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Volume 1, Part B

Earth–Mars Trajectories, 1964

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FOREWORD

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

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

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

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

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

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

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

I. INTRODUCTION

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

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

A. Heliocentric Conic Computation

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

B. Planetocentric Conic Computation

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

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

C. Differential Corrections

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

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

D. Mid-Course Guidance

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

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

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

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

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

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

E. Orbit Determination

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

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

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

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

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

F. Accuracy of Computations

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

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

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

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

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

II. ANALYTICAL MODEL FOR INTERPLANETARY TRAJECTORIES

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

A. Heliocentric Motion

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

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

[2] Hyperbolic heliocentric motion is not considered herein.

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

1. Determination of Planar Orientation

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

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

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

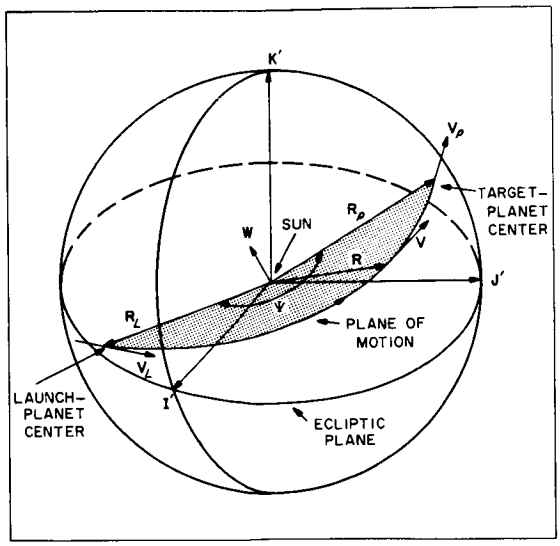

Fig. 1. Heliocentric transfer geometry

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

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

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

2. In-Plane Relations

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

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

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

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

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

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

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

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

and the path angle Γ is found from

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

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

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

3. Lambert's Theorem

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

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

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

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

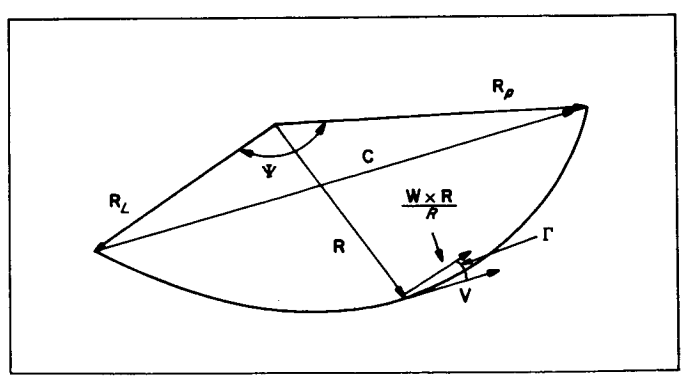

Fig. 2. In-plane transfer geometry

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

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

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

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

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

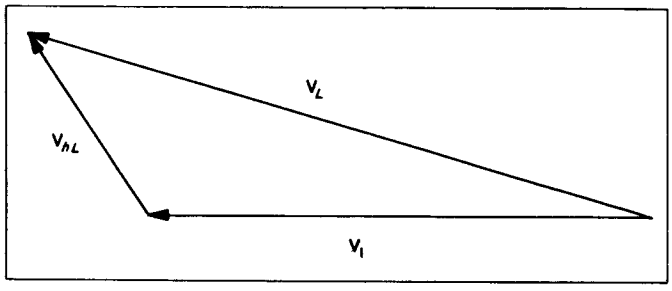

Fig. 3. Determination of the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

B. Launch Planet Escape Hyperbola

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

1. Assumptions

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

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

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

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

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

2. Size and Shape of the Escape Hyperbola

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

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

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

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

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

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

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

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

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

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

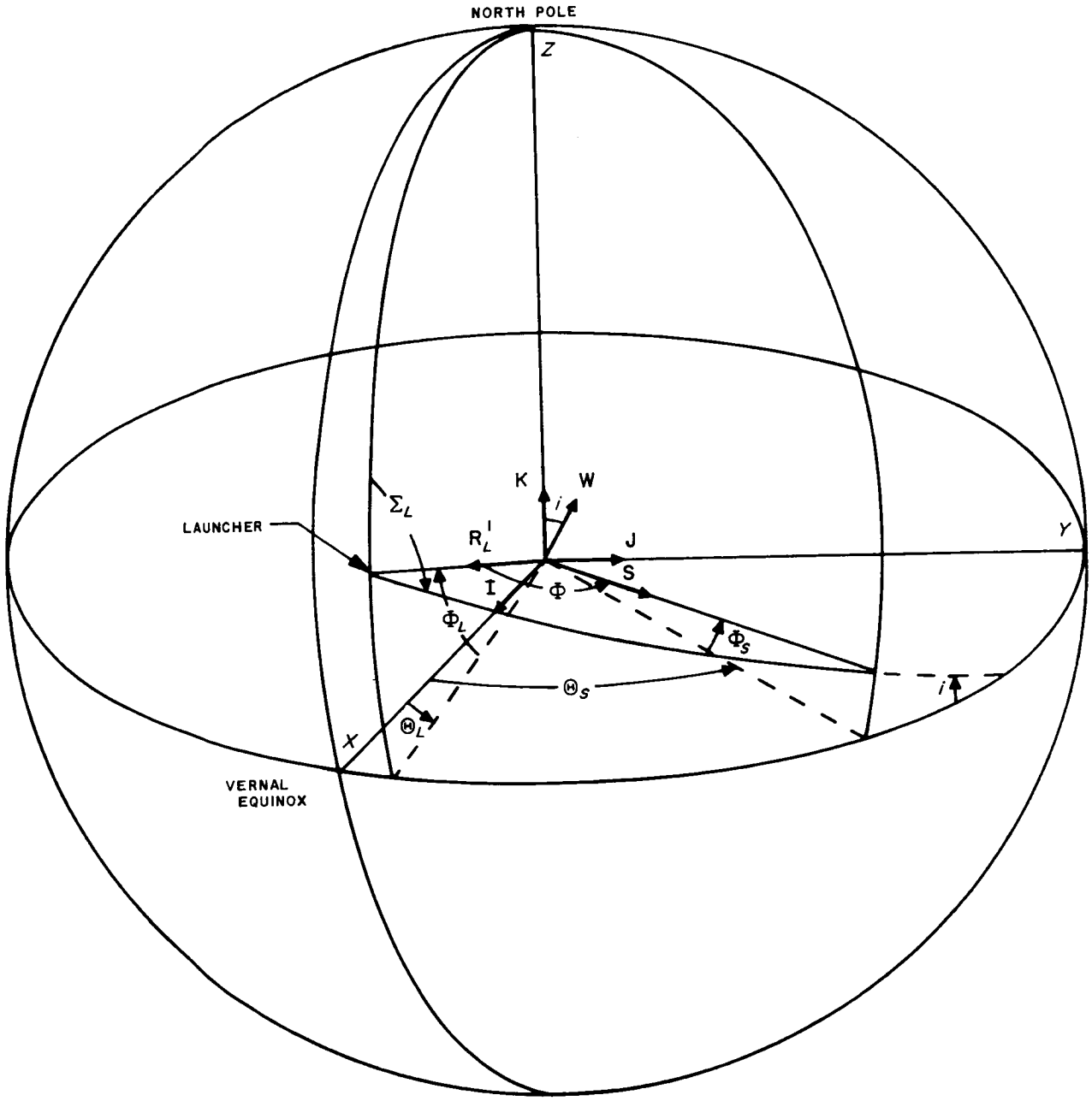

Fig. 4. Vehicle flight plane

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

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

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

C. *Differential Corrections*

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

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

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

where $\mathbf{K}'$ is a unit normal vector to the ecliptic plane. The remaining axis is then given by a unit vector **R**, defined by

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

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

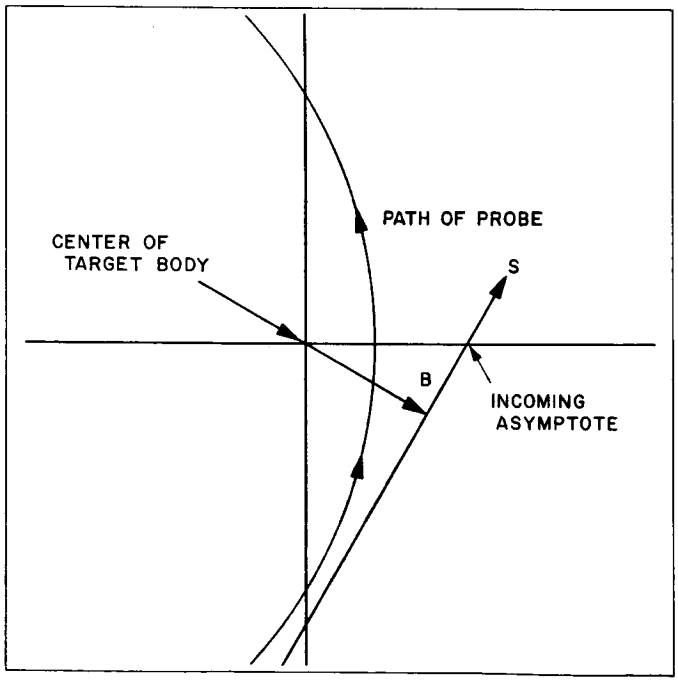

Fig. 5. Impact parameter B

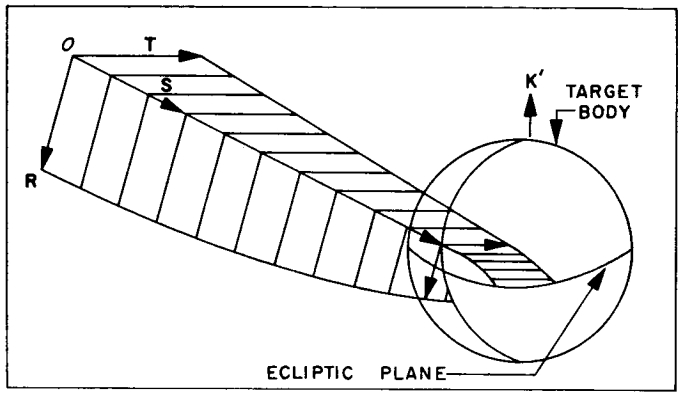

Fig. 6. The R, S, T target coordinate system

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

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

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

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

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

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

where

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

$$(C_3)^{1/2}\, \Delta\Theta_S\, [-\cos\Phi_S \sin\Theta_S, \cos\Phi_S \cos\Theta_S, 0],$$

$$\frac{\Delta C_3}{2\,(C_3)^{1/2}}\, [\cos\Phi_S \cos\Theta_S, \cos\Phi_S \sin\Theta_S, \sin\Phi_S]$$

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

The semimajor axis a' is obtained from

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

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

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

The semilatus rectum p' and eccentricity e' are

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

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

The eccentric anomaly at launch E'_L is

$$\sin E'_L = \frac{R_L\, \dot{R}'_L}{e'\,(a' GM_S)^{1/2}}$$

$$\cos E'_L = \frac{1}{e'}\left(1 - \frac{R_L}{a'}\right) \tag{24}$$

The mean anomaly at launch M'_L is obtained from

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

The mean orbital rate n' is

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

The mean anomaly at the target M'_p is

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

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

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

if

$$\cos E_p \geqq 0$$

or

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

if

$$\cos E_p < 0$$

where

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

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

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

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

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

$$\cos v'_p = \frac{\cos E'_p - e'}{1 - e' \cos E'_p}$$

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

The heliocentric central angle Ψ' is

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

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

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

The heliocentric position vector at the target is

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

where

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

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

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

The heliocentric velocity at the target is

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

The hyperbolic-excess velocity at the target is

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

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

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

The impact parameter **B** is

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

The flight time error is

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

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

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

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

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

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

from whence

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

and

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

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

The effect of solar radiation pressure acting on the probe may also be evaluated as follows: In Eq. (19) let $\Delta\mathbf{V}_{hL} = 0$, but in Eq. (20), (22), (24), (26), (36), vary GM_S by adding an increment ΔGM_S. This procedure gives rise to a varied trajectory from which the impact parameter **B** and flight time error ΔT_F may be obtained. The partials $\partial B/\partial GM_S$ and $\partial T_F/\partial GM_S$ may then be calculated. Since the acceleration caused by solar radiation pressure acts opposite to the gravitational attraction of the Sun, radiation pressure has the effect of decreasing the Sun's gravitational attraction, or decreasing GM_S. A decrease, $\Delta GM_S = -2.4\times10^6\ \mathrm{km^3/sec^2}$ corresponds to the solar radiation pressure acting on a 300-kg spacecraft having a perfectly reflecting area of 3.6 square meters. Thus the miss, always being a positive number, is obtained by $\Delta B_{sp} = 2.4\times10^6\,\partial B/\partial GM_S$, and the corresponding flight time error is $\Delta T_{F_{sp}} = -2.4\times10^6\,\partial T_F/\partial GM_S$, which is sign sensitive.

D. Mid-Course Execution Accuracy

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

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

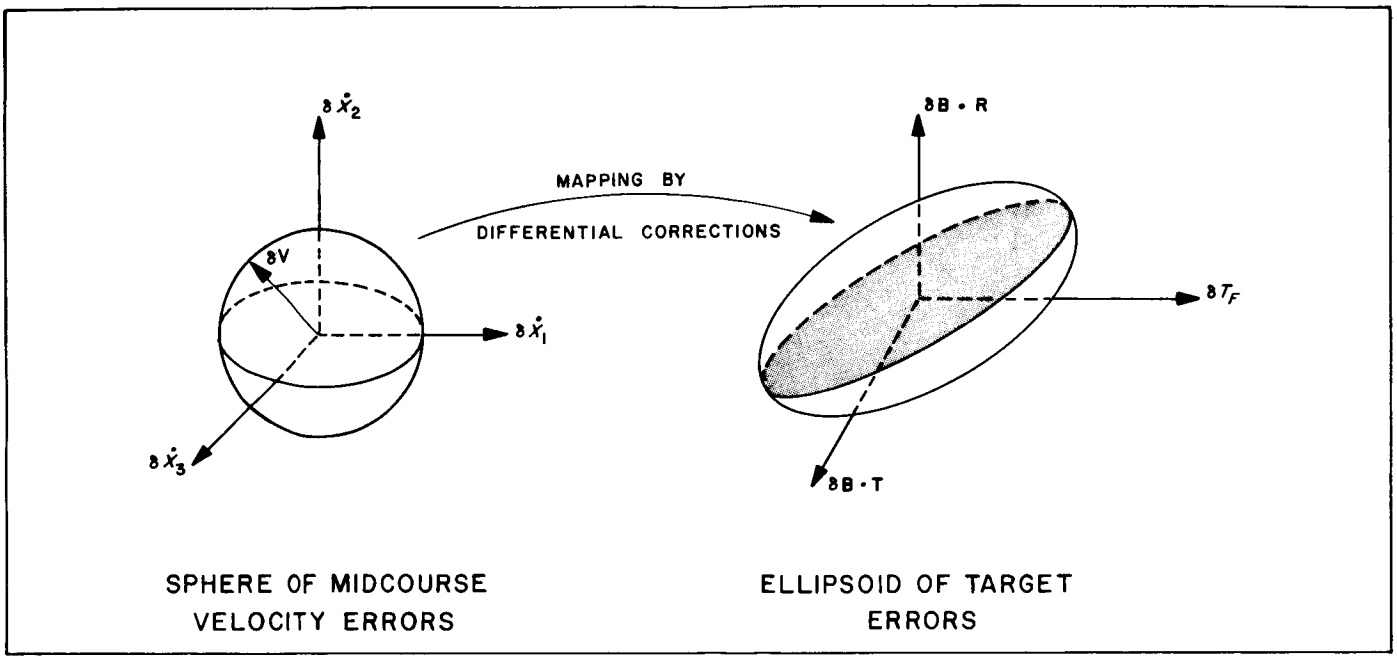

Fig. 7. The mapping of mid-course execution error

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

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

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

Then a new matrix F can be formed,

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

where

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

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

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

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

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

where

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

and

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

The elements of the Λ matrix are:

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

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

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

Then the Λ matrix becomes

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

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

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

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

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

where the matrix L is given by

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

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

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

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

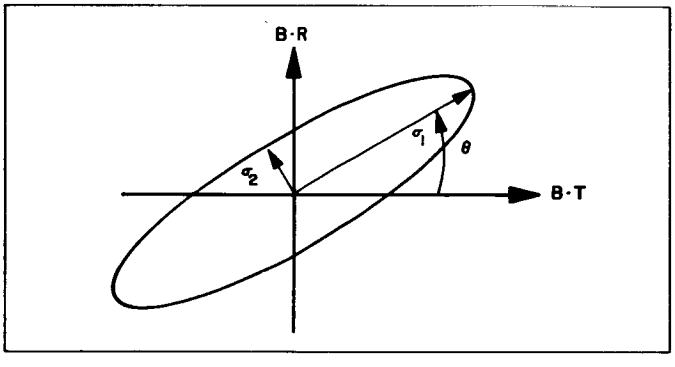

Fig. 8. Projection of three-dimensional error ellipsoid on the T-R plane

E. Orbit Determination Accuracy

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

1. Method of Describing Orbit Determination Accuracy

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

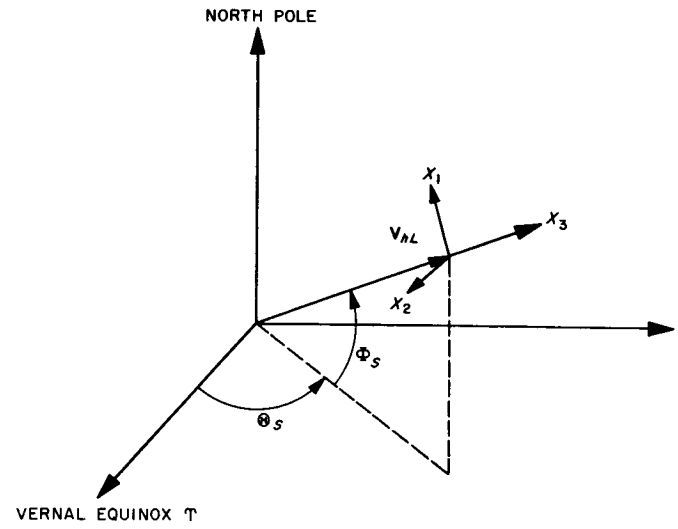

Fig. 9. Orientation of the X_i Cartesian coordinate system to describe uncertainties in the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

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

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

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

Note that

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

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

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

2. Accuracy of Near-Earth Tracking

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

Table 1. Trajectory parameters influencing tracking accuracy

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

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

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

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

Table 2. Tracking station parameters influencing tracking accuracy

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

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

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

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

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

3. Calculation of Target Errors

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

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

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

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

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

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

By postmultiplying K by

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

the F matrix is obtained.

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

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

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

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

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

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

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

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

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

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

III. EXPLANATION OF TRAJECTORY TABLES

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

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

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

A. Heliocentric Conic Group

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

HELIOCENTRIC CONIC DISTANCE

RL LAL LOL VL GAL AZL HCA SMA ECC INC V1

RP LAP LOP VP GAP AZP TAL TAP RCA APO V2

RC GL GP ZAL ZAP ETS ZAE ETE ZAC ETC CLP

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

Line 1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Line 2

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

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

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

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

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

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

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

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

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

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

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

Line 3

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

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

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

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

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

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

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

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

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

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

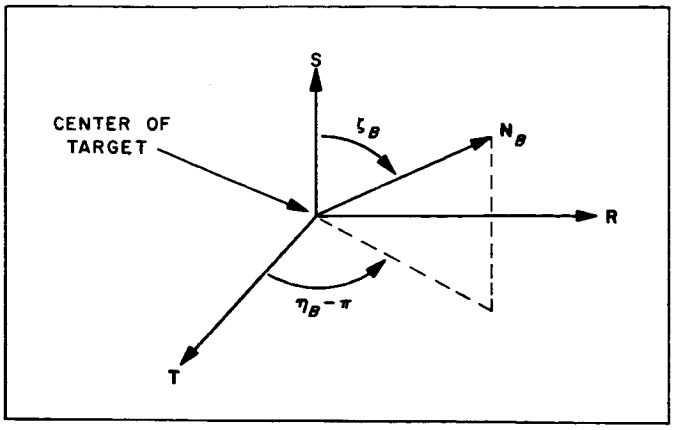

Fig. 10. Generalized geometry for aiming point angles

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

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

since

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

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

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

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

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

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

ETS, η_S — defined as above.

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

ETE, η_E — defined as above.

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

ETC, η_C — defined as above.

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

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

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

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

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

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

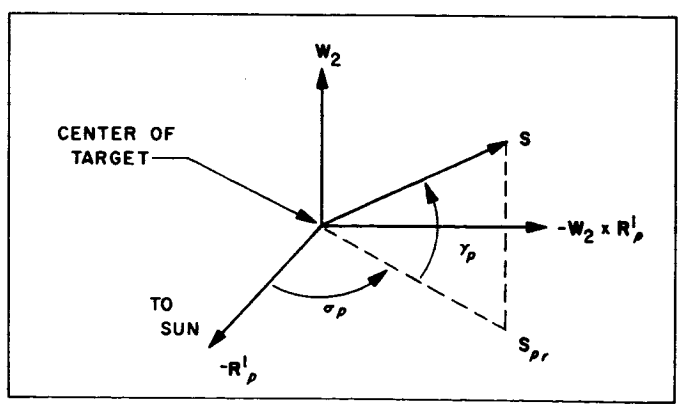

Fig. 11. Definition of σ_p and γ_p

B. Planetocentric Conic Group

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

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

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

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

t_1 the time from launch to parking-orbit injection.

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

t_2 the time of final burn.

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

v_1 the true anomaly in the hyperbolic orbit at injection.

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

ϕ_L the longitude of the launch site.

θ_L the latitude of the launch site.

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

$\Phi_1 =$ 17 deg

$t_1 =$ 500 sec

$\Phi_2 =$ 8 deg

$t_2 =$ 100 sec

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

$v_1 =$ 3.7 deg

$R_p =$ 6560 km

$\phi_L =$ 28.317 deg

$\theta_L =$ 279.457 deg

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

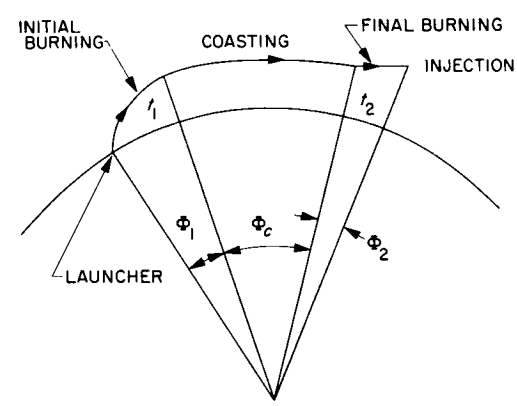

Fig. 12. Ascent trajectory profile

The print array for the PLANETOCENTRIC CONIC group is:

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

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

Line 1

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

Line 2

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

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

C. *Differential Corrections Group*

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

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

DIFFERENTIAL CORRECTIONS

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

The symbols are defined as follows:

Line 1

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

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

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

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

Line 2

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

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

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

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

Line 3

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

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

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

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

Line 4

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

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

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

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

D. Mid-Course Execution Accuracy Group

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

The print array for this group is:

MID-COURSE EXECUTION ACCURACY

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

The quantities are defined as follows:

Line 1

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

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

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

Line 2

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

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

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

Line 3

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

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

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

Line 4

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

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

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

E. Orbit Determination Accuracy Group

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

ORBIT DETERMINATION ACCURACY

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

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

Line 1

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

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

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

Line 2

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

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

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

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

Line 3

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

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

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

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

Line 4

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

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

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

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

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

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

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

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

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

IV. CONSTANTS

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

Gravitational Constants

1. Sun

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

2. Earth

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

Astronomical Unit-to-Kilometer Conversion Factor

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

Earth's Rotation Rate

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

REFERENCES

1. Clarke, V. C., Jr., Roth, R. Y., Bollman, W. E., Hamilton, T. H., and Pfeiffer, C. G., *Earth–Venus Trajectories (Vol. 1, 1964; Vol. 2, 1965–66; Vol. 3, 1967; Vol. 4, 1968–69; Vol. 5, 1970)*, Technical Memorandum No. 33-99, Jet Propulsion Laboratory, Pasadena.

2. Pfeiffer, C. G., *Simple Guidance for Deep-Space Booster Vehicles*, Technical Report No. 32-128, Jet Propulsion Laboratory, Pasadena, November 1961.

3. Noton, A. R. M., *The Statistical Analysis of Space Guidance Systems*, Technical Memorandum No. 33-15, Jet Propulsion Laboratory, Pasadena, June 15, 1960.

4. Noton, A. R. M., Cutting, E., and Barnes, F. L., *Analysis of Radio-Command Mid-Course Guidance*, Technical Report No. 32-28, Jet Propulsion Laboratory, Pasadena, September 8, 1960.

5. Battin, R. H., "The Determination of Round-Trip Planetary Reconnaissance Trajectories," *Journal of the Aero/Space Sciences*, Volume 26, No. 9, September 1959.

6. Clarke, V. C., Jr., *Design of Lunar and Interplanetary Ascent Trajectories*, Technical Report No. 32-30, Rev. 1, Jet Propulsion Laboratory, Pasadena, March 15, 1962.

7. Clarke, V. C., Jr., *A Summary of the Characteristics of Ballistic Interplanetary Trajectories, 1962–1977*, Technical Report No. 32-209, Jet Propulsion Laboratory, Pasadena, January 15, 1962.

8. Clarke, V. C., Jr., Roth, R. Y., Scholey, W. J., and Bollman, W. E., *Design Parameters for Ballistic Interplanetary Trajectories—Part I, One-Way Transfers to Mars and Venus*, Technical Report No. 32-77, Jet Propulsion Laboratory, Pasadena, January 16, 1963.

9. Clarke, V. C., Jr., *Constants and Related Data for Use in Trajectory Calculations—As Adopted by the Ad Hoc NASA Standard Constants Committee*, Technical Report No. 32-604, Jet Propulsion Laboratory, March 6, 1964.

Earth-Mars Trajectories, 1964

Launch date interval: November 9 to December 2, 1964

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

LAUNCH DATE NOV 9 1964 FLIGHT TIME 168.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 446.709 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 35.081 GAL -7.12 AZL 88.04 HCA 143.20 SMA 236.66 ECC .39123 INC 1.9626 V1 30.072
RP 244.80 LAP 1.18 LOP 189.84 VP 22.880 GAP 22.95 AZP 91.57 TAL 334.40 TAP 117.59 RCA 144.07 APO 329.25 V2 22.407
RC 127.239 GL 10.97 GP -.29 ZAL 128.97 ZAP 172.73 ETS 181.03 ZAE 156.35 ETE 356.77 ZAC 87.97 ETC 256.17 CLP 172.73

PLANETOCENTRIC CONIC

C3 39.221 VHL 6.263 DLA 11.46 RAL 181.19 RAD 6568.5 VEL 12.672 PTH 2.30 VHP 10.284 DPA -.06 RAP 182.78 ECC 1.6455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 40	2745.09	-27.94	77.83	58.93	94.80	19 28 25	2145.1	-26.98	69.29
90.00	9 40 56	4661.74	14.36	198.34	51.65	65.33	10 58 38	4061.7	10.91	191.36
100.00	20 9 48	2464.09	-29.37	57.01	58.78	95.83	20 50 52	1864.1	-28.25	48.38
100.00	10 56 29	4417.98	15.66	179.78	51.01	64.21	12 10 7	3818.0	12.06	172.84
110.00	21 31 8	2209.57	-33.19	37.11	58.21	98.70	22 7 58	1609.6	-31.63	28.23
110.00	11 51 38	4245.26	19.08	164.83	49.16	61.08	13 2 24	3645.3	15.07	158.00

DIFFERENTIAL CORRECTIONS

TDE 1.1583 TRA-2.7906 TC3 .6557 BAU .3463
RDE -.4433 RRA -.1088 RC3 -.0788 FAU .06734
FDE -.5598 FRA 1.9673 FC3-1.4864 BSP 9909
BDE 1.2403 BRA 2.7927 BC3 .6605 FSP 636

MID-COURSE EXECUTION ACCURACY

SGT 2929.7 SGR 429.8 SG3 230.2
RRT -.1937 RRF .1775 RTF -.8781
SGB 2961.1 R23 -.0039 R13 .8782
SG1 2930.9 SG2 421.5 THA 178.34

ORBIT DETERMINATION ACCURACY

ST 1317.0 SR 406.8 SS 670.2
CRT -.7577 CRS -.6224 CST .9812
LSA 1504.0 MSA 293.5 SSA 28.5
EL1 1353.9 EL2 258.2 ALF 166.32

LAUNCH DATE NOV 9 1964 FLIGHT TIME 170.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 448.944 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.981 GAL -6.93 AZL 88.03 HCA 144.10 SMA 233.73 ECC .38295 INC 1.9664 V1 30.072
RP 244.57 LAP 1.15 LOP 190.75 VP 22.748 GAP 22.37 AZP 91.59 TAL 334.69 TAP 118.80 RCA 144.23 APO 323.24 V2 22.429
RC 129.306 GL 11.23 GP -.31 ZAL 128.53 ZAP 172.26 ETS 180.97 ZAE 156.08 ETE 356.94 ZAC 88.05 ETC 256.14 CLP 172.26

PLANETOCENTRIC CONIC

C3 37.430 VHL 6.118 DLA 11.86 RAL 180.91 RAD 6568.5 VEL 12.602 PTH 2.29 VHP 10.057 DPA -.25 RAP 183.17 ECC 1.6160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 13	2746.74	-27.95	77.95	57.94	94.74	19 23 59	2146.7	-27.00	69.41
90.00	9 43 11	4636.47	13.63	196.84	50.60	64.94	11 0 27	4036.5	10.14	189.90
100.00	20 5 35	2464.95	-29.38	57.07	57.79	95.80	20 46 40	1865.0	-28.26	48.45
100.00	10 58 30	4393.49	14.92	178.33	49.96	63.80	12 11 43	3793.5	11.28	171.44
110.00	21 27 27	2208.77	-33.18	37.05	57.22	98.73	22 4 16	1608.8	-31.62	28.17
110.00	11 53 7	4222.44	18.32	163.49	48.10	60.62	13 3 29	3622.4	14.27	156.72

DIFFERENTIAL CORRECTIONS

TDE 1.1381 TRA-2.7630 TC3 .7109 BAU .3582
RDE -.4254 RRA -.1011 RC3 -.0827 FAU .06921
FDE -.5615 FRA 2.0109 FC3-1.6008 BSP 10104
BDE 1.2150 BRA 2.7648 BC3 .7157 FSP 672

MID-COURSE EXECUTION ACCURACY

SGT 2980.5 SGR 422.3 SG3 241.6
RRT -.2041 RRF .1877 RTF -.8823
SGB 3010.3 R23 -.0041 R13 .8824
SG1 2981.8 SG2 413.2 THA 178.31

ORBIT DETERMINATION ACCURACY

ST 1328.9 SR 399.4 SS 680.4
CRT -.7567 CRS -.6167 CST .9801
LSA 1517.3 MSA 292.1 SSA 28.6
EL1 1364.1 EL2 254.4 ALF 166.72

LAUNCH DATE NOV 9 1964 FLIGHT TIME 172.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 451.285 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.885 GAL -6.75 AZL 88.03 HCA 145.01 SMA 231.00 ECC .37500 INC 1.9704 V1 30.072
RP 244.34 LAP 1.13 LOP 191.66 VP 22.623 GAP 21.79 AZP 91.61 TAL 335.00 TAP 120.01 RCA 144.38 APO 317.63 V2 22.451
RC 131.411 GL 11.49 GP -.32 ZAL 128.07 ZAP 171.78 ETS 180.93 ZAE 155.87 ETE 357.11 ZAC 88.13 ETC 256.12 CLP 171.79

PLANETOCENTRIC CONIC

C3 35.743 VHL 5.979 DLA 12.27 RAL 180.63 RAD 6568.4 VEL 12.534 PTH 2.27 VHP 9.835 DPA -.44 RAP 183.56 ECC 1.5882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 36	2748.96	-27.96	78.11	56.95	94.66	19 19 25	2149.0	-27.02	69.57
90.00	9 45 30	4610.95	12.89	195.33	49.57	64.57	11 2 21	4010.9	9.36	188.43
100.00	20 1 13	2466.36	-29.39	57.17	56.81	95.74	20 42 20	1866.4	-28.28	48.55
100.00	11 0 34	4368.78	14.18	176.88	48.93	63.41	12 13 23	3768.8	10.49	170.03
110.00	21 23 39	2208.45	-33.18	37.03	56.24	98.75	22 0 27	1608.4	-31.61	28.15
110.00	11 54 38	4199.46	17.55	162.16	47.05	60.18	13 4 37	3599.5	13.45	155.44

DIFFERENTIAL CORRECTIONS

TDE 1.1172 TRA-2.7344 TC3 .7701 BAU .3703
RDE -.4080 RRA -.0927 RC3 -.0868 FAU .07120
FDE -.5625 FRA 2.0549 FC3-1.7244 BSP 10283
BDE 1.1893 BRA 2.7360 BC3 .7750 FSP 710

MID-COURSE EXECUTION ACCURACY

SGT 3030.9 SGR 414.6 SG3 253.4
RRT -.2152 RRF .1986 RTF -.8864
SGB 3059.1 R23 -.0045 R13 .8865
SG1 3032.2 SG2 404.7 THA 178.28

ORBIT DETERMINATION ACCURACY

ST 1339.5 SR 391.9 SS 690.3
CRT -.7557 CRS -.6108 CST .9789
LSA 1529.4 MSA 290.8 SSA 28.6
EL1 1373.0 EL2 250.4 ALF 167.10

LAUNCH DATE NOV 9 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 453.724 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.793 GAL -6.56 AZL 88.03 HCA 145.92 SMA 228.45 ECC .36737 INC 1.9747 V1 30.072
RP 244.11 LAP 1.11 LOP 192.57 VP 22.503 GAP 21.21 AZP 91.64 TAL 335.31 TAP 121.23 RCA 144.52 APO 312.37 V2 22.475
RC 133.550 GL 11.76 GP -.33 ZAL 127.59 ZAP 171.30 ETS 180.89 ZAE 155.70 ETE 357.26 ZAC 88.21 ETC 256.10 CLP 171.30

PLANETOCENTRIC CONIC

C3 34.153 VHL 5.844 DLA 12.69 RAL 180.33 RAD 6568.3 VEL 12.471 PTH 2.26 VHP 9.618 DPA -.63 RAP 183.94 ECC 1.5621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 49	2751.78	-27.98	78.31	55.97	94.56	19 14 41	2151.8	-27.05	69.77
90.00	9 47 54	4585.14	12.13	193.81	48.55	64.22	11 4 19	3985.1	8.57	186.95
100.00	19 56 42	2468.33	-29.40	57.32	55.83	95.67	20 37 51	1868.3	-28.30	48.69
100.00	11 2 42	4343.83	13.41	175.42	47.90	63.03	12 15 6	3743.8	9.69	168.61
110.00	21 19 42	2208.61	-33.18	37.04	55.27	98.74	21 56 31	1608.6	-31.62	28.16
110.00	11 56 11	4176.31	16.76	160.83	46.01	59.76	13 5 48	3576.3	12.61	154.17

DIFFERENTIAL CORRECTIONS

TDE 1.1040 TRA-2.6971 TC3 .8416 BAU .3865
RDE -.3912 RRA -.0847 RC3 -.0912 FAU .07314
FDE -.5601 FRA 2.1022 FC3-1.8540 BSP 10271
BDE 1.1712 BRA 2.6984 BC3 .8465 FSP 755

MID-COURSE EXECUTION ACCURACY

SGT 3079.9 SGR 407.1 SG3 265.7
RRT -.2308 RRF .2091 RTF -.8922
SGB 3106.7 R23 .0003 R13 .8922
SG1 3081.3 SG2 395.9 THA 178.22

ORBIT DETERMINATION ACCURACY

ST 1354.1 SR 384.4 SS 698.9
CRT -.7578 CRS -.6020 CST .9760
LSA 1544.1 MSA 290.9 SSA 28.2
EL1 1386.1 EL2 245.0 ALF 167.46

LAUNCH DATE NOV 9 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 4 1965

DISTANCE 456.250

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.704 GAL -6.38 AZL 88.02 HCA 146.83 SMA 226.06 ECC .36005 INC 1.9790 V1 30.072
RP 243.87 LAP 1.08 LOP 193.48 VP 22.390 GAP 20.63 AZP 91.66 TAL 335.63 TAP 122.45 RCA 144.67 APO 307.45 V2 22.498
RC 135.719 GL 12.03 GP -.35 ZAL 127.11 ZAP 170.81 ETS 180.85 ZAE 155.58 ETE 357.41 ZAC 88.29 ETC 256.08 CLP 170.81

PLANETOCENTRIC CONIC

C3 32.657 VHL 5.715 DLA 13.12 RAL 180.02 RAD 6568.3 VEL 12.411 PTH 2.24 VHP 9.406 DPA -.82 RAP 184.31 ECC 1.5375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 53	2755.21	-28.00	78.56	55.00	94.44	19 9 48	2155.2	-27.09	70.01
90.00	9 50 23	4559.13	11.36	192.30	47.54	63.89	11 6 22	3959.1	7.76	185.47
100.00	19 52 3	2470.86	-29.42	57.51	54.86	95.57	20 33 14	1870.9	-28.33	48.87
100.00	11 4 54	4318.71	12.63	173.97	46.89	62.68	12 16 53	3718.7	8.87	167.19
110.00	21 15 39	2209.27	-33.19	37.09	54.31	98.71	21 52 28	1609.3	-31.63	28.21
110.00	11 57 47	4153.07	15.96	159.50	44.99	59.36	13 7 0	3553.1	11.77	152.89

DIFFERENTIAL CORRECTIONS

TDE 1.0774 TRA-2.6724 TC3 .9015 BAU .3958
RDE -.3747 RRA -.0766 RC3 -.0954 FAU .07538
FDE -.5609 FRA 2.1464 FC3-1.9983 BSP 10559
BDE 1.1407 BRA 2.6735 BC3 .9066 FSP 793

MID-COURSE EXECUTION ACCURACY

SGT 3130.1 SGR 399.0 SG3 278.8
RRT -.2412 RRF .2222 RTF -.8949
SGB 3155.4 R23 -.0031 R13 .8949
SG1 3131.6 SG2 387.1 THA 178.21

ORBIT DETERMINATION ACCURACY

ST 1359.8 SR 376.4 SS 708.7
CRT -.7549 CRS -.5965 CST .9755
LSA 1551.9 MSA 289.2 SSA 28.4
EL1 1390.1 EL2 241.5 ALF 167.82

LAUNCH DATE NOV 9 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 6 1965

DISTANCE 458.860

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.620 GAL -6.21 AZL 88.02 HCA 147.74 SMA 223.82 ECC .35301 INC 1.9838 V1 30.072
RP 243.63 LAP 1.06 LOP 194.39 VP 22.283 GAP 20.06 AZP 91.68 TAL 335.95 TAP 123.69 RCA 144.81 APO 302.83 V2 22.522
RC 137.915 GL 12.31 GP -.37 ZAL 126.61 ZAP 170.31 ETS 180.83 ZAE 155.50 ETE 357.54 ZAC 88.36 ETC 256.06 CLP 170.32

PLANETOCENTRIC CONIC

C3 31.248 VHL 5.590 DLA 13.56 RAL 179.70 RAD 6568.2 VEL 12.354 PTH 2.23 VHP 9.199 DPA -1.01 RAP 184.68 ECC 1.5143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 47	2759.28	-28.02	78.86	54.03	94.29	19 4 46	2159.3	-27.13	70.30
90.00	9 52 56	4532.86	10.57	190.77	46.55	63.58	11 8 29	3932.9	6.93	183.98
100.00	19 47 14	2473.99	-29.44	57.74	53.90	95.45	20 28 28	1874.0	-28.37	49.09
100.00	11 7 10	4293.38	11.84	172.51	45.89	62.35	12 18 43	3693.4	8.04	165.77
110.00	21 11 28	2210.44	-33.20	37.18	53.35	98.66	21 48 19	1610.4	-31.65	28.29
110.00	11 59 25	4129.70	15.14	158.18	43.98	58.98	13 8 15	3529.7	10.92	151.62

DIFFERENTIAL CORRECTIONS

TDE 1.0528 TRA-2.6449 TC3 .9664 BAU .4059
RDE -.3587 RRA -.0688 RC3 -.0999 FAU .07766
FDE -.5597 FRA 2.1928 FC3-2.1515 BSP 10803
BDE 1.1123 BRA 2.6458 BC3 .9716 FSP 837

MID-COURSE EXECUTION ACCURACY

SGT 3179.5 SGR 391.0 SG3 292.5
RRT -.2535 RRF .2355 RTF -.8980
SGB 3203.4 R23 -.0048 R13 .8980
SG1 3181.0 SG2 378.0 THA 178.19

ORBIT DETERMINATION ACCURACY

ST 1365.8 SR 368.3 SS 717.7
CRT -.7527 CRS -.5895 CST .9743
LSA 1559.6 MSA 288.1 SSA 28.5
EL1 1394.5 EL2 237.5 ALF 168.18

LAUNCH DATE NOV 9 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 8 1965

DISTANCE 461.545

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.538 GAL -6.04 AZL 88.01 HCA 148.66 SMA 221.71 ECC .34626 INC 1.9887 V1 30.072
RP 243.38 LAP 1.03 LOP 195.30 VP 22.181 GAP 19.50 AZP 91.70 TAL 336.27 TAP 124.93 RCA 144.94 APO 298.48 V2 22.547
RC 140.134 GL 12.59 GP -.38 ZAL 126.09 ZAP 169.80 ETS 180.81 ZAE 155.47 ETE 357.66 ZAC 88.44 ETC 256.05 CLP 169.81

PLANETOCENTRIC CONIC

C3 29.921 VHL 5.470 DLA 14.01 RAL 179.37 RAD 6568.2 VEL 12.300 PTH 2.22 VHP 8.996 DPA -1.20 RAP 185.05 ECC 1.4924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 31	2764.00	-28.04	79.20	53.08	94.12	18 59 35	2164.0	-27.17	70.64
90.00	9 55 35	4506.34	9.76	189.24	45.58	63.29	11 10 42	3906.3	6.10	182.48
100.00	19 42 17	2477.73	-29.46	58.01	52.94	95.31	20 23 34	1877.7	-28.41	49.36
100.00	11 9 30	4267.84	11.02	171.04	44.91	62.04	12 20 38	3667.8	7.20	164.34
110.00	21 7 10	2212.13	-33.22	37.31	52.41	98.59	21 44 2	1612.1	-31.67	28.42
110.00	12 1 7	4106.21	14.31	156.86	42.99	58.62	13 9 33	3506.2	10.05	150.35

DIFFERENTIAL CORRECTIONS

TDE 1.0286 TRA-2.6156 TC3 1.0362 BAU .4166
RDE -.3431 RRA -.0612 RC3 -.1045 FAU .08005
FDE -.5572 FRA 2.2400 FC3-2.3161 BSP 11007
BDE 1.0843 BRA 2.6163 BC3 1.0415 FSP 882

MID-COURSE EXECUTION ACCURACY

SGT 3227.9 SGR 382.9 SG3 306.8
RRT -.2671 RRF .2498 RTF -.9012
SGB 3250.5 R23 -.0060 R13 .9012
SG1 3229.5 SG2 368.8 THA 178.16

ORBIT DETERMINATION ACCURACY

ST 1371.0 SR 360.0 SS 726.1
CRT -.7508 CRS -.5817 CST .9728
LSA 1566.2 MSA 287.3 SSA 28.5
EL1 1398.1 EL2 233.2 ALF 168.52

LAUNCH DATE NOV 9 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 10 1965

DISTANCE 464.300

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.460 GAL -5.87 AZL 88.01 HCA 149.57 SMA 219.73 ECC .33978 INC 1.9940 V1 30.072
RP 243.12 LAP 1.01 LOP 196.22 VP 22.085 GAP 18.94 AZP 91.72 TAL 336.60 TAP 126.17 RCA 145.07 APO 294.40 V2 22.572
RC 142.373 GL 12.87 GP -.40 ZAL 125.57 ZAP 169.29 ETS 180.79 ZAE 155.48 ETE 357.77 ZAC 88.51 ETC 256.03 CLP 169.30

PLANETOCENTRIC CONIC

C3 28.670 VHL 5.354 DLA 14.47 RAL 179.03 RAD 6568.2 VEL 12.249 PTH 2.20 VHP 8.799 DPA -1.38 RAP 185.40 ECC 1.4718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 4	2769.41	-28.07	79.59	52.13	93.92	18 54 13	2169.4	-27.23	71.05
90.00	9 58 20	4479.57	8.94	187.71	44.62	63.02	11 13 0	3879.6	5.25	180.97
100.00	19 37 9	2482.10	-29.49	58.33	52.00	95.14	20 18 31	1882.1	-28.46	49.68
100.00	11 11 56	4242.10	10.20	169.58	43.95	61.75	12 22 38	3642.1	6.34	162.91
110.00	21 2 43	2214.37	-33.24	37.48	51.47	98.49	21 39 38	1614.4	-31.71	28.58
110.00	12 2 51	4082.61	13.47	155.55	42.02	58.28	13 10 54	3482.6	9.18	149.08

DIFFERENTIAL CORRECTIONS

TDE 1.0050 TRA-2.5840 TC3 1.1105 BAU .4277
RDE -.3281 RRA -.0539 RC3 -.1094 FAU .08254
FDE -.5535 FRA 2.2884 FC3-2.4925 BSP 11191
BDE 1.0572 BRA 2.5854 BC3 1.1159 FSP 931

MID-COURSE EXECUTION ACCURACY

SGT 3275.8 SGR 374.9 SG3 321.8
RRT -.2823 RRF .2650 RTF -.9045
SGB 3297.1 R23 -.0067 R13 .9046
SG1 3277.5 SG2 359.4 THA 178.13

ORBIT DETERMINATION ACCURACY

ST 1375.6 SR 351.6 SS 734.2
CRT -.7494 CRS -.5733 CST .9710
LSA 1572.2 MSA 287.0 SSA 28.4
EL1 1401.3 EL2 228.5 ALF 168.86

LAUNCH DATE NOV 9 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 467.121 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.385 GAL -5.71 AZL 88.00 HCA 150.49 SMA 217.87 ECC .33356 INC 1.9995 V1 30.072
RP 242.87 LAP .98 LOP 197.14 VP 21.995 GAP 18.38 AZP 91.74 TAL 336.94 TAP 127.43 RCA 145.20 APO 290.55 V2 22.598
RC 144.629 GL 13.16 GP -.42 ZAL 125.03 ZAP 168.77 ETS 180.78 ZAE 155.54 ETE 357.87 ZAC 88.57 ETC 256.01 CLP 168.77

PLANETOCENTRIC CONIC

C3 27.493 VHL 5.243 DLA 14.94 RAL 178.69 RAD 6568.1 VEL 12.201 PTH 2.19 VHP 8.605 DPA -1.57 RAP 185.76 ECC 1.4525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 27	2775.51	-28.09	80.04	51.19	93.70	18 48 42	2175.5	-27.28	71.47
90.00	10 1 11	4452.54	8.10	186.16	43.67	62.77	11 15 23	3852.5	4.38	179.45
100.00	19 31 52	2487.12	-29.52	58.70	51.07	94.95	20 13 19	1887.1	-28.52	50.04
100.00	11 14 26	4216.17	9.36	168.11	43.00	61.48	12 24 43	3616.2	5.48	161.47
110.00	20 58 9	2217.15	-33.27	37.69	50.55	98.36	21 35 6	1617.2	-31.75	28.79
110.00	12 4 39	4058.90	12.62	154.24	41.06	57.96	13 12 18	3458.9	8.30	147.81

DIFFERENTIAL CORRECTIONS

TDE .9814 TRA-2.5531 TC3 1.1881 BAU .4387
RDE -.3135 RRA -.0468 RC3 -.1144 FAU .08515
FDE -.5486 FRA 2.3379 FC3-2.6815 BSP 11360
BDE 1.0303 BRA 2.5536 BC3 1.1936 FSP 982

MID-COURSE EXECUTION ACCURACY

SGT 3322.6 SGR 366.8 SG3 337.5
RRT -.2908 RRF .2812 RTF -.9077
SGB 3342.8 RZS -.0073 R13 .9078
SG1 3324.5 SG2 349.9 THA 178.09

ORBIT DETERMINATION ACCURACY

ST 1379.1 SR 343.0 SS 741.9
CRT -.7480 CRS -.5642 CST .9688
LSA 1576.9 MSA 287.1 SSA 28.2
EL1 1403.4 EL2 223.7 ALF 169.18

LAUNCH DATE NOV 9 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 470.003 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.313 GAL -5.55 AZL 87.99 HCA 151.41 SMA 216.12 ECC .32759 INC 2.0053 V1 30.072
RP 242.60 LAP .96 LOP 198.06 VP 21.909 GAP 17.83 AZP 91.76 TAL 337.27 TAP 128.68 RCA 145.32 APO 286.92 V2 22.624
RC 146.900 GL 13.45 GP -.44 ZAL 124.48 ZAP 168.23 ETS 180.78 ZAE 155.63 ETE 357.96 ZAC 88.64 ETC 256.00 CLP 168.24

PLANETOCENTRIC CONIC

C3 26.384 VHL 5.137 DLA 15.41 RAL 178.33 RAD 6568.1 VEL 12.156 PTH 2.18 VHP 8.416 DPA -1.75 RAP 186.10 ECC 1.4342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 39	2782.35	-28.12	80.54	50.26	93.45	18 43 1	2182.3	-27.35	71.96
90.00	10 4 8	4425.26	7.24	184.61	42.75	62.55	11 17 53	3825.3	3.51	177.92
100.00	19 26 26	2492.81	-29.55	59.12	50.14	94.73	20 7 58	1892.8	-28.58	50.45
100.00	11 17 2	4190.03	8.51	166.64	42.07	61.24	12 26 52	3590.0	4.60	160.03
110.00	20 53 28	2220.50	-33.30	37.95	49.65	98.22	21 30 28	1620.5	-31.81	29.04
110.00	12 6 30	4035.10	11.76	152.94	40.12	57.67	13 13 45	3435.1	7.40	146.55

DIFFERENTIAL CORRECTIONS

TDE .9567 TRA-2.5217 TC3 1.2683 BAU .4493
RDE -.2993 RRA -.0398 RC3 -.1197 FAU .08788
FDE -.5422 FRA 2.3888 FC3-2.8835 BSP 11541
BDE 1.0024 BRA 2.5220 BC3 1.2739 FSP 1036

MID-COURSE EXECUTION ACCURACY

SGT 3369.0 SGR 390.8 SG3 353.9
RRT -.3161 RRF .2906 RTF -.9108
SGB 3388.0 RZS -.0081 R13 .9108
SG1 3370.9 SG2 340.2 THA 178.05

ORBIT DETERMINATION ACCURACY

ST 1380.8 SR 334.2 SS 749.1
CRT -.7462 CRS -.5543 CST .9665
LSA 1579.8 MSA 287.5 SSA 27.9
EL1 1403.7 EL2 218.8 ALF 169.50

LAUNCH DATE NOV 9 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 472.942 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.245 GAL -5.40 AZL 87.99 HCA 152.33 SMA 214.47 ECC .32185 INC 2.0115 V1 30.072
RP 242.34 LAP .93 LOP 198.98 VP 21.829 GAP 17.28 AZP 91.78 TAL 337.62 TAP 129.95 RCA 145.44 APO 283.50 V2 22.651
RC 149.184 GL 13.75 GP -.47 ZAL 123.92 ZAP 167.69 ETS 180.78 ZAE 155.77 ETE 358.05 ZAC 88.70 ETC 255.98 CLP 167.70

PLANETOCENTRIC CONIC

C3 25.339 VHL 5.034 DLA 15.90 RAL 177.96 RAD 6568.0 VEL 12.113 PTH 2.17 VHP 8.231 DPA -1.93 RAP 186.44 ECC 1.4170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 39	2789.94	-28.15	81.09	49.34	93.18	18 37 9	2189.9	-27.42	72.50
90.00	10 7 13	4397.69	6.38	183.05	41.84	62.35	11 20 30	3797.7	2.62	176.38
100.00	19 20 49	2499.19	-29.58	59.60	49.23	94.49	20 2 28	1899.2	-28.65	50.92
100.00	11 19 44	4163.67	7.64	165.16	41.16	61.01	12 29 8	3563.7	3.72	158.57
110.00	20 48 38	2224.43	-33.34	38.25	48.75	98.04	21 25 42	1624.4	-31.87	29.33
110.00	12 8 25	4011.19	10.88	151.64	39.20	57.39	13 15 16	3411.2	6.51	145.28

DIFFERENTIAL CORRECTIONS

TDE .9374 TRA-2.4843 TC3 1.3598 BAU .4626
RDE -.2857 RRA -.0332 RC3 -.1253 FAU .09073
FDE -.5345 FRA 2.4409 FC3-3.0999 BSP 11582
BDE .9800 BRA 2.4846 BC3 1.3656 FSP 1093

MID-COURSE EXECUTION ACCURACY

SGT 3414.3 SGR 351.0 SG3 371.2
RRT -.3374 RRF .3172 RTF -.9146
SGB 3432.3 RZS -.0060 R13 .9146
SG1 3416.4 SG2 330.2 THA 177.99

ORBIT DETERMINATION ACCURACY

ST 1385.0 SR 325.4 SS 755.9
CRT -.7471 CRS -.5434 CST .9628
LSA 1584.6 MSA 289.6 SSA 27.3
EL1 1406.7 EL2 213.0 ALF 169.81

LAUNCH DATE NOV 9 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 475.933 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 34.178 GAL -5.25 AZL 87.98 HCA 153.26 SMA 212.92 ECC .31635 INC 2.0182 V1 30.072
RP 242.06 LAP .91 LOP 199.90 VP 21.753 GAP 16.73 AZP 91.80 TAL 337.96 TAP 131.22 RCA 145.56 APO 280.27 V2 22.678
RC 151.478 GL 14.06 GP -.49 ZAL 123.35 ZAP 167.14 ETS 180.79 ZAE 155.95 ETE 358.12 ZAC 88.75 ETC 255.97 CLP 167.15

PLANETOCENTRIC CONIC

C3 24.357 VHL 4.935 DLA 16.39 RAL 177.59 RAD 6568.0 VEL 12.072 PTH 2.16 VHP 8.050 DPA -2.11 RAP 186.76 ECC 1.4009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 29	2798.30	-28.18	81.70	48.44	92.87	18 31 7	2198.3	-27.49	73.10
90.00	10 10 25	4369.87	5.49	181.48	40.96	62.18	11 23 15	3769.9	1.73	174.83
100.00	19 15 2	2506.27	-29.62	60.12	48.34	94.21	19 56 49	1906.3	-28.72	51.43
100.00	11 22 33	4137.13	6.76	163.68	40.27	60.81	12 31 30	3537.1	2.82	157.11
110.00	20 43 41	2220.94	-33.38	38.59	47.87	97.84	21 20 50	1628.9	-31.94	29.66
110.00	12 10 24	3987.22	10.00	150.34	38.30	57.14	13 16 51	3387.2	5.60	144.02

DIFFERENTIAL CORRECTIONS

TDE .9072 TRA-2.4564 TC3 1.4385 BAU .4704
RDE -.2722 RRA -.0284 RC3 -.1308 FAU .09375
FDE -.5256 FRA 2.4935 FC3-3.3523 BSP 11864
BDE .9471 BRA 2.4566 BC3 1.4444 FSP 1152

MID-COURSE EXECUTION ACCURACY

SGT 3458.6 SGR 342.8 SG3 389.2
RRT -.3552 RRF .3374 RTF -.9167
SGB 3475.5 RZS -.0096 R13 .9167
SG1 3460.7 SG2 320.3 THA 177.97

ORBIT DETERMINATION ACCURACY

ST 1380.7 SR 316.2 SS 762.4
CRT -.7432 CRS -.5324 CST .9608
LSA 1582.0 MSA 289.8 SSA 27.2
EL1 1401.0 EL2 208.5 ALF 170.12

LAUNCH DATE NOV. 9 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 20 1965

DISTANCE 478.974

HELIOCENTRIC CONIC

RL 148.16 LAL .00 LOL 46.63 VL 34.115 GAL -5.10 AZL 87.97 HCA 154.18 SMA 211.45 ECC .31107 INC 2.0252 V1 30.072
RP 241.79 LAP .88 LOP 200.83 VP 21.683 GAP 16.19 AZP 91.82 TAL 338.30 TAP 132.49 RCA 145.67 APO 277.22 V2 22.706
RC 153.781 GL 14.36 GP -.52 ZAL 122.77 ZAP 166.58 ETS 180.81 ZAE 156.16 ETE 358.19 ZAC 88.81 ETC 255.96 CLP 166.59

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.432 VHL 4.841 DLA 16.89 RAL 177.21 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 7.873 DPA -2.28 RAP 187.08 ECC 1.3856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 7	2807.48	-28.21	82.37	47.55	92.54	18 24 54	2207.5	-27.56	73.76
90.00	10 13 46	4341.73	4.60	179.90	40.10	62.03	11 26 7	3741.7	.82	173.26
100.00	19 9 5	2514.09	-29.66	60.70	47.46	93.91	19 50 59	1914.1	-28.80	52.00
100.00	11 25 28	4110.35	5.87	162.19	39.40	60.64	12 33 58	3510.3	1.91	155.64
110.00	20 38 35	2234.06	-33.43	38.98	47.01	97.61	21 15 49	1634.1	-32.01	30.04
110.00	12 12 27	3963.15	9.11	149.05	37.42	56.91	13 18 30	3363.1	4.69	142.75

DIFFERENTIAL CORRECTIONS

TDE .8817 TRA-2.4233 TC3 1.5282 BAU .4806
RDE -.2592 RRA -.0199 RC3 -.1368 FAU .09694
FDE -.5155 FRA 2.5472 FC3-3.5818 BSP 12018
BDE .9190 BRA 2.4234 BC3 1.5343 FSP 1213

MID-COURSE EXECUTION ACCURACY

SGT 3502.1 SGR 335.1 SG3 408.2
RRT -.3769 RRF .3593 RTF -.9194
SGB 3518.0 R23 -.0109 R13 .9194
SG1 3504.3 SG2 310.1 THA 177.92

ORBIT DETERMINATION ACCURACY

ST 1378.3 SR 306.9 SS 768.6
CRT -.7416 CRS -.5209 CST .9577
LSA 1580.9 MSA 291.4 SSA 26.8
EL1 1397.4 EL2 203.1 ALF 170.42

LAUNCH DATE NOV 9 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 22 1965

DISTANCE 482.061

HELIOCENTRIC CONIC

RL 148.16 LAL .00 LOL 46.63 VL 34.054 GAL -4.95 AZL 87.97 HCA 155.11 SMA 210.06 ECC .30600 INC 2.0328 V1 30.072
RP 241.51 LAP .86 LOP 201.76 VP 21.616 GAP 15.66 AZP 91.84 TAL 338.65 TAP 133.76 RCA 145.78 APO 274.34 V2 22.734
RC 156.092 GL 14.68 GP -.55 ZAL 122.18 ZAP 166.00 ETS 180.83 ZAE 156.41 ETE 358.24 ZAC 88.85 ETC 255.95 CLP 166.01

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.561 VHL 4.750 DLA 17.40 RAL 176.83 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 7.700 DPA -2.46 RAP 187.39 ECC 1.3713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 31	2817.51	-28.24	83.10	46.68	92.17	18 18 29	2217.5	-27.64	74.49
90.00	10 17 16	4313.25	3.69	178.30	39.26	61.90	11 29 9	3713.2	-.10	171.67
100.00	19 2 57	2522.67	-29.70	61.33	46.59	93.58	19 45 0	1922.7	-28.88	52.62
100.00	11 28 31	4083.32	4.96	160.70	38.56	60.49	12 36 34	3483.3	1.00	154.16
110.00	20 33 22	2230.79	-33.48	39.42	46.17	97.36	21 10 42	1639.8	-32.10	30.46
110.00	12 14 35	3938.96	8.21	147.76	36.57	56.70	13 20 14	3339.0	3.77	141.48

DIFFERENTIAL CORRECTIONS

TDE .8584 TRA-2.3871 TC3 1.6238 BAU .4917
RDE -.2466 RRA -.0136 RC3 -.1431 FAU .10024
FDE -.5029 FRA 2.6028 FC3-3.8464 BSP 12114
BDE .8931 BRA 2.3872 BC3 1.6301 FSP 1279

MID-COURSE EXECUTION ACCURACY

SGT 3543.7 SGR 327.5 SG3 428.1
RRT -.4013 RRF .3825 RTF -.9224
SGB 3558.8 R23 -.0105 R13 .9224
SG1 3546.2 SG2 299.8 THA 177.86

ORBIT DETERMINATION ACCURACY

ST 1376.2 SR 297.6 SS 774.2
CRT -.7413 CRS -.5077 CST .9533
LSA 1579.3 MSA 294.7 SSA 26.2
EL1 1394.1 EL2 197.2 ALF 170.71

LAUNCH DATE NOV 9 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 24 1965

DISTANCE 485.192

HELIOCENTRIC CONIC

RL 148.16 LAL .00 LOL 46.63 VL 33.996 GAL -4.81 AZL 87.96 HCA 156.04 SMA 208.75 ECC .30114 INC 2.0410 V1 30.072
RP 241.22 LAP .83 LOP 202.69 VP 21.554 GAP 15.13 AZP 91.87 TAL 339.00 TAP 135.04 RCA 145.89 APO 271.61 V2 22.762
RC 158.408 GL 15.00 GP -.58 ZAL 121.58 ZAP 165.42 ETS 180.85 ZAE 156.70 ETE 358.28 ZAC 88.90 ETC 255.94 CLP 165.43

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.742 VHL 4.663 DLA 17.92 RAL 176.43 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 7.530 DPA -2.63 RAP 187.69 ECC 1.3578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 44	2828.42	-28.27	83.90	45.82	91.77	18 11 52	2228.4	-27.72	75.28
90.00	10 20 56	4284.43	2.76	176.69	38.45	61.81	11 32 20	3684.4	-1.03	170.06
100.00	18 56 38	2532.04	-29.73	62.03	45.74	93.22	19 38 50	1932.0	-28.97	53.30
100.00	11 31 42	4056.05	4.05	159.19	37.74	60.36	12 39 18	3456.0	.07	152.66
110.00	20 28 1	2246.16	-33.53	39.91	45.34	97.07	21 5 27	1646.2	-32.19	30.94
110.00	12 16 49	3914.69	7.30	146.47	35.73	56.51	13 22 4	3314.7	2.84	140.21

DIFFERENTIAL CORRECTIONS

TDE .8291 TRA-2.3566 TC3 1.7119 BAU .4995
RDE -.2343 RRA -.0073 RC3 -.1495 FAU .10370
FDE -.4888 FRA 2.6600 FC3-4.1292 BSP 12341
BDE .8615 BRA 2.3567 BC3 1.7184 FSP 1348

MID-COURSE EXECUTION ACCURACY

SGT 3584.5 SGR 320.0 SG3 448.9
RRT -.4248 RRF .4076 RTF -.9244
SGB 3598.8 R23 -.0136 R13 .9244
SG1 3587.1 SG2 289.4 THA 177.81

ORBIT DETERMINATION ACCURACY

ST 1368.8 SR 287.9 SS 779.7
CRT -.7381 CRS -.4941 CST .9500
LSA 1573.4 MSA 296.9 SSA 25.8
EL1 1385.6 EL2 191.9 ALF 171.00

LAUNCH DATE NOV 9 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 26 1965

DISTANCE 488.363

HELIOCENTRIC CONIC

RL 148.16 LAL .00 LOL 46.63 VL 33.940 GAL -4.68 AZL 87.95 HCA 156.98 SMA 207.50 ECC .29647 INC 2.0497 V1 30.072
RP 240.93 LAP .80 LOP 203.62 VP 21.497 GAP 14.61 AZP 91.89 TAL 339.35 TAP 136.33 RCA 145.99 APO 269.02 V2 22.791
RC 160.729 GL 15.32 GP -.62 ZAL 120.97 ZAP 164.82 ETS 180.89 ZAE 157.03 ETE 358.31 ZAC 88.94 ETC 255.93 CLP 164.83

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.972 VHL 4.580 DLA 18.45 RAL 176.04 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 7.365 DPA -2.80 RAP 187.98 ECC 1.3451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 42	2840.28	-28.29	84.77	44.97	91.34	18 5 3	2240.3	-27.80	76.13
90.00	10 24 47	4255.21	1.82	175.06	37.66	61.74	11 35 42	3655.2	-1.97	168.43
100.00	18 50 8	2542.24	-29.77	62.78	44.91	92.82	19 32 30	1942.2	-29.06	54.05
100.00	11 35 3	4028.48	3.12	157.67	36.94	60.26	12 42 11	3428.5	-.86	151.15
110.00	20 22 31	2253.18	-33.59	40.45	44.53	96.76	21 0 4	1653.2	-32.29	31.46
110.00	12 19 9	3890.30	6.38	145.18	34.92	56.35	13 23 59	3290.3	1.91	138.94

DIFFERENTIAL CORRECTIONS

TDE .8024 TRA-2.3223 TC3 1.8077 BAU .5087
RDE -.2223 RRA -.0011 RC3 -.1563 FAU .10736
FDE -.4729 FRA 2.7180 FC3-4.4317 BSP 12482
BDE .8326 BRA 2.3223 BC3 1.8145 FSP 1420

MID-COURSE EXECUTION ACCURACY

SGT 3623.6 SGR 312.8 SG3 470.7
RRT -.4516 RRF .4346 RTF -.9268
SGB 3637.0 R23 -.0152 R13 .9268
SG1 3626.3 SG2 278.9 THA 177.75

ORBIT DETERMINATION ACCURACY

ST 1361.8 SR 278.2 SS 784.8
CRT -.7366 CRS -.4798 CST .9455
LSA 1567.5 MSA 300.5 SSA 25.1
EL1 1377.4 EL2 186.0 ALF 171.28

LAUNCH DATE NOV 9 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 491.573 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.886	GAL	-4.55	AZL	87.94	HCA	157.91	SMA	206.33	ECC	.29199	INC	2.0592
RP	240.64	LAP	.77	LOP	204.56	VP	21.443	GAP	14.09	AZP	91.91	TAL	339.70	TAP	137.61	RCA	146.08	APO	266.58
RC	163.052	GL	15.65	GP	-.66	ZAL	120.36	ZAP	164.21	ETS	180.92	ZAE	157.39	ETE	358.33	ZAC	88.97	ETC	255.92

V1 30.072 V2 22.821 CLP 164.22

PLANETOCENTRIC CONIC

C3 20.248 VHL 4.500 DLA 18.98 RAL 175.64 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 7.202 DPA -2.98 RAP 188.26 ECC 1.3332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 26	2853.14	-28.30	85.71	44.14	90.87	17 57 59	2253.1	-27.88	77.07
90.00	10 28 51	4225.53	.86	173.40	36.90	61.70	11 39 16	3625.5	-2.93	166.77
100.00	18 43 25	2553.32	-29.81	63.60	44.09	92.39	19 25 58	1953.3	-29.16	54.86
100.00	11 38 33	4000.59	2.18	156.14	36.17	60.18	12 45 14	3400.6	-1.81	149.62
110.00	20 16 53	2260.88	-33.65	41.05	43.75	96.41	20 54 34	1660.9	-32.40	32.04
110.00	12 21 35	3865.79	5.45	143.88	34.14	56.20	13 26 0	3265.8	.97	137.66

DIFFERENTIAL CORRECTIONS

TDE	.7758	TRA	-2.2876	TC3	1.9062	BAU	.5179
RDE	-.2107	RRA	.0050	RC3	-.1636	FAU	.11121
FDE	-.4552	FRA	2.7777	FC3	-4.7549	BSP	12616
BDE	.8039	BRA	2.2876	BC3	1.9132	FSP	1495

MID-COURSE EXECUTION ACCURACY

SGT	3661.5	SGR	306.1	SG3	493.6		
RRT	-.4803	RRF	.4636	RTF	-.9291		
SGB	3674.3	R23	-.0171	R13	.9291		
SG1	3664.5	SG2	268.3	THA	177.69		

ORBIT DETERMINATION ACCURACY

ST	1353.7	SR	268.3	SS	789.9
CRT	-.7354	CRS	-.4648	CST	.9404
LSA	1560.4	MSA	305.0	SSA	24.4
EL1	1368.2	EL2	179.9	ALF	171.56

LAUNCH DATE NOV 9 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 494.819 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.835	GAL	-4.42	AZL	87.93	HCA	158.85	SMA	205.22	ECC	.28770	INC	2.0696
RP	240.34	LAP	.75	LOP	205.49	VP	21.394	GAP	13.58	AZP	91.93	TAL	340.06	TAP	138.90	RCA	146.18	APO	264.26
RC	165.375	GL	15.99	GP	-.70	ZAL	119.74	ZAP	163.58	ETS	180.97	ZAE	157.79	ETE	358.34	ZAC	89.00	ETC	255.91

V1 30.072 V2 22.851 CLP 163.60

PLANETOCENTRIC CONIC

C3 19.567 VHL 4.424 DLA 19.52 RAL 175.23 RAD 6567.8 VEL 11.872 PTH 2.11 VHP 7.044 DPA -3.15 RAP 188.53 ECC 1.3220

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 54	2867.08	-28.31	86.73	43.33	90.36	17 50 41	2267.1	-27.97	78.08
90.00	10 33 9	4195.33	-.11	171.72	36.17	61.68	11 43 5	3595.3	-3.90	165.08
100.00	18 36 29	2565.32	-29.84	64.49	43.30	91.92	19 19 14	1965.3	-29.25	55.74
100.00	11 42 16	3972.32	1.22	154.59	35.43	60.13	12 48 28	3372.3	-2.77	148.07
110.00	20 11 6	2269.29	-33.71	41.69	42.98	96.03	20 48 55	1669.3	-32.51	32.67
110.00	12 24 8	3841.12	4.52	142.59	33.38	56.08	13 28 9	3241.1	.03	136.37

DIFFERENTIAL CORRECTIONS

TDE	.7503	TRA	-2.2514	TC3	2.0084	BAU	.5273
RDE	-.1994	RRA	.0110	RC3	-.1714	FAU	.11521
FDE	-.4347	FRA	2.8397	FC3	-5.0973	BSP	12715
BDE	.7764	BRA	2.2515	BC3	2.0157	FSP	1575

MID-COURSE EXECUTION ACCURACY

SGT	3698.0	SGR	299.9	SG3	517.6		
RRT	-.5116	RRF	.4945	RTF	-.9315		
SGB	3710.1	R23	-.0182	R13	.9316		
SG1	3701.2	SG2	257.5	THA	177.61		

ORBIT DETERMINATION ACCURACY

ST	1345.0	SR	258.4	SS	794.9
CRT	-.7352	CRS	-.4485	CST	.9342
LSA	1552.5	MSA	311.1	SSA	23.5
EL1	1358.6	EL2	173.4	ALF	171.83

LAUNCH DATE NOV 9 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 498.099 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.785	GAL	-4.29	AZL	87.92	HCA	159.79	SMA	204.16	ECC	.28358	INC	2.0808
RP	240.04	LAP	.72	LOP	206.43	VP	21.348	GAP	13.07	AZP	91.95	TAL	340.41	TAP	140.19	RCA	146.27	APO	262.06
RC	167.697	GL	16.33	GP	-.75	ZAL	119.11	ZAP	162.94	ETS	181.03	ZAE	158.23	ETE	358.32	ZAC	89.02	ETC	255.90

V1 30.072 V2 22.881 CLP 162.96

PLANETOCENTRIC CONIC

C3 18.928 VHL 4.351 DLA 20.07 RAL 174.82 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 6.888 DPA -3.31 RAP 188.79 ECC 1.3115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 5	2882.20	-28.32	87.83	42.54	89.80	17 43 7	2282.2	-28.04	79.18
90.00	10 37 44	4164.52	-1.11	170.00	35.47	61.70	11 47 8	3564.5	-4.88	163.36
100.00	18 29 18	2578.34	-29.86	65.46	42.52	91.41	19 12 17	1978.3	-29.35	56.69
100.00	11 46 11	3943.61	.24	153.01	34.72	60.11	12 51 55	3343.6	-3.74	146.49
110.00	20 5 9	2278.46	-33.77	42.40	42.24	95.62	20 43 8	1678.5	-32.63	33.36
110.00	12 26 49	3816.25	3.57	141.28	32.64	55.98	13 30 26	3216.3	-.92	135.08

DIFFERENTIAL CORRECTIONS

TDE	.7304	TRA	-2.2090	TC3	2.1246	BAU	.5396
RDE	-.1886	RRA	.0169	RC3	-.1801	FAU	.11947
FDE	-.4130	FRA	2.9019	FC3	-5.4645	BSP	12665
BDE	.7544	BRA	2.2091	BC3	2.1323	FSP	1657

MID-COURSE EXECUTION ACCURACY

SGT	3733.1	SGR	294.7	SG3	542.7		
RRT	-.5472	RRF	.5275	RTF	-.9346		
SGB	3744.7	R23	-.0166	R13	.9346		
SG1	3736.6	SG2	246.4	THA	177.52		

ORBIT DETERMINATION ACCURACY

ST	1338.5	SR	248.5	SS	799.8
CRT	-.7388	CRS	-.4324	CST	.9257
LSA	1546.0	MSA	320.3	SSA	22.2
EL1	1351.3	EL2	165.9	ALF	172.07

LAUNCH DATE NOV 9 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 501.411 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.738	GAL	-4.17	AZL	87.91	HCA	160.73	SMA	203.16	ECC	.27963	INC	2.0931
RP	239.73	LAP	.69	LOP	207.37	VP	21.306	GAP	12.57	AZP	91.98	TAL	340.76	TAP	141.49	RCA	146.35	APO	259.98
RC	170.016	GL	16.68	GP	-.80	ZAL	118.49	ZAP	162.29	ETS	181.09	ZAE	158.69	ETE	358.29	ZAC	89.03	ETC	255.89

V1 30.072 V2 22.912 CLP 162.31

PLANETOCENTRIC CONIC

C3 18.329 VHL 4.281 DLA 20.63 RAL 174.42 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 6.736 DPA -3.48 RAP 189.03 ECC 1.3017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 57	2898.54	-28.31	89.03	41.77	89.20	17 35 16	2298.5	-28.12	80.37
90.00	10 42 37	4133.07	-2.12	168.25	34.81	61.76	11 51 30	3533.1	-5.88	161.59
100.00	18 21 54	2592.38	-29.88	66.50	41.77	90.86	19 5 7	1992.4	-29.44	57.73
100.00	11 50 21	3914.47	-.74	151.41	34.04	60.12	12 55 35	3314.5	-4.72	144.88
110.00	19 59 4	2288.38	-33.84	43.17	41.52	95.17	20 37 13	1688.4	-32.75	34.10
110.00	12 29 40	3791.24	2.62	139.97	31.94	55.90	13 32 51	3191.2	-1.88	133.77

DIFFERENTIAL CORRECTIONS

TDE	.6942	TRA	-2.1829	TC3	2.2063	BAU	.5426
RDE	-.1776	RRA	.0232	RC3	-.1883	FAU	.12388
FDE	-.3874	FRA	2.9678	FC3	-5.8510	BSP	12998
BDE	.7166	BRA	2.1830	BC3	2.2143	FSP	1745

MID-COURSE EXECUTION ACCURACY

SGT	3765.2	SGR	289.1	SG3	569.1		
RRT	-.5778	RRF	.5629	RTF	-.9353		
SGB	3776.3	R23	-.0249	R13	.9354		
SG1	3768.9	SG2	235.8	THA	177.45		

ORBIT DETERMINATION ACCURACY

ST	1320.3	SR	238.0	SS	804.9
CRT	-.7334	CRS	-.4152	CST	.9215
LSA	1530.6	MSA	323.5	SSA	21.8
EL1	1332.0	EL2	160.3	ALF	172.36

LAUNCH DATE NOV 9 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 504.754 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.693	GAL	-4.05	AZL	87.89	HCA	161.67	SMA	202.22	ECC	.27585	INC	2.1069
RP	239.42	LAP	.66	LOP	208.32	VP	21.268	GAP	12.07	AZP	92.00	TAL	341.10	TAP	142.78	RCA	146.44	APO	258.00
RC	172.331	GL	17.05	GP	-.86	ZAL	117.85	ZAP	161.62	ETS	181.16	ZAE	159.20	ETE	358.23	ZAC	89.03	ETC	255.09

V1 30.072 V2 22.943 CLP 161.64

PLANETOCENTRIC CONIC

C3	17.768	VHL	4.215	DLA	21.20	RAL	174.01	RAD	6567.7	VEL	11.796	PTH	2.09	VHP	6.588	DPA	-3.65	RAP	189.26

ECC 1.2924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 28	2916.34	-28.28	90.33	41.02	88.55	17 27 5	2316.3	-28.18	81.67
90.00	10 47 51	4100.75	-3.16	166.44	34.18	61.85	11 56 12	3500.8	-6.90	159.76
100.00	18 14 13	2607.62	-29.89	67.64	41.03	90.27	18 57 40	2007.6	-29.53	58.85
100.00	11 54 48	3884.70	-1.75	149.78	33.40	60.15	12 59 33	3284.7	-5.71	143.23
110.00	19 52 49	2299.15	-33.90	44.01	40.83	94.68	20 31 8	1699.1	-32.88	34.92
110.00	12 32 41	3765.94	1.65	138.65	31.28	55.85	13 35 27	3165.9	-2.84	132.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6651	TRA	-2.1488	TC3	2.3038	BAU	.5493	SGT	3795.3	SGR	284.9	SG3	596.6	ST	1305.4	SR	227.5	SS	810.1
RDE	-.1670	RRA	.0294	RC3	-.1977	FAU	.12844	RRT	-.6134	RRF	.5995	RTF	-.9371	CRT	-.7329	CRS	-.3961	CST	.9134
FDE	-.3576	FRA	3.0369	FC3	-6.2585	BSP	13143	SGB	3806.0	R23	-.0288	R13	.9372	LSA	1517.0	MSA	332.0	SSA	20.9
BDE	.6857	BRA	2.1490	BC3	2.3123	FSP	1841	SG1	3799.4	SG2	224.8	THA	177.35	EL1	1316.1	EL2	153.5	ALF	172.62

LAUNCH DATE NOV 9 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 508.125 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.649	GAL	-3.94	AZL	87.88	HCA	162.62	SMA	201.32	ECC	.27222	INC	2.1218
RP	239.11	LAP	.63	LOP	209.26	VP	21.233	GAP	11.58	AZP	92.03	TAL	341.45	TAP	144.07	RCA	146.52	APO	256.12
RC	174.639	GL	17.42	GP	-.93	ZAL	117.22	ZAP	160.94	ETS	181.25	ZAE	159.74	ETE	358.14	ZAC	89.03	ETC	255.88

V1 30.072 V2 22.975 CLP 160.96

PLANETOCENTRIC CONIC

C3	17.242	VHL	4.152	DLA	21.78	RAL	173.61	RAD	6567.7	VEL	11.774	PTH	2.08	VHP	6.442	DPA	-3.82	RAP	189.47

ECC 1.2838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 34	2935.75	-28.24	91.75	40.28	87.84	17 18 30	2335.7	-28.24	83.08
90.00	10 53 32	4067.41	-4.23	164.57	33.60	61.97	12 1 19	3467.4	-7.95	157.87
100.00	18 6 12	2624.17	-29.89	68.87	40.33	89.62	18 49 56	2024.2	-29.62	60.07
100.00	11 59 35	3854.21	-2.79	148.11	32.80	60.23	13 3 49	3254.2	-6.73	141.54
110.00	19 46 21	2310.84	-33.96	44.91	40.17	94.14	20 24 52	1710.8	-33.01	35.80
110.00	12 35 55	3740.31	.67	137.32	30.64	55.82	13 38 15	3140.3	-3.82	131.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6374	TRA	-2.1125	TC3	2.4053	BAU	.5565	SGT	3823.3	SGR	281.9	SG3	625.5	ST	1290.0	SR	217.0	SS	815.8
RDE	-.1568	RRA	.0356	RC3	-.2081	FAU	.13534	RRT	-.6509	RRF	.6382	RTF	-.9389	CRT	-.7343	CRS	-.3785	CST	.9047
FDE	-.3267	FRA	3.1057	FC3	-6.6952	BSP	13228	SGB	3833.7	R23	-.0331	R13	.9390	LSA	1503.2	MSA	341.2	SSA	19.8
BDE	.6564	BRA	2.1128	BC3	2.4143	FSP	1936	SG1	3827.7	SG2	213.7	THA	177.24	EL1	1299.9	EL2	146.2	ALF	172.87

LAUNCH DATE NOV 9 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 511.525 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.607	GAL	-3.83	AZL	87.86	HCA	163.57	SMA	200.47	ECC	.26874	INC	2.1386
RP	238.79	LAP	.60	LOP	210.21	VP	21.202	GAP	11.09	AZP	92.05	TAL	341.80	TAP	145.37	RCA	146.59	APO	254.34
RC	176.939	GL	17.81	GP	-1.00	ZAL	116.58	ZAP	160.24	ETS	181.35	ZAE	160.31	ETE	358.02	ZAC	89.01	ETC	255.88

V1 30.072 V2 23.007 CLP 160.26

PLANETOCENTRIC CONIC

C3	16.749	VHL	4.093	DLA	22.38	RAL	173.21	RAD	6567.7	VEL	11.753	PTH	2.07	VHP	6.300	DPA	-4.00	RAP	189.67

ECC 1.2757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 11	2957.04	-28.18	93.30	39.58	87.06	17 9 28	2357.0	-28.29	84.64
90.00	10 59 43	4032.77	-5.33	162.63	33.06	62.15	12 6 56	3432.8	-9.02	155.89
100.00	17 57 49	2642.23	-29.87	70.21	39.64	88.91	18 41 52	2042.2	-29.71	61.41
100.00	12 4 46	3822.82	-3.85	146.38	32.24	60.33	13 8 29	3222.8	-7.77	139.79
110.00	19 39 41	2323.54	-34.02	45.90	39.54	93.56	20 18 25	1723.5	-33.15	36.77
110.00	12 39 23	3714.27	-.33	135.96	30.04	55.82	13 41 18	3114.3	-4.81	129.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6161	TRA	-2.0695	TC3	2.5202	BAU	.5665	SGT	3849.2	SGR	280.6	SG3	655.9	ST	1277.3	SR	206.7	SS	821.9
RDE	-.1470	RRA	.0448	RC3	-.2199	FAU	.13854	RRT	-.6916	RRF	.6778	RTF	-.9413	CRT	-.7411	CRS	-.3622	CST	.8927
FDE	-.2942	FRA	3.1751	FC3	-7.1608	BSP	13168	SGB	3859.5	R23	-.0346	R13	.9414	LSA	1491.2	MSA	354.6	SSA	18.4
BDE	.6334	BRA	2.0699	BC3	2.5298	FSP	2032	SG1	3854.1	SG2	202.4	THA	177.11	EL1	1286.5	EL2	137.8	ALF	173.08

LAUNCH DATE NOV 9 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 514.950 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.567	GAL	-3.72	AZL	87.84	HCA	164.52	SMA	199.66	ECC	.26542	INC	2.1577
RP	238.47	LAP	.58	LOP	211.17	VP	21.174	GAP	10.62	AZP	92.08	TAL	342.14	TAP	146.66	RCA	146.66	APO	252.65
RC	179.231	GL	18.21	GP	-1.09	ZAL	115.94	ZAP	159.52	ETS	181.46	ZAE	160.92	ETE	357.85	ZAC	88.98	ETC	255.87

V1 30.072 V2 23.040 CLP 159.55

PLANETOCENTRIC CONIC

C3	16.291	VHL	4.036	DLA	22.99	RAL	172.81	RAD	6567.7	VEL	11.733	PTH	2.07	VHP	6.160	DPA	-4.17	RAP	189.85

ECC 1.2681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 15	2980.50	-28.08	95.01	38.89	86.21	16 59 56	2380.5	-28.31	86.35
90.00	11 6 31	3996.60	-6.48	160.59	32.57	62.37	12 13 8	3396.6	-10.13	153.81
100.00	17 49 3	2661.95	-29.84	71.68	38.99	88.14	18 33 25	2062.0	-29.78	62.87
100.00	12 10 25	3790.38	-4.94	144.59	31.73	60.48	13 13 35	3190.4	-8.83	137.97
110.00	19 32 49	2337.33	-34.07	46.97	38.94	92.93	20 11 46	1737.3	-33.29	37.82
110.00	12 43 9	3687.77	-1.34	134.58	29.49	55.84	13 44 36	3087.8	-5.81	128.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5809	TRA	-2.0406	TC3	2.6024	BAU	.5690	SGT	3872.2	SGR	280.0	SG3	687.6	ST	1255.0	SR	195.6	SS	829.5
RDE	-.1368	RRA	.0487	RC3	-.2319	FAU	.14376	RRT	-.7282	RRF	.7183	RTF	-.9423	CRT	-.7405	CRS	-.3425	CST	.8834
FDE	-.2519	FRA	3.2535	FC3	-7.6395	BSP	13408	SGB	3882.3	R23	-.0443	R13	.9424	LSA	1472.4	MSA	364.3	SSA	17.5
BDE	.5968	BRA	2.0412	BC3	2.6127	FSP	2145	SG1	3877.6	SG2	191.6	THA	176.98	EL1	1263.5	EL2	130.6	ALF	173.35

LAUNCH DATE NOV 9 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 518.400 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.529 GAL -3.61 AZL 87.82 HCA 165.48 SMA 198.89 ECC .26223 INC 2.1787 V1 30.072
RP 238.14 LAP .55 LOP 212.12 VP 21.149 GAP 10.14 AZP 92.11 TAL 342.47 TAP 147.95 RCA 146.73 APO 251.04 V2 23.073
RC 181.513 GL 18.63 GP -1.18 ZAL 115.30 ZAP 158.78 ETS 181.60 ZAE 161.56 ETE 357.63 ZAC 88.93 ETC 255.87 CLP 158.81

PLANETOCENTRIC CONIC

C3 15.864 VHL 3.983 DLA 23.61 RAL 172.43 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 6.024 DPA -4.35 RAP 190.02 ECC 1.2611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 36	3006.66	-27.95	96.91	38.23	85.27	16 49 42	2406.7	-28.31	88.27
90.00	11 14 7	3958.36	-7.68	158.42	32.15	62.66	12 20 6	3358.4	-11.29	151.60
100.00	17 39 45	2683.72	-29.78	73.29	38.37	87.29	18 24 29	2083.7	-29.84	64.49
100.00	12 16 39	3756.54	-6.07	142.71	31.27	60.67	13 19 15	3156.5	-9.93	136.06
110.00	19 25 39	2352.41	-34.12	48.15	38.39	92.23	20 4 52	1752.4	-33.43	38.98
110.00	12 47 14	3660.61	-2.38	133.16	28.99	55.89	13 48 15	3060.6	-6.84	126.91

DIFFERENTIAL CORRECTIONS
TDE .5529 TRA-2.0041 TC3 2.6984 BAU .5747
RDE -.1271 RRA .0556 RC3 -.2461 FAU .14949
FDE -.2115 FRA 3.3282 FC3-8.1578 BSP 13480
BDE .5674 BRA 2.0049 BC3 2.7096 FSP 2252

MID-COURSE EXECUTION ACCURACY
SGT 3892.7 SGR 281.9 SG3 720.9
RRT -.7667 RRF .7590 RTF -.9437
SGB 3902.9 R23 -.0528 R13 .9438
SG1 3898.7 SG2 180.7 THA 176.81

ORBIT DETERMINATION ACCURACY
ST 1236.0 SR 184.9 SS 837.3
CRT -.7465 CRS -.3290 CST .8722
LSA 1456.4 MSA 376.2 SSA 16.4
EL1 1243.8 EL2 122.2 ALF 173.57

LAUNCH DATE NOV 9 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 521.875 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.492 GAL -3.51 AZL 87.80 HCA 166.44 SMA 198.16 ECC .25917 INC 2.2032 V1 30.072
RP 237.81 LAP .52 LOP 213.08 VP 21.128 GAP 9.68 AZP 92.14 TAL 342.81 TAP 149.24 RCA 146.80 APO 249.51 V2 23.106
RC 183.786 GL 19.07 GP -1.29 ZAL 114.66 ZAP 158.03 ETS 181.75 ZAE 162.23 ETE 357.34 ZAC 88.87 ETC 255.86 CLP 158.06

PLANETOCENTRIC CONIC

C3 15.468 VHL 3.933 DLA 24.26 RAL 172.06 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 5.891 DPA -4.54 RAP 190.16 ECC 1.2546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 1	3036.22	-27.77	99.06	37.60	84.21	16 38 37	2436.2	-28.28	90.43
90.00	11 22 44	3917.37	-8.96	156.08	31.80	63.02	12 28 2	3317.4	-12.51	149.20
100.00	17 29 50	2707.95	-29.69	75.09	37.78	86.35	18 14 58	2108.0	-29.88	66.29
100.00	12 23 36	3720.87	-7.25	140.73	30.88	60.92	13 25 37	3120.9	-11.08	134.03
110.00	19 18 10	2369.00	-34.16	49.44	37.88	91.47	19 57 39	1769.0	-33.57	40.25
110.00	12 51 45	3632.59	-3.45	131.69	28.54	55.97	13 52 18	3032.6	-7.89	125.42

DIFFERENTIAL CORRECTIONS
TDE .5265 TRA-1.9665 TC3 2.7948 BAU .5805
RDE -.1176 RRA .0630 RC3 -.2621 FAU .15536
FDE -.1638 FRA 3.4096 FC3-8.6954 BSP 13511
BDE .5395 BRA 1.9675 BC3 2.8071 FSP 2370

MID-COURSE EXECUTION ACCURACY
SGT 3910.9 SGR 286.3 SG3 755.8
RRT -.8044 RRF .7982 RTF -.9453
SGB 3921.4 R23 -.0612 R13 .9454
SG1 3917.7 SG2 169.8 THA 176.62

ORBIT DETERMINATION ACCURACY
ST 1217.1 SR 174.1 SS 847.1
CRT -.7565 CRS -.3157 CST .8576
LSA 1440.5 MSA 392.4 SSA 15.1
EL1 1224.3 EL2 113.2 ALF 173.77

LAUNCH DATE NOV 9 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 525.371 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.457 GAL -3.42 AZL 87.77 HCA 167.40 SMA 197.46 ECC .25625 INC 2.2312 V1 30.072
RP 237.48 LAP .49 LOP 214.04 VP 21.109 GAP 9.22 AZP 92.18 TAL 343.14 TAP 150.53 RCA 146.86 APO 248.06 V2 23.140
RC 186.049 GL 19.55 GP -1.42 ZAL 114.02 ZAP 157.25 ETS 181.94 ZAE 162.93 ETE 356.96 ZAC 88.79 ETC 255.86 CLP 157.29

PLANETOCENTRIC CONIC

C3 15.103 VHL 3.886 DLA 24.93 RAL 171.71 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 5.760 DPA -4.73 RAP 190.28 ECC 1.2486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 13	3070.23	-27.51	101.51	36.99	83.00	16 26 23	2470.2	-28.19	92.91
90.00	11 32 43	3872.62	-10.33	153.51	31.54	63.49	12 37 15	3272.6	-13.81	146.56
100.00	17 19 7	2735.25	-29.55	77.11	37.22	85.30	18 4 42	2135.3	-29.89	68.32
100.00	12 31 30	3682.83	-8.51	138.60	30.57	61.24	13 32 53	3082.8	-12.28	131.84
110.00	19 10 19	2387.36	-34.18	50.88	37.42	90.62	19 50 6	1787.4	-33.71	41.66
110.00	12 56 47	3603.49	-4.55	130.17	28.15	56.08	13 56 51	3003.5	-8.98	123.87

DIFFERENTIAL CORRECTIONS
TDE .4950 TRA-1.9327 TC3 2.8763 BAU .5835
RDE -.1080 RRA .0710 RC3 -.2801 FAU .16146
FDE -.1084 FRA 3.4954 FC3-9.2555 BSP 13632
BDE .5067 BRA 1.9340 BC3 2.8899 FSP 2496

MID-COURSE EXECUTION ACCURACY
SGT 3924.8 SGR 293.4 SG3 792.2
RRT -.8388 RRF .8357 RTF -.9463
SGB 3935.7 R23 -.0745 R13 .9465
SG1 3932.5 SG2 159.4 THA 176.41

ORBIT DETERMINATION ACCURACY
ST 1194.0 SR 163.0 SS 859.0
CRT -.7668 CRS -.3054 CST .8435
LSA 1422.6 MSA 407.8 SSA 13.9
EL1 1200.6 EL2 104.1 ALF 173.98

LAUNCH DATE NOV 9 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 528.890 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.424 GAL -3.32 AZL 87.74 HCA 168.36 SMA 196.80 ECC .25346 INC 2.2643 V1 30.072
RP 237.15 LAP .46 LOP 215.00 VP 21.093 GAP 8.76 AZP 92.22 TAL 343.47 TAP 151.82 RCA 146.92 APO 246.69 V2 23.174
RC 188.300 GL 20.06 GP -1.57 ZAL 113.38 ZAP 156.45 ETS 182.15 ZAE 163.67 ETE 356.45 ZAC 88.68 ETC 255.86 CLP 156.50

PLANETOCENTRIC CONIC

C3 14.768 VHL 3.843 DLA 25.63 RAL 171.37 RAD 6567.6 VEL 11.668 PTH 2.05 VHP 5.633 DPA -4.94 RAP 190.37 ECC 1.2430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 39	3110.49	-27.14	104.40	36.39	81.60	16 12 30	2510.5	-28.02	95.85
90.00	11 44 37	3822.35	-11.84	150.59	31.40	64.09	12 48 20	3222.3	-15.23	143.55
100.00	17 7 19	2766.60	-29.36	79.41	36.71	84.10	17 53 26	2166.6	-29.86	70.65
100.00	12 40 38	3641.47	-9.85	136.27	30.36	61.64	13 41 20	3041.5	-13.57	129.45
110.00	19 1 58	2407.92	-34.18	52.48	37.02	89.67	19 42 6	1807.9	-33.85	43.25
110.00	13 2 29	3572.92	-5.71	128.56	27.85	56.24	14 2 2	2972.9	-10.11	122.23

DIFFERENTIAL CORRECTIONS
TDE .4653 TRA-1.8968 TC3 2.9570 BAU .5868
RDE -.0983 RRA .0799 RC3 -.3010 FAU .16777
FDE -.0448 FRA 3.5866 FC3-9.8348 BSP 13704
BDE .4755 BRA 1.8985 BC3 2.9723 FSP 2633

MID-COURSE EXECUTION ACCURACY
SGT 3935.1 SGR 304.1 SG3 830.2
RRT -.8706 RRF .8700 RTF -.9476
SGB 3946.8 R23 -.0890 R13 .9479
SG1 3944.0 SG2 149.3 THA 176.15

ORBIT DETERMINATION ACCURACY
ST 1171.0 SR 152.0 SS 873.6
CRT -.7833 CRS -.2999 CST .8259
LSA 1405.3 MSA 427.3 SSA 12.6
EL1 1177.1 EL2 94.0 ALF 174.16

LAUNCH DATE NOV 9 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 532.429 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.391 GAL -3.23 AZL 87.70 HCA 169.32 SMA 196.18 ECC .25078 INC 2.3024 V1 30.072
RP 236.81 LAP .43 LOP 215.96 VP 21.080 GAP 8.31 AZP 92.26 TAL 343.79 TAP 153.11 RCA 146.98 APO 245.38 V2 23.209
RC 190.540 GL 20.62 GP -1.75 ZAL 112.74 ZAP 155.63 ETS 182.41 ZAE 164.44 ETE 355.78 ZAC 88.53 ETC 255.85 CLP 155.69

PLANETOCENTRIC CONIC

C3 14.465 VHL 3.803 DLA 26.37 RAL 171.07 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 5.509 DPA -5.17 RAP 190.44 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 20	3160.30	-26.60	107.95	35.80	79.90	15 56 0	2560.3	-27.72	99.46
90.00	11 59 31	3763.32	-13.57	147.12	31.42	64.91	13 2 14	3163.3	-16.84	139.97
100.00	16 54 1	2803.49	-29.07	82.12	36.23	82.70	17 40 44	2203.5	-29.77	73.39
100.00	12 51 31	3595.36	-11.33	133.64	30.27	62.15	13 51 27	2995.4	-14.97	126.74
110.00	18 52 58	2431.28	-34.16	54.31	36.68	88.59	19 33 29	1831.3	-33.98	45.07
110.00	13 9 3	3540.34	-6.94	126.84	27.63	56.44	14 8 4	2940.3	-11.31	120.46

DIFFERENTIAL CORRECTIONS
TDE .4390 TRA-1.8582 TC3 3.0403 BAU .5913
RDE -.0890 RRA .0895 RC3 -.3264 FAU .17482
FDE .0162 FRA 3.6730 FC-10.4627 BSP 13677
BDE .4479 BRA 1.8603 BC3 3.0577 FSP 2755

MID-COURSE EXECUTION ACCURACY
SGT 3943.1 SGR 319.8 SG3 870.4
RRT -.8986 RRF .9009 RTF -.9487
SGB 3956.0 R23 -.1079 R13 .9490
SG1 3953.6 SG2 140.0 THA 175.83

ORBIT DETERMINATION ACCURACY
ST 1149.2 SR 141.6 SS 889.2
CRT -.8078 CRS -.3105 CST .8091
LSA 1390.2 MSA 445.7 SSA 11.4
EL1 1155.0 EL2 83.1 ALF 174.29

LAUNCH DATE NOV 9 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 535.989 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.361 GAL -3.14 AZL 87.65 HCA 170.29 SMA 195.58 ECC .24823 INC 2.3483 V1 30.072
RP 236.46 LAP .40 LOP 216.93 VP 21.070 GAP 7.87 AZP 92.32 TAL 344.10 TAP 154.39 RCA 147.04 APO 244.13 V2 23.244
RC 192.768 GL 21.25 GP -1.97 ZAL 112.09 ZAP 154.78 ETS 182.72 ZAE 165.24 ETE 354.88 ZAC 88.35 ETC 255.85 CLP 154.85

PLANETOCENTRIC CONIC

C3 14.195 VHL 3.768 DLA 27.17 RAL 170.80 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 5.387 DPA -5.42 RAP 190.47 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 56	3227.24	-25.71	112.65	35.17	77.71	15 34 44	2627.2	-27.15	104.27
90.00	12 19 47	3688.05	-15.70	142.62	31.68	66.13	13 21 15	3088.1	-18.79	135.31
100.00	16 38 24	2848.57	-28.63	85.40	35.79	81.03	17 25 53	2248.6	-29.58	76.72
100.00	13 5 1	3541.95	-13.01	130.57	30.36	62.85	14 4 3	2942.0	-16.55	123.56
110.00	18 43 7	2458.33	-34.09	56.42	36.44	87.34	19 24 5	1858.3	-34.08	47.17
110.00	13 16 48	3504.95	-8.27	124.96	27.55	56.71	14 15 12	2905.0	-12.59	118.53

DIFFERENTIAL CORRECTIONS
TDE .4136 TRA-1.8187 TC3 3.1189 BAU .5958
RDE -.0795 RRA .1005 RC3 -.3571 FAU .18224
FDE .0850 FRA 3.7638 FC-11.1142 BSP 13618
BDE .4212 BRA 1.8215 BC3 3.1393 FSP 2881

MID-COURSE EXECUTION ACCURACY
SGT 3947.7 SGR 341.3 SG3 912.5
RRT -.9220 RRF .9273 RTF -.9499
SGB 3962.5 R23 -.1305 R13 .9502
SG1 3960.3 SG2 131.7 THA 175.44

ORBIT DETERMINATION ACCURACY
ST 1127.2 SR 131.6 SS 908.0
CRT -.8401 CRS -.3344 CST .7898
LSA 1376.2 MSA 466.9 SSA 10.2
EL1 1132.6 EL2 71.1 ALF 174.37

LAUNCH DATE NOV 9 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 539.567 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.331 GAL -3.06 AZL 87.59 HCA 171.26 SMA 195.02 ECC .24578 INC 2.4063 V1 30.072
RP 236.12 LAP .37 LOP 217.90 VP 21.062 GAP 7.43 AZP 92.38 TAL 344.41 TAP 155.67 RCA 147.09 APO 242.95 V2 23.279
RC 194.983 GL 21.96 GP -2.24 ZAL 111.45 ZAP 153.91 ETS 183.11 ZAE 166.07 ETE 353.65 ZAC 88.12 ETC 255.85 CLP 154.00

PLANETOCENTRIC CONIC

C3 13.962 VHL 3.737 DLA 28.05 RAL 170.59 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 5.269 DPA -5.71 RAP 190.46 ECC 1.2298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 53	3342.38	-23.80	120.54	34.25	74.19	14 59 35	2742.4	-25.74	112.41
90.00	12 55 8	3565.61	-18.91	135.07	32.48	68.53	13 54 34	2965.6	-21.67	127.48
100.00	16 18 52	2907.19	-27.94	89.62	35.35	78.91	17 7 20	2307.2	-29.18	81.03
100.00	13 22 50	3476.03	-15.02	126.71	30.69	63.85	14 20 46	2876.0	-18.42	119.56
110.00	18 32 1	2490.47	-33.96	58.92	36.29	85.87	19 13 31	1890.5	-34.16	49.68
110.00	13 26 11	3465.51	-9.74	122.85	27.62	57.07	14 23 56	2865.5	-14.01	116.35

DIFFERENTIAL CORRECTIONS
TDE .3769 TRA-1.7886 TC3 3.1581 BAU .5940
RDE -.0688 RRA .1142 RC3 -.3920 FAU .18884
FDE .1904 FRA 3.8847 FC-11.7092 BSP 13805
BDE .3832 BRA 1.7923 BC3 3.1823 FSP 3068

MID-COURSE EXECUTION ACCURACY
SGT 3944.8 SGR 369.2 SG3 955.1
RRT -.9400 RRF .9487 RTF -.9507
SGB 3962.0 R23 -.1587 R13 .9511
SG1 3960.0 SG2 125.5 THA 174.97

ORBIT DETERMINATION ACCURACY
ST 1099.2 SR 121.4 SS 938.9
CRT -.8773 CRS -.3677 CST 7664
LSA 1363.8 MSA 494.4 SSA 8.8
EL1 1104.3 EL2 58.0 ALF 174.45

LAUNCH DATE NOV 9 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 543.163 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.303 GAL -2.98 AZL 87.52 HCA 172.24 SMA 194.48 ECC .24345 INC 2.4767 V1 30.072
RP 235.77 LAP .33 LOP 218.88 VP 21.057 GAP 7.00 AZP 92.45 TAL 344.71 TAP 156.95 RCA 147.14 APO 241.83 V2 23.315
RC 197.185 GL 22.79 GP -2.58 ZAL 110.79 ZAP 153.00 ETS 183.60 ZAE 166.92 ETE 351.95 ZAC 87.81 ETC 255.84 CLP 153.12

PLANETOCENTRIC CONIC

C3 13.771 VHL 3.711 DLA 29.02 RAL 170.44 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 5.153 DPA -6.06 RAP 190.40 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.36	12 34 0	3628.65	-22.13	140.96	33.34	70.73	13 34 29	3028.6	-24.55	133.07
96.64	14 23 52	3273.29	-22.12	114.90	33.33	70.71	15 18 25	2673.3	-24.54	107.02
100.00	15 50 47	2994.29	-26.65	95.77	34.82	75.92	16 40 42	2394.3	-28.32	87.36
100.00	13 49 46	3382.88	-17.74	121.12	31.47	65.54	14 46 9	2782.9	-20.89	113.75
110.00	18 19 2	2530.07	-33.73	61.99	36.27	84.07	19 1 12	1930.1	-34.18	52.77
110.00	13 38 1	3419.86	-11.41	120.38	27.93	57.56	14 35 1	2819.9	-15.61	113.79

DIFFERENTIAL CORRECTIONS
TDE .3508 TRA-1.7489 TC3 3.2160 BAU .5975
RDE -.0583 RRA .1299 RC3 -.4386 FAU .19704
FDE .2822 FRA 3.9856 FC-12.3874 BSP 13705
BDE .3556 BRA 1.7537 BC3 3.2457 FSP 3201

MID-COURSE EXECUTION ACCURACY
SGT 3940.3 SGR 408.2 SG3 1001.0
RRT -.9536 RRF .9656 RTF -.9515
SGB 3961.4 R23 -.1906 R13 .9521
SG1 3959.5 SG2 122.4 THA 174.35

ORBIT DETERMINATION ACCURACY
ST 1075.5 SR 113.8 SS 967.6
CRT -.9254 CRS -.4396 CST .7442
LSA 1355.2 MSA 519.2 SSA 7.6
EL1 1080.7 EL2 42.9 ALF 174.40

LAUNCH DATE NOV 9 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 546.778 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.276 GAL -2.90 AZL 87.43 HCA 173.21 SMA 193.97 ECC .24122 INC 2.5688 V1 30.072
RP 235.42 LAP .30 LOP 219.85 VP 21.054 GAP 6.58 AZP 92.55 TAL 345.01 TAP 158.22 RCA 147.18 APO 240.76 V2 23.351
RC 199.372 GL 23.79 GP -3.01 ZAL 110.13 ZAP 152.06 ETS 184.22 ZAE 167.77 ETE 349.51 ZAC 87.40 ETC 255.84 CLP 152.21

PLANETOCENTRIC CONIC

C3 13.632 VHL 3.692 DLA 30.15 RAL 170.40 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 5.041 DPA -6.48 RAP 190.28 ECC 1.2243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.20	12 1 27	3730.22	-23.00	148.82	33.46	69.95	13 3 37	3130.2	-25.52	140.91
100.80	14 56 6	3167.30	-22.99	107.39	33.46	69.94	15 48 53	2567.3	-25.51	99.48
79.20	12 1 27	3730.22	-23.00	148.82	33.46	69.95	13 3 37	3130.2	-25.52	140.91
100.80	14 56 6	3167.30	-22.99	107.39	33.46	69.94	15 48 53	2567.3	-25.51	99.48
110.00	18 2 55	2581.53	-33.29	65.94	36.40	81.76	18 45 57	1981.5	-34.07	56.79
110.00	13 53 48	3363.98	-13.44	117.31	28.58	58.27	14 49 52	2764.0	-17.53	110.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3183 TRA-1.7148 TC3 3.2403 BAU .5974 SGT 3929.2 SGR 460.5 SG3 1047.8 ST 1049.5 SR 108.7 SS 1011.1
RDE -.0462 RRA .1503 RC3 -.4962 FAU .20477 RRT -.9626 RRF .9781 RTF -.9522 CRT -.9724 CRS -.5417 CST .7185
FDE .4099 FRA 4.1123 FC-13.0044 BSP 13736 SGB 3956.1 R23 -.2237 R13 .9530 LSA 1354.0 MSA 549.7 SSA 6.4
BDE .3216 BRA 1.7214 BC3 3.2781 FSP 3377 SG1 3954.2 SG2 124.0 THA 173.56 EL1 1054.8 EL2 25.2 ALF 174.25

LAUNCH DATE NOV 9 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 550.409 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.250 GAL -2.82 AZL 87.31 HCA 174.19 SMA 193.49 ECC .23909 INC 2.6912 V1 30.072
RP 235.06 LAP .27 LOP 220.83 VP 21.054 GAP 6.16 AZP 92.68 TAL 345.30 TAP 159.49 RCA 147.23 APO 239.75 V2 23.387
RC 201.544 GL 25.05 GP -3.60 ZAL 109.43 ZAP 151.07 ETS 185.06 ZAE 168.61 ETE 345.93 ZAC 86.83 ETC 255.83 CLP 151.27

PLANETOCENTRIC CONIC

C3 13.566 VHL 3.683 DLA 31.49 RAL 170.51 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.933 DPA -7.04 RAP 190.08 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.60	11 35 56	3811.29	-24.01	155.32	33.90	68.98	12 39 27	3211.3	-26.65	147.38
104.40	15 22 30	3084.11	-23.99	101.55	33.90	68.96	16 13 54	2484.1	-26.64	93.62
75.60	11 35 56	3811.29	-24.01	155.32	33.90	68.98	12 39 27	3211.3	-26.65	147.38
104.40	15 22 30	3084.11	-23.99	101.55	33.90	68.96	16 13 54	2484.1	-26.64	93.62
110.00	17 40 47	2654.55	-32.45	71.47	36.68	78.60	18 25 2	2054.5	-33.68	62.45
110.00	14 16 49	3288.84	-16.08	113.10	29.83	59.42	15 11 38	2688.8	-20.02	106.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2860 TRA-1.6788 TC3 3.2498 BAU .5985 SGT 3912.7 SGR 533.7 SG3 1096.6 ST 1023.4 SR 109.8 SS 1063.1
RDE -.0323 RRA .1767 RC3 -.5733 FAU .21325 RRT -.9677 RRF .9868 RTF -.9526 CRT -.9986 CRS -.6754 CST .6935
FDE .5547 FRA 4.2406 FC-13.6091 BSP 13726 SGB 3948.9 R23 -.2534 R13 .9538 LSA 1361.6 MSA 579.1 SSA 5.2
BDE .2878 BRA 1.6881 BC3 3.3000 FSP 3540 SG1 3946.6 SG2 133.3 THA 172.47 EL1 1029.2 EL2 5.9 ALF 173.89

LAUNCH DATE NOV 9 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 554.057 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.226 GAL -2.75 AZL 87.14 HCA 175.18 SMA 193.03 ECC .23706 INC 2.8632 V1 30.072
RP 234.71 LAP .24 LOP 221.81 VP 21.056 GAP 5.75 AZP 92.85 TAL 345.58 TAP 160.75 RCA 147.27 APO 238.78 V2 23.424
RC 203.699 GL 26.71 GP -4.43 ZAL 108.69 ZAP 150.01 ETS 186.24 ZAE 169.36 ETE 340.48 ZAC 86.03 ETC 255.82 CLP 150.31

PLANETOCENTRIC CONIC

C3 13.611 VHL 3.689 DLA 33.20 RAL 170.87 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 4.829 DPA -7.80 RAP 189.75 ECC 1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.91	11 12 51	3888.28	-25.22	161.73	34.85	67.66	12 17 39	3288.3	-28.02	153.76
108.09	15 48 26	3008.58	-25.21	96.32	34.84	67.65	16 38 34	2408.6	-28.01	88.35
71.91	11 12 51	3888.28	-25.22	161.73	34.85	67.66	12 17 39	3288.3	-28.02	153.76
108.09	15 48 26	3008.58	-25.21	96.32	34.84	67.65	16 38 34	2408.6	-28.01	88.35
110.00	17 2 17	2781.93	-30.34	80.80	36.89	73.45	17 48 39	2181.9	-32.31	72.14
110.00	14 58 10	3162.92	-20.29	105.76	32.33	61.88	15 50 53	2562.9	-23.89	98.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2567 TRA-1.6398 TC3 3.2382 BAU .6021 SGT 3889.6 SGR 639.8 SG3 1146.8 ST 998.8 SR 122.0 SS 1125.8
RDE -.0154 RRA .2132 RC3 -.6808 FAU .22258 RRT -.9698 RRF .9925 RTF -.9529 CRT -.9763 CRS -.8100 CST .6665
FDE .7230 FRA 4.3702 FC-14.1572 BSP 13595 SGB 3941.9 R23 -.2745 R13 .9546 LSA 1381.2 MSA 610.0 SSA 4.1
BDE .2572 BRA 1.6536 BC3 3.3090 FSP 3676 SG1 3938.9 SG2 154.0 THA 170.92 EL1 1005.9 EL2 26.2 ALF 173.19

LAUNCH DATE NOV 9 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 557.721 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.202 GAL -2.68 AZL 86.87 HCA 176.16 SMA 192.59 ECC .23512 INC 3.1259 V1 30.072
RP 234.35 LAP .21 LOP 222.80 VP 21.060 GAP 5.34 AZP 93.12 TAL 345.85 TAP 162.01 RCA 147.31 APO 237.87 V2 23.461
RC 205.837 GL 29.07 GP -5.69 ZAL 107.85 ZAP 148.83 ETS 188.00 ZAE 169.86 ETE 331.95 ZAC 84.80 ETC 255.79 CLP 149.30

PLANETOCENTRIC CONIC

C3 13.856 VHL 3.722 DLA 35.50 RAL 171.67 RAD 6567.5 VEL 11.629 PTH 2.04 VHP 4.733 DPA -8.93 RAP 189.20 ECC 1.2280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.63	10 50 34	3969.69	-26.76	168.84	36.71	65.75	11 56 43	3369.7	-29.80	160.85
112.37	16 17 6	2934.96	-26.75	91.30	36.70	65.73	17 6 1	2335.0	-29.79	83.31
67.63	10 50 34	3969.69	-26.76	168.84	36.71	65.75	11 56 43	3369.7	-29.80	160.85
112.37	16 17 6	2934.96	-26.75	91.30	36.70	65.73	17 6 1	2335.0	-29.79	83.31
67.63	10 50 34	3969.69	-26.76	168.84	36.71	65.75	11 56 43	3369.7	-29.80	160.85
112.37	16 17 6	2934.96	-26.75	91.30	36.70	65.73	17 6 1	2335.0	-29.79	83.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2233 TRA-1.6032 TC3 3.1720 BAU .6075 SGT 3857.9 SGR 802.5 SG3 1195.8 ST 974.8 SR 154.8 SS 1224.2
RDE .0100 RRA .2696 RC3 -.8323 FAU .23117 RRT -.9700 RRF .9960 RTF -.9533 CRT -.8952 CRS -.9122 CST .6347
FDE .9691 FRA 4.5402 FC-14.4437 BSP 13527 SGB 3940.5 R23 -.2835 R13 .9562 LSA 1433.0 MSA 647.4 SSA 3.0
BDE .2235 BRA 1.6257 BC3 3.2794 FSP 3849 SG1 3935.9 SG2 191.2 THA 168.56 EL1 984.6 EL2 68.3 ALF 171.87

LAUNCH DATE NOV 9 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 561.400 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.180 GAL -2.61 AZL 86.43 HCA 177.15 SMA 192.17 ECC .23327 INC 3.5673 V1 30.072
RP 233.98 LAP .18 LOP 223.79 VP 21.066 GAP 4.94 AZP 93.57 TAL 346.11 TAP 163.26 RCA 147.34 APO 237.00 V2 23.498
RC 207.958 GL 32.77 GP -7.81 ZAL 106.79 ZAP 147.40 ETS 190.90 ZAE 169.63 ETE 318.70 ZAC 82.72 ETC 255.74 CLP 148.25

PLANETOCENTRIC CONIC

C3 14.542 VHL 3.813 DLA 38.96 RAL 173.39 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 4.652 DPA -10.83 RAP 188.24 ECC 1.2393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.03	10 28 25	4065.50	-28.85	177.76	40.49	62.59	11 36 11	3465.5	-32.27	169.78
117.97	16 52 59	2860.49	-28.83	86.39	40.48	62.57	17 40 39	2260.5	-32.26	78.40
62.03	10 28 25	4065.50	-28.85	177.76	40.49	62.59	11 36 11	3465.5	-32.27	169.78
117.97	16 52 59	2860.49	-28.83	86.39	40.48	62.57	17 40 39	2260.5	-32.26	78.40
62.03	10 28 25	4065.50	-28.85	177.76	40.49	62.59	11 36 11	3465.5	-32.27	169.78
117.97	16 52 59	2860.49	-28.83	86.39	40.48	62.57	17 40 39	2260.5	-32.26	78.40

DIFFERENTIAL CORRECTIONS
TDE .2017 TRA-1.5576 TC3 3.0409 BAU .6271
RDE .0484 RRA .3620 RC3-1.0756 FAU .24259
FDE 1.2341 FRA 4.6661 FC-14.4416 BSP 13256
BDE .2074 BRA 1.5991 BC3 3.2255 FSP 3849

MID-COURSE EXECUTION ACCURACY
SGT 3811.8 SGR 1080.5 SG3 1240.2
RRT -.9677 RRF .9979 RTF -.9526
SGB 3962.0 R23 -.2843 R13 .9579
SG1 3953.3 SG2 262.5 THA 164.59

ORBIT DETERMINATION ACCURACY
ST 955.0 SR 223.5 SS 1324.7
CRT -.7926 CRS -.9649 CST .6048
LSA 1502.3 MSA 678.2 SSA 2.1
EL1 971.6 EL2 133.9 ALF 169.29

LAUNCH DATE NOV 9 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 565.099 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.158 GAL -2.55 AZL 85.51 HCA 178.14 SMA 191.78 ECC .23151 INC 4.4768 V1 30.072
RP 233.62 LAP .15 LOP 224.78 VP 21.075 GAP 4.55 AZP 94.49 TAL 346.37 TAP 164.51 RCA 147.38 APO 236.18 V2 23.536
RC 210.060 GL 39.56 GP -12.12 ZAL 105.13 ZAP 145.15 ETS 196.46 ZAE 167.15 ETE 300.17 ZAC 78.47 ETC 255.56 CLP 147.07

PLANETOCENTRIC CONIC

C3 16.589 VHL 4.073 DLA 44.99 RAL 177.61 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 4.617 DPA -14.66 RAP 186.20 ECC 1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.46	10 8 41	4195.50	-31.74	191.08	49.39	56.27	11 18 36	3595.5	-35.92	183.28
126.54	17 46 20	2789.89	-31.73	82.21	49.38	56.25	18 32 50	2189.9	-35.91	74.42
53.46	10 8 41	4195.50	-31.74	191.08	49.39	56.27	11 18 36	3595.5	-35.92	183.28
126.54	17 46 20	2789.89	-31.73	82.21	49.38	56.25	18 32 50	2189.9	-35.91	74.42
53.46	10 8 41	4195.50	-31.74	191.08	49.39	56.27	11 18 36	3595.5	-35.92	183.28
126.54	17 46 20	2789.89	-31.73	82.21	49.38	56.25	18 32 50	2189.9	-35.91	74.42

DIFFERENTIAL CORRECTIONS
TDE .3145 TRA-1.4057 TC3 2.9480 BAU .7394
RDE .0905 RRA .5190 RC3-1.5572 FAU .26667
FDE 1.2670 FRA 4.4620 FC-13.9173 BSP 10420
BDE .3273 BRA 1.4985 BC3 3.3340 FSP 3016

MID-COURSE EXECUTION ACCURACY
SGT 3712.2 SGR 1640.4 SG3 1253.4
RRT -.9650 RRF .9988 RTF -.9517
SGB 4058.5 R23 -.2663 R13 .9637
SG1 4039.1 SG2 395.6 THA 156.67

ORBIT DETERMINATION ACCURACY
ST 951.1 SR 337.0 SS 1285.4
CRT -.6432 CRS -.9803 CST .4795
LSA 1444.4 MSA 764.2 SSA 1.3
EL1 977.3 EL2 251.1 ALF 166.23

LAUNCH DATE NOV 9 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 568.802 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.138 GAL -2.49 AZL 82.47 HCA 179.13 SMA 191.40 ECC .22984 INC 7.5311 V1 30.072
RP 233.25 LAP .11 LOP 225.77 VP 21.085 GAP 4.16 AZP 97.53 TAL 346.62 TAP 165.76 RCA 147.41 APO 235.39 V2 23.574
RC 212.144 GL 55.89 GP -25.00 ZAL 101.31 ZAP 138.04 ETS 209.65 ZAE 155.71 ETE 279.88 ZAC 65.73 ETC 254.48 CLP 145.13

PLANETOCENTRIC CONIC

C3 27.430 VHL 5.237 DLA 57.82 RAL 194.05 RAD 6568.1 VEL 12.199 PTH 2.19 VHP 4.924 DPA -25.82 RAP 179.26 ECC 1.4514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.22	10 23 12	4434.68	-32.85	217.14	80.10	39.34	11 37 7	3834.7	-38.87	211.06
142.78	19 43 1	2792.24	-32.84	83.65	80.08	39.33	20 29 33	2192.2	-38.86	77.56
37.22	10 23 12	4434.68	-32.85	217.14	80.10	39.34	11 37 7	3834.7	-38.87	211.06
142.78	19 43 1	2792.24	-32.84	83.65	80.08	39.33	20 29 33	2192.2	-38.86	77.56
37.22	10 23 12	4434.68	-32.85	217.14	80.10	39.34	11 37 7	3834.7	-38.87	211.06
142.78	19 43 1	2792.24	-32.84	83.65	80.08	39.33	20 29 33	2192.2	-38.86	77.56

DIFFERENTIAL CORRECTIONS
TDE .5605 TRA-1.5220 TC3 1.5174 BAU .8457
RDE .2964 RRA 1.3594 RC3-1.7367 FAU .21325
FDE 1.6032 FRA 5.1145 FC3-6.7306 BSP 17746
BDE .6340 BRA 2.0407 BC3 2.3063 FSP 3907

MID-COURSE EXECUTION ACCURACY
SGT 3560.8 SGR 3348.8 SG3 1103.7
RRT -.9581 RRF .9991 RTF -.9450
SGB 4888.1 R23 -.1959 R13 .9806
SG1 4836.9 SG2 705.8 THA 136.83

ORBIT DETERMINATION ACCURACY
ST 1121.7 SR 900.1 SS 1537.3
CRT -.5841 CRS -.9905 CST .4667
LSA 1893.5 MSA 919.8 SSA .3
EL1 1290.3 EL2 635.1 ALF 145.40

LAUNCH DATE NOV 9 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 576.266 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.100 GAL -2.38 AZL 92.47 HCA 181.14 SMA 190.71 ECC .22674 INC 2.4944 V1 30.072
RP 232.51 LAP .05 LOP 227.77 VP 21.111 GAP 3.41 AZP 87.53 TAL 347.07 TAP 168.21 RCA 147.47 APO 233.95 V2 23.650
RC 216.258 GL -24.51 GP 20.45 ZAL 106.29 ZAP 138.74 ETS 153.28 ZAE 158.22 ETE 81.05 ZAC 110.06 ETC 254.92 CLP 143.35

PLANETOCENTRIC CONIC

C3 11.774 VHL 3.431 DLA -13.02 RAL 147.52 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 4.538 DPA 15.23 RAP 199.31 ECC 1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
19.92	12 53 1	2778.84	-22.03	85.40	338.99	161.12	13 39 20	2178.8	-14.44	83.15
19.92	0 21 44	5824.03	47.36	265.34	343.32	26.28	1 58 48	5224.0	40.09	261.13
29.92	13 24 16	2736.06	-19.92	82.96	344.21	152.16	14 9 52	2136.1	-12.81	79.56
29.92	0 34 29	5806.57	44.54	268.67	349.78	38.03	2 11 16	5206.6	38.06	262.84
39.92	14 0 10	2669.32	-17.17	78.87	348.84	143.75	14 44 39	2069.3	-10.67	74.49
39.92	0 49 29	5778.66	40.99	270.17	354.92	48.45	2 25 48	5178.7	35.44	263.24

DIFFERENTIAL CORRECTIONS
TDE .9718 TRA-1.3566 TC3 3.0204 BAU .6455
RDE .6572 RRA -.5938 RC3 2.7734 FAU .21786
FDE-3.7013 FRA 3.2756 FC-16.0183 BSP 19358
BDE 1.1732 BRA 1.4808 BC3 4.1005 FSP 5404

MID-COURSE EXECUTION ACCURACY
SGT 3512.1 SGR 2421.2 SG3 1192.7
RRT .9516 RRF -.9998 RTF -.9461
SGB 4265.8 R23 -.2288 R13 -.9735
SG1 4220.6 SG2 619.4 THA 34.10

ORBIT DETERMINATION ACCURACY
ST 1767.3 SR 1140.4 SS 2514.9
CRT .9909 CRS 1.0000 CST .9901
LSA 3272.0 MSA 207.9 SSA .8
EL1 2099.3 EL2 129.5 ALF 32.73

LAUNCH DATE NOV 9 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 580,016 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.082	GAL	-2.33	AZL	90.45	HCA	182.14	SMA	190.39	ECC	.22530	INC	.4969
RP	232.14	LAP	.02	LOP	228.78	VP	21.127	GAP	3.04	AZP	89.56	TAL	347.29	TAP	169.43	RCA	147.49	APO	233.28
RC	218.287	GL	-4.70	GP	11.54	ZAL	107.28	ZAP	141.15	ETS	163.82	ZAE	167.15	ETE	79.79	ZAC	101.45	ETC	255.56

V1 30.072 V2 23.689 CLP 142.64

PLANETOCENTRIC CONIC

C3	9.837	VHL	3.136	DLA	5.67	RAL	154.16	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	4.222	DPA	7.03	RAP	195.74

ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 35	2235.49	-20.07	42.81	6.22	110.40	18 17 51	1635.5	-17.11	35.38
90.00	7 7 20	4526.04	10.36	190.38	4.62	63.50	8 22 46	3926.0	6.72	183.59
100.00	19 4 37	1964.47	-20.92	22.53	5.87	111.86	19 37 22	1364.5	-17.77	15.15
100.00	8 26 0	4272.29	11.17	171.30	4.19	62.09	9 37 12	3672.3	7.35	164.59
110.00	20 19 1	1731.65	-23.17	3.78	4.80	115.87	20 47 52	1131.6	-19.50	356.56
110.00	9 28 6	4077.87	13.30	155.29	2.94	58.22	10 36 4	3477.9	9.00	148.83

DIFFERENTIAL CORRECTIONS

TDE	.5597	TRA	-1.3177	TC3	3.8809	BAU	.5744
RDE	.1765	RRA	-.3466	RC3	2.0043	FAU	.26905
FDE	-1.9177	FRA	4.1120	FC	-23.6774	BSP	14777
BDE	.5869	BRA	1.3625	BC3	4.3679	FSP	5484

MID-COURSE EXECUTION ACCURACY

SGT	3581.0	SGR	1445.5	SG3	1471.0		
RRT	.9523	RRF	-.9998	RTF	-.9513		
SGB	3861.7	R23	-.2677	R13	-.9633		
SG1	3839.8	SG2	411.4	THA	21.28		

ORBIT DETERMINATION ACCURACY

ST	1256.0	SR	376.5	SS	1530.1
CRT	.9957	CRS	.9992	CST	.9979
LSA	2014.0	MSA	65.4	SSA	11.8
EL1	1310.8	EL2	33.3	ALF	16.63

LAUNCH DATE NOV 9 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 583.778 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.065	GAL	-2.28	AZL	89.71	HCA	183.15	SMA	190.09	ECC	.22393	INC	.2289
RP	231.76	LAP	-.02	LOP	229.78	VP	21.144	GAP	2.67	AZP	90.29	TAL	347.50	TAP	170.65	RCA	147.52	APO	232.65
RC	220.299	GL	3.08	GP	8.10	ZAL	106.89	ZAP	140.83	ETS	168.46	ZAE	170.70	ETE	84.04	ZAC	98.08	ETC	255.71

V1 30.072 V2 23.728 CLP 141.54

PLANETOCENTRIC CONIC

C3	9.659	VHL	3.108	DLA	13.07	RAL	156.60	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	4.084	DPA	3.94	RAP	194.22

ECC 1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 54	2473.49	-24.89	58.57	10.53	103.95	17 32 8	1873.5	-22.73	50.57
90.00	8 16 33	4280.79	2.64	176.49	7.05	61.80	9 27 54	3680.8	-1.15	169.85
100.00	18 19 2	2189.25	-25.86	37.38	10.24	105.55	18 55 32	1589.2	-23.47	29.40
100.00	9 31 6	4040.26	3.52	158.32	6.57	60.30	10 38 26	3440.3	-.46	151.80
110.00	19 42 34	1927.87	-28.39	16.63	9.34	109.89	20 14 42	1327.9	-25.41	8.71
110.00	10 24 3	3874.41	5.78	144.34	5.17	56.25	11 28 38	3274.4	1.30	138.11

DIFFERENTIAL CORRECTIONS

TDE	.4633	TRA	-1.2410	TC3	4.1280	BAU	.5680
RDE	.0951	RRA	-.2249	RC3	1.5189	FAU	.30393
FDE	-1.3915	FRA	4.2393	FC	-27.2425	BSP	12414
BDE	.4729	BRA	1.2612	BC3	4.3986	FSP	5109

MID-COURSE EXECUTION ACCURACY

SGT	3581.8	SGR	1050.3	SG3	1634.0		
RRT	.9494	RRF	-.9993	RTF	-.9519		
SGB	3732.6	R23	-.2814	R13	-.9589		
SG1	3719.1	SG2	317.6	THA	15.67		

ORBIT DETERMINATION ACCURACY

ST	1109.9	SR	218.7	SS	1254.1
CRT	.9964	CRS	.9924	CST	.9953
LSA	1686.8	MSA	81.6	SSA	18.2
EL1	1131.1	EL2	18.2	ALF	11.11

LAUNCH DATE NOV 9 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 587.553 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.049	GAL	-2.23	AZL	89.33	HCA	184.16	SMA	189.80	ECC	.22263	INC	.6592
RP	231.38	LAP	-.05	LOP	230.79	VP	21.164	GAP	2.32	AZP	90.67	TAL	347.69	TAP	171.85	RCA	147.54	APO	232.05
RC	222.292	GL	7.13	GP	6.29	ZAL	106.39	ZAP	139.92	ETS	171.00	ZAE	172.50	ETE	93.08	ZAC	96.27	ETC	255.78

V1 30.072 V2 23.768 CLP 140.34

PLANETOCENTRIC CONIC

C3	9.631	VHL	3.103	DLA	16.99	RAL	157.78	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.980	DPA	2.37	RAP	193.30

ECC 1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 36	2613.19	-26.83	68.34	13.03	99.43	17 3 9	2013.2	-25.25	60.03
90.00	8 57 12	4139.97	-1.90	168.63	8.80	61.74	10 6 12	3540.0	-5.66	161.97
100.00	17 50 40	2319.52	-27.91	46.52	12.81	101.16	18 29 19	1719.5	-26.09	38.19
100.00	10 8 49	3908.87	-.93	151.11	8.26	60.12	11 13 58	3308.9	-4.90	144.57
110.00	19 20 20	2038.94	-30.71	24.44	12.04	105.81	19 54 19	1438.9	-28.24	16.11
110.00	10 55 38	3762.21	1.51	138.46	6.73	55.85	11 58 20	3162.2	-2.98	132.25

DIFFERENTIAL CORRECTIONS

TDE	.3683	TRA	-1.2251	TC3	3.9730	BAU	.5335
RDE	.0561	RRA	-.1744	RC3	1.1748	FAU	.31549
FDE	-.8148	FRA	4.6375	FC	-28.3589	BSP	12323
BDE	.3726	BRA	1.2375	BC3	4.1430	FSP	5601

MID-COURSE EXECUTION ACCURACY

SGT	3483.8	SGR	809.8	SG3	1711.2		
RRT	.9445	RRF	-.9979	RTF	-.9508		
SGB	3576.7	R23	-.2888	R13	-.9556		
SG1	3567.3	SG2	259.7	THA	12.45		

ORBIT DETERMINATION ACCURACY

ST	985.5	SR	146.2	SS	1074.0
CRT	.9966	CRS	.9599	CST	.9641
LSA	1451.8	MSA	195.8	SSA	11.9
EL1	996.3	EL2	11.9	ALF	8.41

LAUNCH DATE NOV 9 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 591.341 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.034	GAL	-2.19	AZL	89.10	HCA	185.18	SMA	189.53	ECC	.22141	INC	.8969
RP	231.01	LAP	-.08	LOP	231.81	VP	21.184	GAP	1.97	AZP	90.90	TAL	347.88	TAP	173.05	RCA	147.56	APO	231.49
RC	224.266	GL	9.64	GP	5.19	ZAL	105.91	ZAP	138.81	ETS	172.59	ZAE	173.33	ETE	105.79	ZAC	95.14	ETC	255.81

V1 30.072 V2 23.807 CLP 139.08

PLANETOCENTRIC CONIC

C3	9.613	VHL	3.100	DLA	19.45	RAL	158.40	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.888	DPA	1.46	RAP	192.62

ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 33	2709.10	-27.71	75.22	14.53	96.09	16 41 42	2109.1	-26.58	66.74
90.00	9 25 12	4043.31	-5.00	163.22	10.00	62.09	10 32 35	3443.3	-8.70	156.49
100.00	17 30 3	2407.61	-28.91	52.87	14.36	97.96	18 10 11	1807.6	-27.51	44.35
100.00	10 34 23	3820.04	-3.94	146.23	9.42	60.34	11 38 4	3220.0	-7.86	139.63
110.00	19 4 31	2112.07	-31.94	29.78	13.72	102.87	19 39 43	1512.1	-29.84	21.20
110.00	11 16 25	3688.34	-1.32	134.61	7.78	55.84	12 17 53	3088.3	-5.79	128.38

DIFFERENTIAL CORRECTIONS

TDE	.3160	TRA	-1.1922	TC3	3.8514	BAU	.5106
RDE	.0427	RRA	-.1390	RC3	.9756	FAU	.32888
FDE	-.4604	FRA	4.9079	FC	-29.6179	BSP	11961
BDE	.3189	BRA	1.2003	BC3	3.9730	FSP	5943

MID-COURSE EXECUTION ACCURACY

SGT	3391.7	SGR	668.2	SG3	1792.8		
RRT	.9388	RRF	-.9953	RTF	-.9496		
SGB	3456.9	R23	-.2896	R13	-.9532		
SG1	3449.5	SG2	226.3	THA	10.52		

ORBIT DETERMINATION ACCURACY

ST	915.2	SR	115.1	SS	1027.5
CRT	.9942	CRS	.8895	CST	.9143
LSA	1351.0	MSA	284.7	SSA	11.0
EL1	922.3	EL2	12.3	ALF	7.13

LAUNCH DATE NOV 9 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 595.142 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.019 GAL -2.15 AZL 88.94 HCA 186.19 SMA 189.27 ECC .22024 INC 1.0559 V1 30.072
RP 230.62 LAP -.11 LOP 232.82 VP 21.207 GAP 1.62 AZP 91.05 TAL 348.05 TAP 174.25 RCA 147.58 APO 230.95 V2 23.847
RC 226.222 GL 11.34 GP 4.44 ZAL 105.48 ZAP 137.58 ETS 173.68 ZAE 173.43 ETE 119.80 ZAC 94.34 ETC 255.83 CLP 137.77

PLANETOCENTRIC CONIC

C3 9.586 VHL 3.096 DLA 21.16 RAL 158.74 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.803 DPA .90 RAP 192.05 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 4	2781.57	-28.12	80.48	15.46	93.48	16 24 25	2181.6	-27.34	71.90
90.00	9 46 25	3969.74	-7.33	159.07	10.86	62.57	10 52 35	3369.7	-10.94	152.26
100.00	17 13 45	2473.05	-29.43	57.67	15.34	95.49	17 54 58	1873.0	-28.36	49.03
100.00	10 53 25	3753.49	-6.17	142.54	10.23	60.69	11 55 59	3153.5	-10.03	135.88
110.00	18 52 14	2164.92	-32.68	33.73	14.81	100.64	19 28 19	1564.9	-30.87	24.98
110.00	11 31 25	3634.39	-3.38	131.79	8.50	55.96	12 32 0	3034.4	-7.82	125.52

DIFFERENTIAL CORRECTIONS

TDE .2814 TRA-1.1544 TC3 3.7244 BAU .4895
RDE .0384 RRA -.1140 RC3 .8467 FAU .34236
FDE -.1962 FRA 5.1402 FC-30.9189 BSP 11570
BDE .2840 BRA 1.1601 BC3 3.8194 FSP 6268

MID-COURSE EXECUTION ACCURACY

SGT 3292.1 SGR 575.4 SG3 1874.6
RRT .9314 RRF -.9909 RTF -.9480
SGB 3342.0 R23 -.2871 R13 -.9509
SG1 3335.6 SG2 206.7 THA 9.28

ORBIT DETERMINATION ACCURACY

ST 865.1 SR 99.5 SS 1030.1
CRT .9844 CRS .7777 CST .8600
LSA 1301.8 MSA 352.8 SSA 11.1
EL1 870.6 EL2 17.4 ALF 6.46

LAUNCH DATE NOV 9 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 598.952 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.006 GAL -2.11 AZL 88.83 HCA 187.21 SMA 189.02 ECC .21914 INC 1.1703 V1 30.072
RP 230.24 LAP -.15 LOP 233.84 VP 21.230 GAP 1.28 AZP 91.16 TAL 348.21 TAP 175.43 RCA 147.60 APO 230.45 V2 23.887
RC 228.159 GL 12.59 GP 3.90 ZAL 105.08 ZAP 136.29 ETS 174.47 ZAE 172.95 ETE 132.48 ZAC 93.75 ETC 255.85 CLP 136.43

PLANETOCENTRIC CONIC

C3 9.551 VHL 3.090 DLA 22.44 RAL 158.93 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.723 DPA .54 RAP 191.53 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 25	2839.94	-28.29	84.74	16.04	91.35	16 9 45	2239.9	-27.80	76.11
90.00	10 3 33	3909.91	-9.19	155.66	11.49	63.10	11 8 43	3309.9	-12.72	148.76
100.00	17 0 10	2524.78	-29.71	61.49	15.97	93.50	17 42 14	1924.8	-28.90	52.77
100.00	11 8 30	3700.31	-7.93	139.58	10.82	61.08	12 10 10	3100.3	-11.73	132.85
110.00	18 42 12	2205.52	-33.15	36.80	15.54	98.88	19 18 58	1605.5	-31.57	27.93
110.00	11 42 56	3592.32	-4.98	129.58	9.01	56.14	12 42 49	2992.3	-9.39	123.27

DIFFERENTIAL CORRECTIONS

TDE .2466 TRA-1.1234 TC3 3.5530 BAU .4638
RDE .0376 RRA -.0959 RC3 .7569 FAU .35500
FDE .0466 FRA 5.3828 FC-32.1798 BSP 11388
BDE .2495 BRA 1.1275 BC3 3.6327 FSP 6649

MID-COURSE EXECUTION ACCURACY

SGT 3179.6 SGR 510.6 SG3 1955.4
RRT .9194 RRF -.9844 RTF -.9446
SGB 3220.3 R23 -.2862 R13 -.9472
SG1 3214.2 SG2 198.6 THA 8.43

ORBIT DETERMINATION ACCURACY

ST 818.8 SR 91.6 SS 1059.9
CRT .9576 CRS .6270 CST .8116
LSA 1281.4 MSA 400.2 SSA 11.8
EL1 823.5 EL2 26.3 ALF 6.12

LAUNCH DATE NOV 9 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 602.775 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.993 GAL -2.08 AZL 88.74 HCA 188.24 SMA 188.79 ECC .21810 INC 1.2545 V1 30.072
RP 229.86 LAP -.18 LOP 234.87 VP 21.255 GAP .95 AZP 91.24 TAL 348.36 TAP 176.60 RCA 147.62 APO 229.97 V2 23.927
RC 230.076 GL 13.55 GP 3.49 ZAL 104.72 ZAP 134.93 ETS 175.08 ZAE 172.07 ETE 142.54 ZAC 93.27 ETC 255.86 CLP 135.04

PLANETOCENTRIC CONIC

C3 9.509 VHL 3.084 DLA 23.44 RAL 159.02 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.647 DPA .32 RAP 191.03 ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 39	2889.26	-28.31	88.35	16.40	89.54	15 56 48	2289.3	-28.08	79.69
90.00	10 18 4	3858.89	-10.74	152.72	11.98	63.64	11 22 23	3258.9	-14.20	145.74
100.00	16 48 25	2567.58	-29.84	64.66	16.38	91.83	17 31 12	1967.6	-29.27	55.90
100.00	11 20 59	3655.80	-9.39	137.08	11.26	61.49	12 21 55	3055.8	-13.12	130.28
110.00	18 33 42	2238.16	-33.46	39.30	16.04	97.43	19 11 0	1638.2	-32.07	30.34
110.00	11 52 11	3557.98	-6.28	127.77	9.37	56.33	12 51 29	2958.0	-10.66	121.42

DIFFERENTIAL CORRECTIONS

TDE .2263 TRA-1.0813 TC3 3.4003 BAU .4412
RDE .0399 RRA -.0811 RC3 .6964 FAU .36963
FDE .2188 FRA 5.5715 FC-33.6523 BSP 10968
BDE .2298 BRA 1.0843 BC3 3.4709 FSP 6943

MID-COURSE EXECUTION ACCURACY

SGT 3061.0 SGR 465.7 SG3 2041.4
RRT .9058 RRF -.9757 RTF -.9411
SGB 3096.2 R23 -.2826 R13 -.9436
SG1 3090.0 SG2 195.5 THA 7.88

ORBIT DETERMINATION ACCURACY

ST 782.5 SR 89.9 SS 1092.0
CRT .9142 CRS .4639 CST .7714
LSA 1275.1 MSA 432.3 SSA 12.7
EL1 786.8 EL2 36.2 ALF 6.01

LAUNCH DATE NOV 9 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 606.611 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.980 GAL -2.04 AZL 88.68 HCA 189.27 SMA 188.58 ECC .21712 INC 1.3212 V1 30.072
RP 229.47 LAP -.21 LOP 235.90 VP 21.282 GAP .62 AZP 91.30 TAL 348.50 TAP 177.77 RCA 147.63 APO 229.52 V2 23.968
RC 231.973 GL 14.31 GP 3.17 ZAL 104.39 ZAP 133.52 ETS 175.56 ZAE 170.90 ETE 150.06 ZAC 92.87 ETC 255.88 CLP 133.61

PLANETOCENTRIC CONIC

C3 9.464 VHL 3.076 DLA 24.25 RAL 159.05 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.574 DPA .20 RAP 190.53 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 10	2932.46	-28.25	91.51	16.61	87.96	15 45 2	2332.5	-28.23	82.84
90.00	10 30 49	3813.83	-12.09	150.09	12.36	64.20	11 34 23	3213.8	-15.47	143.04
100.00	16 37 59	2604.20	-29.89	67.38	16.64	90.40	17 21 23	2004.2	-29.51	58.60
100.00	11 31 41	3617.32	-10.63	134.90	11.61	61.90	12 31 59	3017.3	-14.31	128.04
110.00	18 26 18	2265.27	-33.68	41.38	16.38	96.21	19 4 4	1665.3	-32.46	32.37
110.00	11 59 51	3529.01	-7.37	126.24	9.64	56.53	12 58 40	2929.0	-11.72	119.85

DIFFERENTIAL CORRECTIONS

TDE .2212 TRA-1.0286 TC3 3.2757 BAU .4226
RDE .0435 RRA -.0690 RC3 .6538 FAU .38544
FDE .3482 FRA 5.7350 FC-35.2586 BSP 10275
BDE .2254 BRA 1.0309 BC3 3.3403 FSP 7193

MID-COURSE EXECUTION ACCURACY

SGT 2940.5 SGR 433.9 SG3 2130.9
RRT .8939 RRF -.9649 RTF -.9386
SGB 2972.3 R23 -.2728 R13 -.9410
SG1 2966.1 SG2 192.9 THA 7.55

ORBIT DETERMINATION ACCURACY

ST 755.4 SR 92.2 SS 1121.8
CRT .8725 CRS .3105 CST .7243
LSA 1272.8 MSA 466.0 SSA 13.2
EL1 759.7 EL2 44.8 ALF 6.10

LAUNCH DATE NOV 9 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 610.457 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.969 GAL -2.01 AZL 88.62 HCA 190.30 SMA 188.37 ECC .21620 INC 1.3749 V1 30.072
RP 229.09 LAP -.25 LOP 236.93 VP 21.310 GAP .30 AZP 91.35 TAL 348.63 TAP 178.93 RCA 147.65 APO 229.10 V2 24.009
RC 233.848 GL 14.94 GP 2.92 ZAL 104.09 ZAP 132.07 ETS 175.95 ZAE 169.55 ETE 155.59 ZAC 92.53 ETC 255.89 CLP 132.14

PLANETOCENTRIC CONIC
C3 9.418 VHL 3.069 DLA 24.93 RAL 159.06 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.504 DPA .15 RAP 190.03 ECC 1.1550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 41	2971.26	-28.12	94.34	16.73	86.55	15 34 12	2371.3	-28.31	85.68
90.00	10 42 20	3773.12	-13.29	147.70	12.69	64.76	11 45 13	3173.1	-16.58	140.57
100.00	16 28 36	2636.23	-29.88	69.76	16.80	89.15	17 12 32	2036.2	-29.68	60.97
100.00	11 41 6	3583.37	-11.71	132.96	11.88	62.30	12 40 49	2983.4	-15.33	126.03
110.00	18 19 49	2288.27	-33.84	43.16	16.63	95.17	18 57 57	1688.3	-32.75	34.09
110.00	12 6 22	3504.10	-8.30	124.91	9.84	56.72	13 4 46	2904.1	-12.62	118.48

DIFFERENTIAL CORRECTIONS
TDE .2088 TRA -.9848 TC3 3.0884 BAU .3966
RDE .0473 RRA -.0597 RC3 .6214 FAU .40001
FDE .4987 FRA 5.9317 FC-36.7704 BSP 9798
BDE .2141 BRA .9866 BC3 3.1503 FSP 7518

MID-COURSE EXECUTION ACCURACY
SGT 2802.9 SGR 410.3 SG3 2218.6
RRT .8753 RRF -.9516 RTF -.9334
SGB 2832.7 R23 -.2700 R13 -.9359
SG1 2825.9 SG2 196.8 THA 7.34

ORBIT DETERMINATION ACCURACY
ST 724.7 SR 96.4 SS 1162.7
CRT .8234 CRS .1641 CST .6842
LSA 1284.2 MSA 487.0 SSA 14.1
EL1 729.0 EL2 54.4 ALF 6.28

LAUNCH DATE NOV 9 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 614.312 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.958 GAL -1.99 AZL 88.58 HCA 191.33 SMA 188.18 ECC .21533 INC 1.4195 V1 30.072
RP 228.70 LAP -.28 LOP 237.96 VP 21.339 GAP -.02 AZP 91.39 TAL 348.75 TAP 180.08 RCA 147.66 APO 228.70 V2 24.049
RC 235.703 GL 15.46 GP 2.71 ZAL 103.82 ZAP 130.57 ETS 176.27 ZAE 168.07 ETE 159.70 ZAC 92.22 ETC 255.91 CLP 130.62

PLANETOCENTRIC CONIC
C3 9.372 VHL 3.061 DLA 25.51 RAL 159.04 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.438 DPA .16 RAP 189.51 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 55	3006.93	-27.95	96.93	16.77	85.26	15 24 2	2406.9	-28.31	88.29
90.00	10 52 58	3735.52	-14.37	145.47	12.96	65.33	11 55 13	3135.5	-17.58	138.26
100.00	16 20 2	2664.80	-29.83	71.89	16.90	88.03	17 4 27	2064.8	-29.79	63.08
100.00	11 49 32	3552.89	-12.67	131.20	12.11	62.70	12 48 45	2952.9	-16.23	124.22
110.00	18 14 2	2308.15	-33.95	44.70	16.80	94.27	18 52 30	1708.1	-32.98	35.60
110.00	12 12 2	3482.30	-9.11	123.75	10.00	56.91	13 10 4	2882.3	-13.41	117.28

DIFFERENTIAL CORRECTIONS
TDE .2004 TRA -.9389 TC3 2.8862 BAU .3693
RDE .0514 RRA -.0521 RC3 .5976 FAU .41455
FDE .6448 FRA 6.1346 FC-38.2949 BSP 9272
BDE .2069 BRA .9404 BC3 2.9474 FSP 7860

MID-COURSE EXECUTION ACCURACY
SGT 2656.0 SGR 393.4 SG3 2307.1
RRT .8546 RRF -.9364 RTF -.9271
SGB 2685.0 R23 -.2685 R13 -.9297
SG1 2677.3 SG2 202.7 THA 7.26

ORBIT DETERMINATION ACCURACY
ST 696.2 SR 102.1 SS 1207.1
CRT .7822 CRS .0371 CST .6411
LSA 1302.7 MSA 504.9 SSA 14.8
EL1 700.8 EL2 63.2 ALF 6.60

LAUNCH DATE NOV 9 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 618.182 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.948 GAL -1.96 AZL 88.54 HCA 192.37 SMA 188.00 ECC .21452 INC 1.4565 V1 30.072
RP 228.31 LAP -.31 LOP 239.00 VP 21.369 GAP -.33 AZP 91.42 TAL 348.85 TAP 181.22 RCA 147.67 APO 228.33 V2 24.090
RC 237.537 GL 15.91 GP 2.54 ZAL 103.58 ZAP 129.02 ETS 176.55 ZAE 166.49 ETE 162.81 ZAC 91.94 ETC 255.93 CLP 129.07

PLANETOCENTRIC CONIC
C3 9.326 VHL 3.054 DLA 26.00 RAL 159.02 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.374 DPA .22 RAP 188.97 ECC 1.1535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 42	3040.33	-27.74	99.36	16.77	84.06	15 14 22	2440.3	-28.27	90.73
90.00	11 3 0	3700.23	-15.36	143.35	13.21	65.91	12 4 40	3100.2	-18.48	136.07
100.00	16 12 10	2690.02	-29.76	73.80	16.95	87.02	16 57 1	2090.6	-29.85	65.00
100.00	11 57 12	3525.18	-13.53	129.59	12.31	63.09	12 55 57	2925.2	-17.03	122.55
110.00	18 8 51	2325.54	-34.03	46.06	16.93	93.47	18 47 37	1725.5	-33.17	36.92
110.00	12 17 1	3463.02	-9.83	122.71	10.14	57.09	13 14 44	2863.0	-14.09	116.21

DIFFERENTIAL CORRECTIONS
TDE .1957 TRA -.8904 TC3 2.6721 BAU .3410
RDE .0559 RRA -.0456 RC3 .5811 FAU .42971
FDE .7735 FRA 6.3278 FC-39.8878 BSP 8669
BDE .2036 BRA .8916 BC3 2.7346 FSP 8182

MID-COURSE EXECUTION ACCURACY
SGT 2500.6 SGR 382.1 SG3 2397.7
RRT .8317 RRF -.9196 RTF -.9191
SGB 2529.7 R23 -.2697 R13 -.9220
SG1 2520.9 SG2 210.5 THA 7.29

ORBIT DETERMINATION ACCURACY
ST 669.5 SR 109.2 SS 1248.5
CRT .7518 CRS -.0667 CST .5972
LSA 1323.0 MSA 518.1 SSA 15.7
EL1 674.5 EL2 71.5 ALF 7.07

LAUNCH DATE NOV 9 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 622.060 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.938 GAL -1.94 AZL 88.51 HCA 193.41 SMA 187.83 ECC .21375 INC 1.4882 V1 30.072
RP 227.92 LAP -.35 LOP 240.04 VP 21.400 GAP -.64 AZP 91.45 TAL 348.94 TAP 182.35 RCA 147.68 APO 227.97 V2 24.132
RC 239.350 GL 16.30 GP 2.39 ZAL 103.37 ZAP 127.44 ETS 176.79 ZAE 164.82 ETE 165.21 ZAC 91.67 ETC 255.95 CLP 127.48

PLANETOCENTRIC CONIC
C3 9.283 VHL 3.047 DLA 26.43 RAL 158.99 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.314 DPA .31 RAP 188.40 ECC 1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 53	3072.11	-27.49	101.65	16.74	82.94	15 5 5	2472.1	-28.19	93.05
90.00	11 12 36	3666.63	-16.28	141.32	13.45	66.51	12 13 43	3066.6	-19.32	133.96
100.00	16 4 55	2714.17	-29.66	75.55	16.98	86.11	16 50 9	2114.2	-29.89	66.75
100.00	12 4 16	3499.80	-14.31	128.11	12.49	63.47	13 2 35	2899.8	-17.75	121.01
110.00	18 4 13	2340.89	-34.08	47.25	17.03	92.77	18 43 14	1740.9	-33.33	38.09
110.00	12 21 27	3445.85	-10.46	121.79	10.25	57.27	13 18 53	2845.9	-14.70	115.25

DIFFERENTIAL CORRECTIONS
TDE .1930 TRA -.8408 TC3 2.4351 BAU .3104
RDE .0605 RRA -.0402 RC3 .5694 FAU .44465
FDE .9031 FRA 6.5293 FC-41.4688 BSP 8047
BDE .2022 BRA .8418 BC3 2.5008 FSP 8523

MID-COURSE EXECUTION ACCURACY
SGT 2334.8 SGR 374.7 SG3 2488.3
RRT .8058 RRF -.9016 RTF -.9085
SGB 2364.6 R23 -.2752 R13 -.9119
SG1 2354.4 SG2 220.1 THA 7.43

ORBIT DETERMINATION ACCURACY
ST 643.6 SR 117.0 SS 1292.4
CRT .7323 CRS -.1537 CST .5494
LSA 1348.7 MSA 528.2 SSA 16.4
EL1 649.4 EL2 78.9 ALF 7.69

LAUNCH DATE NOV 9 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 625.948 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.929 GAL -1.92 AZL 88.48 HCA 194.46 SMA 187.67 ECC .21304 INC 1.5145 V1 30.072
RP 227.53 LAP -.38 LOP 241.09 VP 21.433 GAP -.94 AZP 91.47 TAL 349.02 TAP 183.47 RCA 147.69 APO 227.65 V2 24.173
RC 241.142 GL 16.63 GP 2.26 ZAL 103.18 ZAP 125.81 ETS 177.00 ZAE 163.09 ETE 167.11 ZAC 91.42 ETC 255.97 CLP 125.84

PLANETOCENTRIC CONIC

C3 9.242 VHL 3.040 DLA 26.80 RAL 158.97 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.256 DPA .44 RAP 187.81 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 22	3102.79	-27.22	103.85	16.69	81.86	14 56 5	2502.8	-28.06	95.29
90.00	11 21 58	3634.23	-17.15	139.33	13.67	67.12	12 22 32	3034.2	-20.10	131.90
100.00	15 58 13	2735.81	-29.55	77.15	16.99	85.28	16 43 48	2135.8	-29.89	68.36
100.00	12 10 48	3476.44	-15.01	126.73	12.66	63.84	13 8 45	2876.4	-18.41	119.58
110.00	18 0 4	2354.51	-34.12	48.31	17.11	92.14	18 39 19	1754.5	-33.45	39.14
110.00	12 25 26	3430.50	-11.02	120.95	10.36	57.44	13 22 37	2830.5	-15.24	114.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1942 TRA -.7887 TC3 2.1766 BAU .2778 SGT 2158.5 SGR 371.1 SG3 2579.9 ST 620.6 SR 125.7 SS 1327.5
RDE .0654 RRA -.0352 RC3 .5626 FAU .46028 RRT .7760 RRF -.8833 RTF -.8937 CRT .7264 CRS -.2197 CST .4995
FDE 1.0038 FRA 6.7103 FC-43.1170 BSP 7346 SGB 2190.1 R23 -.2880 R13 -.8979 LSA 1369.7 MSA 535.5 SSA 17.3
BDE .2049 BRA .7895 BC3 2.2481 FSP 8818 SG1 2177.8 SG2 232.0 THA 7.69 EL1 627.4 EL2 85.4 ALF 8.53

LAUNCH DATE NOV 9 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 629.847 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.920 GAL -1.91 AZL 88.46 HCA 195.51 SMA 187.52 ECC .21237 INC 1.5385 V1 30.072
RP 227.14 LAP -.41 LOP 242.13 VP 21.466 GAP -1.23 AZP 91.48 TAL 349.08 TAP 184.59 RCA 147.69 APO 227.34 V2 24.214
RC 242.914 GL 16.93 GP 2.15 ZAL 103.03 ZAP 124.14 ETS 177.19 ZAE 161.29 ETE 168.64 ZAC 91.17 ETC 256.00 CLP 124.16

PLANETOCENTRIC CONIC

C3 9.203 VHL 3.034 DLA 27.13 RAL 158.96 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.202 DPA .60 RAP 187.20 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 2	3132.84	-26.91	106.00	16.62	80.83	14 47 15	2532.8	-27.90	97.47
90.00	11 31 12	3602.55	-17.98	137.38	13.90	67.75	12 31 15	3002.5	-20.84	129.87
100.00	15 52 1	2755.75	-29.43	78.62	16.99	84.51	16 37 57	2155.7	-29.88	69.84
100.00	12 16 55	3454.87	-15.66	125.45	12.82	64.21	13 14 30	2854.9	-19.00	118.26
110.00	17 56 22	2366.62	-34.15	49.26	17.17	91.58	18 35 49	1766.6	-33.56	40.07
110.00	12 29 3	3416.76	-11.53	120.21	10.46	57.59	13 26 0	2816.8	-15.72	113.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1959 TRA -.7362 TC3 1.8985 BAU .2435 SGT 1976.0 SGR 369.5 SG3 2670.1 ST 598.1 SR 134.3 SS 1371.3
RDE .0701 RRA -.0312 RC3 .5580 FAU .47499 RRT .7428 RRF -.8643 RTF -.8742 CRT .7302 CRS -.2785 CST .4409
FDE 1.1241 FRA 6.9189 FC-44.6823 BSP 6645 SGB 2010.2 R23 -.3058 R13 -.8796 LSA 1401.0 MSA 541.5 SSA 18.1
BDE .2080 BRA .7369 BC3 1.9788 FSP 9169 SG1 1995.3 SG2 245.0 THA 8.03 EL1 606.3 EL2 90.5 ALF 9.52

LAUNCH DATE NOV 9 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 633.756 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.912 GAL -1.89 AZL 88.44 HCA 196.56 SMA 187.38 ECC .21175 INC 1.5593 V1 30.072
RP 226.75 LAP -.44 LOP 243.19 VP 21.501 GAP -1.52 AZP 91.49 TAL 349.13 TAP 185.69 RCA 147.70 APO 227.05 V2 24.256
RC 244.666 GL 17.20 GP 2.05 ZAL 102.90 ZAP 122.42 ETS 177.35 ZAE 159.44 ETE 169.88 ZAC 90.93 ETC 256.02 CLP 122.45

PLANETOCENTRIC CONIC

C3 9.167 VHL 3.028 DLA 27.42 RAL 158.96 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.151 DPA .79 RAP 186.55 ECC 1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 45	3162.76	-26.57	108.12	16.54	79.82	14 38 28	2562.8	-27.70	99.64
90.00	11 40 29	3571.11	-18.78	135.42	14.14	68.41	12 40 0	2971.1	-21.55	127.84
100.00	15 46 18	2774.14	-29.30	79.97	16.98	83.81	16 32 33	2174.1	-29.85	71.21
100.00	12 22 37	3434.96	-16.24	124.27	12.98	64.56	13 19 52	2835.0	-19.53	117.02
110.00	17 53 5	2377.41	-34.17	50.10	17.24	91.08	18 32 42	1777.4	-33.64	40.90
110.00	12 32 20	3404.46	-11.98	119.54	10.56	57.74	13 29 5	2804.5	-16.15	112.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1996 TRA -.6812 TC3 1.6008 BAU .2077 SGT 1786.5 SGR 370.3 SG3 2760.3 ST 577.4 SR 143.2 SS 1411.6
RDE .0749 RRA -.0276 RC3 .5564 FAU .48991 RRT .7039 RRF -.8455 RTF -.8465 CRT .7441 CRS -.3263 CST .3759
FDE 1.2344 FRA 7.1187 FC-46.2668 BSP 5871 SGB 1824.4 R23 -.3332 R13 -.8539 LSA 1431.4 MSA 545.3 SSA 18.8
BDE .2132 BRA .6818 BC3 1.6947 FSP 9494 SG1 1805.8 SG2 260.2 THA 8.48 EL1 587.4 EL2 94.1 ALF 10.74

LAUNCH DATE NOV 9 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 637.675 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.904 GAL -1.88 AZL 88.42 HCA 197.62 SMA 187.24 ECC .21118 INC 1.5779 V1 30.072
RP 226.36 LAP -.48 LOP 244.24 VP 21.536 GAP -1.81 AZP 91.50 TAL 349.17 TAP 186.79 RCA 147.70 APO 226.79 V2 24.297
RC 246.398 GL 17.43 GP 1.97 ZAL 102.79 ZAP 120.67 ETS 177.51 ZAE 157.54 ETE 170.92 ZAC 90.70 ETC 256.05 CLP 120.69

PLANETOCENTRIC CONIC

C3 9.134 VHL 3.022 DLA 27.67 RAL 158.97 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 3.103 DPA 1.00 RAP 185.88 ECC 1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 22	3193.14	-26.18	110.26	16.45	78.81	14 29 35	2593.1	-27.46	101.83
90.00	11 50 0	3539.34	-18.56	133.41	14.39	69.11	12 48 59	2939.3	-22.23	125.76
100.00	15 41 5	2791.08	-29.17	81.21	16.99	83.17	16 27 36	2191.1	-29.81	72.46
100.00	12 27 58	3416.63	-16.77	123.17	13.14	64.89	13 24 54	2816.6	-20.02	115.88
110.00	17 50 13	2386.98	-34.18	50.85	17.31	90.64	18 30 0	1787.0	-33.71	41.64
110.00	12 35 20	3393.49	-12.37	118.84	10.66	57.88	13 31 53	2793.5	-16.53	112.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2054 TRA -.6253 TC3 1.2788 BAU .1703 SGT 1594.0 SGR 372.5 SG3 2848.6 ST 559.9 SR 152.3 SS 1452.7
RDE .0797 RRA -.0245 RC3 .5588 FAU .50425 RRT .6851 RRF -.8269 RTF -.8055 CRT .7671 CRS -.3658 CST .3028
FDE 1.3421 FRA 7.3276 FC-47.7921 BSP 5074 SGB 1637.0 R23 -.3739 R13 -.8160 LSA 1464.9 MSA 548.4 SSA 19.6
BDE .2204 BRA .6258 BC3 1.3947 FSP 9832 SG1 1613.2 SG2 278.1 THA 8.97 EL1 572.3 EL2 95.6 ALF 12.13

LAUNCH DATE NOV 9 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 641.603 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.897	GAL	-1.87	AZL	88.41	HCA	198.68	SMA	187.12	ECC	.21065	INC	1.5940	V1	30.072
RP	225.97	LAP	-.51	LOP	245.30	VP	21.573	GAP	-2.09	AZP	91.51	TAL	349.19	TAP	187.87	RCA	147.71	APO	226.54	V2	24.339
RC	248.110	GL	17.65	GP	1.89	ZAL	102.72	ZAP	118.88	ETS	177.65	ZAE	155.58	ETE	171.79	ZAC	90.46	ETC	256.09	CLP	118.90

PLANETOCENTRIC CONIC

C3	9.104	VHL	3.017	DLA	27.89	RAL	159.01	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	3.058	DPA	1.24	RAP	185.19	ECC	1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 35	3224.95	-25.74	112.49	16.36	77.78	14 20 20	2624.9	-27.17	104.11
90.00	12 0 2	3506.27	-20.35	131.31	14.66	69.87	12 58 28	2906.3	-22.91	123.57
100.00	15 36 21	2806.60	-29.04	82.35	17.00	82.59	16 23 8	2206.6	-29.76	73.62
100.00	12 32 57	3399.85	-17.26	122.15	13.31	65.21	13 29 37	2799.8	-20.46	114.82
110.00	17 47 43	2395.44	-34.18	51.51	17.38	90.25	18 27 39	1795.4	-33.77	42.29
110.00	12 38 4	3383.78	-12.72	118.40	10.77	58.00	13 34 27	2783.8	-16.86	111.74

DIFFERENTIAL CORRECTIONS

TDE	.2137	TRA	-.5664	TC3	.9390	BAU	.1330
RDE	.0847	RRA	-.0215	RC3	.5590	FAU	.51883
FDE	1.4294	FRA	7.5196	FC-49.3349		BSP	4222
BDE	.2299	BRA	.5668	BC3	1.0928	FSP	10132

MID-COURSE EXECUTION ACCURACY

SGT	1402.3	SGR	376.5	SG3	2936.0		
RRT	.5922	RRF	-.8092	RTF	-.7434		
SGB	1452.0	R23	-.4315	R13	-.7591		
SG1	1420.7	SG2	299.5	THA	9.46		

ORBIT DETERMINATION ACCURACY

ST	546.1	SR	161.7	SS	1486.4		
CRT	.7982	CRS	-.3958	CST	.2222		
LSA	1493.2	MSA	551.0	SSA	20.4		
EL1	561.6	EL2	94.7	ALF	13.70		

LAUNCH DATE NOV 9 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 645.541 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.891	GAL	-1.87	AZL	88.39	HCA	199.74	SMA	187.01	ECC	.21016	INC	1.6087	V1	30.072
RP	225.58	LAP	-.54	LOP	246.36	VP	21.610	GAP	-2.36	AZP	91.51	TAL	349.21	TAP	188.95	RCA	147.71	APO	226.31	V2	24.381
RC	249.803	GL	17.84	GP	1.82	ZAL	102.67	ZAP	117.06	ETS	177.78	ZAE	153.59	ETE	172.54	ZAC	90.22	ETC	256.13	CLP	117.07

PLANETOCENTRIC CONIC

C3	9.078	VHL	3.013	DLA	28.08	RAL	159.05	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	3.016	DPA	1.49	RAP	184.46	ECC	1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 49	3260.14	-25.21	114.93	16.25	76.67	14 10 9	2660.1	-26.80	106.62
90.00	12 11 11	3469.95	-21.18	128.97	14.97	70.76	13 9 1	2869.9	-23.62	121.14
100.00	15 32 7	2820.72	-28.91	83.38	17.03	82.06	16 19 7	2220.7	-29.71	74.66
100.00	12 37 34	3384.60	-17.69	121.23	13.48	65.50	13 33 59	2784.6	-20.85	113.86
110.00	17 45 37	2402.85	-34.18	52.09	17.46	89.90	18 25 40	1802.8	-33.82	42.86
110.00	12 40 33	3375.23	-13.03	117.93	10.89	58.12	13 36 48	2775.2	-17.15	111.24

DIFFERENTIAL CORRECTIONS

TDE	.2235	TRA	-.5055	TC3	.5804	BAU	.0981
RDE	.0896	RRA	-.0189	RC3	.5625	FAU	.53289
FDE	1.5135	FRA	7.7133	FC-50.8205		BSP	3351
BDE	.2408	BRA	.5059	BC3	.8083	FSP	10437

MID-COURSE EXECUTION ACCURACY

SGT	1220.7	SGR	381.5	SG3	3020.9		
RRT	.5055	RRF	-.7922	RTF	-.6467		
SGB	1278.9	R23	-.5098	R13	-.6701		
SG1	1237.0	SG2	324.9	THA	9.65		

ORBIT DETERMINATION ACCURACY

ST	536.2	SR	171.1	SS	1519.6		
CRT	.8338	CRS	-.4209	CST	.1333		
LSA	1523.1	MSA	552.9	SSA	21.1		
EL1	555.5	EL2	91.2	ALF	15.32		

LAUNCH DATE NOV 9 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 649.489 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.885	GAL	-1.87	AZL	88.38	HCA	200.81	SMA	186.90	ECC	.20971	INC	1.6222	V1	30.072
RP	225.19	LAP	-.58	LOP	247.43	VP	21.648	GAP	-2.63	AZP	91.52	TAL	349.21	TAP	190.01	RCA	147.71	APO	226.10	V2	24.423
RC	251.477	GL	18.01	GP	1.75	ZAL	102.65	ZAP	115.20	ETS	177.90	ZAE	151.55	ETE	173.18	ZAC	89.99	ETC	256.17	CLP	115.21

PLANETOCENTRIC CONIC

C3	9.054	VHL	3.009	DLA	28.24	RAL	159.12	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.978	DPA	1.77	RAP	183.71	ECC	1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 2	3305.31	-24.47	118.03	16.08	75.28	13 57 7	2705.3	-26.25	109.81
90.00	12 25 30	3423.78	-22.19	125.96	15.35	71.94	13 22 34	2823.8	-24.45	118.02
100.00	15 28 24	2833.39	-28.79	84.30	17.07	81.59	16 15 37	2233.4	-29.65	75.60
100.00	12 41 50	3370.93	-18.07	120.39	13.66	65.78	13 38 1	2770.9	-21.19	112.99
110.00	17 43 54	2409.27	-34.18	52.59	17.56	89.61	18 24 3	1809.3	-33.86	43.36
110.00	12 42 49	3367.82	-13.30	117.52	11.02	58.22	13 38 57	2767.8	-17.40	110.82

DIFFERENTIAL CORRECTIONS

TDE	.2341	TRA	-.4430	TC3	.1943	BAU	.0725
RDE	.0945	RRA	-.0166	RC3	.5666	FAU	.54582
FDE	1.5992	FRA	7.9104	FC-52.1881		BSP	2466
BDE	.2524	BRA	.4434	BC3	.5990	FSP	10739

MID-COURSE EXECUTION ACCURACY

SGT	1062.7	SGR	387.2	SG3	3100.8		
RRT	.3753	RRF	-.7755	RTF	-.4900		
SGB	1131.0	R23	-.6125	R13	-.5218		
SG1	1073.8	SG2	355.2	THA	8.75		

ORBIT DETERMINATION ACCURACY

ST	530.3	SR	180.5	SS	1553.8		
CRT	.8704	CRS	-.4430	CST	.0373		
LSA	1555.9	MSA	553.7	SSA	21.8		
EL1	553.7	EL2	85.1	ALF	16.91		

LAUNCH DATE NOV 9 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 653.446 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.879	GAL	-1.86	AZL	88.37	HCA	201.88	SMA	186.81	ECC	.20950	INC	1.6342	V1	30.072
RP	224.80	LAP	-.61	LOP	248.50	VP	21.687	GAP	-2.89	AZP	91.52	TAL	349.19	TAP	191.07	RCA	147.71	APO	225.91	V2	24.465
RC	253.132	GL	18.17	GP	1.69	ZAL	102.66	ZAP	113.31	ETS	178.02	ZAE	149.47	ETE	173.73	ZAC	89.75	ETC	256.22	CLP	113.32

PLANETOCENTRIC CONIC

C3	9.034	VHL	3.006	DLA	28.38	RAL	159.21	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.943	DPA	2.06	RAP	182.94	ECC	1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.06	12 27 53	3416.73	-23.45	125.87	15.83	73.54	13 24 50	2816.7	-25.48	117.78
91.94	13 0 21	3311.50	-23.44	118.17	15.82	73.52	13 55 33	2711.5	-25.47	110.08
100.00	15 25 13	2844.56	-28.68	85.11	17.13	81.18	16 12 38	2244.6	-29.60	76.43
100.00	12 45 42	3358.90	-18.41	119.66	13.84	66.02	13 41 41	2758.9	-21.49	112.22
110.00	17 42 32	2414.74	-34.18	53.02	17.67	89.36	18 22 47	1814.7	-33.89	43.78
110.00	12 44 53	3361.49	-13.52	117.17	11.16	58.30	13 40 54	2761.5	-17.62	110.45

DIFFERENTIAL CORRECTIONS

TDE	.2467	TRA	-.3787	TC3	-.2047	BAU	.0734
RDE	.0994	RRA	-.0144	RC3	.5719	FAU	.55868
FDE	1.6646	FRA	8.1008	FC-53.5372		BSP	1612
BDE	.2660	BRA	.3789	BC3	.6074	FSP	11007

MID-COURSE EXECUTION ACCURACY

SGT	955.6	SGR	393.8	SG3	3179.1		
RRT	.1930	RRF	-.7599	RTF	-.2550		
SGB	1031.7	R23	-.7140	R13	-.2825		
SG1	957.2	SG2	384.9	THA	5.44		

ORBIT DETERMINATION ACCURACY

ST	530.8	SR	190.0	SS	1582.2		
CRT	.9061	CRS	-.4584	CST	-.0605		
LSA	1585.1	MSA	555.2	SSA	22.6		
EL1	558.6	EL2	76.4	ALF	18.33		

LAUNCH DATE NOV 9 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 657.412 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.874 GAL -1.87 AZL 88.35 HCA 202.95 SMA 186.72 ECC .20893 INC 1.6453 V1 30.072
RP 224.41 LAP -.64 LOP 249.58 VP 21.726 GAP -3.15 AZP 91.52 TAL 349.16 TAP 192.11 RCA 147.71 APO 225.73 V2 24.506
RC 254.766 GL 18.31 GP 1.64 ZAL 102.69 ZAP 111.39 ETS 178.13 ZAE 147.36 ETE 174.22 ZAC 89.51 ETC 256.27 CLP 111.40

PLANETOCENTRIC CONIC

C3 9.017 VHL 3.003 DLA 28.49 RAL 159.32 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.911 DPA 2.36 RAP 182.15 ECC 1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.71	12 17 5	3452.78	-23.54	128.54	15.94	73.48	13 14 38	2852.8	-25.59	120.45
93.29	13 12 2	3274.73	-23.53	115.50	15.94	73.46	14 6 37	2674.7	-25.58	107.42
100.00	15 22 37	2854.18	-28.57	85.81	17.22	80.82	16 10 11	2254.2	-29.55	77.14
100.00	12 49 11	3348.56	-18.69	119.02	14.03	66.24	13 44 59	2748.6	-21.75	111.56
110.00	17 41 32	2419.30	-34.17	53.37	17.79	89.14	18 21 52	1819.3	-33.91	44.14
110.00	12 46 45	3356.20	-13.71	116.88	11.31	58.38	13 42 41	2756.2	-17.80	110.15

DIFFERENTIAL CORRECTIONS
TDE .2603 TRA -.3112 TC3 -.6238 BAU .1025
RDE .1043 RRA -.0124 RC3 .5773 FAU .57038
FDE 1.7292 FRA 8.2849 FC-54.7602 BSP 1071
BDE .2804 BRA .3114 BC3 .8499 FSP 11282

MID-COURSE EXECUTION ACCURACY
SGT 918.3 SGR 400.7 SG3 3251.2
RRT -.0348 RRF -.7448 RTF .0523
SGB 1002.0 R23 .7430 R13 -.0584
SG1 918.5 SG2 400.4 THA 178.93

ORBIT DETERMINATION ACCURACY
ST 536.5 SR 199.5 SS 1610.0
CRT .9379 CRS -.4721 CST -.1619
LSA 1615.6 MSA 555.9 SSA 23.3
EL1 568.7 EL2 65.3 ALF 19.50

LAUNCH DATE NOV 9 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 661.388 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.869 GAL -1.87 AZL 88.34 HCA 204.03 SMA 186.63 ECC .20860 INC 1.6555 V1 30.072
RP 224.02 LAP -.67 LOP 250.65 VP 21.766 GAP -3.41 AZP 91.51 TAL 349.12 TAP 193.15 RCA 147.70 APO 225.57 V2 24.548
RC 256.380 GL 18.44 GP 1.59 ZAL 102.75 ZAP 109.44 ETS 178.23 ZAE 145.21 ETE 174.65 ZAC 89.28 ETC 256.32 CLP 109.45

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA 28.58 RAL 159.45 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.883 DPA 2.68 RAP 181.34 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.94	12 11 14	3473.10	-23.62	130.06	16.07	73.43	13 9 7	2873.1	-25.67	121.96
94.06	13 18 56	3253.83	-23.61	114.00	16.07	73.41	14 13 9	2653.8	-25.66	105.91
100.00	15 20 37	2862.16	-28.49	86.38	17.33	80.53	16 8 19	2262.2	-29.50	77.72
100.00	12 52 13	3340.01	-18.93	118.49	14.23	66.42	13 47 53	2740.0	-21.95	111.01
110.00	17 40 54	2422.98	-34.17	53.66	17.94	88.97	18 21 17	1823.0	-33.93	44.42
110.00	12 48 25	3351.95	-13.87	116.64	11.48	58.44	13 44 17	2751.9	-17.94	109.90

DIFFERENTIAL CORRECTIONS
TDE .2755 TRA -.2420 TC3-1.0600 BAU .1456
RDE .1093 RRA -.0105 RC3 .5832 FAU .58131
FDE 1.7740 FRA 8.4635 FC-55.8938 BSP 1383
BDE .2964 BRA .2422 BC3 1.2099 FSP 11521

MID-COURSE EXECUTION ACCURACY
SGT 978.9 SGR 408.2 SG3 3318.6
RRT -.2523 RRF -.7305 RTF 3574
SGB 1060.6 R23 .6432 R13 -.3899
SG1 985.4 SG2 392.4 THA 172.86

ORBIT DETERMINATION ACCURACY
ST 549.6 SR 209.1 SS 1632.7
CRT .9632 CRS -.4805 CST -.2580
LSA 1643.0 MSA 557.9 SSA 23.9
EL1 585.6 EL2 52.8 ALF 20.30

LAUNCH DATE NOV 9 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 665.372 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.865 GAL -1.88 AZL 88.34 HCA 205.11 SMA 186.56 ECC .20831 INC 1.6649 V1 30.072
RP 223.63 LAP -.71 LOP 251.74 VP 21.807 GAP -3.66 AZP 91.51 TAL 349.06 TAP 194.18 RCA 147.70 APO 225.42 V2 24.590
RC 257.974 GL 18.56 GP 1.54 ZAL 102.84 ZAP 107.47 ETS 178.33 ZAE 143.04 ETE 175.04 ZAC 89.04 ETC 256.38 CLP 107.48

PLANETOCENTRIC CONIC

C3 8.994 VHL 2.999 DLA 28.65 RAL 159.60 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.858 DPA 3.00 RAP 180.51 ECC 1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.44	12 7 42	3486.25	-28.68	131.04	16.23	73.39	13 5 48	2886.3	-25.74	122.94
94.56	13 23 40	3240.24	-23.67	113.02	16.23	73.37	14 17 41	2640.2	-25.73	104.92
100.00	15 19 15	2868.42	-28.41	86.83	17.46	80.30	16 7 3	2268.4	-29.46	78.19
100.00	12 54 49	3333.31	-19.11	118.08	14.44	66.57	13 50 22	2733.3	-22.11	110.57
110.00	17 40 38	2425.80	-34.17	53.88	18.10	88.84	18 21 3	1825.8	-33.95	44.64
110.00	12 49 55	3348.69	-13.98	116.46	11.66	58.48	13 45 44	2748.7	-18.05	109.71

DIFFERENTIAL CORRECTIONS
TDE .2911 TRA -.1700 TC3-1.5105 BAU .1950
RDE .1143 RRA -.0086 RC3 .5893 FAU .59150
FDE 1.8112 FRA 8.6268 FC-56.9380 BSP 2293
BDE .3127 BRA .1702 BC3 1.6214 FSP 11718

MID-COURSE EXECUTION ACCURACY
SGT 1125.6 SGR 415.9 SG3 3380.7
RRT -.4097 RRF -.7170 RTF .5883
SGB 1200.0 R23 .4880 R13 -.6165
SG1 1140.1 SG2 374.6 THA 170.34

ORBIT DETERMINATION ACCURACY
ST 567.7 SR 218.7 SS 1652.2
CRT .9808 CRS -.4873 CST -.3492
LSA 1669.3 MSA 559.0 SSA 24.6
EL1 607.1 EL2 39.9 ALF 20.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 669.364 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.861 GAL -1.89 AZL 88.33 HCA 206.20 SMA 186.49 ECC .20805 INC 1.6735 V1 30.072
RP 223.24 LAP -.74 LOP 252.82 VP 21.848 GAP -3.90 AZP 91.50 TAL 348.99 TAP 195.19 RCA 147.69 APO 225.29 V2 24.632
RC 259.547 GL 18.66 GP 1.49 ZAL 102.95 ZAP 105.48 ETS 178.42 ZAE 140.84 ETE 175.39 ZAC 88.80 ETC 256.44 CLP 105.49

PLANETOCENTRIC CONIC

C3 8.987 VHL 2.998 DLA 28.70 RAL 159.78 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.836 DPA 3.34 RAP 179.67 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.12	12 5 48	3494.55	-23.72	131.66	16.41	73.36	13 4 2	2894.5	-25.78	123.56
94.88	13 27 0	3231.65	-23.71	112.40	16.41	73.34	14 20 51	2631.7	-25.77	104.31
100.00	15 18 33	2872.85	-28.36	87.15	17.62	80.14	16 6 26	2272.8	-29.43	78.51
100.00	12 56 55	3328.59	-19.24	117.79	14.65	66.67	13 52 24	2728.6	-22.23	110.27
110.00	17 40 43	2427.76	-34.16	54.03	18.28	88.75	18 21 11	1827.8	-33.96	44.79
110.00	12 51 15	3346.44	-14.06	116.34	11.86	58.52	13 47 1	2746.4	-18.13	109.58

DIFFERENTIAL CORRECTIONS
TDE .3052 TRA -.0980 TC3-1.9899 BAU .2495
RDE .1191 RRA -.0071 RC3 .5940 FAU .59830
FDE 1.8803 FRA 8.8308 FC-57.6362 BSP 3317
BDE .3276 BRA .0983 BC3 2.0767 FSP 11999

MID-COURSE EXECUTION ACCURACY
SGT 1345.1 SGR 423.0 SG3 3431.4
RRT -.5077 RRF -.7018 RTF .7341
SGB 1410.0 R23 .3483 R13 -.7506
SG1 1363.4 SG2 359.5 THA 170.24

ORBIT DETERMINATION ACCURACY
ST 587.9 SR 227.9 SS 1685.6
CRT .9903 CRS -.4976 CST -.4361
LSA 1711.5 MSA 555.7 SSA 25.3
EL1 629.8 EL2 29.6 ALF 21.05

LAUNCH DATE NOV 9 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 673.368 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.857 GAL -1.90 AZL 88.32 HCA 207.29 SMA 186.43 ECC .20782 INC 1.6814 V1 30.072
RP 222.85 LAP -.77 LOP 253.91 VP 21.890 GAP -4.14 AZP 91.49 TAL 348.91 TAP 196.20 RCA 147.69 APO 225.18 V2 24.674
RC 261.100 GL 18.76 GP 1.45 ZAL 103.09 ZAP 103.47 ETS 178.51 ZAE 138.62 ETE 175.70 ZAC 88.56 ETC 256.51 CLP 103.48

PLANETOCENTRIC CONIC

C3 8.983 VHL 2.997 DLA 28.73 RAL 159.98 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.818 DPA 3.68 RAP 178.81 ECC 1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.94	12 5 5	3499.29	-23.75	132.02	16.61	73.34	13 3 25	2899.3	-25.81	123.92
95.06	13 29 16	3226.76	-23.74	112.05	16.60	73.33	14 23 3	2626.8	-25.80	103.95
100.00	15 18 29	2875.58	-28.33	87.35	17.81	80.04	16 6 24	2275.6	-29.41	78.71
100.00	12 58 34	3325.71	-19.31	117.61	14.88	66.73	13 54 0	2725.7	-22.30	110.08
110.00	17 41 8	2428.97	-34.16	54.13	18.49	88.70	18 21 37	1829.0	-33.96	44.89
110.00	12 52 24	3345.09	-14.11	116.26	12.07	58.54	13 48 9	2745.1	-18.17	109.50

DIFFERENTIAL CORRECTIONS
TDE .3243 TRA -.0195 TC3-2.4541 BAU .3035
RDE .1245 RRA -.0050 RC3 .6013 FAU .60882
FDE 1.8326 FRA 8.9164 FC-58.6721 BSP 4508
BDE .3474 BRA .0201 BC3 2.5267 FSP 12032

MID-COURSE EXECUTION ACCURACY
SGT 1597.0 SGR 432.1 SG3 3485.1
RRT -.5540 RRF -.6917 RTF .8241
SGB 1654.4 R23 .2537 R13 -.8334
SG1 1615.7 SG2 355.5 THA 171.04

ORBIT DETERMINATION ACCURACY
ST 621.7 SR 238.2 SS 1676.2
CRT .9932 CRS -.4898 CST -.5010
LSA 1713.0 MSA 563.8 SSA 25.8
EL1 665.2 EL2 25.9 ALF 20.87

LAUNCH DATE NOV 9 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 677.379 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.854 GAL -1.92 AZL 88.31 HCA 208.38 SMA 186.38 ECC .20763 INC 1.6891 V1 30.072
RP 222.47 LAP -.80 LOP 255.00 VP 21.932 GAP -4.38 AZP 91.49 TAL 348.81 TAP 197.20 RCA 147.68 APO 225.07 V2 24.716
RC 262.633 GL 18.84 GP 1.41 ZAL 103.26 ZAP 101.46 ETS 178.60 ZAE 136.39 ETE 175.98 ZAC 88.32 ETC 256.58 CLP 101.46

PLANETOCENTRIC CONIC

C3 8.983 VHL 2.997 DLA 28.74 RAL 160.20 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.803 DPA 4.03 RAP 177.95 ECC 1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.89	12 5 32	3500.74	-23.75	132.13	16.83	73.34	13 3 52	2900.7	-25.81	124.03
95.11	13 30 36	3225.32	-23.75	111.95	16.83	73.32	14 24 22	2625.3	-25.81	103.85
100.00	15 19 7	2876.42	-28.32	87.41	18.04	80.01	16 7 3	2276.4	-29.41	78.78
100.00	12 59 42	3324.87	-19.34	117.56	15.11	66.75	13 55 7	2724.9	-22.32	110.03
110.00	17 41 54	2429.35	-34.16	54.16	18.71	88.68	18 22 24	1829.3	-33.97	44.92
110.00	12 53 24	3344.71	-14.12	116.24	12.29	58.54	13 49 9	2744.7	-18.18	109.48

DIFFERENTIAL CORRECTIONS
TDE .3412 TRA .0593 TC3-2.9441 BAU .3610
RDE .1295 RRA -.0033 RC3 .6064 FAU .61485
FDE 1.8429 FRA 9.0616 FC-59.2535 BSP 5704
BDE .3649 BRA .0593 BC3 3.0059 FSP 12175

MID-COURSE EXECUTION ACCURACY
SGT 1885.9 SGR 439.9 SG3 3524.8
RRT -.5799 RRF -.6789 RTF .8778
SGB 1936.5 R23 .1855 R13 -.8829
SG1 1903.7 SG2 355.0 THA 172.02

ORBIT DETERMINATION ACCURACY
ST 655.5 SR 247.8 SS 1689.8
CRT .9899 CRS -.4903 CST -.5650
LSA 1739.7 MSA 565.1 SSA 26.4
EL1 700.0 EL2 32.9 ALF 20.56

LAUNCH DATE NOV 9 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 681.399 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.851 GAL -1.93 AZL 88.30 HCA 209.48 SMA 186.33 ECC .20748 INC 1.6960 V1 30.072
RP 222.08 LAP -.83 LOP 256.10 VP 21.975 GAP -4.61 AZP 91.48 TAL 348.70 TAP 198.18 RCA 147.67 APO 224.99 V2 24.758
RC 264.145 GL 18.92 GP 1.37 ZAL 103.45 ZAP 99.43 ETS 178.68 ZAE 134.14 ETE 176.24 ZAC 88.08 ETC 256.65 CLP 99.43

PLANETOCENTRIC CONIC

C3 8.987 VHL 2.998 DLA 28.73 RAL 160.44 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.792 DPA 4.38 RAP 177.09 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.95	12 7 4	3498.99	-23.75	132.00	17.08	73.34	13 5 23	2899.0	-25.80	123.90
95.05	13 31 1	3227.21	-23.73	112.08	17.08	73.33	14 24 48	2627.2	-25.79	103.99
100.00	15 20 24	2875.46	-28.33	87.34	18.29	80.05	16 8 20	2275.5	-29.42	78.71
100.00	13 0 22	3325.98	-19.31	117.62	15.35	66.72	13 55 48	2726.0	-22.29	110.10
110.00	17 43 1	2428.95	-34.16	54.13	18.96	88.70	18 23 30	1829.0	-33.96	44.89
110.00	12 54 14	3345.25	-14.10	116.27	12.54	58.53	13 50 0	2745.3	-18.17	109.51

DIFFERENTIAL CORRECTIONS
TDE .3576 TRA .1401 TC3-3.4449 BAU .4204
RDE .1346 RRA -.0015 RC3 .6114 FAU .62007
FDE 1.8242 FRA 9.1757 FC-59.7323 BSP 6923
BDE .3821 BRA .1401 BC3 3.4987 FSP 12254

MID-COURSE EXECUTION ACCURACY
SGT 2196.9 SGR 447.9 SG3 3556.8
RRT -.5917 RRF -.6669 RTF .9118
SGB 2242.1 R23 .1397 R13 -.9148
SG1 2213.3 SG2 358.4 THA 172.93

ORBIT DETERMINATION ACCURACY
ST 692.4 SR 257.6 SS 1693.9
CRT .9819 CRS -.4863 CST -.6169
LSA 1758.5 MSA 567.6 SSA 26.9
EL1 737.4 EL2 45.8 ALF 20.15

LAUNCH DATE NOV 9 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 685.427 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.849 GAL -1.95 AZL 88.30 HCA 210.58 SMA 186.29 ECC .20736 INC 1.7027 V1 30.072
RP 221.70 LAP -.87 LOP 257.20 VP 22.019 GAP -4.84 AZP 91.47 TAL 348.58 TAP 199.16 RCA 147.66 APO 224.91 V2 24.799
RC 265.639 GL 18.98 GP 1.33 ZAL 103.68 ZAP 97.40 ETS 178.76 ZAE 131.89 ETE 176.48 ZAC 87.85 ETC 256.73 CLP 97.40

PLANETOCENTRIC CONIC

C3 8.994 VHL 2.999 DLA 28.70 RAL 160.71 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.784 DPA 4.73 RAP 176.22 ECC 1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.14	12 9 39	3494.31	-23.72	131.64	17.35	73.36	13 7 53	2894.3	-25.77	123.55
94.86	13 30 36	3232.20	-23.71	112.44	17.35	73.34	14 24 28	2632.2	-25.77	104.34
100.00	15 22 21	2872.75	-28.36	87.15	18.57	80.15	16 10 14	2272.8	-29.43	78.51
100.00	13 0 34	3328.99	-19.22	117.81	15.60	66.66	13 56 3	2729.0	-22.22	110.29
110.00	17 44 29	2427.80	-34.16	54.04	19.23	88.75	18 24 57	1827.8	-33.96	44.80
110.00	12 54 56	3346.70	-14.05	116.35	12.80	58.51	13 50 43	2746.7	-18.12	109.59

DIFFERENTIAL CORRECTIONS
TDE .3743 TRA .2235 TC3-3.9498 BAU .4807
RDE .1397 RRA .0002 RC3 .6156 FAU .62346
FDE 1.8035 FRA 9.2935 FC-60.0117 BSP 8166
BDE .3996 BRA .2235 BC3 3.9974 FSP 12336

MID-COURSE EXECUTION ACCURACY
SGT 2522.1 SGR 455.6 SG3 3580.4
RRT -.5948 RRF -.6547 RTF .9338
SGB 2562.9 R23 .1087 R13 -.9356
SG1 2536.9 SG2 364.1 THA 173.74

ORBIT DETERMINATION ACCURACY
ST 733.4 SR 267.2 SS 1699.5
CRT .9704 CRS -.4814 CST -.6616
LSA 1780.8 MSA 570.3 SSA 27.4
EL1 778.2 EL2 60.8 ALF 19.60

LAUNCH DATE NOV 9 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 689.463 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.847 GAL -1.98 AZL 88.29 HCA 211.69 SMA 186.25 ECC .20726 INC 1.7088 V1 30.072
RP 221.32 LAP -.90 LOP 258.31 VP 22.062 GAP -5.06 AZP 91.45 TAL 348.44 TAP 200.12 RCA 147.65 APO 224.85 V2 24.841
RC 267.114 GL 19.04 GP 1.29 ZAL 103.92 ZAP 95.37 ETS 178.83 ZAE 129.63 ETE 176.70 ZAC 87.62 ETC 256.81 CLP 95.37

PLANETOCENTRIC CONIC

C3 9.005 VHL 3.001 DLA 28.65 RAL 161.01 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.780 DPA 5.08 RAP 175.36 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.46	12 13 27	3486.02	-23.68	131.02	17.65	73.38	13 11 33	2886.0	-25.73	122.92
94.54	13 29 8	3240.95	-23.67	113.07	17.65	73.36	14 23 9	2641.0	-25.72	104.98
100.00	15 24 55	2868.41	-28.41	86.83	18.88	80.30	16 12 44	2268.4	-29.46	78.19
100.00	13 0 20	3333.79	-19.09	118.11	15.86	66.55	13 55 54	2733.8	-22.10	110.61
110.00	17 46 16	2425.93	-34.17	53.89	19.52	88.84	18 26 42	1825.9	-33.95	44.65
110.00	12 55 29	3349.04	-13.97	116.48	13.08	58.48	13 51 18	2749.0	-18.04	109.73

DIFFERENTIAL CORRECTIONS
TDE .3900 TRA .3090 TC3-4.4628 BAU .5424
RDE .1449 RRA .0020 RC3 .6193 FAU .62556
FDE 1.7671 FRA 9.3863 FC-60.1422 BSP 9422
BDE .4160 BRA .3090 BC3 4.5056 FSP 12367

MID-COURSE EXECUTION ACCURACY
SGT 2860.1 SGR 463.4 SG3 3595.0
RRT -.5935 RRF -.6427 RTF .9488
SGB 2897.4 R23 .0870 R13 -.9500
SG1 2873.5 SG2 371.2 THA 174.41

ORBIT DETERMINATION ACCURACY
ST 775.6 SR 276.9 SS 1699.7
CRT .9563 CRS -.4743 CST -.6986
LSA 1799.6 MSA 572.8 SSA 27.9
EL1 820.0 EL2 76.6 ALF 19.02

LAUNCH DATE NOV 9 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 693.506 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.845 GAL -2.00 AZL 88.29 HCA 212.80 SMA 186.22 ECC .20720 INC 1.7147 V1 30.072
RP 220.94 LAP -.93 LOP 259.42 VP 22.106 GAP -5.28 AZP 91.44 TAL 348.28 TAP 201.08 RCA 147.63 APO 224.80 V2 24.883
RC 268.570 GL 19.09 GP 1.26 ZAL 104.20 ZAP 93.35 ETS 178.90 ZAE 127.38 ETE 176.90 ZAC 87.39 ETC 256.90 CLP 93.35

PLANETOCENTRIC CONIC

C3 9.019 VHL 3.003 DLA 28.58 RAL 161.33 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.778 DPA 5.42 RAP 174.51 ECC 1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.94	12 18 40	3473.54	-23.62	130.08	17.97	73.41	13 16 34	2873.5	-25.67	121.99
94.06	13 26 26	3254.05	-23.61	114.01	17.97	73.40	14 20 40	2654.0	-25.66	105.92
100.00	15 28 6	2862.49	-28.48	86.41	19.23	80.52	16 15 48	2262.5	-29.50	77.75
100.00	12 59 42	3340.33	-18.92	118.51	16.13	66.41	13 55 23	2740.3	-21.95	111.03
110.00	17 48 23	2423.31	-34.17	53.69	19.84	88.96	18 28 46	1823.3	-33.94	44.45
110.00	12 55 54	3352.27	-13.85	116.66	13.37	58.43	13 51 47	2752.3	-17.93	109.92

DIFFERENTIAL CORRECTIONS
TDE .4053 TRA .3984 TC3-4.9766 BAU .6047
RDE .1498 RRA .0035 RC3 .6206 FAU .62327
FDE 1.7819 FRA 9.5278 FC-59.8261 BSP 10719
BDE .4321 BRA .3984 BC3 5.0152 FSP 12504

MID-COURSE EXECUTION ACCURACY
SGT 3206.6 SGR 469.7 SG3 3595.0
RRT -.5888 RRF -.6277 RTF .9590
SGB 3240.9 R23 .0681 R13 -.9598
SG1 3218.7 SG2 378.3 THA 175.00

ORBIT DETERMINATION ACCURACY
ST 820.6 SR 285.9 SS 1719.1
CRT .9398 CRS -.4753 CST -.7382
LSA 1840.1 MSA 569.0 SSA 28.5
EL1 864.1 EL2 92.8 ALF 18.35

LAUNCH DATE NOV 9 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 697.560 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.844 GAL -2.03 AZL 88.28 HCA 213.91 SMA 186.19 ECC .20718 INC 1.7202 V1 30.072
RP 220.56 LAP -.96 LOP 260.53 VP 22.151 GAP -5.49 AZP 91.43 TAL 348.12 TAP 202.02 RCA 147.62 APO 224.77 V2 24.924
RC 270.009 GL 19.13 GP 1.22 ZAL 104.50 ZAP 91.33 ETS 178.97 ZAE 125.13 ETE 177.08 ZAC 87.17 ETC 256.98 CLP 91.33

PLANETOCENTRIC CONIC

C3 9.037 VHL 3.006 DLA 28.50 RAL 161.66 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.781 DPA 5.76 RAP 173.67 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.64	12 25 50	3455.12	-23.54	128.71	18.32	73.46	13 23 26	2855.1	-25.59	120.62
93.36	13 21 59	3273.25	-23.53	115.39	18.31	73.44	14 16 32	2673.2	-25.58	107.31
100.00	15 31 46	2855.29	-28.56	85.89	19.59	80.78	16 19 21	2255.3	-29.54	77.22
100.00	12 58 44	3348.31	-18.70	119.01	16.41	66.24	13 54 33	2748.3	-21.75	111.54
110.00	17 50 48	2420.06	-34.17	53.43	20.18	89.11	18 31 8	1820.1	-33.92	44.20
110.00	12 56 12	3356.30	-13.71	116.88	13.69	58.38	13 52 8	2756.3	-17.79	110.15

DIFFERENTIAL CORRECTIONS
TDE .4194 TRA .4882 TC3-5.4891 BAU .6675
RDE .1552 RRA .0055 RC3 .6237 FAU .62376
FDE 1.6909 FRA 9.5672 FC-59.7524 BSP 11993
BDE .4472 BRA .4882 BC3 5.5244 FSP 12408

MID-COURSE EXECUTION ACCURACY
SGT 3556.9 SGR 477.7 SG3 3595.3
RRT -.5817 RRF -.6173 RTF .9669
SGB 3588.9 R23 .0590 R13 -.9674
SG1 3567.9 SG2 387.4 THA 175.48

ORBIT DETERMINATION ACCURACY
ST 865.8 SR 296.0 SS 1703.7
CRT .9226 CRS -.4589 CST -.7589
LSA 1845.9 MSA 575.9 SSA 28.8
EL1 908.5 EL2 108.8 ALF 17.77

LAUNCH DATE NOV 9 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 701.621 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.842 GAL -2.06 AZL 88.27 HCA 215.02 SMA 186.17 ECC .20718 INC 1.7254 V1 30.072
RP 220.18 LAP -.99 LOP 261.64 VP 22.195 GAP -5.70 AZP 91.41 TAL 347.93 TAP 202.96 RCA 147.60 APO 224.74 V2 24.965
RC 271.430 GL 19.17 GP 1.19 ZAL 104.83 ZAP 89.33 ETS 179.04 ZAE 122.89 ETE 177.26 ZAC 86.95 ETC 257.07 CLP 89.33

PLANETOCENTRIC CONIC

C3 9.060 VHL 3.010 DLA 28.40 RAL 162.03 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.786 DPA 6.10 RAP 172.84 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.76	12 36 40	3425.23	-23.45	126.49	18.69	73.51	13 33 45	2825.2	-25.49	118.41
92.24	13 14 3	3304.08	-23.44	117.62	18.68	73.50	14 9 7	2704.1	-25.48	109.54
100.00	15 35 56	2846.82	-28.65	85.27	19.99	81.09	16 23 23	2246.8	-29.59	76.59
100.00	12 57 28	3357.72	-18.44	119.58	16.71	66.05	13 53 26	2757.7	-21.52	112.14
110.00	17 53 31	2416.14	-34.18	53.13	20.54	89.29	18 33 47	1816.1	-33.90	43.89
110.00	12 56 22	3361.17	-13.54	117.15	14.02	58.31	13 52 23	2761.2	-17.63	110.43

DIFFERENTIAL CORRECTIONS
TDE .4320 TRA .5806 TC3-6.0009 BAU .7308
RDE .1605 RRA .0075 RC3 .6254 FAU .62191
FDE 1.6016 FRA 9.6015 FC-59.4292 BSP 13271
BDE .4608 BRA .5806 BC3 6.0334 FSP 12320

MID-COURSE EXECUTION ACCURACY
SGT 3912.1 SGR 485.2 SG3 3584.2
RRT -.5734 RRF -.6061 RTF .9726
SGB 3942.0 R23 .0520 R13 -.9731
SG1 3922.1 SG2 396.5 THA 175.89

ORBIT DETERMINATION ACCURACY
ST 911.0 SR 305.8 SS 1690.1
CRT .9041 CRS -.4424 CST -.7774
LSA 1854.9 MSA 581.6 SSA 29.1
EL1 952.8 EL2 124.9 ALF 17.19

LAUNCH DATE NOV 9 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 705.690 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.841 GAL -2.10 AZL 88.27 HCA 216.14 SMA 186.16 ECC .20721 INC 1.7305 V1 30.072
RP 219.81 LAP -1.02 LOP 262.76 VP 22.240 GAP -5.91 AZP 91.40 TAL 347.74 TAP 203.88 RCA 147.58 APO 224.73 V2 25.006
RC 272.833 GL 19.20 GP 1.15 ZAL 105.19 ZAP 87.34 ETS 179.10 ZAE 120.67 ETE 177.42 ZAC 86.74 ETC 257.16 CLP 87.34

PLANETOCENTRIC CONIC

C3 9.086 VHL 3.014 DLA 28.28 RAL 162.41 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.795 DPA 6.42 RAP 172.03 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 46	3323.46	-24.15	119.26	19.33	74.74	14 5 10	2723.5	-26.01	111.09
90.00	12 44 1	3406.96	-22.54	124.85	18.81	72.39	13 40 48	2807.0	-24.74	116.87
100.00	15 40 33	2837.25	-28.75	84.58	20.41	81.44	16 27 50	2237.3	-29.64	75.89
100.00	12 55 56	3368.41	-18.14	120.24	17.03	65.83	13 52 4	2768.4	-21.26	112.83
110.00	17 56 33	2411.58	-34.18	52.77	20.92	89.50	18 36 44	1811.6	-33.87	43.54
110.00	12 56 25	3366.84	-13.33	117.47	14.37	58.23	13 52 32	2766.8	-17.44	110.76

DIFFERENTIAL CORRECTIONS
TDE .4434 TRA .6756 TC3-6.5056 BAU .7939
RDE .1658 RRA .0095 RC3 .6262 FAU .61815
FDE 1.5208 FRA 9.6342 FC-58.9002 BSP 14551
BDE .4734 BRA .6757 BC3 6.5356 FSP 12236

MID-COURSE EXECUTION ACCURACY
SGT 4268.3 SGR 492.2 SG3 3564.0
RRT -.5639 RRF -.5942 RTF .9770
SGB 4296.6 R23 .0463 R13 -.9773
SG1 4277.4 SG2 405.6 THA 176.25

ORBIT DETERMINATION ACCURACY
ST 956.9 SR 315.4 SS 1679.9
CRT .8846 CRS -.4272 CST -.7947
LSA 1869.1 MSA 585.6 SSA 29.4
EL1 997.6 EL2 141.1 ALF 16.60

LAUNCH DATE NOV 9 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 709.766 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.841 GAL -2.13 AZL 88.26 HCA 217.27 SMA 186.15 ECC .20728 INC 1.7351 V1 30.072
RP 219.44 LAP -1.05 LOP 263.89 VP 22.285 GAP -6.11 AZP 91.38 TAL 347.53 TAP 204.80 RCA 147.56 APO 224.73 V2 25.047
RC 274.220 GL 19.22 GP 1.12 ZAL 105.57 ZAP 85.37 ETS 179.17 ZAE 118.46 ETE 177.57 ZAC 86.53 ETC 257.25 CLP 85.37

PLANETOCENTRIC CONIC

C3 9.116 VHL 3.019 DLA 28.14 RAL 162.82 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.806 DPA 6.74 RAP 171.24 ECC 1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 7	3276.33	-24.95	116.04	20.01	76.16	14 20 43	2676.3	-26.61	107.77
90.00	12 30 57	3455.38	-21.51	128.03	18.91	71.12	13 28 32	2855.4	-23.89	120.16
100.00	15 45 35	2826.71	-28.86	83.81	20.86	81.84	16 32 41	2226.7	-29.68	75.11
100.00	12 54 10	3380.24	-17.81	120.96	17.36	65.59	13 50 30	2780.2	-20.96	113.58
110.00	17 59 51	2406.41	-34.18	52.37	21.32	89.74	18 39 58	1806.4	-33.84	43.14
110.00	12 56 23	3373.30	-13.10	117.82	14.74	58.14	13 52 36	2773.3	-17.22	111.13

DIFFERENTIAL CORRECTIONS
TDE .4523 TRA .7723 TC3-7.0080 BAU .8575
RDE .1712 RRA .0116 RC3 .6262 FAU .61293
FDE 1.4286 FRA 9.6518 FC-58.2082 BSP 15818
BDE .4836 BRA .7724 BC3 7.0359 FSP 12112

MID-COURSE EXECUTION ACCURACY
SGT 4626.8 SGR 499.1 SG3 3535.3
RRT -.5542 RRF -.5823 RTF .9803
SGB 4653.7 R23 .0415 R13 -.9806
SG1 4635.2 SG2 414.7 THA 176.55

ORBIT DETERMINATION ACCURACY
ST 1000.8 SR 325.1 SS 1667.4
CRT .8640 CRS -.4094 CST -.8090
LSA 1881.2 MSA 589.5 SSA 29.7
EL1 1040.4 EL2 157.4 ALF 16.05

LAUNCH DATE NOV 9 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 713.850 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.840 GAL -2.17 AZL 88.26 HCA 218.40 SMA 186.14 ECC .20737 INC 1.7396 V1 30.072
RP 219.07 LAP -1.08 LOP 265.02 VP 22.330 GAP -6.31 AZP 91.36 TAL 347.30 TAP 205.70 RCA 147.54 APO 224.74 V2 25.088
RC 275.589 GL 19.23 GP 1.09 ZAL 105.98 ZAP 83.43 ETS 179.22 ZAE 116.27 ETE 177.71 ZAC 86.33 ETC 257.34 CLP 83.43

PLANETOCENTRIC CONIC

C3 9.151 VHL 3.025 DLA 27.99 RAL 163.25 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.821 DPA 7.04 RAP 170.48 ECC 1.1506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 5	3243.71	-25.47	113.79	20.62	77.18	14 32 8	2643.7	-26.98	105.45
90.00	12 22 25	3489.47	-20.74	130.23	19.12	70.28	13 20 35	2889.5	-23.24	122.45
100.00	15 50 58	2815.33	-28.96	82.98	21.34	82.26	16 37 53	2215.3	-29.73	74.26
100.00	12 52 14	3393.09	-17.45	121.74	17.70	65.34	13 48 47	2793.1	-20.63	114.39
110.00	18 3 27	2400.66	-34.18	51.92	21.75	90.01	18 43 28	1800.7	-33.80	42.69
110.00	12 56 14	3380.52	-12.84	118.22	15.13	58.05	13 52 34	2780.5	-16.97	111.55

DIFFERENTIAL CORRECTIONS
TDE .4598 TRA .8716 TC3-7.4983 BAU .9205
RDE .1765 RRA .0137 RC3 .6254 FAU .60638
FDE 1.3291 FRA 9.6558 FC-57.3677 BSP 17083
BDE .4925 BRA .8717 BC3 7.5243 FSP 11966

MID-COURSE EXECUTION ACCURACY
SGT 4983.4 SGR 505.7 SG3 3498.9
RRT -.5437 RRF -.5703 RTF .9830
SGB 5009.0 R23 .0382 R13 -.9831
SG1 4991.0 SG2 423.8 THA 176.82

ORBIT DETERMINATION ACCURACY
ST 1044.8 SR 334.6 SS 1653.6
CRT .8426 CRS -.3897 CST -.8209
LSA 1893.2 MSA 594.1 SSA 29.9
EL1 1083.2 EL2 173.8 ALF 15.51

LAUNCH DATE NOV 9 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 717.942 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.840 GAL -2.21 AZL 88.26 HCA 219.53 SMA 186.14 ECC .20749 INC 1.7439 V1 30.072
RP 218.70 LAP -1.11 LOP 266.15 VP 22.376 GAP -6.51 AZP 91.35 TAL 347.06 TAP 206.59 RCA 147.52 APO 224.76 V2 25.128
RC 276.940 GL 19.23 GP 1.06 ZAL 106.41 ZAP 81.52 ETS 179.28 ZAE 114.11 ETE 177.84 ZAC 86.14 ETC 257.42 CLP 81.51

PLANETOCENTRIC CONIC

C3 9.190 VHL 3.032 DLA 27.82 RAL 163.71 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.839 DPA 7.33 RAP 169.75 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 42	3215.76	-25.87	111.85	21.22	78.07	14 42 18	2615.8	-27.26	103.45
90.00	12 15 25	3519.08	-20.05	132.13	19.39	69.57	13 14 4	2919.1	-22.65	124.42
100.00	15 56 40	2803.22	-29.07	82.10	21.83	82.71	16 43 24	2203.2	-29.77	73.37
100.00	12 50 8	3406.86	-17.06	122.58	18.07	65.07	13 46 55	2806.9	-20.27	115.26
110.00	18 7 19	2394.36	-34.18	51.42	22.20	90.30	18 47 13	1794.4	-33.76	42.21
110.00	12 55 59	3388.48	-12.55	118.66	15.55	57.94	13 52 28	2788.5	-16.70	112.00

DIFFERENTIAL CORRECTIONS
TDE .4654 TRA .9732 TC3-7.9780 BAU .9832
RDE .1819 RRA .0158 RC3 .6238 FAU .59840
FDE 1.2223 FRA 9.6513 FC-56.3706 BSP 18338
BDE .4996 BRA .9733 BC3 8.0024 FSP 11795

MID-COURSE EXECUTION ACCURACY
SGT 5338.2 SGR 512.2 SG3 3454.7
RRT -.5327 RRF -.5582 RTF .9850
SGB 5362.7 R23 .0355 R13 -.9851
SG1 5345.2 SG2 432.9 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 1088.1 SR 344.1 SS 1639.4
CRT .8201 CRS -.3676 CST -.8307
LSA 1905.2 MSA 599.3 SSA 30.1
EL1 1125.2 EL2 190.4 ALF 14.98

LAUNCH DATE NOV 9 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 722.041 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.841	GAL	-2.26	AZL	88.25	HCA	220.66	SMA	186.14	ECC	.20764	INC	1.7481	V1	30.072
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.421	GAP	-6.70	AZP	91.33	TAL	346.81	TAP	207.47	RCA	147.49	APO	224.79	V2	25.168
RC	278.273	GL	19.23	GP	1.03	ZAL	106.87	ZAP	79.63	ETS	179.33	ZAE	111.98	ETE	177.96	ZAC	85.96	ETC	257.51	CLP	79.63

PLANETOCENTRIC CONIC

C3	9.234	VHL	3.039	DLA	27.63	RAL	164.18	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	2.860	DPA	7.61	RAP	169.04	ECC	1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 40	3190.22	-26.22	110.06	21.83	78.91	14 51 51	2590.2	-27.49	101.62
90.00	12 9 15	3546.47	-19.39	133.87	19.69	68.95	13 8 21	2946.5	-22.08	126.23
100.00	16 2 41	2790.47	-29.18	81.17	22.35	83.19	16 49 11	2190.5	-29.81	72.42
100.00	12 47 56	3421.45	-16.63	123.46	18.46	64.80	13 44 57	2821.5	-19.89	116.18
110.00	18 11 26	2387.53	-34.18	50.89	22.67	90.61	18 51 14	1787.5	-33.72	41.68
110.00	12 55 40	3397.16	-12.24	119.14	15.98	57.83	13 52 17	2797.2	-16.40	112.50

DIFFERENTIAL CORRECTIONS

TDE	.4688	TRA	1.0773	TC3	-8.4440	BAU	1.0452
RDE	.1873	RRA	.0180	RC3	.6215	FAU	.58928
FDE	1.1140	FRA	9.6329	FC	-55.2482	BSP	19583
BDE	.5048	BRA	1.0774	BC3	8.4668	FSP	11622

MID-COURSE EXECUTION ACCURACY

SGT	5689.8	SGR	518.5	SG3	3403.9		
RRT	-.5214	RRF	-.5461	RTF	.9867		
SGB	5713.3	R23	.0334	R13	-.9868		
SG1	5696.2	SG2	441.9	THA	177.26		

ORBIT DETERMINATION ACCURACY

ST	1130.6	SR	353.5	SS	1625.0
CRT	.7965	CRS	-.3446	CST	-.8395
LSA	1917.8	MSA	604.0	SSA	30.2
EL1	1166.3	EL2	207.2	ALF	14.45

LAUNCH DATE NOV 9 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 726.148 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.841	GAL	-2.30	AZL	88.25	HCA	221.80	SMA	186.15	ECC	.20782	INC	1.7519	V1	30.072
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.466	GAP	-6.89	AZP	91.31	TAL	346.54	TAP	208.35	RCA	147.46	APO	224.83	V2	25.208
RC	279.589	GL	19.22	GP	1.00	ZAL	107.35	ZAP	77.78	ETS	179.38	ZAE	109.87	ETE	178.07	ZAC	85.79	ETC	257.59	CLP	77.77

PLANETOCENTRIC CONIC

C3	9.283	VHL	3.047	DLA	27.43	RAL	164.68	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	2.884	DPA	7.87	RAP	168.37	ECC	1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 16	3166.21	-26.52	108.36	22.44	79.70	15 1 2	2566.2	-27.68	99.89
90.00	12 3 37	3572.53	-18.74	135.51	20.03	68.38	13 3 10	2972.5	-21.51	127.93
100.00	16 8 57	2777.18	-29.28	80.19	22.90	83.70	16 55 14	2177.2	-29.84	71.43
100.00	12 45 37	3436.79	-16.19	124.38	18.86	64.52	13 42 54	2836.8	-19.49	117.13
110.00	18 15 48	2380.20	-34.17	50.32	23.16	90.95	18 55 28	1780.2	-33.66	41.11
110.00	12 55 15	3406.53	-11.90	119.65	16.43	57.72	13 52 2	2806.5	-16.08	113.03

DIFFERENTIAL CORRECTIONS

TDE	.4688	TRA	1.1832	TC3	-8.8975	BAU	1.1069
RDE	.1927	RRA	.0203	RC3	.6187	FAU	.57924
FDE	.9913	FRA	9.5967	FC	-54.0208	BSP	20790
BDE	.5069	BRA	1.1833	BC3	8.9190	FSP	11403

MID-COURSE EXECUTION ACCURACY

SGT	6037.9	SGR	524.7	SG3	3346.8		
RRT	-.5103	RRF	-.5343	RTF	.9880		
SGB	6060.6	R23	.0318	R13	-.9881		
SG1	6043.9	SG2	450.8	THA	177.45		

ORBIT DETERMINATION ACCURACY

ST	1170.2	SR	362.8	SS	1608.0
CRT	.7711	CRS	-.3173	CST	-.8462
LSA	1927.2	MSA	609.7	SSA	30.3
EL1	1204.4	EL2	224.4	ALF	13.94

LAUNCH DATE NOV 9 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 730.262 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.842	GAL	-2.35	AZL	88.24	HCA	222.95	SMA	186.16	ECC	.20803	INC	1.7557	V1	30.072
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.512	GAP	-7.07	AZP	91.29	TAL	346.26	TAP	209.21	RCA	147.43	APO	224.89	V2	25.248
RC	280.887	GL	19.21	GP	.97	ZAL	107.86	ZAP	75.96	ETS	179.42	ZAE	107.80	ETE	178.18	ZAC	85.63	ETC	257.67	CLP	75.95

PLANETOCENTRIC CONIC

C3	9.337	VHL	3.056	DLA	27.20	RAL	165.20	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	2.910	DPA	8.12	RAP	167.73	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 38	3143.22	-26.79	106.74	23.06	80.48	15 10 1	2543.2	-27.84	98.22
90.00	11 58 23	3597.77	-18.10	137.08	20.40	67.85	12 58 21	2997.8	-20.95	129.56
100.00	16 15 27	2763.43	-29.38	79.18	23.46	84.22	17 1 30	2163.4	-29.87	70.41
100.00	12 43 15	3452.79	-15.72	125.33	19.29	64.24	13 40 48	2852.8	-19.05	118.13
110.00	18 20 24	2372.41	-34.16	49.71	23.68	91.31	18 59 57	1772.4	-33.60	40.51
110.00	12 54 47	3416.58	-11.53	120.20	16.90	57.60	13 51 44	2816.6	-15.73	113.60

DIFFERENTIAL CORRECTIONS

TDE	.4670	TRA	1.2918	TC3	-9.3331	BAU	1.1675
RDE	.1982	RRA	.0226	RC3	.6153	FAU	.56822
FDE	.8710	FRA	9.5506	FC	-52.6878	BSP	21989
BDE	.5073	BRA	1.2920	BC3	9.3533	FSP	11176

MID-COURSE EXECUTION ACCURACY

SGT	6380.9	SGR	530.8	SG3	3284.2		
RRT	-.4989	RRF	-.5225	RTF	.9892		
SGB	6402.9	R23	.0305	R13	-.9893		
SG1	6386.4	SG2	459.6	THA	177.61		

ORBIT DETERMINATION ACCURACY

ST	1209.8	SR	372.0	SS	1592.0
CRT	.7446	CRS	-.2896	CST	-.8526
LSA	1938.4	MSA	614.9	SSA	30.3
EL1	1242.4	EL2	241.8	ALF	13.41

LAUNCH DATE NOV 9 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 734.382 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.843	GAL	-2.41	AZL	88.24	HCA	224.09	SMA	186.18	ECC	.20827	INC	1.7593	V1	30.072
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.557	GAP	-7.25	AZP	91.26	TAL	345.96	TAP	210.06	RCA	147.40	APO	224.95	V2	25.287
RC	282.167	GL	19.19	GP	.94	ZAL	108.39	ZAP	74.17	ETS	179.47	ZAE	105.76	ETE	178.28	ZAC	85.47	ETC	257.75	CLP	74.17

PLANETOCENTRIC CONIC

C3	9.396	VHL	3.065	DLA	26.97	RAL	165.74	RAD	6567.3	VEL	11.436	PTH	1.98	VHP	2.939	DPA	8.35	RAP	167.13	ECC	1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 52	3120.99	-27.03	105.15	23.70	81.24	15 18 53	2521.0	-27.97	96.61
90.00	11 53 27	3622.47	-17.46	138.61	20.80	67.35	12 53 50	3022.5	-20.38	131.15
100.00	16 22 10	2749.27	-29.47	78.14	24.04	84.76	17 8 0	2149.3	-29.89	69.36
100.00	12 40 50	3469.42	-15.22	126.32	19.74	63.96	13 38 39	2869.4	-18.60	119.15
110.00	18 25 14	2364.17	-34.15	49.07	24.21	91.69	19 4 39	1764.2	-33.53	39.88
110.00	12 54 15	3427.29	-11.14	120.78	17.39	57.47	13 51 22	2827.3	-15.35	114.21

DIFFERENTIAL CORRECTIONS

TDE	.4624	TRA	1.4026	TC3	-9.7504	BAU	1.2272
RDE	.2036	RRA	.0249	RC3	.6113	FAU	.55631
FDE	.7453	FRA	9.4968	FC	-51.2576	BSP	23167
BDE	.5053	BRA	1.4028	BC3	9.7695	FSP	10939

MID-COURSE EXECUTION ACCURACY

SGT	6717.9	SGR	536.7	SG3	3216.7		
RRT	-.4875	RRF	-.5108	RTF	.9901		
SGB	6739.3	R23	.0296	R13	-.9902		
SG1	6723.0	SG2	468.2	THA	177.76		

ORBIT DETERMINATION ACCURACY

ST	1248.2	SR	381.1	SS	1576.4
CRT	.7164	CRS	-.2592	CST	-.8578
LSA	1949.8	MSA	621.0	SSA	30.3
EL1	1279.0	EL2	239.5	ALF	12.88

LAUNCH DATE NOV 9 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 738.510 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.844 GAL -2.46 AZL 88.24 HCA 225.24 SMA 186.19 ECC .20854 INC 1.7628 V1 30.072
RP 216.91 LAP -1.25 LOP 271.86 VP 22.603 GAP -7.43 AZP 91.24 TAL 345.65 TAP 210.90 RCA 147.37 APO 225.02 V2 25.327
RC 283.431 GL 19.16 GP .91 ZAL 108.95 ZAP 72.43 ETS 179.51 ZAE 103.76 ETE 178.38 ZAC 85.33 ETC 257.82 CLP 72.42

PLANETOCENTRIC CONIC

C3 9.461 VHL 3.076 DLA 26.71 RAL 166.30 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.971 DPA 8.56 RAP 166.57 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 0	3099.34	-27.25	103.60	24.35	81.98	15 27 39	2499.3	-28.08	95.04
90.00	11 48 46	3646.81	-16.81	140.11	21.22	66.88	12 49 33	3046.8	-19.80	132.70
100.00	16 29 5	2734.77	-29.56	77.07	24.64	85.32	17 14 40	2134.8	-29.89	68.28
100.00	12 38 22	3486.61	-14.71	127.33	20.21	63.68	13 36 29	2886.6	-18.12	120.21
110.00	18 30 17	2355.51	-34.13	48.39	24.77	92.09	19 9 33	1755.5	-33.46	39.21
110.00	12 53 39	3438.64	-10.73	121.40	17.91	57.35	13 50 58	2838.6	-14.96	114.85

DIFFERENTIAL CORRECTIONS
TDE .4545 TRA 1.5156 TC-10.1499 BAU 1.2861
RDE .2091 RRA .0272 RC3 .6069 FAU .54365
FDE .6165 FRA 9.4280 FC-49.7476 BSP 24310
BDE .5003 BRA 1.5159 BC310.1680 FSP 10678

MID-COURSE EXECUTION ACCURACY
SGT 7049.3 SGR 542.6 SG3 3144.3
RRT -.4763 RRF -.4994 RTF .9909
SGB 7070.1 R23 .0288 R13 -.9909
SG1 7054.0 SG2 476.7 THA 177.89

ORBIT DETERMINATION ACCURACY
ST 1284.9 SR 390.1 SS 1560.5
CRT .6861 CRS -.2267 CST -.8625
LSA 1960.8 MSA 626.7 SSA 30.2
EL1 1313.8 EL2 277.6 ALF 12.33

LAUNCH DATE NOV 9 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 742.644 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.845 GAL -2.52 AZL 88.23 HCA 226.40 SMA 186.22 ECC .20884 INC 1.7661 V1 30.072
RP 216.57 LAP -1.28 LOP 273.02 VP 22.648 GAP -7.61 AZP 91.22 TAL 345.33 TAP 211.73 RCA 147.33 APO 225.11 V2 25.365
RC 284.679 GL 19.12 GP .89 ZAL 109.54 ZAP 70.72 ETS 179.54 ZAE 101.79 ETE 178.47 ZAC 85.19 ETC 257.89 CLP 70.72

PLANETOCENTRIC CONIC

C3 9.532 VHL 3.087 DLA 26.44 RAL 166.87 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.006 DPA 8.76 RAP 166.05 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 4	3078.15	-27.44	102.08	25.02	82.72	15 36 22	2478.1	-28.16	93.49
90.00	11 44 18	3670.92	-16.16	141.58	21.67	66.43	12 45 29	3070.9	-19.22	134.23
100.00	16 36 10	2719.97	-29.63	75.98	25.27	85.89	17 21 30	2120.0	-29.89	67.18
100.00	12 35 53	3504.33	-14.17	128.37	20.70	63.40	13 34 18	2904.3	-17.63	121.29
110.00	18 35 33	2346.47	-34.10	47.69	25.34	92.51	19 14 39	1746.5	-33.38	38.52
110.00	12 53 0	3450.60	-10.29	122.04	18.44	57.22	13 50 31	2850.6	-14.53	115.52

DIFFERENTIAL CORRECTIONS
TDE .4440 TRA 1.6315 TC-10.5273 BAU 1.3437
RDE .2147 RRA .0296 RC3 .6020 FAU .53035
FDE .4874 FRA 9.3514 FC-48.1710 BSP 29445
BDE .4931 BRA 1.6318 BC310.5445 FSP 10420

MID-COURSE EXECUTION ACCURACY
SGT 7373.4 SGR 548.3 SG3 3068.3
RRT -.4652 RRF -.4883 RTF .9915
SGB 7393.7 R23 .0283 R13 -.9916
SG1 7377.8 SG2 485.1 THA 178.01

ORBIT DETERMINATION ACCURACY
ST 1321.4 SR 399.0 SS 1545.7
CRT .6539 CRS -.1926 CST -.8669
LSA 1973.2 MSA 632.6 SSA 30.1
EL1 1348.2 EL2 295.8 ALF 11.74

LAUNCH DATE NOV 9 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 746.782 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.847 GAL -2.58 AZL 88.23 HCA 227.55 SMA 186.24 ECC .20917 INC 1.7694 V1 30.072
RP 216.22 LAP -1.31 LOP 274.17 VP 22.694 GAP -7.78 AZP 91.19 TAL 344.99 TAP 212.54 RCA 147.29 APO 225.20 V2 25.404
RC 285.910 GL 19.08 GP .86 ZAL 110.14 ZAP 69.06 ETS 179.58 ZAE 99.87 ETE 178.55 ZAC 85.07 ETC 257.96 CLP 69.05

PLANETOCENTRIC CONIC

C3 9.609 VHL 3.100 DLA 26.15 RAL 167.47 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.043 DPA 8.93 RAP 165.57 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 8	3057.26	-27.61	100.58	25.70	83.46	15 45 6	2457.3	-28.23	91.97
90.00	11 40 1	3694.97	-15.50	143.03	22.15	66.00	12 41 36	3095.0	-18.62	135.74
100.00	16 43 27	2704.87	-29.70	74.86	25.91	86.47	17 28 32	2104.9	-29.88	66.06
100.00	12 33 23	3522.60	-13.61	129.44	21.22	63.13	13 32 6	2922.6	-17.11	122.40
110.00	18 41 1	2337.03	-34.07	46.95	25.94	92.94	19 19 58	1737.0	-33.29	37.80
110.00	12 52 19	3463.20	-9.82	122.72	19.00	57.09	13 50 2	2863.2	-14.09	116.22

DIFFERENTIAL CORRECTIONS
TDE .4437 TRA 1.7643 TC-10.8343 BAU 1.3938
RDE .2196 RRA .0314 RC3 .5943 FAU .51210
FDE .4518 FRA 9.3582 FC-46.1399 BSP 26867
BDE .4951 BRA 1.7646 BC310.8506 FSP 10328

MID-COURSE EXECUTION ACCURACY
SGT 7680.3 SGR 552.0 SG3 2980.8
RRT -.4497 RRF -.4702 RTF .9919
SGB 7700.1 R23 .0249 R13 -.9920
SG1 7684.3 SG2 492.8 THA 178.14

ORBIT DETERMINATION ACCURACY
ST 1378.8 SR 406.6 SS 1552.1
CRT .6276 CRS -.1840 CST -.8794
LSA 2020.0 MSA 628.0 SSA 30.2
EL1 1403.5 EL2 311.0 ALF 11.03

LAUNCH DATE NOV 9 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 750.931 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.848 GAL -2.64 AZL 88.23 HCA 228.72 SMA 186.27 ECC .20953 INC 1.7725 V1 30.072
RP 215.88 LAP -1.33 LOP 275.33 VP 22.739 GAP -7.95 AZP 91.17 TAL 344.63 TAP 213.35 RCA 147.24 APO 225.30 V2 25.442
RC 287.127 GL 19.03 GP .84 ZAL 110.77 ZAP 67.43 ETS 179.61 ZAE 97.98 ETE 178.63 ZAC 84.95 ETC 258.02 CLP 67.43

PLANETOCENTRIC CONIC

C3 9.692 VHL 3.113 DLA 25.85 RAL 168.08 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.082 DPA 9.10 RAP 165.12 ECC 1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 9	3036.81	-27.76	99.10	26.39	84.19	15 53 45	2436.8	-28.28	90.47
90.00	11 35 54	3718.83	-14.84	144.47	22.66	65.60	12 37 53	3118.8	-18.01	137.23
100.00	16 50 50	2689.64	-29.76	73.73	26.57	87.06	17 35 39	2089.6	-29.85	64.93
100.00	12 30 54	3541.23	-13.03	130.52	21.76	62.86	13 29 55	2941.2	-16.57	123.52
110.00	18 46 38	2327.31	-34.04	46.19	26.55	93.39	19 25 25	1727.3	-33.19	37.06
110.00	12 51 35	3476.33	-9.33	123.43	19.58	56.97	13 49 31	2876.3	-13.62	116.95

DIFFERENTIAL CORRECTIONS
TDE .4214 TRA 1.8791 TC-11.1885 BAU 1.4518
RDE .2255 RRA .0340 RC3 .5899 FAU .49991
FDE .2779 FRA 9.2214 FC-44.6537 BSP 27802
BDE .4780 BRA 1.8794 BC311.2041 FSP 9960

MID-COURSE EXECUTION ACCURACY
SGT 7993.7 SGR 558.5 SG3 2902.9
RRT -.4411 RRF -.4629 RTF .9924
SGB 8013.2 R23 .0261 R13 -.9925
SG1 7997.5 SG2 501.0 THA 178.23

ORBIT DETERMINATION ACCURACY
ST 1405.1 SR 415.7 SS 1529.0
CRT .5884 CRS -.1346 CST -.8792
LSA 2018.9 MSA 638.7 SSA 29.9
EL1 1427.5 EL2 330.8 ALF 10.44

LAUNCH DATE NOV 9 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 755.085 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.850 GAL -2.71 AZL 88.22 HCA 229.88 SMA 186.31 ECC .20992 INC 1.7755 V1 30.072
RP 215.54 LAP -1.36 LOP 276.50 VP 22.784 GAP -8.12 AZP 91.14 TAL 344.26 TAP 214.15 RCA 147.20 APO 225.42 V2 25.480
RC 288.329 GL 18.97 GP .81 ZAL 111.42 ZAP 65.84 ETS 179.64 ZAE 96.13 ETE 178.71 ZAC 84.85 ETC 258.07 CLP 65.84

PLANETOCENTRIC CONIC
C3 9.782 VHL 3.128 DLA 25.52 RAL 168.72 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.124 DPA 9.24 RAP 164.72 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 8	3016.63	-27.89	97.64	27.10	84.91	16 2 25	2416.6	-28.31	89.00
90.00	11 31 56	3742.68	-14.16	145.89	23.19	65.22	12 34 19	3142.7	-17.39	138.70
100.00	16 58 21	2674.23	-29.81	72.59	27.24	87.66	17 42 55	2074.2	-29.82	63.78
100.00	12 28 25	3560.30	-12.44	131.63	22.32	62.60	13 27 45	2960.3	-16.01	124.66
110.00	18 52 26	2317.27	-33.99	45.41	27.18	93.85	19 31 3	1717.3	-33.09	36.29
110.00	12 50 49	3490.03	-8.83	124.16	20.17	56.84	13 48 59	2890.0	-13.13	117.71

DIFFERENTIAL CORRECTIONS
TDE .3974 TRA 1.9987 TC-11.5151 BAU 1.5079
RDE .2313 RRA .0365 RC3 .5848 FAU .48668
FDE .1244 FRA 9.0958 FC-43.0711 BSP 28750
BDE .4598 BRA 1.9990 BC311.5299 FSP 9621

MID-COURSE EXECUTION ACCURACY
SGT 8299.2 SGR 564.6 SG3 2822.1
RRT -.4322 RRF -.4549 RTF .9929
SGB 8318.4 R23 .0267 R13 -.9929
SG1 8302.8 SG2 508.9 THA 178.31

ORBIT DETERMINATION ACCURACY
ST 1434.7 SR 424.4 SS 1512.3
CRT .5472 CRS -.0887 CST -.8812
LSA 2026.5 MSA 646.5 SSA 29.6
EL1 1454.5 EL2 350.4 ALF 9.77

LAUNCH DATE NOV 9 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 759.246 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.852 GAL -2.78 AZL 88.22 HCA 231.05 SMA 186.34 ECC .21034 INC 1.7785 V1 30.072
RP 215.21 LAP -1.38 LOP 277.67 VP 22.829 GAP -8.28 AZP 91.12 TAL 343.88 TAP 214.93 RCA 147.15 APO 225.54 V2 25.517
RC 289.516 GL 18.91 GP .79 ZAL 112.10 ZAP 64.30 ETS 179.66 ZAE 94.32 ETE 178.78 ZAC 84.75 ETC 258.12 CLP 64.30

PLANETOCENTRIC CONIC
C3 9.880 VHL 3.143 DLA 25.19 RAL 169.36 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.168 DPA 9.37 RAP 164.37 ECC 1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 8	2996.68	-28.00	96.19	27.83	85.63	16 11 5	2396.7	-28.32	87.54
90.00	11 28 6	3766.55	-13.48	147.31	23.75	64.86	12 30 53	3166.6	-16.76	140.17
100.00	17 5 59	2658.67	-29.85	71.43	27.94	88.27	17 50 18	2058.7	-29.77	62.63
100.00	12 25 57	3579.80	-11.82	132.75	22.91	62.34	13 25 37	2979.8	-15.44	125.82
110.00	18 58 24	2306.95	-33.94	44.61	27.83	94.32	19 36 51	1707.0	-32.97	35.51
110.00	12 50 1	3504.28	-8.29	124.92	20.80	56.72	13 48 26	2904.3	-12.62	118.49

DIFFERENTIAL CORRECTIONS
TDE .3719 TRA 2.1231 TC-11.8100 BAU 1.5618
RDE .2370 RRA .0390 RC3 .5791 FAU .47257
FDE -.0144 FRA 8.9799 FC-41.4092 BSP 29723
BDE .4410 BRA 2.1235 BC311.8242 FSP 9308

MID-COURSE EXECUTION ACCURACY
SGT 8594.8 SGR 570.4 SG3 2738.8
RRT -.4231 RRF -.4463 RTF .9932
SGB 8613.7 R23 .0270 R13 -.9933
SG1 8598.2 SG2 516.6 THA 178.39

ORBIT DETERMINATION ACCURACY
ST 1468.1 SR 432.8 SS 1500.8
CRT .5047 CRS -.0455 CST -.8844
LSA 2041.6 MSA 652.6 SSA 29.3
EL1 1485.4 EL2 369.3 ALF 9.02

LAUNCH DATE NOV 9 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 763.412 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.855 GAL -2.85 AZL 88.22 HCA 232.22 SMA 186.39 ECC .21078 INC 1.7814 V1 30.072
RP 214.88 LAP -1.41 LOP 278.84 VP 22.873 GAP -8.44 AZP 91.09 TAL 343.48 TAP 215.71 RCA 147.10 APO 225.67 V2 25.554
RC 290.691 GL 18.83 GP .77 ZAL 112.80 ZAP 62.80 ETS 179.69 ZAE 92.55 ETE 178.85 ZAC 84.67 ETC 258.16 CLP 62.79

PLANETOCENTRIC CONIC
C3 9.985 VHL 3.160 DLA 24.84 RAL 170.03 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.214 DPA 9.48 RAP 164.05 ECC 1.1643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 9	2976.96	-28.10	94.75	28.56	86.34	16 19 45	2377.0	-28.31	86.10
90.00	11 24 24	3790.49	-12.78	148.72	24.33	64.52	12 27 34	3190.5	-16.11	141.63
100.00	17 13 44	2642.98	-29.87	70.27	28.65	88.88	17 57 47	2043.0	-29.71	61.47
100.00	12 23 30	3599.70	-11.19	133.89	23.51	62.10	13 23 29	2999.7	-14.84	127.00
110.00	19 4 31	2296.38	-33.88	43.79	28.50	94.80	19 42 47	1696.4	-32.85	34.71
110.00	12 49 12	3519.07	-7.74	125.71	21.44	56.60	13 47 51	2919.1	-12.08	119.30

DIFFERENTIAL CORRECTIONS
TDE .3441 TRA 2.2512 TC-12.0795 BAU 1.6143
RDE .2427 RRA .0413 RC3 .5731 FAU .45799
FDE -.1443 FRA 8.8606 FC-39.7092 BSP 30672
BDE .4211 BRA 2.2516 BC312.0930 FSP 9002

MID-COURSE EXECUTION ACCURACY
SGT 8882.4 SGR 576.0 SG3 2653.6
RRT -.4142 RRF -.4377 RTF .9935
SGB 8901.1 R23 .0272 R13 -.9936
SG1 8885.7 SG2 524.0 THA 178.46

ORBIT DETERMINATION ACCURACY
ST 1504.1 SR 441.0 SS 1491.5
CRT .4607 CRS -.0035 CST -.8883
LSA 2061.2 MSA 657.6 SSA 28.9
EL1 1518.8 EL2 387.6 ALF 8.23

LAUNCH DATE NOV 9 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 767.583 EARTH TO MARS
RL 148.16 LAL .00 LOL 46.63 VL 32.857 GAL -2.93 AZL 88.22 HCA 233.40 SMA 186.43 ECC .21127 INC 1.7842 V1 30.072
RP 214.56 LAP -1.43 LOP 280.02 VP 22.917 GAP -8.60 AZP 91.06 TAL 343.07 TAP 216.47 RCA 147.04 APO 225.81 V2 25.590
RC 291.851 GL 18.75 GP .74 ZAL 113.51 ZAP 61.34 ETS 179.71 ZAE 90.82 ETE 178.91 ZAC 84.59 ETC 258.20 CLP 61.33

PLANETOCENTRIC CONIC
C3 10.098 VHL 3.178 DLA 24.47 RAL 170.71 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.263 DPA 9.57 RAP 163.77 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 9	2957.44	-28.18	93.33	29.32	87.05	16 28 26	2357.4	-28.29	84.67
90.00	11 20 48	3814.50	-12.07	150.13	24.94	64.19	12 24 23	3214.5	-15.45	143.08
100.00	17 21 35	2627.21	-29.89	69.09	29.38	89.50	18 5 22	2027.2	-29.64	60.30
100.00	12 21 4	3619.97	-10.54	135.05	24.15	61.87	13 21 24	3020.0	-14.23	128.19
110.00	19 10 47	2285.57	-33.82	42.95	29.18	95.30	19 48 52	1685.6	-32.72	33.89
110.00	12 48 21	3534.38	-7.17	126.52	22.11	56.49	13 47 16	2934.4	-11.52	120.14

DIFFERENTIAL CORRECTIONS
TDE .3136 TRA 2.3834 TC-12.3188 BAU 1.6649
RDE .2485 RRA .0436 RC3 .5668 FAU .44309
FDE -.2680 FRA 8.7448 FC-37.9869 BSP 31631
BDE .4001 BRA 2.3838 BC312.3318 FSP 8709

MID-COURSE EXECUTION ACCURACY
SGT 9160.1 SGR 581.4 SG3 2567.7
RRT -.4054 RRF -.4292 RTF .9938
SGB 9178.5 R23 .0274 R13 -.9938
SG1 9163.1 SG2 531.3 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 1543.0 SR 449.0 SS 1485.5
CRT .4151 CRS .0379 CST -.8926
LSA 2085.7 MSA 661.8 SSA 28.6
EL1 1555.1 EL2 405.3 ALF 7.39

LAUNCH DATE NOV 9 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 771.760 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.860 GAL -3.01 AZL 88.21 HCA 234.58 SMA 186.47 ECC .21178 INC 1.7869 V1 30.072
RP 214.24 LAP -1.46 LOP 281.20 VP 22.961 GAP -8.76 AZP 91.04 TAL 342.64 TAP 217.22 RCA 146.98 APO 225.97 V2 25.626
RC 292.998 GL 18.67 GP .72 ZAL 114.25 ZAP 59.92 ETS 179.73 ZAE 89.12 ETE 178.97 ZAC 84.52 ETC 258.24 CLP 59.91

PLANETOCENTRIC CONIC

C3 10.220 VHL 3.197 DLA 24.08 RAL 171.40 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.313 DPA 9.64 RAP 163.54 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 10	2938.13	-28.24	91.92	30.09	87.75	16 37 8	2338.1	-28.25	83.26
90.00	11 17 20	3838.62	-11.35	151.54	25.57	63.88	12 21 18	3238.6	-14.77	144.53
100.00	17 29 31	2611.37	-29.89	67.92	30.12	90.12	18 13 2	2011.4	-29.56	59.13
100.00	12 18 40	3640.60	-9.88	136.22	24.80	61.64	13 19 21	3040.6	-13.59	129.40
110.00	19 17 10	2274.55	-33.75	42.10	29.89	95.80	19 55 5	1674.6	-32.58	33.06
110.00	12 47 30	3550.19	-6.57	127.36	22.79	56.38	13 46 40	2950.2	-10.95	121.00

DIFFERENTIAL CORRECTIONS
TDE .2793 TRA 2.5183 TC-12.5375 BAU 1.7147
RDE .2544 RRA .0459 RC3 .5604 FAU .42830
FDE -.3902 FRA 8.6227 FC-36.2817 BSP 32540
BDE .3778 BRA 2.5187 BC312.5501 FSP 8409

MID-COURSE EXECUTION ACCURACY
SGT 9431.4 SGR 586.8 SG3 2481.9
RRT -.3973 RRF -.4216 RTF .9940
SGB 9449.6 R23 .0276 R13 -.9940
SG1 9434.3 SG2 538.3 THA 178.58

ORBIT DETERMINATION ACCURACY
ST 1583.7 SR 456.8 SS 1481.0
CRT .3672 CRS .0800 CST -.8970
LSA 2113.4 MSA 665.5 SSA 28.2
EL1 1593.2 EL2 422.3 ALF 6.51

LAUNCH DATE NOV 9 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 775.942 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.863 GAL -3.09 AZL 88.21 HCA 235.76 SMA 186.52 ECC .21232 INC 1.7895 V1 30.072
RP 213.93 LAP -1.48 LOP 282.38 VP 23.005 GAP -8.91 AZP 91.01 TAL 342.20 TAP 217.96 RCA 146.92 APO 226.13 V2 25.662
RC 294.131 GL 18.57 GP .70 ZAL 115.01 ZAP 58.53 ETS 179.75 ZAE 87.47 ETE 179.03 ZAC 84.46 ETC 258.26 CLP 58.53

PLANETOCENTRIC CONIC

C3 10.351 VHL 3.217 DLA 23.69 RAL 172.11 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.366 DPA 9.70 RAP 163.35 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 11	2919.00	-28.28	90.52	30.87	88.45	16 45 50	2319.0	-28.19	81.86
90.00	11 13 57	3862.85	-10.62	152.95	26.23	63.60	12 18 20	3262.9	-14.09	145.98
100.00	17 37 31	2595.49	-29.88	66.74	30.88	90.74	18 20 47	1995.5	-29.46	57.96
100.00	12 16 18	3661.59	-9.20	137.40	25.48	61.43	13 17 19	3061.6	-12.94	130.62
110.00	19 23 41	2263.36	-33.67	41.24	30.61	96.30	20 1 24	1663.4	-32.43	32.22
110.00	12 46 37	3566.50	-5.96	128.22	23.50	56.28	13 46 4	2966.5	-10.35	121.88

DIFFERENTIAL CORRECTIONS
TDE .2422 TRA 2.6572 TC-12.7282 BAU 1.7630
RDE .2602 RRA .0481 RC3 .5538 FAU .41337
FDE -.5046 FRA 8.4994 FC-34.5746 BSP 33441
BDE .3555 BRA 2.6576 BC312.7403 FSP 8120

MID-COURSE EXECUTION ACCURACY
SGT 9693.5 SGR 592.0 SG3 2395.8
RRT -.3895 RRF -.4141 RTF .9942
SGB 9711.6 R23 .0279 R13 -.9942
SG1 9696.2 SG2 545.1 THA 178.63

ORBIT DETERMINATION ACCURACY
ST 1627.7 SR 464.4 SS 1478.3
CRT .3184 CRS .1205 CST -.9020
LSA 2145.7 MSA 667.9 SSA 27.8
EL1 1635.0 EL2 438.3 ALF 5.59

LAUNCH DATE NOV 9 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 780.130 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.866 GAL -3.18 AZL 88.21 HCA 236.95 SMA 186.58 ECC .21290 INC 1.7920 V1 30.072
RP 213.62 LAP -1.50 LOP 283.57 VP 23.048 GAP -9.07 AZP 90.98 TAL 341.74 TAP 218.69 RCA 146.85 APO 226.30 V2 25.697
RC 295.251 GL 18.47 GP .68 ZAL 115.79 ZAP 57.19 ETS 179.76 ZAE 85.85 ETE 179.08 ZAC 84.42 ETC 258.28 CLP 57.19

PLANETOCENTRIC CONIC

C3 10.491 VHL 3.239 DLA 23.27 RAL 172.83 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.420 DPA 9.74 RAP 163.20 ECC 1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 12	2900.07	-28.31	89.14	31.67	89.15	16 54 33	2300.1	-28.12	80.48
90.00	11 10 40	3887.22	-9.88	154.35	26.92	63.33	12 15 27	3287.2	-13.39	147.42
100.00	17 45 36	2579.60	-29.86	65.55	31.66	91.36	18 28 36	1979.6	-29.36	56.79
100.00	12 13 57	3682.92	-8.50	138.60	26.18	61.23	13 15 20	3082.9	-12.28	131.85
110.00	19 30 19	2252.01	-33.58	40.36	31.35	96.81	20 7 51	1652.0	-32.27	31.37
110.00	12 45 44	3583.28	-5.32	129.11	24.24	56.18	13 45 27	2983.3	-9.73	122.79

DIFFERENTIAL CORRECTIONS
TDE .2014 TRA 2.8000 TC-12.8943 BAU 1.8101
RDE .2662 RRA .0502 RC3 .5471 FAU .39859
FDE -.6149 FRA 8.3754 FC-32.8932 BSP 34316
BDE .3338 BRA 2.8004 BC312.9059 FSP 7833

MID-COURSE EXECUTION ACCURACY
SGT 9948.2 SGR 597.2 SG3 2310.8
RRT -.3823 RRF -.4073 RTF .9943
SGB 9966.1 R23 .0281 R13 -.9943
SG1 9950.9 SG2 551.7 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 1675.1 SR 471.9 SS 1477.7
CRT .2681 CRS .1605 CST -.9072
LSA 2182.6 MSA 669.3 SSA 27.4
EL1 1680.3 EL2 453.2 ALF 4.66

LAUNCH DATE NOV 9 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 784.322 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.869 GAL -3.26 AZL 88.21 HCA 238.14 SMA 186.63 ECC .21352 INC 1.7945 V1 30.072
RP 213.31 LAP -1.52 LOP 284.76 VP 23.091 GAP -9.22 AZP 90.95 TAL 341.27 TAP 219.41 RCA 146.78 APO 226.48 V2 25.731
RC 296.356 GL 18.36 GP .66 ZAL 116.59 ZAP 55.89 ETS 179.77 ZAE 84.28 ETE 179.14 ZAC 84.38 ETC 258.30 CLP 55.89

PLANETOCENTRIC CONIC

C3 10.641 VHL 3.262 DLA 22.84 RAL 173.56 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.477 DPA 9.77 RAP 163.09 ECC 1.1751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 14	2881.32	-28.32	87.77	32.48	89.83	17 3 15	2281.3	-28.04	79.11
90.00	11 7 29	3911.73	-9.13	155.76	27.63	63.08	12 12 40	3311.7	-12.67	148.87
100.00	17 53 45	2563.70	-29.83	64.37	32.46	91.98	18 36 28	1963.7	-29.24	55.62
100.00	12 11 39	3704.58	-7.79	139.82	26.91	61.05	13 13 24	3104.6	-11.59	133.10
110.00	19 37 3	2240.52	-33.48	39.48	32.11	97.33	20 14 23	1640.5	-32.11	30.52
110.00	12 44 51	3600.53	-4.67	130.01	24.99	56.10	13 44 51	3000.5	-9.09	123.71

DIFFERENTIAL CORRECTIONS
TDE .1588 TRA 2.9475 TC-13.0307 BAU 1.8553
RDE .2722 RRA .0522 RC3 .5401 FAU .38366
FDE -.7149 FRA 8.2522 FC-31.2136 BSP 35218
BDE .3151 BRA 2.9480 BC313.0419 FSP 7565

MID-COURSE EXECUTION ACCURACY
SGT10193.6 SGR 602.2 SG3 2225.8
RRT -.3753 RRF -.4004 RTF .9944
SGB10211.4 R23 .0282 R13 -.9944
SG110196.1 SG2 558.0 THA 178.73

ORBIT DETERMINATION ACCURACY
ST 1727.2 SR 479.2 SS 1478.2
CRT .2186 CRS .1977 CST -.9128
LSA 2224.6 MSA 669.4 SSA 27.0
EL1 1730.6 EL2 466.6 ALF 3.74

LAUNCH DATE NOV 9 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 788.519 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.872 GAL -3.36 AZL 88.20 HCA 239.33 SMA 186.69 ECC .21416 INC 1.7970 V1 30.072
RP 213.01 LAP -1.55 LOP 285.95 VP 23.134 GAP -9.37 AZP 90.92 TAL 340.78 TAP 220.11 RCA 146.71 APO 226.67 V2 25.765
RC 297.448 GL 18.25 GP .65 ZAL 117.41 ZAP 54.63 ETS 179.79 ZAE 82.73 ETE 179.19 ZAC 84.34 ETC 258.31 CLP 54.63

PLANETOCENTRIC CONIC

C3 10.802 VHL 3.287 DLA 22.40 RAL 174.30 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.535 DPA 9.78 RAP 163.01 ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 16	2862.78	-28.31	86.41	33.31	90.51	17 11 58	2262.8	-27.94	77.77
90.00	11 4 23	3936.38	-8.37	157.17	28.37	62.85	12 9 59	3336.4	-11.94	150.32
100.00	18 1 56	2547.83	-29.79	63.20	33.27	92.60	18 44 24	1947.8	-29.11	54.46
100.00	12 9 23	3726.56	-7.06	141.05	27.66	60.88	13 11 30	3126.6	-10.89	134.35
110.00	19 43 52	2228.94	-33.38	38.59	32.88	97.84	20 21 1	1628.9	-31.93	29.66
110.00	12 43 57	3618.22	-3.99	130.94	25.77	56.02	13 44 15	3018.2	-8.43	124.66

DIFFERENTIAL CORRECTIONS
TDE .1090 TRA 3.0952 TC-13.1556 BAU 1.9014
RDE .2784 RRA .0542 RC3 .5335 FAU .36955
FDE -.8231 FRA 8.1165 FC-29.6185 BSP 35990
BDE .2990 BRA 3.0957 BC313.1664 FSP 7276

MID-COURSE EXECUTION ACCURACY
SGT10434.4 SGR 607.4 SG3 2143.2
RRT -.3698 RRF -.3956 RTF .9945
SGB10452.1 R23 .0287 R13 -.9945
SG110436.9 SG2 564.2 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 1780.2 SR 486.4 SS 1480.1
CRT .1653 CRS .2384 CST -.9179
LSA 2268.8 MSA 669.6 SSA 26.6
EL1 1782.2 EL2 479.2 ALF 2.79

LAUNCH DATE NOV 9 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 792.720 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.876 GAL -3.45 AZL 88.20 HCA 240.53 SMA 186.75 ECC .21484 INC 1.7994 V1 30.072
RP 212.72 LAP -1.57 LOP 287.15 VP 23.176 GAP -9.52 AZP 90.89 TAL 340.28 TAP 220.81 RCA 146.63 APO 226.87 V2 25.798
RC 298.526 GL 18.12 GP .63 ZAL 118.24 ZAP 53.40 ETS 179.79 ZAE 81.23 ETE 179.23 ZAC 84.32 ETC 258.31 CLP 53.40

PLANETOCENTRIC CONIC

C3 10.974 VHL 3.313 DLA 21.95 RAL 175.06 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 3.595 DPA 9.78 RAP 162.98 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 17	2844.42	-28.29	85.07	34.16	91.19	17 20 42	2244.4	-27.83	76.43
90.00	11 1 22	3961.21	-7.59	158.58	29.13	62.64	12 7 23	3361.2	-11.20	151.76
100.00	18 10 11	2532.01	-29.73	62.02	34.09	93.22	18 52 23	1932.0	-28.97	53.30
100.00	12 7 10	3748.85	-6.32	142.29	28.44	60.72	13 9 39	3148.9	-10.18	135.62
110.00	19 50 47	2217.26	-33.27	37.70	33.67	98.36	20 27 44	1617.3	-31.75	28.80
110.00	12 43 3	3636.36	-3.30	131.89	26.57	55.96	13 43 39	3036.4	-7.75	125.63

DIFFERENTIAL CORRECTIONS
TDE .0584 TRA 3.2492 TC-13.2490 BAU 1.9453
RDE .2846 RRA .0560 RC3 .5266 FAU .35535
FDE -.9179 FRA 7.9845 FC-28.0335 BSP 36798
BDE .2906 BRA 3.2497 BC313.2595 FSP 7004

MID-COURSE EXECUTION ACCURACY
SGT10666.4 SGR 612.4 SG3 2061.2
RRT -.3643 RRF -.3906 RTF .9946
SGB10683.9 R23 .0292 R13 -.9946
SG110668.7 SG2 570.2 THA 178.80

ORBIT DETERMINATION ACCURACY
ST 1839.4 SR 493.4 SS 1482.7
CRT .1146 CRS .2749 CST -.9232
LSA 2319.0 MSA 668.4 SSA 26.1
EL1 1840.3 EL2 489.9 ALF 1.89

LAUNCH DATE NOV 9 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 796.925 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.879 GAL -3.55 AZL 88.20 HCA 241.73 SMA 186.81 ECC .21556 INC 1.8017 V1 30.072
RP 212.43 LAP -1.59 LOP 288.35 VP 23.218 GAP -9.66 AZP 90.85 TAL 339.76 TAP 221.49 RCA 146.54 APO 227.08 V2 25.831
RC 299.592 GL 17.99 GP .61 ZAL 119.09 ZAP 52.21 ETS 179.80 ZAE 79.76 ETE 179.28 ZAC 84.31 ETC 258.31 CLP 52.21

PLANETOCENTRIC CONIC

C3 11.158 VHL 3.340 DLA 21.48 RAL 175.82 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 3.657 DPA 9.76 RAP 162.98 ECC 1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 18	2826.26	-28.26	83.74	35.01	91.85	17 29 25	2226.3	-27.71	75.12
90.00	10 58 26	3986.20	-6.81	160.00	29.91	62.45	12 4 52	3386.2	-10.45	153.21
100.00	18 18 27	2516.24	-29.67	60.86	34.93	93.83	19 0 23	1916.2	-28.82	52.15
100.00	12 4 59	3771.45	-5.57	143.54	29.24	60.58	13 7 50	3171.5	-9.45	136.90
110.00	19 57 46	2205.53	-33.15	36.80	34.48	98.88	20 34 31	1605.5	-31.57	27.93
110.00	12 42 9	3654.92	-2.59	132.86	27.39	55.90	13 43 4	3054.9	-7.05	126.61

DIFFERENTIAL CORRECTIONS
TDE .0029 TRA 3.4061 TC-13.3216 BAU 1.9887
RDE .2910 RRA .0578 RC3 .5197 FAU .34145
FDE-1.0099 FRA 7.8521 FC-26.4930 BSP 37567
BDE .2910 BRA 3.4066 BC313.3317 FSP 6739

MID-COURSE EXECUTION ACCURACY
SGT10891.3 SGR 617.3 SG3 1981.1
RRT -.3597 RRF -.3863 RTF .9946
SGB10908.8 R23 .0295 R13 -.9946
SG110893.6 SG2 575.8 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 1902.3 SR 500.3 SS 1486.7
CRT .0629 CRS .3107 CST -.9286
LSA 2373.9 MSA 665.9 SSA 25.7
EL1 1902.6 EL2 499.2 ALF 1.02

LAUNCH DATE NOV 9 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 801.134 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.883 GAL -3.65 AZL 88.20 HCA 242.93 SMA 186.87 ECC .21632 INC 1.8040 V1 30.072
RP 212.15 LAP -1.61 LOP 289.55 VP 23.259 GAP -9.81 AZP 90.82 TAL 339.23 TAP 222.16 RCA 146.45 APO 227.30 V2 25.863
RC 300.645 GL 17.85 GP .59 ZAL 119.95 ZAP 51.06 ETS 179.81 ZAE 78.32 ETE 179.32 ZAC 84.30 ETC 258.30 CLP 51.05

PLANETOCENTRIC CONIC

C3 11.354 VHL 3.370 DLA 20.99 RAL 176.59 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 3.721 DPA 9.73 RAP 163.02 ECC 1.1869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 19	2808.31	-28.21	82.43	35.89	92.51	17 38 7	2208.3	-27.57	73.82
90.00	10 55 35	4011.37	-6.01	161.42	30.73	62.28	12 2 26	3411.4	-9.68	154.66
100.00	18 26 45	2500.56	-29.59	59.70	35.79	94.43	19 8 26	1900.6	-28.66	51.02
100.00	12 2 50	3794.35	-4.80	144.81	30.06	60.46	13 6 4	3194.3	-8.70	138.19
110.00	20 4 49	2193.77	-33.02	35.91	35.30	99.39	20 41 23	1593.8	-31.37	27.07
110.00	12 41 15	3673.91	-1.87	133.85	28.24	55.86	13 42 29	3073.9	-6.34	127.62

DIFFERENTIAL CORRECTIONS
TDE -.0550 TRA 3.5681 TC-13.3682 BAU 2.0307
RDE .2975 RRA .0595 RC3 .5127 FAU .32773
FDE-1.0963 FRA 7.7181 FC-24.9891 BSP 38319
BDE .3025 BRA 3.5686 BC313.3780 FSP 6478

MID-COURSE EXECUTION ACCURACY
SGT11108.6 SGR 622.1 SG3 1902.1
RRT -.3555 RRF -.3826 RTF .9946
SGB11126.0 R23 .0300 R13 -.9946
SG111110.8 SG2 581.3 THA 178.86

ORBIT DETERMINATION ACCURACY
ST 1970.4 SR 507.0 SS 1491.2
CRT .0133 CRS .3450 CST -.9336
LSA 2433.6 MSA 663.4 SSA 25.3
EL1 1970.4 EL2 506.9 ALF .21

LAUNCH DATE NOV 9 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 805.346 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.887 GAL -3.76 AZL 88.19 HCA 244.14 SMA 186.94 ECC .21711 INC 1.8063 V1 30.072
RP 211.87 LAP -1.63 LOP 290.76 VP 23.299 GAP -9.95 AZP 90.79 TAL 338.68 TAP 222.82 RCA 146.35 APO 227.53 V2 25.895
RC 301.687 GL 17.71 GP .58 ZAL 120.84 ZAP 49.94 ETS 179.81 ZAE 76.92 ETE 179.36 ZAC 84.30 ETC 258.29 CLP 49.93

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA 20.50 RAL 177.37 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 3.787 DPA 9.68 RAP 163.09 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 19	2790.58	-28.16	81.14	36.77	93.15	17 46 50	2190.6	-27.42	72.55
90.00	10 52 48	4036.71	-5.21	162.85	31.56	62.13	12 0 5	3436.7	-8.90	156.11
100.00	18 35 5	2484.98	-29.50	58.55	36.66	95.03	19 16 30	1885.0	-28.49	49.89
100.00	12 0 43	3817.53	-4.02	146.09	30.91	60.35	13 4 21	3217.5	-7.94	139.49
110.00	20 11 56	2181.99	-32.89	35.02	36.15	99.90	20 48 18	1582.0	-31.17	26.21
110.00	12 40 22	3693.29	-1.13	134.86	29.11	55.83	13 41 55	3093.3	-5.60	128.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1163 TRA 3.7347 TC-13.3919 BAU 2.0718 SGT11319.3 SGR 626.7 SG3 1825.3 ST 2043.3 SR 513.5 SS 1496.2
RDE .3041 RRA .0610 RC3 .5056 FAU .31438 RRT -.3518 RRF -.3795 RTF .9946 CRT -.0351 CRS .3775 CST -.9384
FDE-1.1772 FRA 7.5846 FC-23.5360 BSP 39061 SGB11336.6 R23 .0306 R13 -.9946 LSA 2498.2 MSA 660.0 SSA 24.8
BDE .3256 BRA 3.7352 BC313.4015 FSP 6228 SG111321.4 SG2 586.6 THA 178.88 EL1 2043.3 EL2 513.2 ALF 179.46

LAUNCH DATE NOV 9 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 809.562 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.891 GAL -3.87 AZL 88.19 HCA 245.35 SMA 187.01 ECC .21795 INC 1.8085 V1 30.072
RP 211.60 LAP -1.64 LOP 291.97 VP 23.339 GAP -10.10 AZP 90.75 TAL 338.12 TAP 223.46 RCA 146.25 APO 227.77 V2 25.926
RC 302.717 GL 17.56 GP .56 ZAL 121.73 ZAP 48.85 ETS 179.81 ZAE 75.55 ETE 179.40 ZAC 84.31 ETC 258.27 CLP 48.85

PLANETOCENTRIC CONIC

C3 11.788 VHL 3.433 DLA 19.99 RAL 178.16 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 3.854 DPA 9.62 RAP 163.20 ECC 1.1940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 18	2773.06	-28.08	79.86	37.68	93.79	17 55 31	2173.1	-27.26	71.29
90.00	10 50 6	4062.23	-4.40	164.28	32.43	62.00	11 57 48	3462.2	-8.11	157.57
100.00	18 43 26	2469.52	-29.41	57.41	37.55	95.62	19 24 36	1869.5	-28.32	48.77
100.00	11 58 39	3841.01	-3.23	147.38	31.78	60.27	13 2 40	3241.0	-7.17	140.80
110.00	20 19 6	2170.23	-32.74	34.13	37.00	100.41	20 55 16	1570.2	-30.96	25.36
110.00	12 39 29	3713.07	-.37	135.90	30.00	55.82	13 41 22	3113.1	-4.65	129.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1812 TRA 3.9061 TC-13.3942 BAU 2.1122 SGT11523.8 SGR 631.3 SG3 1750.1 ST 2120.9 SR 519.9 SS 1501.2
RDE .3108 RRA .0624 RC3 .4985 FAU .30125 RRT -.3488 RRF -.3768 RTF .9946 CRT -.0822 CRS .4078 CST -.9432
FDE-1.2511 FRA 7.4515 FC-22.1254 BSP 39779 SGB11541.1 R23 .0310 R13 -.9946 LSA 2567.4 MSA 655.3 SSA 24.3
BDE .3598 BRA 3.9066 BC313.4035 FSP 5981 SG111525.9 SG2 591.5 THA 178.90 EL1 2121.3 EL2 518.0 ALF 178.77

LAUNCH DATE NOV 9 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 813.780 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.895 GAL -3.98 AZL 88.19 HCA 246.56 SMA 187.08 ECC .21882 INC 1.8106 V1 30.072
RP 211.33 LAP -1.66 LOP 293.18 VP 23.379 GAP -10.24 AZP 90.72 TAL 337.54 TAP 224.10 RCA 146.14 APO 228.02 V2 25.956
RC 303.736 GL 17.40 GP .55 ZAL 122.64 ZAP 47.79 ETS 179.81 ZAE 74.21 ETE 179.44 ZAC 84.33 ETC 258.25 CLP 47.79

PLANETOCENTRIC CONIC

C3 12.026 VHL 3.468 DLA 19.47 RAL 178.95 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 3.923 DPA 9.54 RAP 163.34 ECC 1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 16	2755.78	-28.00	78.60	38.59	94.41	18 4 12	2155.8	-27.09	70.05
90.00	10 47 28	4087.94	-3.57	165.72	33.31	61.89	11 55 36	3487.9	-7.30	159.03
100.00	18 51 47	2454.20	-29.30	56.28	38.46	96.21	19 32 42	1854.2	-28.13	47.67
100.00	11 56 38	3864.75	-2.43	148.69	32.68	60.20	13 1 2	3264.8	-6.38	142.12
110.00	20 26 18	2158.50	-32.60	33.24	37.88	100.91	21 2 17	1558.5	-30.75	24.51
110.00	12 38 36	3733.23	.40	136.95	30.91	55.82	13 40 49	3133.2	-4.09	130.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2493 TRA 4.0823 TC-13.3733 BAU 2.1516 SGT11721.0 SGR 635.7 SG3 1676.6 ST 2203.0 SR 526.2 SS 1506.1
RDE .3178 RRA .0636 RC3 .4913 FAU .28847 RRT -.3462 RRF -.3749 RTF .9945 CRT -.1271 CRS .4372 CST -.9473
FDE-1.3217 FRA 7.3157 FC-20.7658 BSP 40487 SGB11738.3 R23 .0317 R13 -.9946 LSA 2640.9 MSA 650.9 SSA 23.9
BDE .4039 BRA 4.0828 BC313.3823 FSP 5743 SG111723.1 SG2 596.3 THA 178.92 EL1 2204.1 EL2 521.6 ALF 178.16

LAUNCH DATE NOV 9 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 818.001 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.899 GAL -4.09 AZL 88.19 HCA 247.77 SMA 187.16 ECC .21974 INC 1.8128 V1 30.072
RP 211.08 LAP -1.68 LOP 294.40 VP 23.418 GAP -10.38 AZP 90.69 TAL 336.95 TAP 224.72 RCA 146.03 APO 228.28 V2 25.986
RC 304.746 GL 17.23 GP .54 ZAL 123.56 ZAP 46.77 ETS 179.81 ZAE 72.90 ETE 179.48 ZAC 84.35 ETC 258.22 CLP 46.77

PLANETOCENTRIC CONIC

C3 12.281 VHL 3.504 DLA 18.95 RAL 179.75 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.993 DPA 9.45 RAP 163.51 ECC 1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 13	2738.75	-27.90	77.37	39.53	95.03	18 12 51	2138.7	-26.91	68.84
90.00	10 44 54	4113.83	-2.74	167.17	34.23	61.80	11 53 28	3513.8	-6.49	160.50
100.00	19 0 9	2439.04	-29.18	55.17	39.38	96.78	19 40 48	1839.0	-27.94	46.59
100.00	11 54 39	3888.77	-1.62	150.01	33.60	60.15	12 59 27	3288.8	-5.58	143.46
110.00	20 33 33	2146.82	-32.44	32.37	38.77	101.41	21 9 20	1546.8	-30.53	23.67
110.00	12 37 44	3753.76	1.18	138.02	31.85	55.83	13 40 18	3153.8	-3.31	131.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3211 TRA 4.2631 TC-13.3324 BAU 2.1904 SGT11912.1 SGR 640.1 SG3 1605.3 ST 2289.5 SR 532.3 SS 1510.9
RDE .3248 RRA .0647 RC3 .4841 FAU .27600 RRT -.3443 RRF -.3736 RTF .9945 CRT -.1703 CRS .4648 CST -.9513
FDE-1.3867 FRA 7.1813 FC-19.4566 BSP 41166 SGB11929.3 R23 .0323 R13 -.9945 LSA 2718.5 MSA 645.6 SSA 23.5
BDE .4567 BRA 4.2636 BC313.3412 FSP 5512 SG111914.2 SG2 600.8 THA 178.94 EL1 2291.4 EL2 524.1 ALF 177.61

LAUNCH DATE NOV 9 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 822.224 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.904 GAL -4.21 AZL 88.19 HCA 248.99 SMA 187.23 ECC .22070 INC 1.8149 V1 30.072
RP 210.82 LAP -1.69 LOP 295.61 VP 23.456 GAP -10.52 AZP 90.65 TAL 336.34 TAP 225.33 RCA 145.91 APO 228.55 V2 26.015
RC 305.746 GL 17.06 GP .52 ZAL 124.49 ZAP 45.78 ETS 179.81 ZAE 71.62 ETE 179.51 ZAC 84.38 ETC 258.19 CLP 45.77

PLANETOCENTRIC CONIC

C3 12.552 VHL 3.543 DLA 18.41 RAL 180.55 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 4.066 DPA 9.35 RAP 163.72 ECC 1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 7	2721.97	-27.80	76.15	40.48	95.63	18 21 29	2122.0	-26.73	67.65
90.00	10 42 24	4139.90	-1.90	168.63	35.17	61.74	11 51 24	3539.9	-5.66	161.97
100.00	19 8 31	2424.05	-29.06	54.07	40.31	97.35	19 48 55	1824.1	-27.74	45.52
100.00	11 52 42	3913.05	-.79	151.34	34.55	60.12	12 57 55	3313.1	-4.76	144.80
110.00	20 40 49	2135.22	-32.28	31.50	39.68	101.90	21 16 25	1535.2	-30.31	22.84
110.00	12 36 52	3774.64	1.98	139.11	32.81	55.87	13 39 47	3174.6	-2.51	132.90

DIFFERENTIAL CORRECTIONS
TDE -.3956 TRA 4.4494 TC-13.2698 BAU 2.2282
RDE .3321 RRA .0656 RC3 .4768 FAU .26387
FDE-1.4454 FRA 7.0469 FC-18.1997 BSP 41843
BDE .5165 BRA 4.4499 BC313.2783 FSP 5286

MID-COURSE EXECUTION ACCURACY
SGT12096.7 SGR 644.3 SG3 1535.9
RRT -.3429 RRF -.3727 RTF .9944
SGB12113.8 R23 .0329 R13 -.9944
SG112098.7 SG2 605.1 THA 178.95

ORBIT DETERMINATION ACCURACY
ST 2380.1 SR 538.2 SS 1514.8
CRT -.2109 CRS .4905 CST -.9550
LSA 2799.8 MSA 640.1 SSA 23.0
EL1 2383.0 EL2 525.5 ALF 177.13

LAUNCH DATE NOV 9 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 826.449 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.908 GAL -4.34 AZL 88.18 HCA 250.21 SMA 187.31 ECC .22170 INC 1.8170 V1 30.072
RP 210.58 LAP -1.71 LOP 296.84 VP 23.494 GAP -10.67 AZP 90.62 TAL 335.71 TAP 225.93 RCA 145.78 APO 228.84 V2 26.043
RC 306.737 GL 16.88 GP .51 ZAL 125.44 ZAP 44.81 ETS 179.81 ZAE 70.36 ETE 179.55 ZAC 84.42 ETC 258.16 CLP 44.81

PLANETOCENTRIC CONIC

C3 12.841 VHL 3.583 DLA 17.86 RAL 181.36 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 4.139 DPA 9.24 RAP 163.95 ECC 1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 1	2705.45	-27.68	74.96	41.44	96.22	18 30 6	2105.5	-26.53	66.48
90.00	10 39 58	4166.16	-1.05	170.09	36.13	61.70	11 49 24	3566.2	-4.83	163.45
100.00	19 16 52	2409.25	-28.92	52.99	41.27	97.90	19 57 1	1809.3	-27.53	44.47
100.00	11 50 48	3937.59	.04	152.68	35.52	60.11	12 56 25	3337.6	-3.94	146.15
110.00	20 48 7	2123.73	-32.12	30.65	40.60	102.38	21 23 31	1523.7	-30.08	22.02
110.00	12 36 2	3795.88	2.79	140.22	33.80	55.92	13 39 17	3195.9	-1.70	134.01

DIFFERENTIAL CORRECTIONS
TDE -.4731 TRA 4.6417 TC-13.1876 BAU 2.2653
RDE .3395 RRA .0663 RC3 .4694 FAU .25206
FDE-1.4979 FRA 6.9133 FC-18.9940 BSP 42509
BDE .5824 BRA 4.6422 BC313.1959 FSP 5072

MID-COURSE EXECUTION ACCURACY
SGT12275.9 SGR 648.3 SG3 1468.7
RRT -.3419 RRF -.3723 RTF .9943
SGB12293.1 R23 .0336 R13 -.9943
SG112277.9 SG2 609.1 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 2474.8 SR 544.0 SS 1517.7
CRT -.2491 CRS .5144 CST -.9584
LSA 2884.7 MSA 634.1 SSA 22.6
EL1 2478.7 EL2 526.1 ALF 176.72

LAUNCH DATE NOV 9 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 830.675 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.913 GAL -4.47 AZL 88.18 HCA 251.44 SMA 187.39 ECC .22275 INC 1.8190 V1 30.072
RP 210.34 LAP -1.72 LOP 298.06 VP 23.531 GAP -10.81 AZP 90.58 TAL 335.07 TAP 226.51 RCA 145.65 APO 229.13 V2 26.071
RC 307.719 GL 16.69 GP .50 ZAL 126.39 ZAP 43.88 ETS 179.80 ZAE 69.14 ETE 179.58 ZAC 84.46 ETC 258.12 CLP 43.87

PLANETOCENTRIC CONIC

C3 13.148 VHL 3.626 DLA 17.30 RAL 182.17 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 4.215 DPA 9.11 RAP 164.22 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 52	2689.21	-27.56	73.78	42.42	96.79	18 38 41	2089.2	-26.33	65.33
90.00	10 37 35	4192.60	-.20	171.57	37.12	61.68	11 47 28	3592.6	-3.98	164.93
100.00	19 25 12	2394.67	-28.78	51.93	42.23	98.44	20 5 7	1794.7	-27.32	43.44
100.00	11 48 56	3962.38	.88	154.04	36.52	60.12	12 54 58	3362.4	-3.10	147.52
110.00	20 55 26	2112.36	-31.95	29.80	41.54	102.86	21 30 38	1512.4	-29.85	21.22
110.00	12 35 11	3817.45	3.62	141.35	34.81	55.99	13 38 49	3217.5	-.87	135.14

DIFFERENTIAL CORRECTIONS
TDE -.5546 TRA 4.8393 TC-13.0875 BAU 2.3019
RDE .3472 RRA .0669 RC3 .4619 FAU .24057
FDE-1.5470 FRA 6.7785 FC-15.8402 BSP 43158
BDE .6543 BRA 4.8398 BC313.0956 FSP 4863

MID-COURSE EXECUTION ACCURACY
SGT12449.7 SGR 652.3 SG3 1403.3
RRT -.3416 RRF -.3726 RTF .9942
SGB12466.8 R23 .0343 R13 -.9942
SG112451.7 SG2 612.9 THA 178.97

ORBIT DETERMINATION ACCURACY
ST 2573.3 SR 549.7 SS 1520.1
CRT -.2855 CRS .5373 CST -.9614
LSA 2973.2 MSA 628.1 SSA 22.2
EL1 2578.3 EL2 525.8 ALF 176.36

LAUNCH DATE NOV 9 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 834.902 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.918 GAL -4.60 AZL 88.18 HCA 252.66 SMA 187.47 ECC .22385 INC 1.8211 V1 30.072
RP 210.10 LAP -1.74 LOP 299.29 VP 23.567 GAP -10.95 AZP 90.54 TAL 334.42 TAP 227.08 RCA 145.51 APO 229.44 V2 26.098
RC 308.691 GL 16.50 GP .49 ZAL 127.35 ZAP 42.97 ETS 179.80 ZAE 67.94 ETE 179.61 ZAC 84.51 ETC 258.08 CLP 42.97

PLANETOCENTRIC CONIC

C3 13.476 VHL 3.671 DLA 16.74 RAL 182.99 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 4.292 DPA 8.98 RAP 164.51 ECC 1.2218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 40	2673.27	-27.42	72.64	43.41	97.35	18 47 14	2073.3	-26.12	64.21
90.00	10 35 16	4219.22	.66	173.05	38.13	61.69	11 45 35	3619.2	-3.13	166.42
100.00	19 33 31	2380.31	-28.63	50.89	43.22	98.97	20 13 11	1780.3	-27.10	42.42
100.00	11 47 7	3987.41	1.73	155.42	37.54	60.15	12 53 34	3387.4	-2.26	148.90
110.00	21 2 45	2101.13	-31.78	28.97	42.50	103.32	21 37 46	1501.1	-29.62	20.43
110.00	12 34 22	3839.35	4.45	142.49	35.84	56.07	13 38 22	3239.4	-.04	136.28

DIFFERENTIAL CORRECTIONS
TDE -.6380 TRA 5.0430 TC-12.9680 BAU 2.3377
RDE .3551 RRA .0672 RC3 .4543 FAU .22938
FDE-1.5889 FRA 6.6445 FC-14.7366 BSP 43805
BDE .7302 BRA 5.0434 BC312.9760 FSP 4662

MID-COURSE EXECUTION ACCURACY
SGT12617.3 SGR 656.0 SG3 1339.9
RRT -.3416 RRF -.3732 RTF .9940
SGB12634.3 R23 .0350 R13 -.9940
SG112619.3 SG2 616.5 THA 178.98

ORBIT DETERMINATION ACCURACY
ST 2674.6 SR 555.2 SS 1520.6
CRT -.3190 CRS .5583 CST -.9642
LSA 3063.7 MSA 621.9 SSA 21.8
EL1 2680.7 EL2 525.0 ALF 176.06

LAUNCH DATE NOV 9 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 839.130 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.922 GAL -4.73 AZL 88.18 HCA 253.89 SMA 187.55 ECC .22500 INC 1.8231 V1 30.072
RP 209.88 LAP -1.75 LOP 300.52 VP 23.603 GAP -11.09 AZP 90.51 TAL 333.75 TAP 227.64 RCA 145.36 APO 229.75 V2 26.124
RC 309.654 GL 16.30 GP .47 ZAL 128.32 ZAP 42.09 ETS 179.79 ZAE 66.77 ETE 179.64 ZAC 84.57 ETC 258.03 CLP 42.08

PLANETOCENTRIC CONIC

C3 13.824 VHL 3.718 DLA 16.16 RAL 183.80 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 4.371 DPA 8.83 RAP 164.83 ECC 1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 27	2657.63	-27.28	71.51	44.42	97.90	18 55 44	2057.6	-25.91	63.12
90.00	10 33 1	4246.01	1.52	174.55	39.17	61.72	11 43 47	3646.0	-2.27	167.92
100.00	19 41 49	2366.20	-28.48	49.87	44.22	99.49	20 21 15	1766.2	-26.88	41.43
100.00	11 45 20	4012.67	2.58	156.80	38.58	60.21	12 52 12	3412.7	-1.40	150.28
110.00	21 10 4	2090.07	-31.60	28.16	43.48	103.77	21 44 54	1490.1	-29.38	19.65
110.00	12 33 34	3861.57	5.29	143.66	36.90	56.18	13 37 55	3261.6	.81	137.44

DIFFERENTIAL CORRECTIONS
TDE -.7253 TRA 5.2521 TC-12.8326 BAU 2.3731
RDE .3632 RRA .0673 RC3 .4466 FAU .21855
FDE-1.6274 FRA 6.5092 FC-13.6866 BSP 44431
BDE .8112 BRA 5.2526 BC312.8404 FSP 4465

MID-COURSE EXECUTION ACCURACY
SGT12779.6 SGR 659.7 SG3 1278.4
RRT -.3422 RRF -.3745 RTF .9938
SGB12796.6 R23 .0358 R13 -.9939
SG112781.6 SG2 619.7 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 2778.9 SR 560.7 SS 1520.1
CRT -.3508 CRS .5783 CST -.9666
LSA 3157.1 MSA 615.7 SSA 21.5
EL1 2786.1 EL2 523.7 ALF 175.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 843.357 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.927 GAL -4.87 AZL 88.17 HCA 255.13 SMA 187.64 ECC .22620 INC 1.8251 V1 30.072
RP 209.66 LAP -1.76 LOP 301.75 VP 23.638 GAP -11.23 AZP 90.47 TAL 333.06 TAP 228.19 RCA 145.20 APO 230.08 V2 26.149
RC 310.607 GL 16.10 GP .46 ZAL 129.30 ZAP 41.23 ETS 179.79 ZAE 65.62 ETE 179.67 ZAC 84.63 ETC 257.98 CLP 41.23

PLANETOCENTRIC CONIC

C3 14.195 VHL 3.768 DLA 15.58 RAL 184.62 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 4.452 DPA 8.67 RAP 165.17 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 10	2642.30	-27.13	70.42	45.45	98.43	19 4 13	2042.3	-25.69	62.05
90.00	10 30 49	4272.98	2.39	176.05	40.24	61.78	11 42 2	3673.0	-1.40	169.42
100.00	19 50 5	2352.35	-28.32	48.87	45.23	99.99	20 29 17	1752.3	-26.65	40.47
100.00	11 43 35	4038.16	3.45	158.21	39.66	60.29	12 50 53	3438.2	-.53	151.68
110.00	21 17 23	2079.19	-31.42	27.36	44.47	104.21	21 52 2	1479.2	-29.15	18.89
110.00	12 32 46	3884.09	6.14	144.85	37.98	56.31	13 37 30	3284.1	1.67	138.61

DIFFERENTIAL CORRECTIONS
TDE -.8164 TRA 5.4677 TC-12.6833 BAU 2.4084
RDE .3715 RRA .0672 RC3 .4389 FAU .20810
FDE-1.6615 FRA 6.3745 FC-12.6919 BSP 45037
BDE .8969 BRA 5.4681 BC312.6909 FSP 4275

MID-COURSE EXECUTION ACCURACY
SGT12938.1 SGR 663.2 SG3 1219.2
RRT -.3434 RRF -.3764 RTF .9936
SGB12955.1 R23 .0367 R13 -.9937
SG112940.2 SG2 622.8 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 2886.1 SR 565.9 SS 1518.4
CRT -.3807 CRS .5972 CST -.9688
LSA 3253.3 MSA 609.3 SSA 21.1
EL1 2894.4 EL2 521.8 ALF 175.59

LAUNCH DATE NOV 9 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 847.585 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.932 GAL -5.02 AZL 88.17 HCA 256.36 SMA 187.73 ECC .22745 INC 1.8270 V1 30.072
RP 209.44 LAP -1.78 LOP 302.99 VP 23.672 GAP -11.37 AZP 90.43 TAL 332.36 TAP 228.72 RCA 145.03 APO 230.43 V2 26.174
RC 311.551 GL 15.89 GP .45 ZAL 130.28 ZAP 40.40 ETS 179.78 ZAE 64.49 ETE 179.70 ZAC 84.70 ETC 257.93 CLP 40.40

PLANETOCENTRIC CONIC

C3 14.589 VHL 3.820 DLA 15.00 RAL 185.44 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 4.535 DPA 8.50 RAP 165.54 ECC 1.2401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 51	2627.30	-26.98	69.35	46.49	98.95	19 12 38	2027.3	-25.46	61.00
90.00	10 28 40	4300.11	3.27	177.57	41.33	61.86	11 40 20	3700.1	-.52	170.94
100.00	19 58 19	2338.77	-28.16	47.90	46.27	100.48	20 37 18	1738.8	-26.42	39.52
100.00	11 41 53	4063.88	4.31	159.62	40.75	60.39	12 49 37	3463.9	.34	153.09
110.00	21 24 42	2068.51	-31.24	26.58	45.48	104.64	21 59 10	1468.5	-28.91	18.15
110.00	12 32 0	3906.90	7.00	146.05	39.09	56.46	13 37 6	3306.9	2.54	139.80

DIFFERENTIAL CORRECTIONS
TDE -.9096 TRA 5.6901 TC-12.5160 BAU 2.4427
RDE .3801 RRA .0668 RC3 .4311 FAU .19791
FDE-1.6899 FRA 6.2395 FC-11.7440 BSP 45651
BDE .9858 BRA 5.6905 BC312.5234 FSP 4092

MID-COURSE EXECUTION ACCURACY
SGT13090.5 SGR 666.5 SG3 1161.8
RRT -.3449 RRF -.3787 RTF .9934
SGB13107.4 R23 .0376 R13 -.9934
SG113092.5 SG2 625.5 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 2995.2 SR 571.1 SS 1514.8
CRT -.4082 CRS .6148 CST -.9708
LSA 3350.7 MSA 603.2 SSA 20.7
EL1 3004.5 EL2 519.7 ALF 175.41

LAUNCH DATE NOV 9 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 851.811 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.937 GAL -5.17 AZL 88.17 HCA 257.60 SMA 187.82 ECC .22876 INC 1.8290 V1 30.072
RP 209.24 LAP -1.79 LOP 304.22 VP 23.705 GAP -11.51 AZP 90.39 TAL 331.64 TAP 229.24 RCA 144.85 APO 230.78 V2 26.198
RC 312.486 GL 15.68 GP .44 ZAL 131.27 ZAP 39.59 ETS 179.77 ZAE 63.39 ETE 179.73 ZAC 84.77 ETC 257.87 CLP 39.59

PLANETOCENTRIC CONIC

C3 15.009 VHL 3.874 DLA 14.40 RAL 186.26 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 4.619 DPA 8.32 RAP 165.94 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 29	2612.65	-26.82	68.30	47.55	99.44	19 21 1	2012.6	-25.24	59.99
90.00	10 26 34	4327.41	4.14	179.10	42.45	61.96	11 38 41	3727.4	.36	172.46
100.00	20 6 31	2325.49	-27.99	46.94	47.31	100.95	20 45 17	1725.5	-26.19	38.60
100.00	11 40 13	4089.80	5.18	161.06	41.88	60.52	12 48 23	3489.8	1.22	154.51
110.00	21 31 59	2058.06	-31.06	25.82	46.50	105.06	22 6 17	1458.1	-28.68	17.43
110.00	12 31 14	3929.99	7.87	147.28	40.22	56.63	13 36 44	3330.0	3.43	141.01

DIFFERENTIAL CORRECTIONS
TDE-1.0058 TRA 5.9185 TC-12.3364 BAU 2.4768
RDE .3889 RRA .0662 RC3 .4232 FAU .18803
FDE-1.7141 FRA 6.1038 FC-10.8458 BSP 46253
BDE 1.0784 BRA 5.9189 BC312.3436 FSP 3915

MID-COURSE EXECUTION ACCURACY
SGT13238.2 SGR 669.7 SG3 1106.2
RRT -.3469 RRF -.3815 RTF .9932
SGB13255.1 R23 .0385 R13 -.9932
SG113240.3 SG2 628.0 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 3105.7 SR 576.0 SS 1509.4
CRT -.4338 CRS .6314 CST -.9724
LSA 3449.4 MSA 597.1 SSA 20.4
EL1 3116.0 EL2 517.3 ALF 175.27

LAUNCH DATE NOV 9 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 856.035 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32,942	GAL	-5.32	AZL	88.17	HCA	258.84	SMA	187.91	ECC	.23012	INC	1.8309	V1	30.072
RP	209.04	LAP	-1.80	LOP	305.46	VP	23.738	GAP	-11.66	AZP	90.35	TAL	330.91	TAP	229.75	RCA	144.67	APO	231.15	V2	26.221
RC	313.411	GL	15.46	GP	.43	ZAL	132.26	ZAP	38.81	ETS	179.76	ZAE	62.31	ETE	179.75	ZAC	84.85	ETC	257.82	CLP	38.81

PLANETOCENTRIC CONIC

C3	15.455	VHL	3.931	DLA	13.81	RAL	187.08	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	4.705	DPA	8.13	RAP	166.36	ECC	1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 3	2598.34	-26.66	67.29	48.63	99.93	19 29 21	1998.3	-25.01	59.00
90.00	10 24 31	4354.88	5.02	180.64	43.59	62.09	11 37 6	3754.9	1.24	173.99
100.00	20 14 40	2312.52	-27.82	46.02	48.38	101.41	20 53 13	1712.5	-25.96	37.71
100.00	11 38 35	4115.93	6.06	162.50	43.02	60.67	12 47 11	3515.9	2.10	155.95
110.00	21 39 16	2047.86	-30.87	25.08	47.54	105.46	22 13 23	1447.9	-28.45	16.72
110.00	12 30 29	3953.36	8.74	148.53	41.38	56.82	13 36 23	3353.4	4.31	142.24

DIFFERENTIAL CORRECTIONS

TDE	-1.1061	TRA	6.1538	TC	-12.1447	BAU	2.5108	SGT	13381.9	SGR	672.8
RDE	.5980	RRA	.0654	RC3	.4152	FAU	.17852	RRT	-.3495	RRF	-.3848
FDE	-1.7344	FRA	5.9676	FC	-10.0001	BSP	46826	SGB	13398.8	R23	.0396
BDE	1.1755	BRA	6.1542	BC	312.1518	FSP	3742	SG1	13384.0	SG2	630.3

MID-COURSE EXECUTION ACCURACY

SG3	1052.6	RTF	.9929	R13	-.9929
THA	178.99				

ORBIT DETERMINATION ACCURACY

ST	3218.3	SR	580.9	SS	1502.5
CRT	-.4580	CRS	.6471	CST	-.9740
LSA	3550.0	MSA	590.9	SSA	20.1
EL1	3229.5	EL2	514.6	ALF	175.15

LAUNCH DATE NOV 9 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 860.257 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.948	GAL	-5.48	AZL	88.17	HCA	260.08	SMA	188.00	ECC	.23154	INC	1.8328	V1	30.072
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.769	GAP	-11.80	AZP	90.32	TAL	330.16	TAP	230.24	RCA	144.47	APO	231.53	V2	26.243
RC	314.329	GL	15.24	GP	.42	ZAL	133.26	ZAP	38.05	ETS	179.75	ZAE	61.26	ETE	179.78	ZAC	84.94	ETC	257.76	CLP	38.05

PLANETOCENTRIC CONIC

C3	15.930	VHL	3.991	DLA	13.21	RAL	187.90	RAD	6567.6	VEL	11.718	PTH	2.06	VHP	4.792	DPA	7.93	RAP	166.80	ECC	1.2622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 34	2584.40	-26.49	66.30	49.72	100.40	19 37 38	1984.4	-24.78	58.05
90.00	10 22 32	4382.49	5.90	182.19	44.76	62.25	11 35 34	3782.5	2.14	175.53
100.00	20 22 47	2299.88	-27.64	45.12	49.46	101.85	21 1 7	1699.9	-25.73	36.84
100.00	11 37 0	4142.25	6.93	163.97	44.20	60.85	12 46 2	3542.3	2.99	157.39
110.00	21 46 31	2037.91	-30.69	24.36	48.60	105.85	22 20 29	1437.9	-28.21	16.04
110.00	12 29 46	3976.99	9.62	149.79	42.56	57.04	13 36 3	3377.0	5.21	143.48

DIFFERENTIAL CORRECTIONS

TDE	-1.2098	TRA	6.3947	TC	-11.9439	BAU	2.5451	SGT	13521.4	SGR	675.8
RDE	.4074	RRA	.0643	RC3	.4072	FAU	.16936	RRT	-.3526	RRF	-.3889
FDE	-1.7512	FRA	5.8297	FC3	-9.2043	BSP	47376	SGB	13538.3	R23	.0408
BDE	1.2765	BRA	6.3951	BC	311.9509	FSP	3573	SG1	13523.5	SG2	632.3

MID-COURSE EXECUTION ACCURACY

SG3	1000.9	RTF	.9926	R13	-.9926
THA	178.99				

ORBIT DETERMINATION ACCURACY

ST	3331.7	SR	585.6	SS	1494.0
CRT	-.4808	CRS	.6621	CST	-.9753
LSA	3651.4	MSA	584.9	SSA	19.8
EL1	3343.9	EL2	511.6	ALF	175.05

LAUNCH DATE NOV 9 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 864.477 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.953	GAL	-5.64	AZL	88.17	HCA	261.32	SMA	188.09	ECC	.23303	INC	1.8348	V1	30.072
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.800	GAP	-11.95	AZP	90.28	TAL	329.39	TAP	230.72	RCA	144.26	APO	231.92	V2	26.264
RC	315.238	GL	15.01	GP	.42	ZAL	134.26	ZAP	37.31	ETS	179.73	ZAE	60.22	ETE	179.81	ZAC	85.03	ETC	257.70	CLP	37.31

PLANETOCENTRIC CONIC

C3	16.434	VHL	4.054	DLA	12.60	RAL	188.71	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	4.882	DPA	7.72	RAP	167.26	ECC	1.2705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 1	2570.84	-26.32	65.34	50.82	100.85	19 45 52	1970.8	-24.55	57.12
90.00	10 20 35	4410.26	6.77	183.76	45.96	62.44	11 34 6	3810.3	3.03	177.08
100.00	20 30 51	2287.57	-27.47	44.24	50.56	102.28	21 8 59	1687.6	-25.50	36.00
100.00	11 35 26	4168.76	7.81	165.45	45.40	61.05	12 44 55	3568.8	3.89	158.85
110.00	21 53 44	2028.23	-30.51	23.67	49.68	106.22	22 27 32	1428.2	-27.99	15.38
110.00	12 29 3	4000.86	10.50	151.08	43.77	57.28	13 35 44	3400.9	6.12	144.74

DIFFERENTIAL CORRECTIONS

TDE	-1.3160	TRA	6.6441	TC	-11.7307	BAU	2.5788	SGT	13656.8	SGR	678.6
RDE	.4171	RRA	.0628	RC3	.3991	FAU	.16043	RRT	-.3560	RRF	-.3932
FDE	-1.7633	FRA	5.6923	FC3	-8.4515	BSP	47935	SGB	13673.6	R23	.0420
BDE	1.3805	BRA	6.6444	BC	311.7375	FSP	3410	SG1	13658.9	SG2	634.0

MID-COURSE EXECUTION ACCURACY

SG3	950.9	RTF	.9922	R13	-.9922
THA	178.98				

ORBIT DETERMINATION ACCURACY

ST	3445.9	SR	590.2	SS	1483.4
CRT	-.5017	CRS	.6762	CST	-.9764
LSA	3753.3	MSA	579.1	SSA	19.5
EL1	3458.8	EL2	508.6	ALF	174.98

LAUNCH DATE NOV 9 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 868.694 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	32.958	GAL	-5.81	AZL	88.16	HCA	262.57	SMA	188.19	ECC	.23458	INC	1.8367	V1	30.072
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.830	GAP	-12.09	AZP	90.24	TAL	328.61	TAP	231.18	RCA	144.04	APO	232.33	V2	26.285
RC	316.140	GL	14.78	GP	.41	ZAL	135.26	ZAP	36.59	ETS	179.72	ZAE	59.20	ETE	179.83	ZAC	85.13	ETC	257.63	CLP	36.59

PLANETOCENTRIC CONIC

C3	16.970	VHL	4.119	DLA	12.00	RAL	189.53	RAD	6567.7	VEL	11.762	PTH	2.08	VHP	4.973	DPA	7.50	RAP	167.74	ECC	1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 25	2557.66	-26.15	64.42	51.95	101.28	19 54 3	1957.7	-24.33	56.22
90.00	10 18 41	4438.18	7.65	185.35	47.19	62.65	11 32 40	3838.2	3.92	178.65
100.00	20 38 52	2275.61	-27.29	43.40	51.67	102.69	21 16 48	1675.6	-25.27	35.18
100.00	11 33 55	4195.46	8.68	166.94	46.63	61.28	12 43 51	3595.5	4.78	160.33
110.00	22 0 56	2018.85	-30.33	23.00	50.77	106.58	22 34 34	1418.8	-27.76	14.75
110.00	12 28 21	4024.98	11.39	152.39	45.01	57.55	13 35 26	3425.0	7.02	146:01

DIFFERENTIAL CORRECTIONS

TDE	-1.4264	TRA	6.8992	TC	-11.5108	BAU	2.6130	SGT	13788.1	SGR	681.3
RDE	.4271	RRA	.0611	RC3	.3910	FAU	.15187	RRT	-.3600	RRF	-.3982
FDE	-1.7719	FRA	5.5528	FC3	-7.7476	BSP	48452	SGB	13804.9	R23	.0433
BDE	1.4890	BRA	6.8995	BC	311.5174	FSP	3252	SG1	13790.3	SG2	635.5

MID-COURSE EXECUTION ACCURACY

SG3	902.7	RTF	.9918	R13	-.9919
THA	178.98				

ORBIT DETERMINATION ACCURACY

ST	3560.6	SR	594.6	SS	1471.0
CRT	-.5217	CRS	.6897	CST	-.9774
LSA	3855.7	MSA	573.2	SSA	19.2
EL1	3574.4	EL2	505.4	ALF	174.92

LAUNCH DATE NOV 9 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 872.906 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.964 GAL -5.99 AZL 88.16 HCA 263.82 SMA 188.29 ECC .23620 INC 1.8385 V1 30.072
RP 208.32 LAP -1.83 LOP 310.45 VP 23.860 GAP -12.24 AZP 90.20 TAL 327.82 TAP 231.64 RCA 143.81 APO 232.76 V2 26.304
RC 317.035 GL 14.55 GP .40 ZAL 136.26 ZAP 35.89 ETS 179.71 ZAE 58.21 ETE 179.85 ZAC 85.23 ETC 257.57 CLP 35.89

PLANETOCENTRIC CONIC

C3 17.540 VHL 4.188 DLA 11.39 RAL 190.34 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 5.066 DPA 7.27 RAP 168.25 ECC 1.2887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 45	2544.87	-25.97	63.52	53.09	101.70	20 2 10	1944.9	-24.10	55.35
90.00	10 16 51	4466.23	8.52	186.94	48.44	62.89	11 31 17	3866.2	4.82	180.22
100.00	20 46 50	2264.01	-27.12	42.58	52.80	103.09	21 24 34	1664.0	-25.04	34.40
100.00	11 32 26	4222.33	9.56	168.46	47.88	61.54	12 42 49	3622.3	5.68	161.81
110.00	22 8 5	2009.77	-30.15	22.35	51.88	106.93	22 41 35	1409.8	-27.54	14.13
110.00	12 27 41	4049.33	12.27	153.72	46.27	57.84	13 35 10	3449.3	7.94	147.30

DIFFERENTIAL CORRECTIONS
TDE-1.5392 TRA 7.1627 TC-11.2809 BAU 2.6468
RDE .4374 RRA .0590 RC3 .3828 FAU .14354
FDE-1.7767 FRA 5.4135 FC3-7.0845 BSP 48963
BDE 1.6002 BRA 7.1629 BC311.2874 FSP 3098

MID-COURSE EXECUTION ACCURACY
SGT13915.3 SGR 683.8 SG3 856.2
RRT -.3643 RRF -.4036 RTF .9914
SGB13932.1 R23 .0448 R13 -.9914
SG113917.5 SG2 636.7 THA 178.97

ORBIT DETERMINATION ACCURACY
ST 3675.2 SR 598.9 SS 1456.8
CRT -.5400 CRS .7024 CST -.9782
LSA 3958.0 MSA 567.6 SSA 18.9
EL1 3689.7 EL2 502.1 ALF 174.88

LAUNCH DATE NOV 9 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 877.113 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.970 GAL -6.16 AZL 88.16 HCA 265.07 SMA 188.38 ECC .23789 INC 1.8404 V1 30.072
RP 208.16 LAP -1.83 LOP 311.70 VP 23.888 GAP -12.40 AZP 90.16 TAL 327.00 TAP 232.07 RCA 143.57 APO 233.20 V2 26.323
RC 317.924 GL 14.31 GP .39 ZAL 137.26 ZAP 35.21 ETS 179.70 ZAE 57.23 ETE 179.88 ZAC 85.34 ETC 257.50 CLP 35.21

PLANETOCENTRIC CONIC

C3 18.146 VHL 4.260 DLA 10.78 RAL 191.15 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 5.161 DPA 7.03 RAP 168.77 ECC 1.2986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 1	2532.49	-25.80	62.66	54.24	102.10	20 10 13	1932.5	-23.87	54.52
90.00	10 15 2	4494.42	9.39	188.56	49.72	63.16	11 29 57	3894.4	5.72	181.81
100.00	20 54 45	2252.78	-26.94	41.79	53.95	103.47	21 32 17	1652.8	-24.82	33.64
100.00	11 31 0	4249.35	10.43	169.99	49.17	61.83	12 41 49	3649.4	6.59	163.32
110.00	22 15 12	2001.02	-29.98	21.73	53.00	107.26	22 48 33	1401.0	-27.32	13.54
110.00	12 27 2	4073.89	13.16	155.07	47.56	58.16	13 34 56	3473.9	8.85	148.62

DIFFERENTIAL CORRECTIONS
TDE-1.6560 TRA 7.4334 TC-11.0453 BAU 2.6811
RDE .4480 RRA .0566 RC3 .3746 FAU .13551
FDE-1.7781 FRA 5.2724 FC3-6.4652 BSP 49479
BDE 1.7155 BRA 7.4336 BC311.0516 FSP 2950

MID-COURSE EXECUTION ACCURACY
SGT14039.1 SGR 686.2 SG3 811.3
RRT -.3691 RRF -.4096 RTF .9909
SGB14055.9 R23 .0463 R13 -.9910
SG114041.4 SG2 637.7 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 3789.9 SR 603.1 SS 1440.7
CRT -.5573 CRS .7146 CST -.9789
LSA 4060.4 MSA 562.0 SSA 18.6
EL1 3805.1 EL2 498.8 ALF 174.84

LAUNCH DATE NOV 9 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 881.315 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.975 GAL -6.35 AZL 88.16 HCA 266.32 SMA 188.48 ECC .23965 INC 1.8423 V1 30.072
RP 208.01 LAP -1.84 LOP 312.95 VP 23.915 GAP -12.55 AZP 90.12 TAL 326.18 TAP 232.50 RCA 143.31 APO 233.65 V2 26.341
RC 318.808 GL 14.07 GP .38 ZAL 138.26 ZAP 34.55 ETS 179.68 ZAE 56.27 ETE 179.90 ZAC 85.45 ETC 257.43 CLP 34.55

PLANETOCENTRIC CONIC

C3 18.790 VHL 4.335 DLA 10.17 RAL 191.96 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 5.259 DPA 6.78 RAP 169.32 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 13	2520.52	-25.63	61.82	55.41	102.48	20 18 13	1920.5	-23.65	53.71
90.00	10 13 17	4522.73	10.26	190.19	51.02	63.46	11 28 39	3922.7	6.61	183.40
100.00	21 2 36	2241.94	-26.77	41.04	55.12	103.83	21 39 58	1641.9	-24.60	32.91
100.00	11 29 35	4276.55	11.30	171.54	50.48	62.14	12 40 52	3676.6	7.49	164.83
110.00	22 22 17	1992.59	-29.80	21.13	54.15	107.57	22 55 29	1392.6	-27.11	12.98
110.00	12 26 23	4098.66	14.04	156.44	48.88	58.51	13 34 42	3498.7	9.77	149.94

DIFFERENTIAL CORRECTIONS
TDE-1.7763 TRA 7.7109 TC-10.8057 BAU 2.7160
RDE .4589 RRA .0539 RC3 .3663 FAU .12779
FDE-1.7756 FRA 5.1301 FC3-5.8879 BSP 49934
BDE 1.8346 BRA 7.7111 BC310.8119 FSP 2804

MID-COURSE EXECUTION ACCURACY
SGT14159.5 SGR 688.5 SG3 768.1
RRT -.3744 RRF -.4160 RTF .9904
SGB14176.3 R23 .0479 R13 -.9904
SG114161.9 SG2 638.4 THA 178.95

ORBIT DETERMINATION ACCURACY
ST 3904.0 SR 607.1 SS 1422.6
CRT -.5736 CRS .7262 CST -.9796
LSA 4162.2 MSA 556.4 SSA 18.4
EL1 3919.8 EL2 495.3 ALF 174.82

LAUNCH DATE NOV 9 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 885.511 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.981 GAL -6.54 AZL 88.16 HCA 267.57 SMA 188.59 ECC .24148 INC 1.8442 V1 30.072
RP 207.86 LAP -1.84 LOP 314.21 VP 23.942 GAP -12.71 AZP 90.08 TAL 325.33 TAP 232.91 RCA 143.05 APO 234.13 V2 26.357
RC 319.685 GL 13.82 GP .38 ZAL 139.26 ZAP 33.91 ETS 179.67 ZAE 55.33 ETE 179.92 ZAC 85.57 ETC 257.36 CLP 33.91

PLANETOCENTRIC CONIC

C3 19.474 VHL 4.413 DLA 9.56 RAL 192.76 RAD 6567.8 VEL 11.868 PTH 2.11 VHP 5.358 DPA 6.53 RAP 169.88 ECC 1.3205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 21	2508.98	-25.45	61.02	56.60	102.85	20 26 10	1909.0	-23.43	52.93
90.00	10 11 34	4551.17	11.12	191.83	52.36	63.79	11 27 25	3951.2	7.51	185.02
100.00	21 10 23	2231.49	-26.59	40.31	56.30	104.18	21 47 34	1631.5	-24.38	32.20
100.00	11 28 12	4303.89	12.17	173.11	51.82	62.48	12 39 56	3703.9	8.39	166.36
110.00	22 29 18	1984.51	-29.64	20.56	55.30	107.87	23 2 23	1384.5	-26.91	12.44
110.00	12 25 46	4123.64	14.93	157.84	50.22	58.89	13 34 30	3523.6	10.70	151.29

DIFFERENTIAL CORRECTIONS
TDE-1.9007 TRA 7.9967 TC-10.5614 BAU 2.7512
RDE .4702 RRA .0508 RC3 .3581 FAU .12034
FDE-1.7709 FRA 4.9863 FC3-5.3496 BSP 50372
BDE 1.9580 BRA 7.9969 BC310.5674 FSP 2662

MID-COURSE EXECUTION ACCURACY
SGT14276.9 SGR 690.7 SG3 726.4
RRT -.3801 RRF -.4231 RTF .9898
SGB14293.6 R23 .0498 R13 -.9899
SG114279.4 SG2 638.8 THA 178.94

ORBIT DETERMINATION ACCURACY
ST 4018.1 SR 611.0 SS 1403.0
CRT -.5890 CRS .7375 CST -.9800
LSA 4264.1 MSA 551.1 SSA 18.1
EL1 4034.4 EL2 491.7 ALF 174.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 889.700 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.987 GAL -6.73 AZL 88.15 HCA 268.83 SMA 188.69 ECC .24340 INC 1.8461 V1 30.072
RP 207.73 LAP -1.85 LOP 315.46 VP 23.967 GAP -12.86 AZP 90.04 TAL 324.47 TAP 233.30 RCA 142.76 APO 234.62 V2 26.373
RC 320.558 GL 13.58 GP .37 ZAL 140.26 ZAP 33.29 ETS 179.65 ZAE 54.41 ETE 179.95 ZAC 85.69 ETC 257.29 CLP 33.29

PLANETOCENTRIC CONIC

C3 20.201 VHL 4.495 DLA 8.95 RAL 193.56 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 5.459 DPA 6.26 RAP 170.46 ECC 1.3325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 24	2497.85	-25.28	60.25	57.81	103.20	20 34 2	1897.9	-23.22	52.19
90.00	10 9 53	4579.72	11.97	193.50	53.72	64.15	11 26 13	3979.7	8.40	186.64
100.00	21 18 7	2221.43	-26.42	39.61	57.49	104.51	21 55 8	1621.4	-24.17	31.53
100.00	11 26 52	4331.38	13.03	174.70	53.18	62.86	12 39 3	3731.4	9.28	167.91
110.00	22 36 18	1976.78	-29.47	20.02	56.48	108.15	23 9 14	1376.8	-26.71	11.92
110.00	12 25 10	4148.80	15.81	159.26	51.60	59.29	13 34 19	3548.8	11.62	152.66

DIFFERENTIAL CORRECTIONS
TDE-2.0278 TRA 8.2908 TC-10.3128 BAU 2.7868
RDE .4819 RRA .0473 RC3 .3498 FAU .11312
FDE-1.7622 FRA 4.8412 FC3-4.8477 BSP 50815
BDE 2.0843 BRA 8.2909 BC310.3188 FSP 2525

MID-COURSE EXECUTION ACCURACY
SGT14390.6 SGR 692.8 SG3 686.1
RRT -.3862 RRF -.4306 RTF .9892
SGB14407.3 R23 .0518 R13 -.9892
SG114393.1 SG2 638.9 THA 178.93

ORBIT DETERMINATION ACCURACY
ST 4130.6 SR 614.6 SS 1381.3
CRT -.6034 CRS .7483 CST -.9804
LSA 4364.5 MSA 545.8 SSA 17.8
EL1 4147.4 EL2 488.2 ALF 174.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 893.881 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.993 GAL -6.93 AZL 88.15 HCA 270.09 SMA 188.79 ECC .24539 INC 1.8479 V1 30.072
RP 207.60 LAP -1.85 LOP 316.72 VP 23.992 GAP -13.03 AZP 90.00 TAL 323.59 TAP 233.68 RCA 142.46 APO 235.12 V2 26.388
RC 321.425 GL 13.33 GP .36 ZAL 141.25 ZAP 32.69 ETS 179.64 ZAE 53.50 ETE 179.97 ZAC 85.82 ETC 257.22 CLP 32.68

PLANETOCENTRIC CONIC

C3 20.975 VHL 4.580 DLA 8.34 RAL 194.36 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 5.563 DPA 5.99 RAP 171.05 ECC 1.3452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 24	2487.16	-25.11	59.51	59.03	103.53	20 41 51	1887.2	-23.00	51.48
90.00	10 8 15	4608.38	12.82	195.18	55.11	64.53	11 25 3	4008.4	9.28	188.28
100.00	21 25 47	2211.79	-26.26	38.94	58.70	104.82	22 2 38	1611.8	-23.97	30.89
100.00	11 25 33	4358.99	13.88	176.31	54.58	63.26	12 38 12	3759.0	10.18	169.47
110.00	22 43 14	1969.41	-29.32	19.50	57.67	108.42	23 16 3	1369.4	-26.52	11.44
110.00	12 24 35	4174.13	16.68	160.70	53.00	59.72	13 34 10	3574.1	12.54	154.05

DIFFERENTIAL CORRECTIONS
TDE-2.1595 TRA 8.5922 TC-10.0617 BAU 2.8231
RDE .4939 RRA .0434 RC3 .3415 FAU .10616
FDE-1.7506 FRA 4.6942 FC3-4.3818 BSP 51206
BDE 2.2153 BRA 8.5923 BC310.0675 FSP 2390

MID-COURSE EXECUTION ACCURACY
SGT14500.5 SGR 694.8 SG3 647.3
RRT -.3927 RRF -.4386 RTF .9885
SGB14517.1 R23 .0540 R13 -.9885
SG114503.0 SG2 638.8 THA 178.92

ORBIT DETERMINATION ACCURACY
ST 4242.4 SR 618.2 SS 1357.8
CRT -.6170 CRS .7587 CST -.9806
LSA 4464.4 MSA 540.6 SSA 17.6
EL1 4259.7 EL2 484.5 ALF 174.79

LAUNCH DATE NOV 9 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 898.052 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 32.999 GAL -7.14 AZL 88.15 HCA 271.35 SMA 188.90 ECC .24748 INC 1.8498 V1 30.072
RP 207.48 LAP -1.85 LOP 317.98 VP 24.016 GAP -13.19 AZP 89.96 TAL 322.70 TAP 234.05 RCA 142.15 APO 235.65 V2 26.402
RC 322.286 GL 13.08 GP .36 ZAL 142.24 ZAP 32.10 ETS 179.62 ZAE 52.61 ETE 179.99 ZAC 85.95 ETC 257.15 CLP 32.10

PLANETOCENTRIC CONIC

C3 21.796 VHL 4.669 DLA 7.73 RAL 195.15 RAD 6567.9 VEL 11.966 PTH 2.13 VHP 5.668 DPA 5.71 RAP 171.67 ECC 1.3587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 19	2476.91	-24.95	58.81	60.26	103.85	20 49 36	1876.9	-22.80	50.80
90.00	10 6 39	4637.15	13.65	196.88	56.53	64.95	11 23 56	4037.1	10.16	189.94
100.00	21 33 23	2202.56	-26.10	38.30	59.93	105.12	22 10 5	1602.6	-23.77	30.28
100.00	11 24 17	4386.73	14.72	177.93	56.00	63.69	12 37 23	3786.7	11.07	171.05
110.00	22 50 7	1962.41	-29.17	19.02	58.88	108.67	23 22 49	1362.4	-26.34	10.97
110.00	12 24 2	4199.64	17.55	162.17	54.43	60.19	13 34 1	3599.6	13.45	155.45

DIFFERENTIAL CORRECTIONS
TDE-2.2943 TRA 8.9020 TC3-9.8099 BAU 2.8602
RDE .5063 RRA .0392 RC3 .3333 FAU .09944
FDE-1.7359 FRA 4.5458 FC3-3.9495 BSP 51572
BDE 2.3495 BRA 8.9021 BC3 9.8156 FSP 2259

MID-COURSE EXECUTION ACCURACY
SGT14607.6 SGR 696.6 SG3 609.9
RRT -.3995 RRF -.4470 RTF .9877
SGB14624.2 R23 .0564 R13 -.9877
SG114610.3 SG2 638.5 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 4352.4 SR 621.6 SS 1332.5
CRT -.6298 CRS .7687 CST -.9808
LSA 4562.7 MSA 535.4 SSA 17.3
EL1 4370.2 EL2 480.8 ALF 174.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 902.214 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.005 GAL -7.36 AZL 88.15 HCA 272.61 SMA 189.01 ECC .24965 INC 1.8517 V1 30.072
RP 207.36 LAP -1.85 LOP 319.24 VP 24.038 GAP -13.36 AZP 89.92 TAL 321.79 TAP 234.40 RCA 141.82 APO 236.19 V2 26.416
RC 323.141 GL 12.84 GP .35 ZAL 143.23 ZAP 31.53 ETS 179.60 ZAE 51.74 ETE 180.01 ZAC 86.08 ETC 257.08 CLP 31.53

PLANETOCENTRIC CONIC

C3 22.670 VHL 4.761 DLA 7.12 RAL 195.94 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 5.776 DPA 5.42 RAP 172.30 ECC 1.3731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 10	2467.09	-24.79	58.13	61.52	104.15	20 57 17	1867.1	-22.60	50.15
90.00	10 5 6	4666.01	14.48	198.60	57.98	65.40	11 22 52	4066.0	11.04	191.61
100.00	21 40 55	2193.74	-25.94	37.69	61.18	105.40	22 17 29	1593.7	-23.57	29.69
100.00	11 23 2	4414.59	15.56	179.58	57.45	64.15	12 36 37	3814.6	11.95	172.65
110.00	22 56 57	1955.79	-29.02	18.56	60.11	108.91	23 29 33	1355.8	-26.16	10.54
110.00	12 23 29	4225.30	18.41	163.66	55.89	60.68	13 33 55	3625.3	14.37	156.88

DIFFERENTIAL CORRECTIONS
TDE-2.4337 TRA 9.2199 TC3-9.5585 BAU 2.8986
RDE .5191 RRA .0345 RC3 .3251 FAU .09296
FDE-1.7183 FRA 4.3952 FC3-3.5499 BSP 51912
BDE 2.4884 BRA 9.2200 BC3 9.5640 FSP 2131

MID-COURSE EXECUTION ACCURACY
SGT14712.1 SGR 698.4 SG3 573.9
RRT -.4068 RRF -.4560 RTF .9868
SGB14728.6 R23 .0589 R13 -.9868
SG114714.8 SG2 637.8 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 4461.3 SR 624.8 SS 1305.5
CRT -.6421 CRS .7785 CST -.9809
LSA 4660.0 MSA 530.3 SSA 17.1
EL1 4479.5 EL2 477.1 ALF 174.80

LAUNCH DATE NOV 9 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 906.364 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.011 GAL -7.58 AZL 88.15 HCA 273.87 SMA 189.11 ECC .25191 INC 1.8536 V1 30.072
RP 207.26 LAP -1.85 LOP 320.50 VP 24.060 GAP -13.53 AZP 89.87 TAL 320.86 TAP 234.73 RCA 141.47 APO 236.75 V2 26.428
RC 323.990 GL 12.59 GP .34 ZAL 144.22 ZAP 30.97 ETS 179.59 ZAE 50.88 ETE 180.03 ZAC 86.23 ETC 257.01 CLP 30.97

PLANETOCENTRIC CONIC

C3 23.599 VHL 4.858 DLA 6.52 RAL 196.72 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 5.887 DPA 5.13 RAP 172.94 ECC 1.3884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 57	2457.71	-24.63	57.49	62.78	104.43	21 4 54	1857.7	-22.41	49.53
90.00	10 3 35	4694.96	15.29	200.33	59.46	65.87	11 21 50	4095.0	11.90	193.29
100.00	21 48 23	2185.35	-25.79	37.12	62.44	105.67	22 24 49	1585.3	-23.39	29.14
100.00	11 21 49	4442.56	16.38	181.25	58.94	64.64	12 35 52	3842.6	12.83	174.26
110.00	23 3 44	1949.55	-28.88	18.12	61.35	109.13	23 36 13	1349.6	-26.00	10.13
110.00	12 22 58	4251.11	19.27	165.17	57.38	61.20	13 33 49	3651.1	15.28	158.33

DIFFERENTIAL CORRECTIONS
TDE-2.5760 TRA 9.5476 TC3-9.3050 BAU 2.9374
RDE .5322 RRA .0293 RC3 .3169 FAU .08668
FDE-1.6976 FRA 4.2432 FC3-3.1790 BSP 52232
BDE 2.6304 BRA 9.5476 BC3 9.3104 FSP 2007

MID-COURSE EXECUTION ACCURACY
SGT14812.9 SGR 700.0 SG3 539.1
RRT -.4144 RRF -.4655 RTF .9858
SGB14829.5 R23 .0618 R13 -.9858
SG114815.8 SG2 637.0 THA 178.88

ORBIT DETERMINATION ACCURACY
ST 4568.0 SR 627.8 SS 1276.7
CRT -.6535 CRS .7880 CST -.9808
LSA 4755.4 MSA 525.3 SSA 16.8
EL1 4586.6 EL2 473.3 ALF 174.61

LAUNCH DATE NOV 9 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 910.502 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.017 GAL -7.80 AZL 88.14 HCA 275.13 SMA 189.22 ECC .25428 INC 1.8555 V1 30.072
RP 207.16 LAP -1.85 LOP 321.77 VP 24.081 GAP -13.71 AZP 89.83 TAL 319.92 TAP 235.05 RCA 141.11 APO 237.34 V2 26.439
RC 324.833 GL 12.33 GP .34 ZAL 145.19 ZAP 30.44 ETS 179.57 ZAE 50.04 ETE 180.05 ZAC 86.37 ETC 256.94 CLP 30.43

PLANETOCENTRIC CONIC

C3 24.586 VHL 4.958 DLA 5.92 RAL 197.50 RAD 6568.0 VEL 12.082 PTH 2.16 VHP 5.999 DPA 4.82 RAP 173.60 ECC 1.4046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 39	2448.78	-24.48	56.88	64.07	104.70	21 12 28	1848.8	-22.22	48.94
90.00	10 2 6	4723.99	16.09	202.09	60.96	66.38	11 20 50	4124.0	12.76	194.99
100.00	21 55 48	2177.37	-25.64	36.57	63.72	105.92	22 32 5	1577.4	-23.21	28.62
100.00	11 20 38	4470.63	17.19	182.94	60.45	65.16	12 35 9	3870.6	13.70	175.89
110.00	23 10 28	1943.70	-28.75	17.72	62.61	109.34	23 42 51	1343.7	-25.84	9.75
110.00	12 22 28	4277.07	20.11	166.71	58.91	61.76	13 33 45	3677.1	16.18	159.80

DIFFERENTIAL CORRECTIONS
TDE-2.7234 TRA 9.8833 TC3-9.0543 BAU 2.9778
RDE .5457 RRA .0237 RC3 .3088 FAU .08062
FDE-1.6741 FRA 4.0890 FC3-2.8388 BSP 52503
BDE 2.7775 BRA 9.8833 BC3 9.0596 FSP 1886

MID-COURSE EXECUTION ACCURACY
SGT14911.5 SGR 701.6 SG3 505.5
RRT -.4223 RRF -.4754 RTF .9847
SGB14928.0 R23 .0648 R13 -.9847
SG114914.4 SG2 635.8 THA 178.86

ORBIT DETERMINATION ACCURACY
ST 4673.3 SR 630.7 SS 1246.2
CRT -.6644 CRS .7972 CST -.9807
LSA 4849.7 MSA 520.3 SSA 16.6
EL1 4692.3 EL2 469.5 ALF 174.82

LAUNCH DATE NOV 9 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 914.627 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.023 GAL -8.04 AZL 88.14 HCA 276.39 SMA 189.34 ECC .25674 INC 1.8574 V1 30.072
RP 207.08 LAP -1.85 LOP 323.03 VP 24.101 GAP -13.89 AZP 89.79 TAL 318.96 TAP 235.36 RCA 140.73 APO 237.94 V2 26.449
RC 325.671 GL 12.08 GP .33 ZAL 146.17 ZAP 29.91 ETS 179.55 ZAE 49.21 ETE 180.06 ZAC 86.52 ETC 256.87 CLP 29.91

PLANETOCENTRIC CONIC

C3 25.636 VHL 5.063 DLA 5.32 RAL 198.28 RAD 6568.0 VEL 12.125 PTH 2.17 VHP 6.115 DPA 4.51 RAP 174.28 ECC 1.4219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 17	2440.28	-24.33	56.30	65.37	104.95	21 19 57	1840.3	-22.04	48.38
90.00	10 0 40	4753.10	16.88	203.86	62.50	66.92	11 19 53	4153.1	13.61	196.71
100.00	22 3 8	2169.82	-25.50	36.05	65.01	106.16	22 39 18	1569.8	-23.03	28.12
100.00	11 19 29	4498.80	17.99	184.65	61.99	65.71	12 34 28	3898.8	14.56	177.54
110.00	23 17 8	1938.23	-28.63	17.34	63.88	109.53	23 49 26	1338.2	-25.70	9.39
110.00	12 21 59	4303.15	20.94	168.28	60.46	62.35	13 33 42	3703.1	17.08	161.29

DIFFERENTIAL CORRECTIONS
TDE-2.8747 TRA10.2285 TC3-8.8042 BAU 3.0193
RDE .5597 RRA .0176 RC3 .3008 FAU .07475
FDE-1.6481 FRA 3.9329 FC3-2.5244 BSP 52748
BDE 2.9287 BRA10.2285 BC3 8.8094 FSP 1768

MID-COURSE EXECUTION ACCURACY
SGT15006.8 SGR 703.0 SG3 473.2
RRT -.4306 RRF -.4858 RTF .9834
SGB15023.2 R23 .0682 R13 -.9834
SG115009.8 SG2 634.4 THA 178.84

ORBIT DETERMINATION ACCURACY
ST 4776.6 SR 633.4 SS 1214.2
CRT -.6748 CRS .8063 CST -.9805
LSA 4942.2 MSA 515.3 SSA 16.4
EL1 4795.9 EL2 465.6 ALF 174.84

LAUNCH DATE NOV 9 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 918.737 EARTH TO MARS

RL 148.16 LAL .00 LOL 46.63 VL 33.029 GAL -8.28 AZL 88.14 HCA 277.66 SMA 189.45 ECC .25931 INC 1.8594 V1 30.072
RP 207.00 LAP -1.84 LOP 324.30 VP 24.120 GAP -14.08 AZP 89.75 TAL 317.99 TAP 235.65 RCA 140.32 APO 238.57 V2 26.459
RC 326.503 GL 11.83 GP .33 ZAL 147.14 ZAP 29.40 ETS 179.53 ZAE 48.39 ETE 180.08 ZAC 86.67 ETC 256.80 CLP 29.40

PLANETOCENTRIC CONIC

C3 26.753 VHL 5.172 DLA 4.73 RAL 199.05 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 6.233 DPA 4.20 RAP 174.97 ECC 1.4403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 51	2432.23	-24.19	55.76	66.68	105.19	21 27 23	1832.2	-21.87	47.85
90.00	9 59 15	4782.28	17.65	205.66	64.06	67.49	11 18 57	4182.3	14.44	198.45
100.00	22 10 25	2162.69	-25.36	35.57	66.32	106.38	22 46 27	1562.7	-22.87	27.65
100.00	11 18 22	4527.04	18.77	186.39	63.56	66.30	12 33 49	3927.0	15.40	179.21
110.00	23 23 45	1933.15	-28.51	16.99	65.17	109.71	23 55 58	1333.2	-25.56	9.06
110.00	12 21 31	4329.35	21.76	169.87	62.05	62.96	13 33 41	3729.3	17.96	162.80

DIFFERENTIAL CORRECTIONS
TDE-3.0296 TRA10.5837 TC3-8.5557 BAU 3.0618
RDE .5740 RRA .0110 RC3 .2928 FAU .06906
FDE-1.6185 FRA 3.7747 FC3-2.2348 BSP 52965
BDE 3.0835 BRA10.5837 BC3 8.5607 FSP 1654

MID-COURSE EXECUTION ACCURACY
SGT15099.2 SGR 704.4 SG3 441.9
RRT -.4391 RRF -.4965 RTF .9819
SGB15115.6 R23 .0718 R13 -.9820
SG115102.4 SG2 632.7 THA 178.82

ORBIT DETERMINATION ACCURACY
ST 4877.3 SR 635.9 SS 1180.2
CRT -.6846 CRS .8151 CST -.9802
LSA 5032.4 MSA 510.3 SSA 16.1
EL1 4896.9 EL2 461.7 ALF 174.85

LAUNCH DATE NOV 9 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 922.830 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.036	GAL	-8.53	AZL	88.14	HCA	278.92	SMA	189.56	ECC	.26199	INC	1.8613
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.137	GAP	-14.27	AZP	89.71	TAL	317.00	TAP	235.92	RCA	139.90	APO	239.22
RC	327.330	GL	11.58	GP	.32	ZAL	148.10	ZAP	28.91	ETS	179.51	ZAE	47.60	ETE	180.10	ZAC	86.83	ETC	256.74

V1 30.072 V2 26.467 CLP 28.91

PLANETOCENTRIC CONIC

C3 27.941 VHL 5.286 DLA 4.14 RAL 199.82 RAD 6568.1 VEL 12.219 PTH 2.20 VHP 6.353 DPA 3.87 RAP 175.67 ECC 1.4598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 20	2424.60	-24.05	55.24	68.01	105.42	21 34 45	1824.6	-21.70	47.35
90.00	9 57 53	4811.51	18.40	207.47	65.66	68.09	11 18 4	4211.5	15.26	200.20
100.00	22 17 37	2155.98	-25.23	35.11	67.64	106.59	22 53 33	1556.0	-22.72	27.22
100.00	11 17 17	4555.37	19.53	188.14	65.16	66.91	12 33 12	3955.4	16.24	180.90
110.00	23 30 19	1928.46	-28.40	16.67	66.47	109.87	24 2 27	1328.5	-25.43	8.75
110.00	12 21 5	4355.65	22.57	171.49	63.66	63.62	13 33 40	3755.7	18.84	164.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.1892	TRA	10.9484	TC3	-8.3100	BAU	3.1060	SGT	15188.9	SGR	705.7	SG3	411.8	ST	4976.0	SR	638.2	SS	1145.1
RDE	.5888	RRA	.0039	RC3	.2849	FAU	.06356	RRT	-.4480	RRF	-.5078	RTF	.9803	CRT	-.6940	CRS	.8239	CST	-.9797
FDE	-1.5870	FRA	3.6141	FC3	-1.9693	BSP	53135	SGB	15205.2	R23	.0760	R13	-.9803	LSA	5120.9	MSA	505.5	SSA	15.9
BDE	3.2431	BRA	10.9484	BC3	8.3149	FSP	1542	SG1	15192.1	SG2	630.8	THA	178.81	EL1	4995.9	EL2	457.7	ALF	174.87

LAUNCH DATE NOV 9 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 926.906 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.042	GAL	-8.79	AZL	88.14	HCA	280.19	SMA	189.68	ECC	.26479	INC	1.8632
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.154	GAP	-14.47	AZP	89.67	TAL	315.99	TAP	236.18	RCA	139.45	APO	239.90
RC	328.152	GL	11.33	GP	.32	ZAL	149.06	ZAP	28.43	ETS	179.50	ZAE	46.81	ETE	180.12	ZAC	86.99	ETC	256.67

V1 30.072 V2 26.474 CLP 28.43

PLANETOCENTRIC CONIC

C3 29.205 VHL 5.404 DLA 3.55 RAL 200.58 RAD 6568.2 VEL 12.271 PTH 2.21 VHP 6.477 DPA 3.54 RAP 176.39 ECC 1.4806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 46	2417.41	-23.92	54.75	69.36	105.63	21 42 3	1817.4	-21.54	46.89
90.00	9 56 33	4840.80	19.13	209.31	67.28	68.72	11 17 13	4240.8	16.07	201.97
100.00	22 24 46	2149.68	-25.11	34.68	68.98	106.78	23 0 36	1549.7	-22.57	26.81
100.00	11 16 13	4583.76	20.28	189.92	66.79	67.56	12 32 37	3983.8	17.06	182.60
110.00	23 36 49	1924.16	-28.30	16.37	67.79	110.02	24 8 54	1324.2	-25.31	8.47
110.00	12 20 39	4382.05	23.36	173.13	65.31	64.30	13 33 41	3782.1	19.71	165.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.3521	TRA	11.3233	TC3	-8.0673	BAU	3.1517	SGT	15275.4	SGR	706.9	SG3	382.8	ST	5071.5	SR	640.3	SS	1108.0
RDE	.6039	RRA	-.0037	RC3	.2771	FAU	.05821	RRT	-.4570	RRF	-.5195	RTF	.9783	CRT	-.7027	CRS	.8324	CST	-.9791
FDE	-1.5521	FRA	3.4512	FC3	-1.7256	BSP	53291	SGB	15291.8	R23	.0805	R13	-.9784	LSA	5206.5	MSA	500.6	SSA	15.7
BDE	3.4061	BRA	11.3233	BC3	8.0721	FSP	1435	SG1	15278.8	SG2	628.6	THA	178.79	EL1	5091.6	EL2	453.8	ALF	174.89

LAUNCH DATE NOV 9 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 930.963 EARTH TO MARS

RL	148.16	LAL	.00	LOL	46.63	VL	33.049	GAL	-9.05	AZL	88.13	HCA	281.46	SMA	189.79	ECC	.26770	INC	1.8652
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.170	GAP	-14.67	AZP	89.63	TAL	314.96	TAP	236.42	RCA	138.98	APO	240.60
RC	328.970	GL	11.08	GP	.31	ZAL	150.01	ZAP	27.97	ETS	179.48	ZAE	46.04	ETE	180.13	ZAC	87.16	ETC	256.60

V1 30.072 V2 26.480 CLP 27.97

PLANETOCENTRIC CONIC

C3 30.550 VHL 5.527 DLA 2.97 RAL 201.34 RAD 6568.2 VEL 12.326 PTH 2.22 VHP 6.603 DPA 3.20 RAP 177.12 ECC 1.5028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 9 7	2410.65	-23.79	54.30	70.72	105.82	21 49 18	1810.6	-21.39	46.45
90.00	9 55 14	4870.13	19.85	211.17	68.93	69.38	11 16 25	4270.1	16.86	203.76
100.00	22 31 51	2143.80	-24.99	34.29	70.33	106.96	23 7 35	1543.8	-22.43	26.42
100.00	11 15 12	4612.21	21.01	191.72	68.45	68.23	12 32 4	4012.2	17.87	184.33
110.00	23 43 17	1920.23	-28.21	16.10	69.12	110.16	24 15 17	1320.2	-25.20	8.22
110.00	12 20 15	4408.54	24.13	174.80	66.99	65.02	13 33 44	3808.5	20.56	167.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.5209	TRA	11.7078	TC3	-7.8287	BAU	3.1993	SGT	15359.3	SGR	708.0	SG3	354.8	ST	5165.4	SR	642.3	SS	1069.7
RDE	.6195	RRA	-.0119	RC3	.2694	FAU	.05303	RRT	-.4664	RRF	-.5316	RTF	.9761	CRT	-.7113	CRS	.8410	CST	-.9783
FDE	-1.5148	FRA	3.2858	FC3	-1.5028	BSP	53375	SGB	15375.6	R23	.0855	R13	-.9762	LSA	5290.7	MSA	495.7	SSA	15.4
BDE	3.5750	BRA	11.7078	BC3	7.8333	FSP	1329	SG1	15362.9	SG2	626.1	THA	178.77	EL1	5185.7	EL2	449.7	ALF	174.91

LAUNCH DATE NOV 10 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 443.171 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 35.165 GAL -7.06 AZL 88.08 HCA 141.74 SMA 238.96 ECC .39676 INC 1.9168 V1 30.080
RP 244.91 LAP 1.19 LOP 189.39 VP 22.988 GAP 23.33 AZP 91.51 TAL 334.89 TAP 116.63 RCA 144.15 APO 333.78 V2 22.396
RC 126.220 GL 10.67 GP -.17 ZAL 128.39 ZAP 173.11 ETS 180.18 ZAE 156.36 ETE 356.94 ZAC 88.07 ETC 256.17 CLP 173.11

PLANETOCENTRIC CONIC

C3 39.747 VHL 6.305 DLA 11.04 RAL 181.39 RAD 6568.5 VEL 12.693 PTH 2.31 VHP 10.445 DPA .08 RAP 182.76 ECC 1.6541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 1	2734.46	-27.88	77.06	59.19	95.18	19 28 36	2134.5	-26.87	68.53
90.00	9 34 20	4679.10	14.85	199.38	52.09	65.61	10 52 19	4079.1	11.43	192.37
100.00	20 9 54	2454.26	-29.30	56.29	59.03	96.21	20 50 48	1854.3	-28.13	47.68
100.00	10 50 8	4434.54	16.14	180.77	51.46	64.50	12 4 3	3834.5	12.58	173.80
110.00	21 30 42	2201.45	-33.10	36.49	58.43	99.05	22 7 23	1601.4	-31.50	27.63
110.00	11 45 50	4260.12	19.56	165.70	49.63	61.39	12 56 50	3660.1	15.59	158.83

DIFFERENTIAL CORRECTIONS
TDE 1.1408 TRA-2.7503 TC3 .6364 BAU .3405
RDE -.4570 RRA -.1248 RC3 -.0744 FAU .06589
FDE -.5404 FRA 1.8915 FC3-1.4352 BSP 9674
BDE 1.2289 BRA 2.7532 BC3 .6407 FSP 609

MID-COURSE EXECUTION ACCURACY
SGT 2864.3 SGR 441.1 SG3 221.7
RRT -.1674 RRF .1513 RTF -.8738
SGB 2898.0 R23 -.0016 R13 .8738
SG1 2865.2 SG2 434.8 THA 178.49

ORBIT DETERMINATION ACCURACY
ST 1288.0 SR 416.7 SS 650.9
CRT -.7529 CRS -.6185 CST .9816
LSA 1471.7 MSA 299.3 SSA 28.7
EL1 1327.4 EL2 266.2 ALF 165.72

LAUNCH DATE NOV 10 1964 FLIGHT TIME 168.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 445.327 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 35.061 GAL -6.87 AZL 88.08 HCA 142.64 SMA 235.87 ECC .38821 INC 1.9190 V1 30.080
RP 244.68 LAP 1.16 LOP 190.30 VP 22.850 GAP 22.75 AZP 91.53 TAL 335.19 TAP 117.84 RCA 144.30 APO 327.44 V2 22.418
RC 128.267 GL 10.91 GP -.18 ZAL 127.94 ZAP 172.64 ETS 180.13 ZAE 156.07 ETE 357.13 ZAC 88.16 ETC 256.15 CLP 172.64

PLANETOCENTRIC CONIC

C3 37.902 VHL 6.156 DLA 11.43 RAL 181.11 RAD 6568.5 VEL 12.620 PTH 2.29 VHP 10.213 DPA -.11 RAP 183.16 ECC 1.6238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 38	2735.51	-27.88	77.13	58.17	95.14	19 24 13	2135.5	-26.88	68.61
90.00	9 36 26	4654.02	14.14	197.88	51.01	65.21	10 54 0	4054.0	10.68	190.91
100.00	20 5 45	2454.57	-29.30	56.31	58.01	96.19	20 46 39	1854.6	-28.14	47.70
100.00	10 52 0	4410.21	15.42	179.32	50.38	64.07	12 5 30	3810.2	11.81	172.39
110.00	21 27 3	2200.16	-33.09	36.39	57.41	99.11	22 3 43	1600.2	-31.48	27.54
110.00	11 47 11	4237.38	18.81	164.36	48.54	60.92	12 57 49	3637.4	14.79	157.55

DIFFERENTIAL CORRECTIONS
TDE 1.1208 TRA-2.7231 TC3 .6913 BAU .3525
RDE -.4386 RRA -.1182 RC3 -.0779 FAU .06772
FDE -.5421 FRA 1.9326 FC3-1.5469 BSP 9860
BDE 1.2035 BRA 2.7255 BC3 .6957 FSP 644

MID-COURSE EXECUTION ACCURACY
SGT 2915.0 SGR 435.6 SG3 232.6
RRT -.1758 RRF .1595 RTF -.8781
SGB 2947.1 R23 -.0018 R13 .8781
SG1 2916.1 SG2 426.7 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 1300.1 SR 409.6 SS 660.8
CRT -.7516 CRS -.6126 CST .9805
LSA 1485.0 MSA 297.9 SSA 28.8
EL1 1337.5 EL2 262.6 ALF 166.13

LAUNCH DATE NOV 10 1964 FLIGHT TIME 170.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 447.596 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.962 GAL -6.68 AZL 88.08 HCA 143.55 SMA 232.99 ECC .38001 INC 1.9214 V1 30.080
RP 244.46 LAP 1.14 LOP 191.20 VP 22.720 GAP 22.16 AZP 91.55 TAL 335.50 TAP 119.05 RCA 144.45 APO 321.53 V2 22.440
RC 130.354 GL 11.16 GP -.19 ZAL 127.48 ZAP 172.17 ETS 180.09 ZAE 155.83 ETE 357.31 ZAC 88.25 ETC 256.43 CLP 172.17

PLANETOCENTRIC CONIC

C3 36.164 VHL 6.014 DLA 11.83 RAL 180.81 RAD 6568.4 VEL 12.551 PTH 2.27 VHP 9.987 DPA -.29 RAP 183.55 ECC 1.5952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 5	2737.11	-27.89	77.25	57.15	95.09	19 19 42	2137.1	-26.90	68.72
90.00	9 38 36	4628.71	13.41	196.38	49.95	64.82	10 55 44	4028.7	9.91	189.45
100.00	20 1 26	2455.39	-29.31	56.37	56.99	96.16	20 42 21	1855.4	-28.15	47.76
100.00	10 53 55	4385.67	14.69	177.87	49.31	63.67	12 7 1	3785.7	11.03	170.99
110.00	21 23 16	2199.32	-33.08	36.33	56.40	99.15	21 59 56	1599.3	-31.46	27.48
110.00	11 48 35	4214.50	18.05	163.03	47.45	60.47	12 58 49	3614.5	13.98	156.28

DIFFERENTIAL CORRECTIONS
TDE 1.1002 TRA-2.6950 TC3 .7496 BAU .3645
RDE -.4208 RRA -.1078 RC3 -.0816 FAU .06963
FDE -.5429 FRA 1.9745 FC3-1.6669 BSP 10050
BDE 1.1779 BRA 2.6971 BC3 .7540 FSP 680

MID-COURSE EXECUTION ACCURACY
SGT 2965.4 SGR 425.9 SG3 244.1
RRT -.1848 RRF .1682 RTF -.8823
SGB 2995.9 R23 -.0019 R13 .8824
SG1 2966.5 SG2 418.5 THA 178.45

ORBIT DETERMINATION ACCURACY
ST 1311.0 SR 402.2 SS 670.4
CRT -.7502 CRS -.6061 CST .9794
LSA 1497.1 MSA 296.6 SSA 28.9
EL1 1346.7 EL2 258.9 ALF 166.53

LAUNCH DATE NOV 10 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 449.968 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.866 GAL -6.49 AZL 88.08 HCA 144.46 SMA 230.30 ECC .37212 INC 1.9238 V1 30.080
RP 244.23 LAP 1.12 LOP 192.11 VP 22.595 GAP 21.58 AZP 91.57 TAL 335.82 TAP 120.27 RCA 144.60 APO 316.00 V2 22.463
RC 132.477 GL 11.42 GP -.20 ZAL 127.00 ZAP 171.69 ETS 180.06 ZAE 155.63 ETE 357.48 ZAC 88.33 ETC 256.11 CLP 171.69

PLANETOCENTRIC CONIC

C3 34.526 VHL 5.876 DLA 12.24 RAL 180.49 RAD 6568.4 VEL 12.486 PTH 2.26 VHP 9.766 DPA -.48 RAP 183.93 ECC 1.5682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 22	2739.30	-27.91	77.41	56.14	95.01	19 15 1	2139.3	-26.92	68.88
90.00	9 40 49	4603.10	12.66	194.87	48.89	64.46	10 57 32	4003.1	9.12	187.98
100.00	19 56 58	2456.75	-29.32	56.47	55.98	96.11	20 37 55	1856.8	-28.16	47.86
100.00	10 55 54	4360.88	13.94	176.42	48.25	63.28	12 8 35	3760.9	10.24	169.58
110.00	21 19 22	2198.95	-33.08	36.30	55.39	99.16	21 56 1	1599.0	-31.46	27.45
110.00	11 50 0	4191.44	17.27	161.69	46.38	60.03	12 59 51	3591.4	13.16	155.00

DIFFERENTIAL CORRECTIONS
TDE 1.0952 TRA-2.6499 TC3 .8301 BAU .3852
RDE -.4039 RRA -.1001 RC3 -.0858 FAU .07144
FDE -.5386 FRA 2.0212 FC3-1.7913 BSP 9842
BDE 1.1674 BRA 2.6518 BC3 .8345 FSP 728

MID-COURSE EXECUTION ACCURACY
SGT 3013.8 SGR 418.7 SG3 255.9
RRT -.2020 RRF .1755 RTF -.8901
SGB 3042.7 R23 .0078 R13 .8901
SG1 3015.0 SG2 409.9 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 1330.6 SR 395.0 SS 678.1
CRT -.7552 CRS -.5951 CST .9750
LSA 1515.6 MSA 297.6 SSA 28.1
EL1 1364.9 EL2 252.4 ALF 166.91

LAUNCH DATE NOV 10 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 452.434 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.775 GAL -6.31 AZL 88.07 HCA 145.37 SMA 227.79 ECC .36457 INC 1.9264 V1 30.080
RP 243.99 LAP 1.09 LOP 193.02 VP 22.478 GAP 21.01 AZP 91.59 TAL 336.13 TAP 121.50 RCA 144.74 APO 310.83 V2 22.486
RC 134.631 GL 11.67 GP -.21 ZAL 126.51 ZAP 171.20 ETS 180.03 ZAE 155.49 ETE 357.64 ZAC 88.41 ETC 256.09 CLP 171.20

PLANETOCENTRIC CONIC

C3 32.987 VHL 5.743 DLA 12.66 RAL 180.17 RAD 6568.3 VEL 12.424 PTH 2.25 VHP 9.550 DPA -.67 RAP 184.31 ECC 1.5429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 31	2742.03	-27.92	77.60	55.13	94.91	19 10 13	2142.0	-26.95	69.07
90.00	9 43 6	4577.37	11.90	193.36	47.85	64.12	10 59 24	3977.4	8.32	186.51
100.00	19 52 23	2458.64	-29.33	56.61	54.98	96.04	20 33 22	1858.6	-28.19	47.99
100.00	10 57 55	4335.99	13.17	174.97	47.20	62.92	12 10 11	3736.0	9.43	168.17
110.00	21 15 21	2199.05	-33.08	36.31	54.39	99.16	21 52 0	1599.0	-31.46	27.46
110.00	11 51 27	4168.35	16.48	160.37	45.32	59.62	13 0 55	3568.3	12.33	153.73

DIFFERENTIAL CORRECTIONS
TDE 1.0650 TRA-2.6296 TC3 .8849 BAU .3923
RDE -.3870 RRA -.0921 RC3 -.0895 FAU .07364
FDE -.5403 FRA 2.0621 FC3-1.9328 BSP 10230
BDE 1.1331 BRA 2.6312 BC3 .8895 FSP 763

MID-COURSE EXECUTION ACCURACY
SGT 3064.4 SGR 410.4 SG3 268.6
RRT -.2079 RRF .1864 RTF -.8920
SGB 3091.8 R23 .0024 R13 .8920
SG1 3065.6 SG2 401.3 THA 178.38

ORBIT DETERMINATION ACCURACY
ST 1334.2 SR 387.1 SS 687.9
CRT -.7502 CRS -.5900 CST .9753
LSA 1521.6 MSA 295.4 SSA 28.6
EL1 1366.6 EL2 249.9 ALF 167.29

LAUNCH DATE NOV 10 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 454.987 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.687 GAL -6.14 AZL 88.07 HCA 146.28 SMA 225.43 ECC .35732 INC 1.9291 V1 30.080
RP 243.75 LAP 1.07 LOP 193.93 VP 22.366 GAP 20.43 AZP 91.60 TAL 336.46 TAP 122.74 RCA 144.88 APO 305.98 V2 22.510
RC 136.814 GL 11.93 GP -.22 ZAL 126.01 ZAP 170.71 ETS 180.00 ZAE 155.39 ETE 357.79 ZAC 88.50 ETC 256.07 CLP 170.71

PLANETOCENTRIC CONIC

C3 31.538 VHL 5.616 DLA 13.09 RAL 179.84 RAD 6568.3 VEL 12.366 PTH 2.23 VHP 9.339 DPA -.85 RAP 184.69 ECC 1.5190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 30	2745.37	-27.94	77.85	54.13	94.79	19 5 15	2145.4	-26.98	69.31
90.00	9 45 28	4551.40	11.13	191.85	46.82	63.79	11 1 19	3951.4	7.51	185.03
100.00	19 47 39	2461.09	-29.35	56.79	53.98	95.95	20 28 40	1861.1	-28.22	48.17
100.00	11 0 0	4310.91	12.39	173.52	46.17	62.58	12 11 51	3710.9	8.62	166.76
110.00	21 11 12	2199.63	-33.08	36.35	53.40	99.13	21 47 52	1599.6	-31.47	27.50
110.00	11 52 56	4145.14	15.68	159.05	44.28	59.23	13 2 1	3545.1	11.48	152.46

DIFFERENTIAL CORRECTIONS
TDE 1.0390 TRA-2.6037 TC3 .9481 BAU .4017
RDE -.3706 RRA -.0844 RC3 -.0934 FAU .07590
FDE -.5400 FRA 2.1046 FC3-2.0836 BSP 10507
BDE 1.1031 BRA 2.6050 BC3 .9527 FSP 803

MID-COURSE EXECUTION ACCURACY
SGT 3113.8 SGR 402.2 SG3 281.8
RRT -.2167 RRF .1974 RTF -.8948
SGB 3139.7 R23 -.0003 R13 .8948
SG1 3115.1 SG2 392.5 THA 178.37

ORBIT DETERMINATION ACCURACY
ST 1339.5 SR 379.0 SS 696.9
CRT -.7469 CRS -.5835 CST .9746
LSA 1528.5 MSA 293.8 SSA 28.8
EL1 1370.1 EL2 246.4 ALF 167.66

LAUNCH DATE NOV 10 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 457.621 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.603 GAL -5.96 AZL 88.07 HCA 147.19 SMA 223.22 ECC .35036 INC 1.9319 V1 30.080
RP 243.50 LAP 1.05 LOP 194.85 VP 22.260 GAP 19.86 AZP 91.62 TAL 336.79 TAP 123.98 RCA 145.01 APO 301.43 V2 22.535
RC 139.022 GL 12.19 GP -.23 ZAL 125.49 ZAP 170.21 ETS 179.98 ZAE 155.34 ETE 357.92 ZAC 88.58 ETC 256.05 CLP 170.21

PLANETOCENTRIC CONIC

C3 30.172 VHL 5.493 DLA 13.53 RAL 179.50 RAD 6568.2 VEL 12.310 PTH 2.22 VHP 9.133 DPA -1.03 RAP 185.06 ECC 1.4966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 19	2749.33	-27.96	78.13	53.14	94.65	19 0 9	2149.3	-27.03	69.59
90.00	9 47 54	4525.22	10.33	190.33	45.80	63.49	11 3 19	3925.2	6.69	183.55
100.00	19 42 46	2464.12	-29.37	57.01	52.99	95.83	20 23 50	1864.1	-28.25	48.38
100.00	11 2 9	4285.66	11.59	172.06	45.14	62.25	12 13 34	3685.7	7.79	165.34
110.00	21 6 56	2200.71	-33.10	36.44	52.42	99.09	21 43 37	1600.7	-31.49	27.58
110.00	11 54 27	4121.83	14.86	157.74	43.25	58.86	13 3 9	3521.8	10.63	151.19

DIFFERENTIAL CORRECTIONS
TDE 1.0138 TRA-2.5761 TC3 1.0163 BAU .4118
RDE -.3547 RRA -.0770 RC3 -.0975 FAU .07823
FDE -.5379 FRA 2.1490 FC3-2.2447 BSP 10748
BDE 1.0741 BRA 2.5772 BC3 1.0209 FSP 846

MID-COURSE EXECUTION ACCURACY
SGT 3162.8 SGR 393.9 SG3 295.7
RRT -.2268 RRF .2086 RTF -.8979
SGB 3187.2 R23 -.0020 R13 .8979
SG1 3164.0 SG2 383.5 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 1344.2 SR 370.8 SS 705.2
CRT -.7439 CRS -.5754 CST .9733
LSA 1534.6 MSA 292.8 SSA 28.9
EL1 1373.2 EL2 242.6 ALF 168.02

LAUNCH DATE NOV 10 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 460.329 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.523 GAL -5.80 AZL 88.07 HCA 148.11 SMA 221.15 ECC .34368 INC 1.9348 V1 30.080
RP 243.25 LAP 1.02 LOP 195.76 VP 22.160 GAP 19.30 AZP 91.64 TAL 337.12 TAP 125.23 RCA 145.14 APO 297.15 V2 22.560
RC 141.251 GL 12.46 GP -.24 ZAL 124.96 ZAP 169.69 ETS 179.97 ZAE 155.33 ETE 358.06 ZAC 88.65 ETC 256.03 CLP 169.70

PLANETOCENTRIC CONIC

C3 28.887 VHL 5.375 DLA 13.97 RAL 179.14 RAD 6568.2 VEL 12.258 PTH 2.21 VHP 8.932 DPA -1.21 RAP 185.42 ECC 1.4754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 59	2753.91	-27.99	78.47	52.15	94.48	18 54 53	2153.9	-27.07	69.92
90.00	9 50 24	4498.83	9.53	188.81	44.80	63.21	11 5 23	3898.8	5.86	182.05
100.00	19 37 43	2467.73	-29.39	57.28	52.01	95.69	20 18 51	1867.7	-28.30	48.64
100.00	11 4 21	4260.25	10.78	170.61	44.14	61.95	12 15 21	3660.3	6.95	163.92
110.00	21 2 33	2202.30	-33.11	36.56	51.45	99.02	21 39 15	1602.3	-31.51	27.70
110.00	11 56 0	4098.44	14.04	156.43	42.23	58.51	13 4 19	3498.4	9.77	149.93

DIFFERENTIAL CORRECTIONS
TDE .9899 TRA-2.5462 TC3 1.0898 BAU .4227
RDE -.3394 RRA -.0698 RC3 -.1017 FAU .08067
FDE -.5346 FRA 2.1941 FC3-2.4176 BSP 10950
BDE 1.0464 BRA 2.5471 BC3 1.0945 FSP 893

MID-COURSE EXECUTION ACCURACY
SGT 3210.8 SGR 385.6 SG3 310.2
RRT -.2384 RRF .2205 RTF -.9012
SGB 3233.9 R23 -.0028 R13 .9012
SG1 3212.2 SG2 374.3 THA 178.34

ORBIT DETERMINATION ACCURACY
ST 1348.7 SR 362.5 SS 713.1
CRT -.7416 CRS -.5666 CST .9717
LSA 1540.3 MSA 292.1 SSA 28.9
EL1 1376.1 EL2 238.4 ALF 168.37

LAUNCH DATE NOV 10 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 463.106 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.445 GAL -5.63 AZL 88.06 HCA 149.03 SMA 219.20 ECC .33727 INC 1.9381 V1 30.080
RP 243.00 LAP 1.00 LOP 196.68 VP 22.065 GAP 18.74 AZP 91.66 TAL 337.46 TAP 126.48 RCA 145.27 APO 293.13 V2 22.585
RC 143.499 GL 12.73 GP -.25 ZAL 124.41 ZAP 169.18 ETS 179.96 ZAE 155.36 ETE 358.18 ZAC 88.73 ETC 256.02 CLP 169.18

PLANETOCENTRIC CONIC

C3 27.677 VHL 5.261 DLA 14.43 RAL 178.77 RAD 6568.1 VEL 12.209 PTH 2.19 VHP 8.735 DPA -1.38 RAP 185.78 ECC 1.4555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 28	2759.15	-28.02	78.85	51.17	94.29	18 49 27	2159.1	-27.13	70.29
90.00	9 53 0	4472.23	8.71	187.29	43.81	62.95	11 7 32	3872.2	5.01	180.56
100.00	19 32 32	2471.94	-29.42	57.59	51.03	95.53	20 13 44	1871.9	-28.35	48.95
100.00	11 6 37	4234.67	9.96	169.16	43.15	61.67	12 17 12	3634.7	6.10	162.50
110.00	20 58 2	2204.40	-33.13	36.72	50.48	98.93	21 34 46	1604.4	-31.55	27.85
110.00	11 57 36	4074.98	13.20	155.13	41.23	58.18	13 5 31	3475.0	8.90	148.67

DIFFERENTIAL CORRECTIONS
TDE .9660 TRA-2.5151 TC3 1.1675 BAU .4337
RDE -.3244 RRA -.0629 RC3 -.1060 FAU .08319
FDE -.5296 FRA 2.2408 FC3-2.6023 BSP 11133
BDE 1.0190 BRA 2.5159 BC3 1.1723 FSP 943

MID-COURSE EXECUTION ACCURACY
SGT 3258.2 SGR 377.2 SG3 325.3
RRT -.2511 RRF .2330 RTF -.9045
SGB 3279.9 R23 -.0031 R13 .9045
SG1 3259.6 SG2 365.0 THA 178.31

ORBIT DETERMINATION ACCURACY
ST 1352.1 SR 354.0 SS 720.3
CRT -.7393 CRS -.5565 CST .9696
LSA 1544.7 MSA 292.0 SSA 28.8
EL1 1377.9 EL2 233.9 ALF 168.72

LAUNCH DATE NOV 10 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 465.947 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.371 GAL -5.47 AZL 88.06 HCA 149.95 SMA 217.37 ECC .33111 INC 1.9413 V1 30.080
RP 242.74 LAP .97 LOP 197.60 VP 21.976 GAP 18.18 AZP 91.68 TAL 337.80 TAP 127.74 RCA 145.39 APO 289.34 V2 22.611
RC 145.763 GL 13.00 GP -.26 ZAL 123.85 ZAP 168.65 ETS 179.95 ZAE 155.44 ETE 358.30 ZAC 88.80 ETC 256.00 CLP 168.65

PLANETOCENTRIC CONIC

C3 26.537 VHL 5.151 DLA 14.89 RAL 178.40 RAD 6568.1 VEL 12.162 PTH 2.18 VHP 8.542 DPA -1.56 RAP 186.13 ECC 1.4367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 48	2765.04	-28.05	79.28	50.20	94.08	18 43 53	2165.0	-27.18	70.72
90.00	9 55 40	4445.44	7.88	185.76	42.84	62.71	11 9 45	3845.4	4.16	179.05
100.00	19 27 11	2476.77	-29.45	57.94	50.07	95.35	20 8 28	1876.8	-28.40	49.29
100.00	11 8 58	4208.95	9.12	167.70	42.17	61.41	12 19 7	3608.9	5.24	161.07
110.00	20 53 24	2207.02	-33.16	36.92	49.53	98.81	21 30 11	1607.0	-31.59	28.04
110.00	11 59 14	4051.45	12.35	153.84	40.25	57.87	13 6 46	3451.5	8.02	147.42

DIFFERENTIAL CORRECTIONS
TDE .9423 TRA-2.4830 TC3 1.2486 BAU .4447
RDE -.3100 RRA -.0562 RC3 -.1105 FAU .08586
FDE -.5239 FRA 2.2877 FC3-2.8009 BSP 11293
BDE .9919 BRA 2.4836 BC3 1.2535 FSP 994

MID-COURSE EXECUTION ACCURACY
SGT 3304.4 SGR 368.8 SG3 341.2
RRT -.2649 RRF .2465 RTF -.9077
SGB 3324.9 R23 -.0033 R13 .9077
SG1 3305.8 SG2 355.5 THA 178.29

ORBIT DETERMINATION ACCURACY
ST 1354.5 SR 345.3 SS 727.2
CRT -.7371 CRS -.5462 CST .9674
LSA 1548.1 MSA 292.0 SSA 28.6
EL1 1378.9 EL2 229.2 ALF 169.05

LAUNCH DATE NOV 10 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 468.848 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.300 GAL -5.31 AZL 88.06 HCA 150.87 SMA 215.64 ECC .32521 INC 1.9449 V1 30.080
RP 242.47 LAP .95 LOP 198.52 VP 21.892 GAP 17.63 AZP 91.70 TAL 338.14 TAP 129.01 RCA 145.51 APO 285.77 V2 22.638
RC 148.041 GL 13.28 GP -.27 ZAL 123.29 ZAP 168.11 ETS 179.94 ZAE 155.56 ETE 358.41 ZAC 88.87 ETC 255.99 CLP 168.11

PLANETOCENTRIC CONIC

C3 25.464 VHL 5.046 DLA 15.36 RAL 178.01 RAD 6568.0 VEL 12.118 PTH 2.17 VHP 8.354 DPA -1.73 RAP 186.47 ECC 1.4191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 57	2771.62	-28.08	79.76	49.24	93.84	18 38 9	2171.6	-27.25	71.19
90.00	9 58 26	4418.44	7.03	184.23	41.89	62.50	11 12 4	3818.4	3.29	177.54
100.00	19 21 41	2482.21	-29.49	58.34	49.12	95.14	20 3 4	1882.2	-28.46	49.69
100.00	11 11 23	4183.08	8.28	166.25	41.22	61.17	12 21 6	3583.1	4.37	159.64
110.00	20 48 38	2210.17	-33.20	37.16	48.59	98.67	21 25 28	1610.2	-31.64	28.27
110.00	12 0 55	4027.88	11.49	152.55	39.29	57.58	13 8 3	3427.9	7.13	146.17

DIFFERENTIAL CORRECTIONS
TDE .9179 TRA-2.4510 TC3 1.3327 BAU .4554
RDE -.2959 RRA -.0498 RC3 -.1151 FAU .08864
FDE -.5168 FRA 2.3360 FC3-3.0137 BSP 11468
BDE .9644 BRA 2.4515 BC3 1.3377 FSP 1049

MID-COURSE EXECUTION ACCURACY
SGT 3350.2 SGR 360.3 SG3 357.9
RRT -.2795 RRF .2609 RTF -.9108
SGB 3369.5 R23 -.0037 R13 .9108
SG1 3351.8 SG2 345.8 THA 178.26

ORBIT DETERMINATION ACCURACY
ST 1355.5 SR 336.5 SS 733.8
CRT -.7347 CRS -.5349 CST .9649
LSA 1550.1 MSA 292.5 SSA 28.4
EL1 1378.5 EL2 224.5 ALF 169.38

LAUNCH DATE NOV 10 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 471.805 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.232 GAL -5.16 AZL 88.05 HCA 151.79 SMA 214.01 ECC .31954 INC 1.9486 V1 30.080
RP 242.20 LAP .92 LOP 199.44 VP 21.813 GAP 17.08 AZP 91.72 TAL 338.49 TAP 130.28 RCA 145.63 APO 282.40 V2 22.664
RC 150.330 GL 13.56 GP -.29 ZAL 122.71 ZAP 167.56 ETS 179.94 ZAE 155.72 ETE 358.51 ZAC 88.94 ETC 255.97 CLP 167.56

PLANETOCENTRIC CONIC

C3 24.454 VHL 4.945 DLA 15.84 RAL 177.62 RAD 6568.0 VEL 12.076 PTH 2.16 VHP 8.170 DPA -1.90 RAP 186.81 ECC 1.4025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 56	2778.89	-28.11	80.29	48.29	93.58	18 32 15	2178.9	-27.32	71.71
90.00	10 1 18	4391.23	6.17	182.69	40.96	62.31	11 14 29	3791.2	2.42	176.02
100.00	19 16 2	2488.30	-29.52	58.79	48.17	94.90	19 57 31	1888.3	-28.53	50.13
100.00	11 13 53	4157.05	7.42	164.79	40.28	60.96	12 23 10	3557.0	3.49	158.21
110.00	20 43 45	2213.87	-33.23	37.44	47.66	98.51	21 20 39	1613.9	-31.70	28.55
110.00	12 2 39	4004.25	10.63	151.26	38.34	57.32	13 9 23	3404.3	6.24	144.91

DIFFERENTIAL CORRECTIONS
TDE .8963 TRA-2.4148 TC3 1.4258 BAU .4678
RDE -.2824 RRA -.0435 RC3 -.1200 FAU .09156
FDE -.5079 FRA 2.3853 FC3-3.2416 BSP 11547
BDE .9398 BRA 2.4152 BC3 1.4308 FSP 1106

MID-COURSE EXECUTION ACCURACY
SGT 3394.9 SGR 352.0 SG3 375.4
RRT -.2968 RRF .2762 RTF -.9144
SGB 3413.0 R23 -.0023 R13 .9144
SG1 3396.5 SG2 335.9 THA 178.22

ORBIT DETERMINATION ACCURACY
ST 1357.0 SR 327.6 SS 739.7
CRT -.7338 CRS -.5223 CST .9613
LSA 1552.0 MSA 294.2 SSA 27.9
EL1 1378.7 EL2 219.0 ALF 169.69

LAUNCH DATE NOV 10 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 474.813 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.166 GAL -5.01 AZL 88.05 HCA 152.72 SMA 212.48 ECC .31410 INC 1.9526 V1 30.080
RP 241.93 LAP .89 LOP 200.37 VP 21.738 GAP 16.54 AZP 91.74 TAL 338.84 TAP 131.56 RCA 145.74 APO 279.22 V2 22.692
RC 152.629 GL 13.84 GP -.30 ZAL 122.12 ZAP 167.00 ETS 179.94 ZAE 155.91 ETE 358.61 ZAC 89.01 ETC 255.96 CLP 167.01

PLANETOCENTRIC CONIC

C3 23.504 VHL 4.848 DLA 16.32 RAL 177.21 RAD 6568.0 VEL 12.037 PTH 2.15 VHP 7.990 DPA -2.07 RAP 187.13 ECC 1.3868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 44	2786.87	-28.14	80.87	47.36	93.29	18 26 11	2186.9	-27.39	72.28
90.00	10 4 16	4363.83	5.30	181.14	40.04	62.14	11 17 0	3763.8	1.53	174.49
100.00	19 10 14	2495.03	-29.56	59.29	47.24	94.65	19 51 49	1895.0	-28.60	50.61
100.00	11 16 28	4130.90	6.55	163.34	39.36	60.77	12 25 18	3530.9	2.61	156.77
110.00	20 38 45	2218.09	-33.27	37.76	46.75	98.32	21 15 43	1618.1	-31.77	28.86
110.00	12 4 26	3980.61	9.75	149.99	37.41	57.07	13 10 47	3380.6	5.35	143.67

DIFFERENTIAL CORRECTIONS
TDE .8678 TRA-2.3855 TC3 1.5099 BAU .4761
RDE -.2690 RRA -.0373 RC3 -.1247 FAU .09465
FDE -.4985 FRA 2.4351 FC3-3.4864 BSP 11792
BDE .9085 BRA 2.3858 BC3 1.5151 FSP 1165

MID-COURSE EXECUTION ACCURACY
SGT 3438.6 SGR 343.3 SG3 393.7
RRT -.3118 RRF .2929 RTF -.9165
SGB 3455.7 R23 -.0048 R13 .9165
SG1 3440.3 SG2 326.0 THA 178.20

ORBIT DETERMINATION ACCURACY
ST 1352.9 SR 318.3 SS 745.6
CRT -.7294 CRS -.5098 CST .9590
LSA 1549.2 MSA 294.5 SSA 27.8
EL1 1373.2 EL2 214.5 ALF 170.02

LAUNCH DATE NOV 10 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 477.870 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.103 GAL -4.87 AZL 88.04 HCA 153.64 SMA 211.03 ECC .30888 INC 1.9569 V1 30.080
RP 241.65 LAP .87 LOP 201.29 VP 21.669 GAP 16.00 AZP 91.75 TAL 339.20 TAP 132.84 RCA 145.85 APO 276.21 V2 22.720
RC 154.936 GL 14.12 GP -.32 ZAL 121.52 ZAP 166.43 ETS 179.95 ZAE 156.15 ETE 358.70 ZAC 89.07 ETC 255.95 CLP 166.44

PLANETOCENTRIC CONIC

C3 22.609 VHL 4.755 DLA 16.81 RAL 176.80 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 7.814 DPA -2.23 RAP 187.45 ECC 1.3721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 22	2795.59	-28.17	81.50	46.43	92.97	18 19 58	2195.6	-27.46	72.91
90.00	10 7 21	4336.21	4.42	179.59	39.15	62.00	11 19 37	3736.2	.64	172.95
100.00	19 4 16	2502.43	-29.60	59.83	46.33	94.36	19 45 59	1902.4	-28.68	51.15
100.00	11 19 8	4104.60	5.68	161.88	38.46	60.60	12 27 33	3504.6	1.72	155.33
110.00	20 33 38	2222.87	-33.32	38.13	45.85	98.11	21 10 40	1622.9	-31.84	29.21
110.00	12 6 16	3956.93	8.88	148.72	36.50	56.85	13 12 13	3356.9	4.45	142.42

DIFFERENTIAL CORRECTIONS
TDE .8422 TRA-2.3524 TC3 1.6024 BAU .4859
RDE -.2562 RRA -.0314 RC3 -.1297 FAU .09786
FDE -.4868 FRA 2.4869 FC3-3.7470 BSP 11947
BDE .8803 BRA 2.3527 BC3 1.6077 FSP 1229

MID-COURSE EXECUTION ACCURACY
SGT 3481.4 SGR 334.7 SG3 412.9
RRT -.3297 RRF .3106 RTF -.9192
SGB 3497.5 R23 -.0053 R13 .9193
SG1 3483.2 SG2 315.9 THA 178.17

ORBIT DETERMINATION ACCURACY
ST 1349.5 SR 308.9 SS 751.0
CRT -.7266 CRS -.4957 CST .9555
LSA 1546.6 MSA 296.4 SSA 27.4
EL1 1368.5 EL2 209.3 ALF 170.33

LAUNCH DATE NOV 10 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 480.972 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 34.043 GAL -4.72 AZL 88.04 HCA 154.57 SMA 209.66 ECC .30387 INC 1.9613 V1 30.080
RP 241.36 LAP .84 LOP 202.22 VP 21.603 GAP 15.46 AZP 91.77 TAL 339.55 TAP 134.12 RCA 145.95 APO 273.37 V2 22.748
RC 157.250 GL 14.41 GP -.34 ZAL 120.91 ZAP 165.85 ETS 179.95 ZAE 156.42 ETE 358.79 ZAC 89.13 ETC 255.94 CLP 165.86

PLANETOCENTRIC CONIC

C3 21.767 VHL 4.666 DLA 17.30 RAL 176.38 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 7.641 DPA -2.40 RAP 187.76 ECC 1.3582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 48	2805.07	-28.21	82.19	45.52	92.63	18 13 33	2205.1	-27.54	73.59
90.00	10 10 34	4308.34	3.53	178.03	38.27	61.89	11 22 22	3708.3	-.26	171.40
100.00	18 58 9	2510.52	-29.64	60.43	45.42	94.05	19 39 59	1910.5	-28.77	51.74
100.00	11 21 54	4078.13	4.79	160.41	37.58	60.46	12 29 53	3478.1	.82	153.87
110.00	20 28 23	2228.20	-33.37	38.53	44.97	97.87	21 5 31	1628.2	-31.92	29.60
110.00	12 8 10	3933.21	7.99	147.45	35.61	56.65	13 13 43	3333.2	3.55	141.18

DIFFERENTIAL CORRECTIONS
TDE .8198 TRA-2.3149 TC3 1.7045 BAU .4976
RDE -.2438 RRA -.0257 RC3 -.1350 FAU .10123
FDE -.4736 FRA 2.5392 FC3-4.0263 BSP 12017
BDE .8552 BRA 2.3151 BC3 1.7098 FSP 1295

MID-COURSE EXECUTION ACCURACY
SGT 3522.7 SGR 326.4 SG3 433.0
RRT -.3506 RRF .3296 RTF -.9224
SGB 3537.8 R23 -.0040 R13 .9224
SG1 3524.6 SG2 305.6 THA 178.12

ORBIT DETERMINATION ACCURACY
ST 1346.8 SR 299.5 SS 756.0
CRT -.7255 CRS -.4805 CST .9508
LSA 1544.1 MSA 299.7 SSA 26.8
EL1 1364.6 EL2 203.4 ALF 170.62

LAUNCH DATE NOV 10 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 484.117 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.985 GAL -4.59 AZL 88.03 HCA 155.50 SMA 208.37 ECC .29907 INC 1.9663 V1 30.080
RP 241.08 LAP .82 LOP 203.15 VP 21.543 GAP 14.94 AZP 91.79 TAL 339.91 TAP 135.41 RCA 146.05 APO 270.68 V2 22.777
RC 159.568 GL 14.70 GP -.36 ZAL 120.30 ZAP 165.26 ETS 179.97 ZAE 156.72 ETE 358.86 ZAC 89.19 ETC 255.93 CLP 165.27

PLANETOCENTRIC CONIC

C3 20.976 VHL 4.580 DLA 17.80 RAL 175.95 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 7.473 DPA -2.55 RAP 188.07 ECC 1.3452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 4	2815.31	-28.23	82.94	44.62	92.25	18 6 59	2215.3	-27.62	74.33
90.00	10 13 54	4280.26	2.63	176.46	37.42	61.80	11 25 14	3680.3	-1.16	169.83
100.00	18 51 52	2519.28	-29.68	61.08	44.53	93.71	19 33 51	1919.3	-28.85	52.37
100.00	11 24 47	4051.52	3.90	158.94	36.72	60.34	12 32 19	3451.5	-.08	152.41
110.00	20 23 1	2234.08	-33.43	38.99	44.10	97.61	21 0 15	1634.1	-32.01	30.04
110.00	12 10 7	3909.49	7.10	146.19	34.74	56.47	13 15 17	3309.5	2.64	139.94

DIFFERENTIAL CORRECTIONS
TDE .7903 TRA-2.2848 TC3 1.7956 BAU .5050
RDE -.2315 RRA -.0200 RC3 -.1401 FAU .10478
FDE -.4589 FRA 2.5931 FC3-4.3246 BSP 12255
BDE .8235 BRA 2.2849 BC3 1.8010 FSP 1365

MID-COURSE EXECUTION ACCURACY
SGT 3563.0 SGR 317.9 SG3 454.2
RRT -.3696 RRF .3502 RTF -.9243
SGB 3577.2 R23 -.0067 R13 .9243
SG1 3565.0 SG2 295.2 THA 178.10

ORBIT DETERMINATION ACCURACY
ST 1338.3 SR 289.8 SS 760.8
CRT -.7206 CRS -.4648 CST .9474
LSA 1536.9 MSA 301.6 SSA 26.5
EL1 1354.8 EL2 198.5 ALF 170.94

LAUNCH DATE NOV 10 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 487.301 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.930 GAL -4.45 AZL 88.03 HCA 156.44 SMA 207.14 ECC .29446 INC 1.9716 V1 30.080
RP 240.79 LAP .79 LOP 204.09 VP 21.486 GAP 14.41 AZP 91.81 TAL 340.26 TAP 136.70 RCA 146.15 APO 268.14 V2 22.806
RC 161.890 GL 15.00 GP -.38 ZAL 119.68 ZAP 164.66 ETS 179.98 ZAE 157.07 ETE 358.94 ZAC 89.24 ETC 255.92 CLP 164.66

PLANETOCENTRIC CONIC

C3 20.231 VHL 4.498 DLA 18.31 RAL 175.52 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 7.308 DPA -2.71 RAP 188.36 ECC 1.3329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 7	2826.38	-28.26	83.75	43.73	91.85	18 0 14	2226.4	-27.71	75.13
90.00	10 17 23	4251.89	1.71	174.87	36.59	61.73	11 28 15	3651.9	-2.08	168.25
100.00	18 45 25	2528.77	-29.72	61.78	43.66	93.34	19 27 33	1928.8	-28.94	53.07
100.00	11 27 47	4024.73	2.99	157.47	35.88	60.24	12 34 52	3424.7	-.99	150.94
110.00	20 17 32	2240.54	-33.48	39.48	43.25	97.32	20 54 53	1640.5	-32.11	30.52
110.00	12 12 9	3885.73	6.21	144.93	33.89	56.32	13 16 54	3285.7	1.74	138.70

DIFFERENTIAL CORRECTIONS
TDE .7635 TRA-2.2510 TC3 1.8954 BAU .5141
RDE -.2197 RRA -.0145 RC3 -.1456 FAU .10850
FDE -.4420 FRA 2.6485 FC3-4.6431 BSP 12404
BDE .7945 BRA 2.2510 BC3 1.9010 FSP 1439

MID-COURSE EXECUTION ACCURACY
SGT 3602.1 SGR 309.6 SG3 476.3
RRT -.3917 RRF .3724 RTF -.9267
SGB 3615.4 R23 -.0077 R13 .9267
SG1 3604.2 SG2 284.7 THA 178.06

ORBIT DETERMINATION ACCURACY
ST 1330.3 SR 279.9 SS 765.3
CRT -.7173 CRS -.4475 CST .9427
LSA 1529.7 MSA 305.1 SSA 25.9
EL1 1345.7 EL2 192.8 ALF 171.23

LAUNCH DATE NOV 10 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 490.524 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.877 GAL -4.32 AZL 88.02 HCA 157.37 SMA 205.98 ECC .29005 INC 1.9771 V1 30.080
RP 240.49 LAP .76 LOP 205.02 VP 21.434 GAP 13.90 AZP 91.83 TAL 340.62 TAP 138.00 RCA 146.24 APO 265.73 V2 22.836
RC 164.213 GL 15.29 GP -.40 ZAL 119.05 ZAP 164.04 ETS 180.00 ZAE 157.45 ETE 359.00 ZAC 89.28 ETC 255.91 CLP 164.05

PLANETOCENTRIC CONIC

C3 19.531 VHL 4.419 DLA 18.82 RAL 175.08 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 7.146 DPA -2.87 RAP 188.64 ECC 1.3214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 58	2838.29	-28.28	84.62	42.86	91.41	17 53 17	2238.3	-27.79	75.99
90.00	10 21 2	4223.23	.79	173.28	35.79	61.69	11 31 25	3623.2	-3.00	166.65
100.00	18 38 47	2539.00	-29.76	62.54	42.80	92.94	19 21 6	1939.0	-29.03	53.81
100.00	11 30 54	3997.75	2.08	155.98	35.07	60.17	12 37 32	3397.8	-1.91	149.46
110.00	20 11 56	2247.57	-33.54	40.02	42.41	97.01	20 49 24	1647.6	-32.21	31.04
110.00	12 14 15	3861.95	5.31	143.68	33.07	56.18	13 18 37	3261.9	.83	137.46

DIFFERENTIAL CORRECTIONS
TDE .7378 TRA-2.2151 TC3 1.9977 BAU .5231
RDE -.2082 RRA -.0091 RC3 -.1512 FAU .11242
FDE -.4238 FRA 2.7041 FC3-4.9831 BSP 12517
BDE .7667 BRA 2.2152 BC3 2.0034 FSP 1514

MID-COURSE EXECUTION ACCURACY
SGT 3638.5 SGR 301.5 SG3 499.5
RRT -.4160 RRF .3963 RTF -.9290
SGB 3651.0 R23 -.0084 R13 .9290
SG1 3640.7 SG2 274.0 THA 178.01

ORBIT DETERMINATION ACCURACY
ST 1321.5 SR 270.0 SS 769.7
CRT -.7147 CRS -.4299 CST .9373
LSA 1521.6 MSA 309.5 SSA 25.2
EL1 1335.8 EL2 186.8 ALF 171.52

LAUNCH DATE NOV 10 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 493.782 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.826 GAL -4.19 AZL 88.02 HCA 158.31 SMA 204.89 ECC .28581 INC 1.9831 V1 30.080
RP 240.19 LAP .73 LOP 205.96 VP 21.386 GAP 13.39 AZP 91.84 TAL 340.98 TAP 139.29 RCA 146.33 APO 263.45 V2 22.866
RC 166.536 GL 15.59 GP -.43 ZAL 118.42 ZAP 163.41 ETS 180.03 ZAE 157.87 ETE 359.06 ZAC 89.33 ETC 255.90 CLP 163.42

PLANETOCENTRIC CONIC

C3 18.872 VHL 4.344 DLA 19.34 RAL 174.64 RAD 6567.8 VEL 11.843 PTH 2.10 VHP 6.988 DPA -3.02 RAP 188.91 ECC 1.3106

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 36	2851.09	-28.30	85.56	42.00	90.94	17 46 8	2251.1	-27.87	76.92
90.00	10 24 51	4194.23	-.15	171.66	35.01	61.68	11 34 46	3594.2	-3.93	165.02
100.00	18 31 59	2550.00	-29.80	63.36	41.95	92.52	19 14 29	1950.0	-29.13	54.62
100.00	11 34 10	3970.55	1.16	154.49	34.28	60.13	12 40 21	3370.6	-2.83	147.97
110.00	20 6 12	2255.19	-33.60	40.61	41.59	96.67	20 43 48	1655.2	-32.32	31.61
110.00	12 16 26	3838.12	4.40	142.43	32.26	56.07	13 20 24	3238.1	-.08	136.22

DIFFERENTIAL CORRECTIONS
TDE .7131 TRA-2.1778 TC3 2.1058 BAU .5328
RDE -.1971 RRA -.0039 RC3 -.1573 FAU .11657
FDE -.4043 FRA 2.7604 FC3-5.3477 BSP 12601
BDE .7399 BRA 2.1778 BC3 2.1117 FSP 1593

MID-COURSE EXECUTION ACCURACY
SGT 3674.0 SGR 293.7 SG3 523.8
RRT -.4427 RRF .4224 RTF -.9314
SGB 3685.8 R23 -.0089 R13 .9314
SG1 3676.4 SG2 263.2 THA 177.96

ORBIT DETERMINATION ACCURACY
ST 1312.1 SR 260.0 SS 774.1
CRT -.7130 CRS -.4119 CST .9311
LSA 1512.9 MSA 314.7 SSA 24.4
EL1 1325.4 EL2 180.5 ALF 171.81

LAUNCH DATE NOV 10 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 497.075 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.777 GAL -4.07 AZL 88.01 HCA 159.25 SMA 203.85 ECC .28175 INC 1.9900 V1 30.080
RP 239.88 LAP .70 LOP 206.90 VP 21.341 GAP 12.88 AZP 91.86 TAL 341.34 TAP 140.59 RCA 146.41 APO 261.28 V2 22.897
RC 168.857 GL 15.89 GP -.46 ZAL 117.78 ZAP 162.77 ETS 180.06 ZAE 158.32 ETE 359.10 ZAC 89.36 ETC 255.90 CLP 162.77

PLANETOCENTRIC CONIC

C3 18.253 VHL 4.272 DLA 19.86 RAL 174.19 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 6.834 DPA -3.17 RAP 189.17 ECC 1.3004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 0	2864.85	-28.31	86.56	41.16	90.44	17 38 45	2264.8	-27.95	77.92
90.00	10 28 53	4164.81	-1.10	170.02	34.26	61.70	11 38 18	3564.8	-4.87	163.37
100.00	18 24 59	2561.81	-29.83	64.23	41.12	92.06	19 7 41	1961.8	-29.22	55.48
100.00	11 37 36	3943.08	.23	152.98	33.52	60.11	12 43 19	3343.1	-3.75	146.46
110.00	20 0 21	2263.42	-33.67	41.24	40.79	96.30	20 38 5	1663.4	-32.43	32.23
110.00	12 18 42	3814.23	3.49	141.18	31.48	55.91	13 22 17	3214.2	-1.00	134.97

DIFFERENTIAL CORRECTIONS
TDE .6941 TRA-2.1348 TC3 2.2274 BAU .5450
RDE -.1864 RRA .0010 RC3 -.1639 FAU .12084
FDE -.3806 FRA 2.8204 FC3-5.7316 BSP 12528
BDE .7187 BRA 2.1348 BC3 2.2335 FSP 1678

MID-COURSE EXECUTION ACCURACY
SGT 3708.8 SGR 286.6 SG3 549.3
RRT -.4740 RRF .4497 RTF -.9347
SGB 3719.9 R23 -.0053 R13 .9347
SG1 3711.3 SG2 252.2 THA 177.89

ORBIT DETERMINATION ACCURACY
ST 1305.3 SR 250.0 SS 778.3
CRT -.7150 CRS -.3906 CST .9213
LSA 1505.4 MSA 324.7 SSA 23.0
EL1 1317.7 EL2 173.2 ALF 172.06

LAUNCH DATE NOV 10 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 500.397 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.730 GAL -3.95 AZL 88.00 HCA 160.20 SMA 202.86 ECC .27786 INC 1.9972 V1 30.080
RP 239.58 LAP .68 LOP 207.85 VP 21.300 GAP 12.38 AZP 91.88 TAL 341.69 TAP 141.89 RCA 146.50 APO 259.23 V2 22.928
RC 171.174 GL 16.20 GP -.49 ZAL 117.14 ZAP 162.11 ETS 180.09 ZAE 158.81 ETE 359.14 ZAC 89.39 ETC 255.89 CLP 162.11

PLANETOCENTRIC CONIC

C3 17.673 VHL 4.204 DLA 20.39 RAL 173.74 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 6.683 DPA -3.32 RAP 189.41 ECC 1.2908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 11	2879.55	-28.32	87.64	40.34	89.90	17 31 11	2279.6	-28.03	78.99
90.00	10 33 7	4135.05	-2.06	168.36	33.53	61.75	11 42 2	3535.0	-5.82	161.70
100.00	18 17 49	2574.41	-29.86	65.17	40.32	91.56	19 0 43	1974.4	-29.32	56.41
100.00	11 41 11	3915.42	-.71	151.47	32.79	60.12	12 46 26	3315.4	-4.68	144.93
110.00	19 54 24	2272.24	-33.73	41.92	40.02	95.90	20 32 16	1672.2	-32.55	32.89
110.00	12 21 5	3790.36	2.58	139.93	30.73	55.90	13 24 15	3190.4	-1.91	133.72

DIFFERENTIAL CORRECTIONS

TDE .6566 TRA-2.1103 TC3 2.3089 BAU .5470
RDE -.1755 RRA .0065 RC3 -.1697 FAU .12534
FDE -.3548 FRA 2.8824 FC3-6.1399 BSP 12895
BDE .6796 BRA 2.1104 BC3 2.3151 FSP 1768

MID-COURSE EXECUTION ACCURACY

SGT 3739.6 SGR 278.7 SG3 576.0
RRT -.4987 RRF .4798 RTF -.9351
SGB 3750.0 R23 -.0132 R13 .9352
SG1 3742.2 SG2 241.4 THA 177.86

ORBIT DETERMINATION ACCURACY

ST 1285.1 SR 239.3 SS 782.9
CRT -.7054 CRS -.3695 CST .9177
LSA 1488.1 MSA 326.7 SSA 22.8
EL1 1296.3 EL2 168.1 ALF 172.39

LAUNCH DATE NOV 10 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 503.750 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.685 GAL -3.83 AZL 87.99 HCA 161.14 SMA 201.93 ECC .27413 INC 2.0052 V1 30.080
RP 239.26 LAP .65 LOP 208.79 VP 21.263 GAP 11.88 AZP 91.90 TAL 342.04 TAP 143.19 RCA 146.57 APO 257.28 V2 22.959
RC 173.485 GL 16.51 GP -.53 ZAL 116.49 ZAP 161.43 ETS 180.13 ZAE 159.33 ETE 359.16 ZAC 89.42 ETC 255.88 CLP 161.44

PLANETOCENTRIC CONIC

C3 17.127 VHL 4.139 DLA 20.92 RAL 173.29 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 6.535 DPA -3.46 RAP 189.65 ECC 1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 5	2895.37	-28.31	88.80	39.53	89.32	17 23 20	2295.4	-28.10	80.14
90.00	10 37 37	4104.72	-3.03	166.66	32.84	61.83	11 46 2	3504.7	-6.78	159.98
100.00	18 10 25	2587.94	-29.88	66.17	39.53	91.04	18 53 33	1987.9	-29.41	57.40
100.00	11 44 58	3887.38	-1.66	149.93	32.08	60.15	12 49 45	3287.4	-5.62	143.38
110.00	19 48 18	2281.71	-33.80	42.65	39.26	95.47	20 26 20	1681.7	-32.67	33.60
110.00	12 23 35	3766.37	1.67	138.68	30.00	55.85	13 26 21	3166.4	-2.83	132.47

DIFFERENTIAL CORRECTIONS

TDE .6282 TRA-2.0759 TC3 2.4120 BAU .5538
RDE -.1651 RRA .0116 RC3 -.1764 FAU .13004
FDE -.3256 FRA 2.9464 FC3-6.5730 BSP 13035
BDE .6495 BRA 2.0759 BC3 2.4184 FSP 1864

MID-COURSE EXECUTION ACCURACY

SGT 3769.4 SGR 271.8 SG3 604.0
RRT -.5300 RRF .5116 RTF -.9369
SGB 3779.2 R23 -.0155 R13 .9370
SG1 3772.2 SG2 230.3 THA 177.80

ORBIT DETERMINATION ACCURACY

ST 1269.6 SR 228.7 SS 787.6
CRT -.7020 CRS -.3463 CST .9096
LSA 1473.9 MSA 334.4 SSA 21.9
EL1 1279.9 EL2 161.6 ALF 172.68

LAUNCH DATE NOV 10 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 507.132 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.642 GAL -3.72 AZL 87.99 HCA 162.09 SMA 201.04 ECC .27055 INC 2.0140 V1 30.080
RP 238.95 LAP .62 LOP 209.74 VP 21.229 GAP 11.40 AZP 91.92 TAL 342.40 TAP 144.49 RCA 146.65 APO 255.43 V2 22.991
RC 175.790 GL 16.83 GP -.57 ZAL 115.85 ZAP 160.74 ETS 180.18 ZAE 159.88 ETE 359.17 ZAC 89.44 ETC 255.88 CLP 160.75

PLANETOCENTRIC CONIC

C3 16.616 VHL 4.076 DLA 21.46 RAL 172.84 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 6.390 DPA -3.60 RAP 189.86 ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 41	2912.38	-28.29	90.04	38.74	88.70	17 15 13	2312.4	-28.17	81.38
90.00	10 42 25	4073.76	-4.03	164.93	32.18	61.95	11 50 19	3473.8	-7.75	158.23
100.00	18 2 48	2602.44	-29.89	67.25	38.75	90.47	18 46 11	2002.4	-29.50	58.47
100.00	11 48 59	3858.93	-2.63	148.37	31.40	60.21	12 53 18	3258.9	-6.57	141.80
110.00	19 42 5	2291.86	-33.86	43.44	38.53	95.01	20 20 16	1691.9	-32.79	34.37
110.00	12 26 12	3742.27	.74	137.42	29.30	55.82	13 28 34	3142.3	-3.74	131.21

DIFFERENTIAL CORRECTIONS

TDE .6023 TRA-2.0385 TC3 2.5203 BAU .5614
RDE -.1551 RRA .0166 RC3 -.1837 FAU .13506
FDE -.2957 FRA 3.0101 FC3-7.0372 BSP 13088
BDE .6219 BRA 2.0386 BC3 2.5270 FSP 1959

MID-COURSE EXECUTION ACCURACY

SGT 3797.0 SGR 265.6 SG3 633.5
RRT -.5645 RRF .5461 RTF -.9388
SGB 3806.3 R23 -.0175 R13 .9389
SG1 3800.0 SG2 219.1 THA 177.73

ORBIT DETERMINATION ACCURACY

ST 1254.4 SR 218.1 SS 792.8
CRT -.7007 CRS -.3243 CST .9004
LSA 1460.0 MSA 343.2 SSA 20.8
EL1 1263.9 EL2 154.5 ALF 172.95

LAUNCH DATE NOV 10 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 510.542 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.601 GAL -3.61 AZL 87.98 HCA 163.04 SMA 200.20 ECC .26713 INC 2.0239 V1 30.080
RP 238.63 LAP .59 LOP 210.69 VP 21.199 GAP 10.91 AZP 91.94 TAL 342.75 TAP 145.79 RCA 146.72 APO 253.68 V2 23.024
RC 178.086 GL 17.15 GP -.61 ZAL 115.20 ZAP 160.03 ETS 180.23 ZAE 160.47 ETE 359.17 ZAC 89.45 ETC 255.87 CLP 160.04

PLANETOCENTRIC CONIC

C3 16.136 VHL 4.017 DLA 22.00 RAL 172.39 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 6.248 DPA -3.74 RAP 190.07 ECC 1.2656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 56	2930.74	-28.25	91.38	37.97	88.02	17 6 47	2330.7	-28.23	82.72
90.00	10 47 33	4042.01	-5.04	163.15	31.55	62.10	11 54 55	3442.0	-8.74	156.42
100.00	17 54 56	2618.01	-29.89	68.41	38.00	89.86	18 38 34	2018.0	-29.59	59.62
100.00	11 53 15	3829.97	-3.60	146.77	30.76	60.31	12 57 5	3230.0	-7.53	140.19
110.00	19 35 42	2302.75	-33.92	44.28	37.82	94.51	20 14 5	1702.7	-32.92	35.19
110.00	12 28 58	3718.00	-.18	136.15	28.63	55.82	13 30 56	3118.0	-4.67	129.94

DIFFERENTIAL CORRECTIONS

TDE .5822 TRA-1.9952 TC3 2.6435 BAU .5718
RDE -.1454 RRA .0214 RC3 -.1921 FAU .14034
FDE -.2626 FRA 3.0755 FC3-7.5297 BSP 13004
BDE .6001 BRA 1.9953 BC3 2.6505 FSP 2059

MID-COURSE EXECUTION ACCURACY

SGT 3823.8 SGR 260.6 SG3 664.3
RRT -.6033 RRF .5825 RTF -.9415
SGB 3832.7 R23 -.0161 R13 .9415
SG1 3827.0 SG2 207.6 THA 177.64

ORBIT DETERMINATION ACCURACY

ST 1241.6 SR 207.7 SS 798.5
CRT -.7044 CRS -.3013 CST .8873
LSA 1447.3 MSA 356.8 SSA 19.3
EL1 1250.3 EL2 146.4 ALF 173.19

LAUNCH DATE NOV 10 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 513.976 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.561 GAL -3.51 AZL 87.96 HCA 164.00 SMA 199.40 ECC .26385 INC 2.0351 V1 30.080
RP 238.31 LAP .56 LOP 211.64 VP 21.172 GAP 10.43 AZP 91.96 TAL 343.09 TAP 147.09 RCA 146.79 APO 252.02 V2 23.056
RC 180.373 GL 17.48 GP -.66 ZAL 114.56 ZAP 159.31 ETS 180.30 ZAE 161.10 ETE 359.14 ZAC 89.45 ETC 255.87 CLP 159.32

PLANETOCENTRIC CONIC

C3 15.688 VHL 3.961 DLA 22.55 RAL 171.94 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 6.109 DPA -3.89 RAP 190.26 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 51	2950.55	-28.20	92.83	37.22	87.30	16 58 1	2350.6	-28.28	84.16
90.00	10 53 5	4009.42	-6.08	161.31	30.97	62.29	11 59 55	3409.4	-9.74	154.55
100.00	17 46 48	2634.71	-29.88	69.65	37.27	89.21	18 30 42	2034.7	-29.67	60.85
100.00	11 57 49	3800.49	-4.60	145.15	30.16	60.43	13 1 10	3200.5	-8.50	138.53
110.00	19 29 11	2314.37	-33.98	45.19	37.14	93.98	20 7 46	1714.4	-33.05	36.07
110.00	12 31 55	3693.60	-1.12	134.88	27.99	55.83	13 33 29	3093.6	-5.59	128.65

DIFFERENTIAL CORRECTIONS
TDE .5464 TRA-1.9679 TC3 2.7224 BAU .5725
RDE -.1355 RRA .0268 RC3 -.1997 FAU .14564
FDE -.2224 FRA 3.1480 FC3-8.0372 BSP 13300
BDE .5629 BRA 1.9681 BC3 2.7297 FSP 2174

MID-COURSE EXECUTION ACCURACY
SGT 3844.1 SGR 255.3 SG3 696.3
RRT -.6374 RRF .6208 RTF -.9420
SGB 3852.6 R23 -.0244 R13 .9421
SG1 3847.5 SG2 196.6 THA 177.57

ORBIT DETERMINATION ACCURACY
ST 1218.2 SR 196.4 SS 805.4
CRT -.6973 CRS -.2756 CST .8794
LSA 1427.7 MSA 364.0 SSA 18.6
EL1 1226.0 EL2 139.9 ALF 173.50

LAUNCH DATE NOV 10 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 517.436 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.523 GAL -3.40 AZL 87.95 HCA 164.95 SMA 198.64 ECC .26072 INC 2.0474 V1 30.080
RP 237.98 LAP .53 LOP 212.60 VP 21.148 GAP 9.96 AZP 91.98 TAL 343.43 TAP 148.38 RCA 146.85 APO 250.43 V2 23.089
RC 182.651 GL 17.82 GP -.72 ZAL 113.91 ZAP 158.57 ETS 180.37 ZAE 161.75 ETE 359.08 ZAC 89.44 ETC 255.86 CLP 158.58

PLANETOCENTRIC CONIC

C3 15.269 VHL 3.907 DLA 23.11 RAL 171.50 RAD 6567.6 VEL 11.690 PTH 2.06 VHP 5.974 DPA -4.03 RAP 190.43 ECC 1.2513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 17	2972.14	-28.12	94.40	36.48	86.51	16 48 49	2372.1	-28.31	85.74
90.00	10 59 7	3975.61	-7.14	159.40	30.43	62.53	12 5 23	3375.6	-10.77	152.60
100.00	17 38 20	2652.76	-29.86	70.99	36.57	88.50	18 22 33	2052.8	-29.75	62.19
100.00	12 2 45	3770.22	-5.61	143.47	29.59	60.59	13 5 35	3170.2	-9.49	136.83
110.00	19 22 30	2326.85	-34.03	46.16	36.49	93.41	20 1 17	1726.9	-33.19	37.02
110.00	12 35 4	3668.89	-2.06	133.59	27.39	55.87	13 36 13	3068.9	-6.53	127.35

DIFFERENTIAL CORRECTIONS
TDE .5192 TRA-1.9311 TC3 2.8231 BAU .5778
RDE -.1260 RRA .0321 RC3 -.2090 FAU .15139
FDE -.1815 FRA 3.2191 FC3-8.5842 BSP 13368
BDE .5343 BRA 1.9313 BC3 2.8309 FSP 2287

MID-COURSE EXECUTION ACCURACY
SGT 3863.3 SGR 251.8 SG3 730.1
RRT -.6767 RRF .6612 RTF -.9435
SGB 3871.5 R23 -.0289 R13 .9436
SG1 3867.1 SG2 185.2 THA 177.47

ORBIT DETERMINATION ACCURACY
ST 1198.7 SR 185.4 SS 813.1
CRT -.6979 CRS -.2525 CST .8673
LSA 1411.0 MSA 375.9 SSA 17.5
EL1 1205.8 EL2 132.0 ALF 173.76

LAUNCH DATE NOV 10 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 520.919 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.487 GAL -3.30 AZL 87.94 HCA 165.91 SMA 197.92 ECC .25771 INC 2.0615 V1 30.080
RP 237.65 LAP .50 LOP 213.56 VP 21.128 GAP 9.50 AZP 92.00 TAL 343.77 TAP 149.68 RCA 146.92 APO 248.93 V2 23.123
RC 184.919 GL 18.17 GP -.78 ZAL 113.27 ZAP 157.80 ETS 180.46 ZAE 162.44 ETE 358.98 ZAC 89.42 ETC 255.86 CLP 157.82

PLANETOCENTRIC CONIC

C3 14.877 VHL 3.857 DLA 23.68 RAL 171.06 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 5.841 DPA -4.17 RAP 190.58 ECC 1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 10	2995.82	-28.01	96.13	35.77	85.66	16 39 6	2395.8	-28.32	87.48
90.00	11 5 45	3940.29	-8.25	157.39	29.93	62.81	12 11 25	3340.3	-11.83	150.54
100.00	17 29 29	2672.36	-29.81	72.45	35.89	87.74	18 14 2	2072.4	-29.81	63.64
100.00	12 8 7	3738.99	-6.65	141.74	29.07	60.79	13 10 26	3139.0	-10.50	135.06
110.00	19 15 38	2340.29	-34.08	47.20	35.87	92.79	19 54 38	1740.3	-33.32	38.05
110.00	12 38 28	3643.83	-3.02	132.28	26.83	55.93	13 39 11	3043.8	-7.47	126.02

DIFFERENTIAL CORRECTIONS
TDE .4928 TRA-1.8945 TC3 2.9227 BAU .5829
RDE -.1167 RRA .0375 RC3 -.2193 FAU .15746
FDE -.1373 FRA 3.2927 FC3-9.1628 BSP 13414
BDE .5064 BRA 1.8949 BC3 2.9309 FSP 2404

MID-COURSE EXECUTION ACCURACY
SGT 3881.0 SGR 249.7 SG3 765.6
RRT -.7171 RRF .7029 RTF -.9449
SGB 3889.0 R23 -.0344 R13 .9450
SG1 3885.1 SG2 173.9 THA 177.35

ORBIT DETERMINATION ACCURACY
ST 1179.1 SR 174.4 SS 822.1
CRT -.7005 CRS -.2311 CST .8542
LSA 1394.6 MSA 389.1 SSA 16.3
EL1 1185.5 EL2 123.8 ALF 174.02

LAUNCH DATE NOV 10 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 524.424 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.452 GAL -3.21 AZL 87.92 HCA 166.87 SMA 197.24 ECC .25484 INC 2.0777 V1 30.080
RP 237.31 LAP .47 LOP 214.52 VP 21.110 GAP 9.04 AZP 92.02 TAL 344.10 TAP 150.98 RCA 146.98 APO 247.51 V2 23.157
RC 187.176 GL 18.54 GP -.86 ZAL 112.63 ZAP 157.02 ETS 180.56 ZAE 163.17 ETE 358.84 ZAC 89.39 ETC 255.86 CLP 157.04

PLANETOCENTRIC CONIC

C3 14.513 VHL 3.810 DLA 24.26 RAL 170.63 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 5.711 DPA -4.31 RAP 190.72 ECC 1.2388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 22	3022.09	-27.86	98.03	35.08	84.71	16 28 44	2422.1	-28.30	89.40
90.00	11 13 9	3903.00	-9.40	155.26	29.50	63.17	12 18 12	3303.0	-12.93	148.36
100.00	17 20 11	2693.79	-29.75	74.04	35.24	86.90	18 5 5	2093.8	-29.86	65.24
100.00	12 14 1	3706.52	-7.73	139.93	28.60	61.03	13 15 47	3106.5	-11.53	133.21
110.00	19 8 32	2354.82	-34.13	48.34	35.28	92.12	19 47 47	1754.8	-33.45	39.16
110.00	12 42 9	3618.27	-3.99	130.94	26.31	56.02	13 42 27	3018.3	-8.43	124.66

DIFFERENTIAL CORRECTIONS
TDE .4645 TRA-1.8583 TC3 3.0141 BAU .5865
RDE -.1075 RRA .0431 RC3 -.2307 FAU .16371
FDE -.0861 FRA 3.3705 FC3-9.7655 BSP 13474
BDE .4767 BRA 1.8588 BC3 3.0229 FSP 2531

MID-COURSE EXECUTION ACCURACY
SGT 3893.5 SGR 249.2 SG3 802.6
RRT -.7572 RRF .7449 RTF -.9462
SGB 3901.5 R23 -.0416 R13 .9463
SG1 3898.1 SG2 162.6 THA 177.22

ORBIT DETERMINATION ACCURACY
ST 1156.9 SR 163.2 SS 832.9
CRT -.7042 CRS -.2096 CST .8398
LSA 1376.9 MSA 403.6 SSA 15.1
EL1 1162.7 EL2 115.3 ALF 174.27

LAUNCH DATE NOV 10 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 527.950 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.419 GAL -3.12 AZL 87.90 HCA 167.84 SMA 196.59 ECC .25209 INC 2.0966 V1 30.080
RP 236.98 LAP .44 LOP 215.48 VP 21.095 GAP 8.59 AZP 92.05 TAL 344.43 TAP 152.27 RCA 147.03 APO 246.15 V2 23.191
RC 189.421 GL 18.92 GP -.95 ZAL 111.99 ZAP 156.22 ETS 180.68 ZAE 163.93 ETE 358.64 ZAC 89.34 ETC 255.86 CLP 156.24

PLANETOCENTRIC CONIC

C3 14.175 VHL 3.765 DLA 24.85 RAL 170.22 RAD 6567.6 VEL 11.643 PTH 2.04 VHP 5.585 DPA -4.46 RAP 190.83 ECC 1.2333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 40	3051.66	-27.66	100.17	34.41	83.66	16 17 32	2451.7	-28.25	91.56
90.00	11 21 33	3863.01	-10.62	152.95	29.13	63.60	12 25 56	3263.0	-14.08	145.99
100.00	17 10 19	2717.49	-29.65	75.79	34.62	85.98	17 55 36	2117.5	-29.89	67.00
100.00	12 20 35	3672.41	-8.85	138.01	28.20	61.33	13 21 48	3072.4	-12.61	131.24
110.00	19 1 11	2370.63	-34.16	49.57	34.74	91.39	19 40 41	1770.6	-33.59	40.37
110.00	12 46 13	3592.03	-4.99	129.57	25.84	56.14	13 46 5	2992.0	-9.40	123.26

DIFFERENTIAL CORRECTIONS
TDE .4355 TRA-1.8245 TC3 3.0967 BAU .5887
RDE -.0983 RRA .0492 RC3 -.2436 FAU .17018
FDE -.0288 FRA 3.4544 FC-10.3934 BSP 13564
BDE .4464 BRA 1.8251 BC3 3.1063 FSP 2668

MID-COURSE EXECUTION ACCURACY
SGT 3903.7 SGR 250.7 SG3 841.3
RRT -.7965 RRF .7867 RTF -.9472
SGB 3911.8 R23 -.0514 R13 .9473
SG1 3908.8 SG2 151.4 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 1134.3 SR 151.8 SS 846.5
CRT -.7103 CRS -.1912 CST .8246
LSA 1360.2 MSA 419.3 SSA 13.9
EL1 1139.5 EL2 106.4 ALF 174.52

LAUNCH DATE NOV 10 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 531.497 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.387 GAL -3.03 AZL 87.88 HCA 168.80 SMA 195.97 ECC .24947 INC 2.1189 V1 30.080
RP 236.64 LAP .41 LOP 216.45 VP 21.083 GAP 8.14 AZP 92.08 TAL 344.76 TAP 153.56 RCA 147.09 APO 244.86 V2 23.226
RC 191.655 GL 19.33 GP -1.05 ZAL 111.36 ZAP 155.39 ETS 180.83 ZAE 164.72 ETE 358.34 ZAC 89.27 ETC 255.85 CLP 155.41

PLANETOCENTRIC CONIC

C3 13.864 VHL 3.723 DLA 25.47 RAL 169.82 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 5.461 DPA -4.62 RAP 190.92 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 43	3085.72	-27.37	102.63	33.76	82.46	16 5 8	2485.7	-28.14	94.04
90.00	11 31 20	3819.17	-11.93	150.41	28.86	64.13	12 34 59	3219.2	-15.32	143.36
100.00	16 59 41	2744.09	-29.50	77.76	34.03	84.96	17 45 25	2144.1	-29.89	68.97
100.00	12 28 3	3636.03	-10.03	135.96	27.86	61.69	13 28 39	3036.0	-13.73	129.13
110.00	18 53 29	2388.02	-34.18	50.93	34.24	90.59	19 33 17	1788.0	-33.72	41.72
110.00	12 50 44	3564.86	-6.02	128.14	25.43	56.29	13 50 9	2964.9	-10.41	121.79

DIFFERENTIAL CORRECTIONS
TDE .4092 TRA-1.7870 TC3 3.1814 BAU .5916
RDE -.0893 RRA .0557 RC3 -.2590 FAU .17700
FDE .0335 FRA 3.5398 FC-11.0529 BSP 13580
BDE .4189 BRA 1.7878 BC3 3.1920 FSP 2810

MID-COURSE EXECUTION ACCURACY
SGT 3909.8 SGR 255.2 SG3 881.8
RRT -.8347 RRF .8268 RTF -.9484
SGB 3918.1 R23 -.0621 R13 .9486
SG1 3915.6 SG2 140.3 THA 176.88

ORBIT DETERMINATION ACCURACY
ST 1112.0 SR 140.5 SS 862.2
CRT -.7233 CRS -.1787 CST .8065
LSA 1344.5 MSA 438.1 SSA 12.6
EL1 1116.7 EL2 96.6 ALF 174.74

LAUNCH DATE NOV 10 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 535.064 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.357 GAL -2.94 AZL 87.85 HCA 169.77 SMA 195.39 ECC .24696 INC 2.1442 V1 30.080
RP 236.29 LAP .38 LOP 217.42 VP 21.073 GAP 7.70 AZP 92.11 TAL 345.07 TAP 154.85 RCA 147.14 APO 243.64 V2 23.261
RC 193.877 GL 19.78 GP -1.18 ZAL 110.73 ZAP 154.54 ETS 181.00 ZAE 165.55 ETE 357.93 ZAC 89.17 ETC 255.85 CLP 154.57

PLANETOCENTRIC CONIC

C3 13.578 VHL 3.685 DLA 26.11 RAL 169.45 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 5.339 DPA -4.78 RAP 190.98 ECC 1.2235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 56	3126.23	-26.98	105.53	33.12	81.06	15 51 2	2526.2	-27.94	96.99
90.00	11 43 8	3769.56	-13.39	147.49	28.69	64.81	12 45 58	3169.6	-16.67	140.35
100.00	16 48 1	2774.53	-29.30	80.00	33.47	83.80	17 34 16	2174.5	-29.85	71.24
100.00	12 36 44	3596.50	-11.30	133.71	27.62	62.14	13 36 40	2996.5	-14.94	126.81
110.00	18 45 22	2407.39	-34.18	52.44	33.80	89.70	19 25 29	1807.4	-33.85	43.21
110.00	12 55 52	3536.40	-7.09	126.63	25.09	56.47	13 54 49	2936.4	-11.45	120.25

DIFFERENTIAL CORRECTIONS
TDE .3832 TRA-1.7493 TC3 3.2616 BAU .5942
RDE -.0804 RRA .0628 RC3 -.2775 FAU .18459
FDE .0934 FRA 3.6203 FC-11.7693 BSP 13573
BDE .3915 BRA 1.7505 BC3 3.2734 FSP 2938

MID-COURSE EXECUTION ACCURACY
SGT 3912.6 SGR 263.2 SG3 924.7
RRT -.8693 RRF .8650 RTF -.9493
SGB 3921.5 R23 -.0787 R13 .9494
SG1 3919.3 SG2 129.9 THA 176.65

ORBIT DETERMINATION ACCURACY
ST 1089.0 SR 129.4 SS 878.4
CRT -.7421 CRS -.1816 CST .7915
LSA 1330.1 MSA 453.0 SSA 11.4
EL1 1093.3 EL2 86.4 ALF 174.93

LAUNCH DATE NOV 10 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 538.649 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.328 GAL -2.86 AZL 87.82 HCA 170.74 SMA 194.83 ECC .24456 INC 2.1760 V1 30.080
RP 235.94 LAP .35 LOP 218.39 VP 21.066 GAP 7.26 AZP 92.15 TAL 345.38 TAP 156.13 RCA 147.18 APO 242.48 V2 23.297
RC 196.086 GL 20.27 GP -1.33 ZAL 110.11 ZAP 153.67 ETS 181.21 ZAE 166.41 ETE 357.34 ZAC 89.05 ETC 255.85 CLP 153.70

PLANETOCENTRIC CONIC

C3 13.320 VHL 3.650 DLA 26.79 RAL 169.10 RAD 6567.5 VEL 11.606 PTH 2.03 VHP 5.221 DPA -4.96 RAP 191.01 ECC 1.2192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 7	3177.16	-26.39	109.14	32.48	79.34	15 34 4	2577.2	-27.59	100.68
90.00	11 58 12	3710.28	-15.08	143.96	28.68	65.75	13 0 2	3110.3	-18.23	136.70
100.00	16 34 52	2810.43	-29.01	82.63	32.95	82.44	17 21 43	2210.4	-29.75	73.90
100.00	12 47 8	3552.23	-12.69	131.16	27.50	62.71	13 46 20	2952.2	-16.25	124.18
110.00	18 36 40	2429.35	-34.16	54.16	33.42	88.68	19 17 9	1829.3	-33.97	44.92
110.00	13 1 50	3506.08	-8.23	125.02	24.85	56.70	14 0 16	2906.1	-12.55	118.59

DIFFERENTIAL CORRECTIONS
TDE .3551 TRA-1.7134 TC3 3.3251 BAU .5945
RDE -.0713 RRA .0709 RC3 -.2993 FAU .19206
FDE .1705 FRA 3.7141 FC-12.4829 BSP 13604
BDE .3622 BRA 1.7149 BC3 3.3386 FSP 3094

MID-COURSE EXECUTION ACCURACY
SGT 3909.3 SGR 275.3 SG3 968.9
RRT -.8996 RRF .8987 RTF -.9500
SGB 3919.0 R23 -.0990 R13 .9502
SG1 3917.1 SG2 120.0 THA 176.37

ORBIT DETERMINATION ACCURACY
ST 1064.6 SR 118.2 SS 900.7
CRT -.7683 CRS -.1911 CST .7726
LSA 1317.2 MSA 472.8 SSA 10.2
EL1 1068.5 EL2 75.4 ALF 175.10

LAUNCH DATE NOV 10 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 542.254 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.300	GAL	-2.78	AZL	87.78	HCA	171.72	SMA	194.30	ECC	.24227	INC	2.2154
RP	235.59	LAP	.32	LOP	219.36	VP	21.062	GAP	6.84	AZP	92.19	TAL	345.69	TAP	157.41	RCA	147.23	APO	241.37
RC	198.280	GL	20.82	GP	-1.52	ZAL	109.48	ZAP	152.77	ETS	181.48	ZAE	167.31	ETE	356.49	ZAC	88.88	ETC	255.85

V1	30.080	V2	23.333	CLP	152.81														

PLANETOCENTRIC CONIC

C3	13.090	VHL	3.618	DLA	27.53	RAL	168.80	RAD	6567.5	VEL	11.596	PTH	2.03	VHP	5.106	DPA	-5.17	RAP	191.01
ECC	1.2154																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 9	3248.68	-25.39	114.14	31.77	77.02	15 11 18	2648.7	-26.93	105.80
90.00	12 19 43	3631.23	-17.23	139.15	28.94	67.18	13 20 15	3031.2	-20.17	131.71
100.00	16 19 22	2854.72	-28.57	85.84	32.47	80.80	17 6 56	2254.7	-29.54	77.18
100.00	13 0 12	3500.42	-14.29	128.14	27.54	63.46	13 58 32	2900.4	-17.74	121.05
110.00	18 27 8	2454.87	-34.10	56.15	33.13	87.50	19 8 3	1854.9	-34.07	46.90
110.00	13 8 55	3473.03	-9.46	123.25	24.72	57.00	14 6 48	2873.0	-13.74	116.77

DIFFERENTIAL CORRECTIONS

TDE	.3302	TRA	-1.6748	TC3	3.3931	BAU	.5966
RDE	-.0621	RRA	.0802	RC3	-.3270	FAU	.20006
FDE	.2550	FRA	3.8110	FC	-13.2313	BSP	13541
BDE	.3360	BRA	1.6767	BC3	3.4088	FSP	3251

MID-COURSE EXECUTION ACCURACY

SGT	3904.7	SGR	293.6	SG3	1015.5		
RRT	-.9254	RRF	.9276	RTF	-.9511		
SGB	3915.7	R23	-.1232	R13	.9514		
SG1	3914.1	SG2	111.0	THA	176.02		

ORBIT DETERMINATION ACCURACY

ST	1041.1	SR	107.6	SS	926.8		
CRT	-.8082	CRS	-.2214	CST	.7506		
LSA	1307.1	MSA	495.9	SSA	8.8		
EL1	1044.8	EL2	63.1	ALF	175.21		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 545.875 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.273	GAL	-2.70	AZL	87.73	HCA	172.70	SMA	193.80	ECC	.24008	INC	2.2649
RP	235.24	LAP	.29	LOP	220.34	VP	21.060	GAP	6.41	AZP	92.25	TAL	345.98	TAP	158.68	RCA	147.27	APO	240.33
RC	200.460	GL	21.47	GP	-1.76	ZAL	108.86	ZAP	151.84	ETS	181.82	ZAE	168.23	ETE	355.24	ZAC	88.66	ETC	255.85

V1	30.080	V2	23.369	CLP	151.89														

PLANETOCENTRIC CONIC

C3	12.893	VHL	3.591	DLA	28.34	RAL	168.55	RAD	6567.5	VEL	11.588	PTH	2.03	VHP	4.993	DPA	-5.42	RAP	190.97
ECC	1.2122																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.90	13 8 15	3466.49	-21.93	128.99	30.26	71.60	14 6 1	2866.5	-24.25	121.08
91.10	13 26 38	3406.88	-21.92	124.63	30.26	71.58	14 23 25	2806.9	-24.24	116.72
100.00	15 59 37	2913.59	-27.85	90.07	31.99	78.69	16 48 11	2313.6	-29.13	81.50
100.00	13 17 57	3435.02	-16.24	124.27	27.84	64.55	14 15 12	2835.0	-19.53	117.02
110.00	18 16 22	2485.53	-33.99	58.54	32.95	86.09	18 57 48	1885.5	-34.15	49.29
110.00	13 17 41	3435.84	-10.83	121.24	24.75	57.38	14 14 57	2835.8	-15.05	114.69

DIFFERENTIAL CORRECTIONS

TDE	.3048	TRA	-1.6360	TC3	3.4473	BAU	.5975
RDE	-.0526	RRA	.0914	RC3	-.3623	FAU	.20861
FDE	.3478	FRA	3.9095	FC	-14.0075	BSP	13455
BDE	.3093	BRA	1.6386	BC3	3.4663	FSP	3404

MID-COURSE EXECUTION ACCURACY

SGT	3893.9	SGR	319.7	SG3	1064.3		
RRT	-.9451	RRF	.9511	RTF	-.9518		
SGB	3907.0	R23	-.1557	R13	.9522		
SG1	3905.6	SG2	104.2	THA	175.56		

ORBIT DETERMINATION ACCURACY

ST	1016.7	SR	97.8	SS	956.9		
CRT	-.8607	CRS	-.2834	CST	.7292		
LSA	1300.2	MSA	518.1	SSA	7.6		
EL1	1020.2	EL2	49.6	ALF	175.25		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 549.513 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.248	GAL	-2.63	AZL	87.67	HCA	173.68	SMA	193.32	ECC	.23799	INC	2.3307
RP	234.89	LAP	.26	LOP	221.32	VP	21.060	GAP	6.00	AZP	92.32	TAL	346.27	TAP	159.95	RCA	147.31	APO	239.33
RC	202.623	GL	22.24	GP	-2.08	ZAL	108.24	ZAP	150.88	ETS	182.26	ZAE	169.18	ETE	353.34	ZAC	88.35	ETC	255.84

V1	30.080	V2	23.405	CLP	150.95														

PLANETOCENTRIC CONIC

C3	12.736	VHL	3.569	DLA	29.26	RAL	168.38	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	4.883	DPA	-5.72	RAP	190.87
ECC	1.2096																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.29	12 13 20	3639.07	-22.68	141.94	30.16	71.00	13 13 59	3039.1	-25.07	134.00
97.71	14 20 11	3229.04	-22.67	111.84	30.16	70.99	15 14 1	2629.0	-25.06	103.91
100.00	15 29 36	3006.59	-26.44	96.62	31.40	75.52	16 19 42	2406.6	-28.17	88.25
100.00	13 46 36	3336.75	-19.01	118.29	28.64	66.49	14 42 13	2736.8	-22.03	110.80
110.00	18 3 37	2524.17	-33.77	61.53	32.91	84.33	18 45 41	1924.2	-34.18	52.31
110.00	13 29 5	3391.93	-12.43	118.85	25.03	57.90	14 25 37	2791.9	-16.58	112.20

DIFFERENTIAL CORRECTIONS

TDE	.2721	TRA	-1.6039	TC3	3.4660	BAU	.5942
RDE	-.0418	RRA	.1060	RC3	-.4073	FAU	.21685
FDE	.4725	FRA	4.0309	FC	-14.7402	BSP	13510
BDE	.2753	BRA	1.6074	BC3	3.4898	FSP	3595

MID-COURSE EXECUTION ACCURACY

SGT	3875.9	SGR	356.4	SG3	1114.2		
RRT	-.9584	RRF	.9690	RTF	-.9522		
SGB	3892.3	R23	-.1957	R13	.9526		
SG1	3891.0	SG2	101.3	THA	174.96		

ORBIT DETERMINATION ACCURACY

ST	990.2	SR	89.5	SS	1000.9		
CRT	-.9230	CRS	-.3863	CST	.7078		
LSA	1302.6	MSA	541.8	SSA	6.4		
EL1	993.6	EL2	34.3	ALF	175.23		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 553.168 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.224	GAL	-2.56	AZL	87.58	HCA	174.66	SMA	192.87	ECC	.23600	INC	2.4188
RP	234.53	LAP	.22	LOP	222.31	VP	21.063	GAP	5.59	AZP	92.41	TAL	346.56	TAP	161.22	RCA	147.35	APO	238.38
RC	204.770	GL	23.23	GP	-2.52	ZAL	107.60	ZAP	149.88	ETS	182.87	ZAE	170.14	ETE	350.36	ZAC	87.93	ETC	255.84

V1	30.080	V2	23.442	CLP	149.98														

PLANETOCENTRIC CONIC

C3	12.632	VHL	3.554	DLA	30.37	RAL	168.33	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	4.777	DPA	-6.13	RAP	190.70
ECC	1.2079																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.53	11 44 16	3729.55	-23.55	148.99	30.31	70.24	12 46 26	3129.5	-26.02	141.02
101.47	14 48 51	3135.05	-23.54	105.20	30.30	70.23	15 41 6	2535.0	-26.01	97.23
78.53	11 44 16	3729.55	-23.55	148.99	30.31	70.24	12 46 26	3129.5	-26.02	141.02
101.47	14 48 51	3135.05	-23.54	105.20	30.30	70.23	15 41 6	2535.0	-26.01	97.23
110.00	17 47 15	2576.55	-33.34	65.56	33.06	81.99	18 30 12	1976.5	-34.09	56.40
110.00	13 45 3	3336.05	-14.43	115.76	25.71	58.67	14 40 39	2736.0	-18.47	108.97

DIFFERENTIAL CORRECTIONS

TDE	.2525	TRA	-1.5583	TC3	3.5109	BAU	.5983
RDE	-.0309	RRA	.1241	RC3	-.4729	FAU	.22719
FDE	.5836	FRA	4.1247	FC	-15.5701	BSP	13212
BDE	.2544	BRA	1.5632	BC3	3.5426	FSP	3713

MID-COURSE EXECUTION ACCURACY

SGT	3856.4	SGR	411.4	SG3	1168.1		
RRT	-.9671	RRF	.9818	RTF	-.9529		
SGB	3878.3	R23	-.2344	R13	.9535		
SG1	3876.9	SG2	104.1	THA	174.11		

ORBIT DETERMINATION ACCURACY

ST	966.6	SR	86.1	SS	1039.3		
CRT	-.9823	CRS	-.5409	CST	.6827		
LSA	1304.5	MSA	565.8	SSA	5.2		
EL1	970.3	EL2	16.1	ALF	175.00		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 556.838 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.200 GAL -2.49 AZL 87.45 HCA 175.65 SMA 192.44 ECC .23410 INC 2.5486 V1 30.080
RP 234.17 LAP .19 LOP 223.29 VP 21.068 GAP 5.18 AZP 92.54 TAL 346.83 TAP 162.48 RCA 147.39 APO 237.49 V2 23.479
RC 206.900 GL 24.57 GP -3.16 ZAL 106.94 ZAP 148.83 ETS 183.76 ZAE 171.06 ETE 345.42 ZAC 87.30 ETC 255.83 CLP 148.98

PLANETOCENTRIC CONIC

C3 12.610 VHL 3.551 DLA 31.79 RAL 168.48 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 4.675 DPA -6.71 RAP 190.42 ECC 1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.92	11 19 9	3810.36	-24.61	155.50	30.86	69.21	12 22 39	3210.4	-27.21	147.51
105.08	15 15 12	3053.49	-24.59	99.48	30.85	69.20	16 6 5	2453.5	-27.20	91.49
74.92	11 19 9	3810.36	-24.61	155.50	30.86	69.21	12 22 39	3210.4	-27.21	147.51
105.08	15 15 12	3053.49	-24.59	99.48	30.85	69.20	16 6 5	2453.5	-27.20	91.49
110.00	17 23 5	2657.02	-32.41	71.65	33.43	78.49	18 7 22	2057.0	-33.66	62.64
110.00	14 10 26	3254.83	-17.25	111.15	27.13	60.02	15 4 41	2654.8	-21.11	104.14

DIFFERENTIAL CORRECTIONS
TDE .2225 TRA-1.5210 TC3 3.5014 BAU .5979
RDE -.0167 RRA .1507 RC3 -.5648 FAU .23711
FDE .7487 FRA 4.2503 FC-16.2789 BSP 13118
BDE .2232 BRA 1.5285 BC3 3.5467 FSP 3876

MID-COURSE EXECUTION ACCURACY
SGT 3827.4 SGR 493.4 SG3 1222.5
RRT -.9707 RRF .9902 RTF -.9530
SGB 3859.1 R23 -.2673 R13 .9540
SG1 3857.3 SG2 117.7 THA 172.86

ORBIT DETERMINATION ACCURACY
ST 940.6 SR 90.7 SS 1101.5
CRT -.9946 CRS -.7249 CST .6583
LSA 1325.6 MSA 590.7 SSA 4.1
EL1 944.9 EL2 9.3 ALF 174.52

LAUNCH DATE NOV 10 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 560.524 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.178 GAL -2.42 AZL 87.24 HCA 176.64 SMA 192.03 ECC .23230 INC 2.7561 V1 30.080
RP 233.80 LAP .16 LOP 224.28 VP 21.075 GAP 4.79 AZP 92.75 TAL 347.09 TAP 163.73 RCA 147.42 APO 236.63 V2 23.517
RC 209.011 GL 26.55 GP -4.18 ZAL 106.20 ZAP 147.70 ETS 185.17 ZAE 171.80 ETE 336.78 ZAC 86.29 ETC 255.82 CLP 147.94

PLANETOCENTRIC CONIC

C3 12.739 VHL 3.569 DLA 33.77 RAL 169.02 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 4.578 DPA -7.62 RAP 189.95 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.77	10 54 27	3895.64	-26.01	162.66	32.18	67.65	11 59 23	3295.6	-28.80	154.63
109.23	15 44 9	2972.57	-26.00	93.89	32.18	67.64	16 33 42	2372.6	-28.80	85.86
70.77	10 54 27	3895.64	-26.01	162.66	32.18	67.65	11 59 23	3295.6	-28.80	154.63
109.23	15 44 9	2972.57	-26.00	93.89	32.18	67.64	16 33 42	2372.6	-28.80	85.86
110.00	16 28 52	2835.94	-29.24	84.61	33.54	71.44	17 16 8	2235.9	-31.49	76.13
110.00	15 8 55	3080.26	-22.86	100.72	30.62	63.86	16 0 15	2480.3	-26.18	93.13

DIFFERENTIAL CORRECTIONS
TDE .1909 TRA-1.4834 TC3 3.4502 BAU .5998
RDE .0036 RRA .1929 RC3 -.7065 FAU .24721
FDE .9785 FRA 4.4011 FC-16.7999 BSP 12950
BDE .1910 BRA 1.4959 BC3 3.5218 FSP 4036

MID-COURSE EXECUTION ACCURACY
SGT 3790.4 SGR 627.1 SG3 1277.2
RRT -.9710 RRF .9951 RTF -.9531
SGB 3841.9 R23 -.2852 R13 .9549
SG1 3839.0 SG2 148.1 THA 170.86

ORBIT DETERMINATION ACCURACY
ST 915.4 SR 113.0 SS 1193.0
CRT -.9229 CRS -.8792 CST .6289
LSA 1374.5 MSA 620.1 SSA 2.9
EL1 921.4 EL2 43.2 ALF 173.49

LAUNCH DATE NOV 10 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 564.226 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.157 GAL -2.36 AZL 86.86 HCA 177.63 SMA 191.64 ECC .23057 INC 3.1339 V1 30.080
RP 233.44 LAP .13 LOP 225.28 VP 21.084 GAP 4.39 AZP 93.14 TAL 347.35 TAP 164.98 RCA 147.45 APO 235.83 V2 23.555
RC 211.104 GL 29.94 GP -6.06 ZAL 105.29 ZAP 146.37 ETS 187.71 ZAE 171.89 ETE 321.33 ZAC 84.44 ETC 255.78 CLP 146.86

PLANETOCENTRIC CONIC

C3 13.232 VHL 3.638 DLA 36.99 RAL 170.42 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 4.492 DPA -9.29 RAP 189.07 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.13	10 28 7	3999.77	-28.10	171.94	35.30	64.88	11 34 47	3399.8	-31.23	163.89
114.87	16 21 40	2884.78	-28.09	87.96	35.29	64.87	17 9 45	2284.8	-31.22	79.91
65.13	10 28 7	3999.77	-28.10	171.94	35.30	64.88	11 34 47	3399.8	-31.23	163.89
114.87	16 21 40	2884.78	-28.09	87.96	35.29	64.87	17 9 45	2284.8	-31.22	79.91
65.13	10 28 7	3999.77	-28.10	171.94	35.30	64.88	11 34 47	3399.8	-31.23	163.89
114.87	16 21 40	2884.78	-28.09	87.96	35.29	64.87	17 9 45	2284.8	-31.22	79.91

DIFFERENTIAL CORRECTIONS
TDE .1877 TRA-1.4133 TC3 3.4088 BAU .6269
RDE .0330 RRA .2642 RC3 -.9697 FAU .26295
FDE 1.2013 FRA 4.4605 FC-17.2044 BSP 11979
BDE .1906 BRA 1.4378 BC3 3.5440 FSP 3912

MID-COURSE EXECUTION ACCURACY
SGT 3742.4 SGR 878.5 SG3 1331.8
RRT -.9691 RRF .9977 RTF -.9533
SGB 3844.1 R23 -.2872 R13 .9570
SG1 3838.3 SG2 211.3 THA 167.14

ORBIT DETERMINATION ACCURACY
ST 890.0 SR 166.1 SS 1268.6
CRT -.7907 CRS -.9557 CST .5757
LSA 1412.8 MSA 658.0 SSA 1.9
EL1 899.7 EL2 100.6 ALF 171.50

LAUNCH DATE NOV 10 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 567.939 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.137 GAL -2.30 AZL 85.92 HCA 178.63 SMA 191.27 ECC .22893 INC 4.0762 V1 30.080
RP 233.07 LAP .10 LOP 226.27 VP 21.095 GAP 4.01 AZP 94.08 TAL 347.60 TAP 166.23 RCA 147.48 APO 235.06 V2 23.593
RC 213.179 GL 37.33 GP -10.62 ZAL 105.75 ZAP 144.25 ETS 193.60 ZAE 169.22 ETE 297.34 ZAC 79.95 ETC 255.63 CLP 145.66

PLANETOCENTRIC CONIC

C3 15.112 VHL 3.887 DLA 43.62 RAL 174.72 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 4.452 DPA -13.34 RAP 186.93 ECC 1.2487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.32	10 0 27	4155.30	-31.65	187.36	44.43	58.26	11 9 43	3555.3	-35.59	179.41
124.68	17 23 39	2787.82	-31.64	81.96	44.42	58.25	18 10 7	2187.8	-35.58	74.01
55.32	10 0 27	4155.30	-31.65	187.36	44.43	58.26	11 9 43	3555.3	-35.59	179.41
124.68	17 23 39	2787.82	-31.64	81.96	44.42	58.25	18 10 7	2187.8	-35.58	74.01
55.32	10 0 27	4155.30	-31.65	187.36	44.43	58.26	11 9 43	3555.3	-35.59	179.41
124.68	17 23 39	2787.82	-31.64	81.96	44.42	58.25	18 10 7	2187.8	-35.58	74.01

DIFFERENTIAL CORRECTIONS
TDE .1485 TRA-1.3897 TC3 2.9460 BAU .6627
RDE .1304 RRA .4629 RC3-1.4429 FAU .26965
FDE 1.8072 FRA 4.7294 FC-15.4477 BSP 12311
BDE .1976 BRA 1.4648 BC3 3.2804 FSP 3960

MID-COURSE EXECUTION ACCURACY
SGT 3646.8 SGR 1477.7 SG3 1349.8
RRT -.9638 RRF .9989 RTF -.9508
SGB 3934.9 R23 -.2742 R13 .9616
SG1 3917.7 SG2 366.7 THA 158.47

ORBIT DETERMINATION ACCURACY
ST 879.3 SR 343.6 SS 1517.6
CRT -.6629 CRS -.9892 CST .5459
LSA 1646.9 MSA 694.1 SSA .9
EL1 910.7 EL2 248.4 ALF 164.28

LAUNCH DATE NOV 10 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 575.403 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.100	GAL	-2.20	AZL	92.96	HCA	180.64	SMA	190.59	ECC	.22590	INC	2.9000	V1	30.080
RP	232.32	LAP	.03	LOP	228.27	VP	21.122	GAP	3.26	AZP	87.04	TAL	348.04	TAP	168.68	RCA	147.53	APO	233.64	V2	23.670
RC	217.275	GL	-29.05	GP	22.73	ZAL	104.15	ZAP	137.25	ETS	151.46	ZAE	156.02	ETE	83.22	ZAC	112.26	ETC	254.69	CLP	142.77

PLANETOCENTRIC CONIC

C3	12.405	VHL	3.522	DLA	-17.00	RAL	145.16	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	4.580	DPA	17.31	RAP	200.27	ECC	1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.99	13 19 36	2680.93	-16.60	81.35	342.18	152.67	14 4 16	2080.9	-9.46	78.05
29.99	0 12 49	5883.20	48.53	273.24	350.22	41.64	1 50 52	5283.2	42.31	266.47
39.99	13 59 0	2607.53	-13.78	76.55	346.96	144.38	14 42 28	2007.5	-7.24	72.28
39.99	0 24 22	5861.68	44.57	275.79	355.57	52.57	2 2 3	5261.7	39.39	267.98
49.99	14 46 22	2498.78	-10.46	69.25	351.08	136.71	15 28 1	1898.8	-4.60	64.18
49.99	0 39 1	5828.01	40.18	276.07	359.39	61.94	2 16 9	5228.0	36.08	267.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4434	TRA	-.9151	TC3	4.0316	BAU	.9505	SGT	4000.2	SGR	3478.2	SG3	1508.4	ST	2395.5	SR	1931.5	SS	3813.7		
RDE	1.1839	RRA	-.2304	RC3	4.0738	FAU	.29440	RRT	.9546	RRF	-.9999	RTF	-.9498	CRT	.9908	CRS	1.0000	CST	.9897		
FDE	-5.9098	FRA	1.0015	FC	-20.5461	BSP	8051	SGB	5300.9	R23	-.1877	R13	-.9822	LSA	4891.4	MSA	296.2	SSA	.5		
BDE	1.8668	BRA	.9436	BC3	5.7315	FSP	1550	SG1	5241.6	SG2	790.6	THA	40.82	EL1	3070.4	EL2	203.6	ALF	38.82		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 579.165 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.082	GAL	-2.14	AZL	90.01	HCA	181.64	SMA	190.27	ECC	.22449	INC	.0000	V1	30.080
RP	231.95	LAP	.00	LOP	229.28	VP	21.139	GAP	2.89	AZP	89.99	TAL	348.27	TAP	169.91	RCA	147.56	APO	232.99	V2	23.709
RC	219.295	GL	-.16	GP	9.52	ZAL	105.57	ZAP	141.25	ETS	166.46	ZAE	169.21	ETE	80.52	ZAC	99.50	ETC	255.65	CLP	142.25

PLANETOCENTRIC CONIC

C3	9.584	VHL	3.096	DLA	10.19	RAL	155.08	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	4.154	DPA	5.14	RAP	195.00	ECC	1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 2	2375.14	-23.11	51.92	7.99	106.83	17 44 37	1775.1	-20.59	44.15
90.00	7 42 24	4376.10	5.69	181.83	5.22	62.21	8 55 20	3776.1	1.93	175.18
100.00	18 31 25	2096.52	-24.01	31.11	7.67	108.36	19 6 22	1496.5	-21.28	23.38
100.00	8 58 42	4129.95	6.52	163.28	4.77	60.76	10 7 32	3530.0	2.58	156.72
110.00	19 51 8	1847.10	-26.40	11.19	6.69	112.55	20 21 55	1247.1	-23.11	3.58
110.00	9 55 29	3952.14	8.70	148.46	3.44	56.81	11 1 21	3352.1	4.27	142.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5046	TRA	-1.2132	TC3	4.2123	BAU	.5867	SGT	3588.7	SGR	1227.4	SG3	1570.7	ST	1160.4	SR	267.9	SS	1356.8		
RDE	.1217	RRA	-.2503	RC3	1.7943	FAU	.29412	RRT	.9493	RRF	-.9999	RTF	-.9500	CRT	.9958	CRS	.9990	CST	.9976		
FDE	-1.6662	FRA	3.7749	FC	-26.5674	BSP	12724	SGB	3792.8	R23	-.2815	R13	-.9594	LSA	1804.2	MSA	62.1	SSA	11.2		
BDE	.5191	BRA	1.2388	BC3	4.5786	FSP	4889	SG1	3775.0	SG2	366.7	THA	18.16	EL1	1190.7	EL2	24.0	ALF	12.95		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 582.934 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.066	GAL	-2.10	AZL	89.30	HCA	182.65	SMA	189.98	ECC	.22316	INC	.7093	V1	30.080
RP	231.57	LAP	-.03	LOP	230.29	VP	21.157	GAP	2.53	AZP	90.69	TAL	348.47	TAP	171.12	RCA	147.58	APO	232.37	V2	23.748
RC	221.297	GL	7.44	GP	6.07	ZAL	105.02	ZAP	140.71	ETS	171.06	ZAE	172.75	ETE	86.67	ZAC	96.11	ETC	255.78	CLP	141.11

PLANETOCENTRIC CONIC

C3	9.591	VHL	3.097	DLA	17.41	RAL	157.55	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	4.029	DPA	2.06	RAP	193.44	ECC	1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 36	2628.24	-26.99	69.41	12.89	98.91	16 54 24	2028.2	-25.48	61.07
90.00	8 56 31	4123.27	-2.44	167.70	8.61	61.78	10 5 14	3523.3	-6.19	161.03
100.00	17 42 2	2333.37	-28.09	47.51	12.68	100.67	18 20 55	1733.4	-26.33	39.15
100.00	10 7 46	3893.37	-1.46	150.26	8.07	60.14	11 12 39	3293.4	-5.42	143.71
110.00	19 12 28	2050.44	-30.92	25.27	11.92	105.36	19 46 38	1450.4	-28.51	16.90
110.00	10 53 49	3749.06	1.00	137.77	6.52	55.83	11 56 18	3149.1	-3.49	131.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3235	TRA	-1.2315	TC3	3.9574	BAU	.5264	SGT	3473.9	SGR	752.8	SG3	1640.6	ST	936.4	SR	117.3	SS	983.4		
RDE	.0340	RRA	-.1666	RC3	1.0931	FAU	.30134	RRT	.9440	RRF	-.9989	RTF	-.9498	CRT	.9883	CRS	.9754	CST	.9364		
FDE	-.5138	FRA	4.4904	FC	-27.2006	BSP	12960	SGB	3554.5	R23	-.2966	R13	-.9541	LSA	1341.3	MSA	241.9	SSA	6.5		
BDE	.3253	BRA	1.2427	BC3	4.1056	FSP	5752	SG1	3546.2	SG2	243.4	THA	11.62	EL1	943.5	EL2	17.8	ALF	7.06		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 586.716 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	33.050	GAL	-2.05	AZL	88.98	HCA	183.66	SMA	189.69	ECC	.22189	INC	.9989	V1	30.080
RP	231.20	LAP	-.06	LOP	231.30	VP	21.177	GAP	2.17	AZP	91.01	TAL	348.67	TAP	172.33	RCA	147.60	APO	231.79	V2	23.788
RC	223.281	GL	10.87	GP	4.50	ZAL	104.49	ZAP	139.66	ETS	173.22	ZAE	174.21	ETE	99.65	ZAC	94.53	ETC	255.82	CLP	139.87

PLANETOCENTRIC CONIC

C3	9.629	VHL	3.103	DLA	20.73	RAL	158.52	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.933	DPA	.72	RAP	192.60	ECC	1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 25	2763.64	-28.04	79.18	15.15	94.13	16 24 29	2163.6	-27.17	70.62
90.00	9 36 28	3989.41	-6.71	160.18	10.55	62.42	10 42 57	3389.4	-10.35	153.40
100.00	17 13 30	2457.04	-29.32	56.49	15.02	96.10	17 54 27	1857.0	-28.17	47.88
100.00	10 44 4	3771.24	-5.58	143.53	9.93	60.59	11 46 55	3171.2	-9.45	136.89
110.00	18 50 55	2152.27	-32.52	32.78	14.46	101.18	19 26 47	1552.3	-30.63	24.06
110.00	11 23 8	3648.78	-2.83	132.54	8.22	55.92	12 23 57	3048.8	-7.28	126.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3027	TRA	-1.1583	TC3	4.0162	BAU	.5281	SGT	3428.5	SGR	563.4	SG3	1758.2	ST	888.1	SR	83.1	SS	946.3		
RDE	.0273	RRA	-.1085	RC3	.8358	FAU	.32798	RRT	.9374	RRF	-.9964	RTF	-.9496	CRT	.9944	CRS	.9070	CST	.8912		
FDE	-.3255	FRA	4.4966	FC	-29.4892	BSP	11502	SGB	3474.5	R23	-.2969	R13	-.9522	LSA	1264.7	MSA	302.5	SSA	7.9		
BDE	.3039	BRA	1.1634	BC3	4.1022	FSP	5496	SG1	3469.1	SG2	193.9	THA	8.79	EL1	891.9	EL2	8.7	ALF	5.32		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 590.509 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.035 GAL -2.01 AZL 88.80 HCA 184.68 SMA 189.43 ECC .22070 INC 1.1962 V1 30.080
RP 230.82 LAP -.10 LOP 232.32 VP 21.198 GAP 1.83 AZP 91.19 TAL 348.85 TAP 173.53 RCA 147.62 APO 231.23 V2 23.827
RC 225.247 GL 12.84 GP 3.61 ZAL 104.02 ZAP 138.46 ETS 174.46 ZAE 174.59 ETE 116.34 ZAC 93.60 ETC 255.84 CLP 138.59

PLANETOCENTRIC CONIC

C3 9.629 VHL 3.103 DLA 22.70 RAL 158.96 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.846 DPA .02 RAP 191.98 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 8	2854.02	-28.31	85.77	16.29	90.84	16 2 42	2254.0	-27.89	77.13
90.00	10 3 16	3899.04	-9.52	155.03	11.74	63.21	11 8 15	3299.0	-13.04	148.12
100.00	16 53 21	2537.32	-29.75	62.42	16.24	93.01	17 35 38	1937.3	-29.02	53.69
100.00	11 7 44	3690.97	-8.24	139.06	11.05	61.16	12 9 15	3091.0	-12.02	132.31
110.00	18 36 11	2215.60	-33.25	37.57	15.82	98.43	19 13 7	1615.6	-31.73	28.67
110.00	11 41 23	3585.45	-5.24	129.22	9.21	56.17	12 41 9	2985.5	-9.65	122.90

DIFFERENTIAL CORRECTIONS
TDE .2383 TRA-1.1487 TC3 3.7756 BAU .4933
RDE .0208 RRA -.0834 RC3 .6580 FAU .33454
FDE .1356 FRA 4.8841 FC-30.0790 BSP 11763
BDE .2392 BRA 1.1517 BC3 3.8325 FSP 6137

MID-COURSE EXECUTION ACCURACY
SGT 3312.0 SGR 442.8 SG3 1820.7
RRT .9256 RRF -.9907 RTF -.9471
SGB 3341.5 R23 -.2955 R13 -.9490
SG1 3337.4 SG2 166.4 THA 7.07

ORBIT DETERMINATION ACCURACY
ST 821.1 SR 64.3 SS 995.7
CRT .9907 CRS .7480 CST .7935
LSA 1226.3 MSA 407.2 SSA 7.7
EL1 823.6 EL2 8.7 ALF 4.44

LAUNCH DATE NOV 10 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 594.314 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.021 GAL -1.97 AZL 88.69 HCA 185.70 SMA 189.17 ECC .21956 INC 1.3109 V1 30.080
RP 230.43 LAP -.13 LOP 233.33 VP 21.221 GAP 1.48 AZP 91.31 TAL 349.02 TAP 174.72 RCA 147.64 APO 230.71 V2 23.867
RC 227.193 GL 14.13 GP 3.03 ZAL 103.60 ZAP 137.18 ETS 175.28 ZAE 174.20 ETE 131.93 ZAC 92.97 ETC 255.85 CLP 137.26

PLANETOCENTRIC CONIC

C3 9.605 VHL 3.099 DLA 24.02 RAL 159.15 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.765 DPA -.38 RAP 191.46 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 20	2922.47	-28.27	90.78	16.87	88.33	15 45 3	2322.5	-28.20	82.11
90.00	10 23 35	3829.63	-11.62	151.02	12.53	64.00	11 27 25	3229.6	-15.03	143.99
100.00	16 37 31	2596.23	-29.88	66.79	16.89	90.71	17 20 48	1996.2	-29.47	58.01
100.00	11 25 5	3631.10	-10.19	135.68	11.78	61.74	12 25 36	3031.1	-13.89	128.84
110.00	18 24 57	2260.14	-33.64	40.99	16.61	96.45	19 2 37	1660.1	-32.39	31.98
110.00	11 54 9	3539.96	-6.96	126.82	9.82	56.45	12 53 9	2940.0	-11.32	120.44

DIFFERENTIAL CORRECTIONS
TDE .2216 TRA-1.1025 TC3 3.6801 BAU .4781
RDE .0238 RRA -.0627 RC3 .5636 FAU .35058
FDE .3117 FRA 5.0311 FC-31.5981 BSP 11179
BDE .2228 BRA 1.1043 BC3 3.7230 FSP 6334

MID-COURSE EXECUTION ACCURACY
SGT 3217.2 SGR 374.3 SG3 1907.9
RRT .9120 RRF -.9812 RTF -.9454
SGB 3238.9 R23 -.2853 R13 -.9468
SG1 3235.3 SG2 152.7 THA 6.07

ORBIT DETERMINATION ACCURACY
ST 787.8 SR 59.1 S. 1029.2
CRT .9496 CRS .5193 CST .7419
LSA 1217.4 MSA 448.6 SSA 8.7
EL1 789.8 EL2 18.5 ALF 4.08

LAUNCH DATE NOV 10 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 598.130 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.007 GAL -1.93 AZL 88.60 HCA 186.72 SMA 188.93 ECC .21849 INC 1.3918 V1 30.080
RP 230.05 LAP -.16 LOP 234.36 VP 21.245 GAP 1.14 AZP 91.39 TAL 349.18 TAP 175.90 RCA 147.65 APO 230.21 V2 23.907
RC 229.120 GL 15.06 GP 2.63 ZAL 103.22 ZAP 135.83 ETS 175.85 ZAE 173.32 ETE 143.78 ZAC 92.50 ETC 255.87 CLP 135.89

PLANETOCENTRIC CONIC

C3 9.568 VHL 3.093 DLA 25.00 RAL 159.22 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.688 DPA -.60 RAP 190.98 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 8	2978.69	-28.09	94.88	17.15	86.28	15 29 47	2378.7	-28.31	86.22
90.00	10 40 19	3771.86	-13.32	147.63	13.09	64.78	11 43 11	3171.9	-16.61	140.49
100.00	16 24 18	2642.87	-29.87	70.26	17.23	88.89	17 8 21	2042.9	-29.71	61.46
100.00	11 38 50	3582.91	-11.73	132.93	12.27	62.31	12 38 33	2982.9	-15.34	126.01
110.00	18 15 50	2293.90	-33.87	43.60	17.08	94.92	18 54 4	1693.9	-32.82	34.52
110.00	12 3 47	3504.65	-8.28	124.94	10.21	56.72	13 2 12	2904.6	-12.60	118.51

DIFFERENTIAL CORRECTIONS
TDE .1991 TRA-1.0671 TC3 3.5201 BAU .4548
RDE .0277 RRA -.0484 RC3 .5002 FAU .36486
FDE .4937 FRA 5.2116 FC-33.0150 BSP 10873
BDE .2011 BRA 1.0682 BC3 3.5555 FSP 6625

MID-COURSE EXECUTION ACCURACY
SGT 3104.0 SGR 328.9 SG3 1991.8
RRT .8899 RRF -.9663 RTF -.9415
SGB 3121.4 R23 -.2773 R13 -.9428
SG1 3117.8 SG2 149.4 THA 5.40

ORBIT DETERMINATION ACCURACY
ST 753.9 SR 60.1 SS 1076.8
CRT .8607 CRS .2635 CST .7038
LSA 1228.1 MSA 472.6 SSA 9.8
EL1 755.7 EL2 30.5 ALF 3.93

LAUNCH DATE NOV 10 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 601.958 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.995 GAL -1.90 AZL 88.54 HCA 187.75 SMA 188.71 ECC .21748 INC 1.4533 V1 30.080
RP 229.67 LAP -.20 LOP 235.38 VP 21.271 GAP .81 AZP 91.44 TAL 349.33 TAP 177.07 RCA 147.67 APO 229.75 V2 23.948
RC 231.027 GL 15.76 GP 2.33 ZAL 102.88 ZAP 134.44 ETS 176.28 ZAE 172.14 ETE 152.06 ZAC 92.13 ETC 255.88 CLP 134.49

PLANETOCENTRIC CONIC

C3 9.522 VHL 3.086 DLA 25.77 RAL 159.21 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.613 DPA -.71 RAP 190.51 ECC 1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 28	3027.77	-27.82	98.45	17.24	84.51	15 15 56	2427.8	-28.29	89.81
90.00	10 54 57	3720.90	-14.78	144.59	13.51	65.57	11 56 58	3120.9	-17.96	137.36
100.00	16 12 46	2681.85	-29.79	73.15	17.40	87.37	16 57 28	2081.8	-29.83	64.35
100.00	11 50 20	3542.06	-13.01	130.57	12.63	62.85	12 49 22	2942.1	-16.55	123.57
110.00	18 8 8	2320.88	-34.01	45.69	17.35	93.68	18 46 49	1720.9	-33.12	36.57
110.00	12 11 27	3475.79	-9.35	123.40	10.47	56.97	13 9 23	2875.8	-13.64	116.92

DIFFERENTIAL CORRECTIONS
TDE .1825 TRA-1.0284 TC3 3.3471 BAU .4300
RDE .0322 RRA -.0378 RC3 .4562 FAU .37829
FDE .6754 FRA 5.4054 FC-34.3943 BSP 10535
BDE .1853 BRA 1.0291 BC3 3.3781 FSP 6973

MID-COURSE EXECUTION ACCURACY
SGT 2979.5 SGR 298.2 SG3 2074.2
RRT .8635 RRF -.9458 RTF -.9374
SGB 2994.4 R23 -.2662 R13 -.9386
SG1 2990.7 SG2 149.8 THA 4.95

ORBIT DETERMINATION ACCURACY
ST 723.4 SR 64.7 SS 1132.4
CRT .7616 CRS .0371 CST .6636
LSA 1251.4 MSA 493.6 SSA 10.7
EL1 725.1 EL2 41.8 ALF 3.91

LAUNCH DATE NOV 10 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 605.800 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.983	GAL	-1.87	AZL	88.50	HCA	188.78	SMA	188.50	ECC	.21653	INC	1.5032
RP	229.28	LAP	-.23	LOP	236.41	VP	21.298	GAP	.49	AZP	91.49	TAL	349.46	TAP	178.24	RCA	147.68	APO	229.31
RC	232.913	GL	16.32	GP	2.10	ZAL	102.57	ZAP	133.00	ETS	176.61	ZAE	170.76	ETE	157.79	ZAC	91.82	ETC	255.89

V1	30.080	V2	23.988	CLP	133.04														

PLANETOCENTRIC CONIC

C3	9.472	VHL	3.078	DLA	26.39	RAL	159.17	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	3.542	DPA	-.75	RAP	190.04
ECC	1.1559																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 38	3072.79	-27.49	101.70	17.21	82.91	15 2 51	2472.8	-28.18	93.10
90.00	11 8 25	3673.82	-16.09	141.75	13.85	66.38	12 9 39	3073.8	-19.14	134.41
100.00	16 2 24	2715.72	-29.65	75.66	17.45	86.05	16 47 40	2115.7	-29.89	66.86
100.00	12 0 20	3506.13	-14.11	128.48	12.89	63.37	12 58 46	2906.1	-17.58	121.40
110.00	18 1 26	2343.26	-34.09	47.44	17.51	92.66	18 40 29	1743.3	-33.35	38.27
110.00	12 17 47	3451.35	-10.26	122.08	10.64	57.21	13 15 19	2851.4	-14.51	115.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1769	TRA	-.9821	TC3	3.1931	BAU	.4079	SGT	2852.5	SGR	277.4	SG3	2158.3	ST	697.7	SR	71.4	SS	1192.7
RDE	.0368	RRA	-.0298	RC3	.4250	FAU	.39167	RRT	.8381	RRF	-.9204	RTF	-.9344	CRT	.6907	CRS	-.1379	CST	.6098
FDE	.8521	FRA	5.6104	FC-35.7985		BSP	9957	SGB	2866.0	R23	-.2477	R13	-.9355	LSA	1282.5	MSA	519.1	SSA	11.2
BDE	.1807	BRA	.9825	BC3	3.2213	FSP	7338	SG1	2862.0	SG2	150.8	THA	4.67	EL1	699.5	EL2	51.5	ALF	4.06

LAUNCH DATE NOV 10 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 609.651 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.971	GAL	-1.84	AZL	88.46	HCA	189.81	SMA	188.30	ECC	.21563	INC	1.5394
RP	228.89	LAP	-.26	LOP	237.44	VP	21.326	GAP	.17	AZP	91.52	TAL	349.59	TAP	179.40	RCA	147.69	APO	228.90
RC	234.778	GL	16.77	GP	1.92	ZAL	102.28	ZAP	131.52	ETS	176.88	ZAE	169.27	ETE	161.85	ZAC	91.54	ETC	255.91

V1	30.080	V2	24.029	CLP	131.55														

PLANETOCENTRIC CONIC

C3	9.422	VHL	3.069	DLA	26.90	RAL	159.11	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.474	DPA	-.72	RAP	189.55
ECC	1.1551																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 13	3115.74	-27.09	104.78	17.11	81.42	14 50 9	2515.7	-28.00	96.23
90.00	11 21 20	3628.78	-17.29	139.00	14.14	67.22	12 21 48	3028.8	-20.23	131.56
100.00	15 52 57	2745.89	-29.49	77.89	17.44	84.89	16 38 43	2145.9	-29.89	69.11
100.00	12 9 17	3473.87	-15.09	126.58	13.10	63.89	13 7 11	2873.9	-18.48	119.43
110.00	17 55 33	2362.25	-34.14	48.92	17.60	91.78	18 34 55	1762.2	-33.52	39.73
110.00	12 23 10	3430.27	-11.03	120.94	10.76	57.44	13 20 20	2830.3	-15.25	114.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1727	TRA	-.9364	TC3	3.0131	BAU	.3829	SGT	2714.3	SGR	265.5	SG3	2247.7	ST	672.9	SR	80.3	SS	1234.6
RDE	.0421	RRA	-.0229	RC3	.4056	FAU	.40718	RRT	.8045	RRF	-.8911	RTF	-.9287	CRT	.6332	CRS	-.2603	CST	.5717
FDE	.9748	FRA	5.7708	FC-37.4151		BSP	9404	SGB	2727.3	R23	-.2382	R13	-.9298	LSA	1305.6	MSA	528.0	SSA	12.3
BDE	.1778	BRA	.9367	BC3	3.0403	FSP	7620	SG1	2722.7	SG2	157.2	THA	4.51	EL1	674.9	EL2	62.0	ALF	4.36

LAUNCH DATE NOV 10 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 613.513 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.960	GAL	-1.82	AZL	88.43	HCA	190.85	SMA	188.11	ECC	.21478	INC	1.5701
RP	228.51	LAP	-.30	LOP	238.48	VP	21.356	GAP	-.15	AZP	91.54	TAL	349.70	TAP	180.54	RCA	147.70	APO	228.51
RC	236.623	GL	17.15	GP	1.78	ZAL	102.03	ZAP	129.99	ETS	177.11	ZAE	167.67	ETE	164.81	ZAC	91.29	ETC	255.92

V1	30.080	V2	24.070	CLP	130.01														

PLANETOCENTRIC CONIC

C3	9.371	VHL	3.061	DLA	27.34	RAL	159.03	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	3.409	DPA	-.65	RAP	189.04
ECC	1.1542																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 40	3158.67	-26.62	107.83	16.94	79.96	14 37 18	2558.7	-27.73	99.34
90.00	11 34 19	3583.77	-18.46	136.21	14.42	68.14	12 34 3	2983.8	-21.27	128.66
100.00	15 44 11	2773.36	-29.31	79.91	17.38	83.84	16 30 24	2173.4	-29.85	71.15
100.00	12 17 29	3444.31	-15.97	124.82	13.27	64.39	13 14 53	2844.3	-19.28	117.60
110.00	17 50 19	2378.68	-34.17	50.20	17.63	91.02	18 29 57	1778.7	-33.65	40.99
110.00	12 27 50	3411.75	-11.71	119.93	10.85	57.65	13 24 42	2811.8	-15.90	113.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1703	TRA	-.8901	TC3	2.8113	BAU	.3556	SGT	2565.4	SGR	258.5	SG3	2336.5	ST	648.7	SR	89.6	SS	1283.9
RDE	.0473	RRA	-.0173	RC3	.3921	FAU	.42197	RRT	.7689	RRF	-.8588	RTF	-.9217	CRT	.5985	CRS	-.3534	CST	.5272
FDE	1.1115	FRA	5.9531	FC-38.9828		BSP	8840	SGB	2578.4	R23	-.2302	R13	-.9228	LSA	1337.8	MSA	536.0	SSA	13.1
BDE	.1768	BRA	.8902	BC3	2.8385	FSP	7955	SG1	2573.1	SG2	164.8	THA	4.45	EL1	651.0	EL2	71.5	ALF	4.78

LAUNCH DATE NOV 10 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 617.386 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.950	GAL	-1.79	AZL	88.40	HCA	191.89	SMA	187.93	ECC	.21399	INC	1.5955
RP	228.12	LAP	-.33	LOP	239.52	VP	21.386	GAP	-.46	AZP	91.56	TAL	349.80	TAP	181.68	RCA	147.71	APO	228.14
RC	238.446	GL	17.48	GP	1.66	ZAL	101.81	ZAP	128.42	ETS	177.29	ZAE	166.01	ETE	167.03	ZAC	91.05	ETC	255.94

V1	30.080	V2	24.111	CLP	128.44														

PLANETOCENTRIC CONIC

C3	9.322	VHL	3.053	DLA	27.72	RAL	158.96	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	3.347	DPA	-.54	RAP	188.50
ECC	1.1534																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 16	3204.09	-26.04	111.03	16.72	78.45	14 23 40	2604.1	-27.37	102.62
90.00	11 48 9	3536.31	-19.63	133.22	14.71	69.18	12 47 6	2936.3	-22.29	125.56
100.00	15 36 0	2798.73	-29.11	81.77	17.29	82.88	16 22 39	2198.7	-29.79	73.03
100.00	12 25 6	3416.90	-16.77	123.18	13.43	64.88	13 22 3	2816.9	-20.01	115.89
110.00	17 45 38	2393.04	-34.18	51.32	17.64	90.36	18 25 31	1793.0	-33.75	42.10
110.00	12 31 57	3395.35	-12.31	119.04	10.91	57.85	13 28 33	2795.4	-16.46	112.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1676	TRA	-.8451	TC3	2.5782	BAU	.3249	SGT	2405.6	SGR	255.6	SG3	2425.2	ST	624.5	SR	99.2	SS	1336.8
RDE	.0525	RRA	-.0127	RC3	.3836	FAU	.43641	RRT	.7289	RRF	-.8248	RTF	-.9119	CRT	.5762	CRS	-.4253	CST	.4839
FDE	1.2533	FRA	6.1485	FC-40.5274		BSP	8276	SGB	2419.1	R23	-.2288	R13	-.9132	LSA	1377.1	MSA	538.6	SSA	14.0
BDE	.1756	BRA	.8452	BC3	2.6066	FSP	8308	SG1	2412.8	SG2	174.5	THA	4.45	EL1	627.1	EL2	80.7	ALF	5.32

LAUNCH DATE NOV 10 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 621.269 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.941 GAL -1.77 AZL 88.38 HCA 192.93 SMA 187.76 ECC .21325 INC 1.6164 V1 30.080
RP 227.73 LAP -.36 LOP 240.56 VP 21.418 GAP -.76 AZP 91.58 TAL 349.88 TAP 182.81 RCA 147.72 APO 227.80 V2 24.152
RC 240.248 GL 17.76 GP 1.55 ZAL 101.61 ZAP 126.81 ETS 177.46 ZAE 164.28 ETE 168.75 ZAC 90.83 ETC 255.96 CLP 126.83

PLANETOCENTRIC CONIC

C3 9.276 VHL 3.046 DLA 28.05 RAL 158.90 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.288 DPA -.39 RAP 187.94 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 18	3257.68	-25.25	114.76	16.42	76.74	14 7 36	2657.7	-26.83	106.45
90.00	12 4 36	3480.76	-20.94	129.67	15.05	70.49	13 2 37	2880.8	-23.41	121.87
100.00	15 28 19	2822.44	-28.90	83.50	17.19	81.99	16 15 21	2222.4	-29.70	74.79
100.00	12 32 17	3391.23	-17.50	121.63	13.57	65.37	13 28 48	2791.2	-20.68	114.28
110.00	17 41 27	2405.72	-34.18	52.31	17.64	89.77	18 21 33	1805.7	-33.84	43.08
110.00	12 35 38	3380.73	-12.83	118.23	10.97	58.04	13 31 58	2780.7	-16.96	111.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1703 TRA -.7959 TC3 2.3356 BAU .2934 SGT 2237.2 SGR 256.2 SG3 2515.9 ST 602.9 SR 109.2 SS 1379.3
RDE .0578 RRA -.0087 RC3 .3796 FAU .45175 RRT .6895 RRF -.7918 RTF -.8993 CRT .5771 CRS -.4759 CST .4326
FDE 1.3684 FRA 6.3243 FC-42.1629 BSP 7614 SGB 2251.8 R23 -.2313 R13 -.9008 LSA 1408.7 MSA 541.6 SSA 14.9
BDE .1799 BRA .7960 BC3 2.3662 FSP 8622 SG1 2244.2 SG2 185.0 THA 4.55 EL1 606.3 EL2 88.7 ALF 6.10

LAUNCH DATE NOV 10 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 625.163 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.932 GAL -1.76 AZL 88.37 HCA 193.98 SMA 187.61 ECC .21256 INC 1.6342 V1 30.080
RP 227.34 LAP -.39 LOP 241.61 VP 21.451 GAP -1.06 AZP 91.59 TAL 349.96 TAP 183.93 RCA 147.73 APO 227.48 V2 24.193
RC 242.030 GL 18.00 GP 1.47 ZAL 101.44 ZAP 125.16 ETS 177.60 ZAE 162.49 ETE 170.10 ZAC 90.61 ETC 255.98 CLP 125.17

PLANETOCENTRIC CONIC

C3 9.232 VHL 3.038 DLA 28.33 RAL 158.85 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.232 DPA -.22 RAP 187.35 ECC 1.1519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
89.04	12 30 46	3394.18	-23.33	124.18	15.75	73.45	13 27 20	2794.2	-25.37	116.11
90.96	12 46 44	3342.42	-23.32	120.39	15.75	73.44	13 42 26	2742.4	-25.37	112.32
100.00	15 21 3	2844.79	-28.67	85.13	17.09	81.17	16 8 28	2244.8	-29.60	76.44
100.00	12 39 8	3367.04	-18.18	120.16	13.71	65.86	13 35 15	2767.0	-21.29	112.74
110.00	17 37 44	2416.93	-34.18	53.19	17.63	89.25	18 18 1	1816.9	-33.90	43.95
110.00	12 38 56	3367.66	-13.30	117.51	11.02	58.22	13 35 3	2767.7	-17.41	110.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1751 TRA -.7449 TC3 2.0737 BAU .2602 SGT 2060.1 SGR 259.3 SG3 2606.9 ST 582.8 SR 119.3 SS 1418.5
RDE .0631 RRA -.0052 RC3 .3786 FAU .46723 RRT .6495 RRF -.7604 RTF -.8823 CRT .5921 CRS -.5145 CST .3750
FDE 1.4754 FRA 6.4959 FC-43.8165 BSP 6897 SGB 2076.3 R23 -.2395 R13 -.8842 LSA 1439.0 MSA 543.2 SSA 15.8
BDE .1862 BRA .7449 BC3 2.1079 FSP 8930 SG1 2067.0 SG2 196.5 THA 4.72 EL1 587.2 EL2 95.4 ALF 7.10

LAUNCH DATE NOV 10 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 629.066 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.923 GAL -1.74 AZL 88.35 HCA 195.03 SMA 187.46 ECC .21191 INC 1.6495 V1 30.080
RP 226.95 LAP -.43 LOP 242.66 VP 21.485 GAP -1.35 AZP 91.59 TAL 350.02 TAP 185.04 RCA 147.73 APO 227.18 V2 24.235
RC 243.792 GL 18.22 GP 1.39 ZAL 101.30 ZAP 123.47 ETS 177.73 ZAE 160.65 ETE 171.19 ZAC 90.40 ETC 256.01 CLP 123.48

PLANETOCENTRIC CONIC

C3 9.190 VHL 3.032 DLA 28.58 RAL 158.81 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.179 DPA -.02 RAP 186.74 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.96	12 4 52	3476.64	-23.55	130.29	15.71	73.31	13 2 49	2876.6	-25.61	122.21
94.04	13 12 18	3258.21	-23.53	114.29	15.71	73.30	14 6 37	2658.2	-25.60	106.21
100.00	15 14 11	2865.93	-28.44	86.65	16.99	80.39	16 1 57	2265.9	-29.48	78.00
100.00	12 45 41	3344.16	-18.81	118.75	13.85	66.33	13 41 25	2744.2	-21.85	111.27
110.00	17 34 26	2426.85	-34.16	53.96	17.62	88.80	18 14 53	1826.9	-33.95	44.72
110.00	12 41 55	3356.00	-13.72	116.87	11.07	58.38	13 37 51	2756.0	-17.80	110.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1812 TRA -.6945 TC3 1.7864 BAU .2244 SGT 1877.4 SGR 264.3 SG3 2697.9 ST 565.1 SR 129.4 SS 1458.7
RDE .0684 RRA -.0022 RC3 .3801 FAU .48252 RRT .6063 RRF -.7310 RTF -.8582 CRT .6165 CRS -.5447 CST .3124
FDE 1.5809 FRA 6.6787 FC-45.4527 BSP 6171 SGB 1895.9 R23 -.2566 R13 -.8607 LSA 1472.4 MSA 543.7 SSA 16.7
BDE .1936 BRA .6945 BC3 1.8264 FSP 9245 SG1 1884.3 SG2 209.4 THA 4.94 EL1 570.9 EL2 100.9 ALF 8.30

LAUNCH DATE NOV 10 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 632.980 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.916 GAL -1.73 AZL 88.34 HCA 196.08 SMA 187.32 ECC .21131 INC 1.6635 V1 30.080
RP 226.56 LAP -.46 LOP 243.71 VP 21.520 GAP -1.64 AZP 91.60 TAL 350.06 TAP 186.14 RCA 147.74 APO 226.91 V2 24.277
RC 245.534 GL 18.41 GP 1.33 ZAL 101.18 ZAP 121.74 ETS 177.84 ZAE 158.75 ETE 172.09 ZAC 90.18 ETC 256.03 CLP 121.75

PLANETOCENTRIC CONIC

C3 9.152 VHL 3.025 DLA 28.80 RAL 158.79 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 3.129 DPA .20 RAP 186.09 ECC 1.1506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.53	11 53 4	3513.66	-23.73	133.07	15.69	73.20	12 51 38	2913.7	-25.81	124.98
95.47	13 23 56	3219.57	-23.72	111.52	15.69	73.18	14 17 35	2619.6	-25.80	103.43
100.00	15 7 42	2886.01	-28.21	88.10	16.89	79.67	15 55 48	2286.0	-29.34	79.48
100.00	12 51 58	3322.46	-19.40	117.41	13.99	66.80	13 47 21	2722.5	-22.37	109.87
110.00	17 31 33	2435.61	-34.15	54.65	17.62	88.39	18 12 9	1835.6	-34.00	45.40
110.00	12 44 37	3345.62	-14.09	116.29	11.13	58.53	13 40 22	2745.6	-18.15	109.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1893 TRA -.6414 TC3 1.4817 BAU .1873 SGT 1689.3 SGR 270.4 SG3 2786.9 ST 549.7 SR 139.4 SS 1501.7
RDE .0735 RRA .0004 RC3 .3831 FAU .49715 RRT .5615 RRF -.7035 RTF -.8248 CRT .6523 CRS -.5704 CST .2377
FDE 1.6930 FRA 6.8708 FC-47.0274 BSP 5376 SGB 1710.8 R23 -.2806 R13 -.8282 LSA 1510.1 MSA 544.1 SSA 17.5
BDE .2031 BRA .6414 BC3 1.5305 FSP 9577 SG1 1696.2 SG2 222.9 THA 5.23 EL1 557.5 EL2 104.2 ALF 9.73

LAUNCH DATE NOV 10 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 636.904 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.908	GAL	-1.72	AZL	88.32	HCA	197.14	SMA	187.19	ECC	.21076	INC	1.6757
RP	226.17	LAP	-.49	LOP	244.77	VP	21.555	GAP	-1.92	AZP	91.60	TAL	350.10	TAP	187.24	RCA	147.74	APO	226.65
RC	247.256	GL	18.58	GP	1.27	ZAL	101.09	ZAP	119.97	ETS	177.95	ZAE	156.81	ETE	172.84	ZAC	89.97	ETC	256.06

V1	30.080	V2	24.318	CLP	119.98

PLANETOCENTRIC CONIC

C3	9.117	VHL	3.019	DLA	28.99	RAL	158.78	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.082	DPA	.45	RAP	185.42
ECC	1.1500																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.54	11 45 0	3538.85	-23.90	134.98	15.68	73.09	12 43 59	2938.9	-25.99	126.88
96.46	13 31 57	3192.90	-23.89	109.61	15.68	73.08	14 25 10	2592.9	-25.98	101.51
100.00	15 1 37	2905.05	-27.97	89.46	16.81	78.99	15 50 2	2305.0	-29.20	80.88
100.00	12 58 2	3301.94	-19.95	116.13	14.15	67.26	13 53 4	2701.9	-22.85	108.54
110.00	17 29 4	2443.29	-34.13	55.25	17.62	88.04	18 9 47	1843.3	-34.03	46.00
110.00	12 47 4	3336.45	-14.42	115.78	11.19	58.66	13 42 40	2736.5	-18.46	109.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1994	TRA	-.5865	TC3	1.1525	BAU	.1482	SGT	1498.8	SGR	277.8	SG3	2874.3	ST	537.9	SR	149.4	SS	1540.0
RDE	.0786	RRA	.0028	RC3	.3879	FAU	.51163	RRT	.5089	RRF	-.6789	RTF	-.7743	CRT	.6960	CRS	-.5901	CST	.1555
FDE	1.7930	FRA	7.0566	FC-48.5836		BSP	4561	SGB	1524.3	R23	-.3190	R13	-.7793	LSA	1545.0	MSA	544.0	SSA	18.3
BDE	.2144	BRA	.5865	BC3	1.2161	FSP	9903	SG1	1505.6	SG2	238.1	THA	5.53	EL1	548.2	EL2	105.2	ALF	11.36

LAUNCH DATE NOV 10 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 640.837 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.901	GAL	-1.71	AZL	88.31	HCA	198.20	SMA	187.08	ECC	.21024	INC	1.6864
RP	225.78	LAP	-.53	LOP	245.83	VP	21.592	GAP	-2.20	AZP	91.60	TAL	350.12	TAP	188.32	RCA	147.74	APO	226.41
RC	248.959	GL	18.73	GP	1.21	ZAL	101.03	ZAP	118.16	ETS	178.05	ZAE	154.83	ETE	173.48	ZAC	89.76	ETC	256.10

V1	30.080	V2	24.360	CLP	118.17

PLANETOCENTRIC CONIC

C3	9.085	VHL	3.014	DLA	29.15	RAL	158.80	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	3.039	DPA	.71	RAP	184.72
ECC	1.1495																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.79	11 39 3	3557.52	-24.04	136.40	15.69	73.01	12 38 21	2957.5	-26.14	128.29
97.21	13 38 1	3172.88	-24.03	108.18	15.69	72.99	14 30 54	2572.9	-26.13	100.07
100.00	14 55 55	2923.02	-27.73	90.75	16.74	78.35	15 44 38	2323.0	-29.05	82.19
100.00	13 3 50	3282.61	-20.45	114.91	14.31	67.71	13 58 33	2682.6	-23.29	107.27
110.00	17 26 58	2449.96	-34.12	55.77	17.65	87.73	18 7 48	1850.0	-34.05	46.52
110.00	12 49 17	3328.44	-14.70	115.33	11.27	58.79	13 44 45	2728.4	-18.73	108.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2108	TRA	-.5305	TC3	.8011	BAU	.1084	SGT	1314.2	SGR	286.1	SG3	2959.9	ST	529.9	SR	159.3	SS	1576.7
RDE	.0837	RRA	.0049	RC3	.3941	FAU	.52576	RRT	.4422	RRF	-.6567	RTF	-.6964	CRT	.7435	CRS	-.6056	CST	.0672
FDE	1.8871	FRA	7.2438	FC-50.1003		BSP	3713	SGB	1344.9	R23	-.3753	R13	-.7038	LSA	1580.0	MSA	543.3	SSA	19.2
BDE	.2268	BRA	.5305	BC3	.8927	FSP	10220	SG1	1320.5	SG2	255.4	THA	5.71	EL1	543.5	EL2	103.9	ALF	13.09

LAUNCH DATE NOV 10 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 644.780 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.895	GAL	-1.71	AZL	88.30	HCA	199.27	SMA	186.97	ECC	.20977	INC	1.6961
RP	225.38	LAP	-.56	LOP	246.90	VP	21.630	GAP	-2.47	AZP	91.60	TAL	350.12	TAP	189.39	RCA	147.75	APO	226.19
RC	250.643	GL	18.87	GP	1.17	ZAL	101.00	ZAP	116.32	ETS	178.14	ZAE	152.81	ETE	174.02	ZAC	89.54	ETC	256.14

V1	30.080	V2	24.402	CLP	116.32

PLANETOCENTRIC CONIC

C3	9.057	VHL	3.009	DLA	29.28	RAL	158.83	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.999	DPA	.99	RAP	183.99
ECC	1.1490																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.21	11 34 35	3571.72	-24.16	137.49	15.72	72.94	12 34 7	2971.7	-26.27	129.38
97.79	13 42 46	3157.46	-24.15	107.08	15.72	72.92	14 35 23	2557.5	-26.26	98.97
100.00	14 50 40	2939.86	-27.49	91.94	16.69	77.77	15 39 40	2339.9	-28.90	83.42
100.00	13 9 22	3264.55	-20.91	113.77	14.48	68.14	14 3 47	2664.6	-23.69	106.08
110.00	17 25 15	2455.66	-34.10	56.21	17.68	87.47	18 6 11	1855.7	-34.08	46.96
110.00	12 51 17	3321.52	-14.94	114.94	11.35	58.89	13 46 38	2721.5	-18.95	108.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2245	TRA	-.4724	TC3	.4282	BAU	.0710	SGT	1145.5	SGR	295.1	SG3	3042.2	ST	527.6	SR	169.2	SS	1609.6
RDE	.0888	RRA	.0068	RC3	.4011	FAU	.53929	RRT	.3527	RRF	-.6370	RTF	-.5731	CRT	.7942	CRS	-.6170	CST	-.0276
FDE	1.9697	FRA	7.4287	FC-51.5521		BSP	2795	SGB	1182.9	R23	-.4514	R13	-.5836	LSA	1613.1	MSA	543.4	SSA	20.0
BDE	.2414	BRA	.4724	BC3	.5868	FSP	10512	SG1	1150.5	SG2	274.9	THA	5.51	EL1	545.1	EL2	99.5	ALF	14.79

LAUNCH DATE NOV 10 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 648.732 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.889	GAL	-1.71	AZL	88.29	HCA	200.34	SMA	186.86	ECC	.20934	INC	1.7049
RP	224.99	LAP	-.59	LOP	247.97	VP	21.668	GAP	-2.74	AZP	91.60	TAL	350.12	TAP	190.45	RCA	147.75	APO	225.98
RC	252.307	GL	19.00	GP	1.12	ZAL	100.99	ZAP	114.44	ETS	178.22	ZAE	150.74	ETE	174.49	ZAC	89.32	ETC	256.18

V1	30.080	V2	24.444	CLP	114.45

PLANETOCENTRIC CONIC

C3	9.031	VHL	3.005	DLA	29.40	RAL	158.89	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.962	DPA	1.29	RAP	183.24
ECC	1.1486																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.75	11 31 14	3582.69	-24.27	138.34	15.77	72.88	12 30 57	2982.7	-26.38	130.22
98.25	13 46 35	3145.41	-24.25	106.23	15.77	72.86	14 39 0	2545.4	-26.37	98.11
100.00	14 45 55	2955.38	-27.26	93.04	16.66	77.23	15 35 11	2355.4	-28.74	84.55
100.00	13 14 35	3247.95	-21.33	112.71	14.66	68.55	14 8 43	2647.9	-24.05	104.97
110.00	17 23 55	2460.42	-34.09	56.58	17.74	87.25	18 4 55	1860.4	-34.09	47.34
110.00	12 53 5	3315.67	-15.15	114.61	11.45	58.98	13 48 20	2715.7	-19.15	107.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2390	TRA	-.4119	TC3	.0392	BAU	.0496	SGT	1010.4	SGR	304.4	SG3	3121.3	ST	529.8	SR	179.0	SS	1643.6
RDE	.0937	RRA	.0085	RC3	.4088	FAU	.55215	RRT	.2291	RRF	-.6190	RTF	-.3832	CRT	.8429	CRS	-.6272	CST	-.1270
FDE	2.0547	FRA	7.6154	FC-52.9300		BSP	1866	SGB	1055.2	R23	-.5371	R13	-.3951	LSA	1649.1	MSA	542.3	SSA	20.8
BDE	.2567	BRA	.4120	BC3	.4107	FSP	10807	SG1	1013.0	SG2	295.6	THA	4.32	EL1	551.5	EL2	92.5	ALF	16.37

LAUNCH DATE NOV 10 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 652.694 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.884	GAL	-1.71	AZL	88.29	HCA	201.41	SMA	186.77	ECC	.20895	INC	1.7128	V1	30.080
RP	224.60	LAP	-.63	LOP	249.04	VP	21.707	GAP	-3.00	AZP	91.59	TAL	350.09	TAP	191.50	RCA	147.74	APO	225.80	V2	24.486
RC	253.951	GL	19.11	GP	1.08	ZAL	101.01	ZAP	112.54	ETS	178.30	ZAE	148.64	ETE	174.91	ZAC	89.10	ETC	256.23	CLP	112.54

PLANETOCENTRIC CONIC

C3	9.009	VHL	3.002	DLA	29.49	RAL	158.97	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	2.928	DPA	1.60	RAP	182.47	ECC	1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.40	11 28 46	3591.14	-24.35	138.99	15.84	72.83	12 28 37	2991.1	-26.47	130.86
98.60	13 49 41	3136.02	-24.34	105.56	15.84	72.81	14 41 57	2536.0	-26.46	97.44
100.00	14 41 46	2969.31	-27.05	94.02	16.66	76.76	15 31 15	2369.3	-28.60	85.56
100.00	13 19 22	3233.08	-21.70	111.76	14.84	68.92	14 13 15	2633.1	-24.37	103.98
110.00	17 22 56	2464.29	-34.07	56.88	17.81	87.07	18 4 1	1864.3	-34.10	47.64
110.00	12 54 41	3310.86	-15.32	114.34	11.56	59.06	13 49 52	2710.9	-19.30	107.49

DIFFERENTIAL CORRECTIONS

TDE	.2553	TRA	-.3492	TC3	-.3684	BAU	.0670
RDE	.0988	RRA	.0101	RC3	.4173	FAU	.56466
FDE	2.1197	FRA	7.7894	FC	-54.2618	BSP	993
BDE	.2738	BRA	.3494	BC3	.5567	FSP	11076

MID-COURSE EXECUTION ACCURACY

SGT	934.4	SGR	314.3	SG3	3197.0		
RRT	.0663	RRF	-.6034	RTF	-.1130		
SGB	985.8	R23	-.5962	R13	-.1180		
SG1	934.6	SG2	313.5	THA	1.44		

ORBIT DETERMINATION ACCURACY

ST	538.9	SR	188.8	SS	1670.3
CRT	.8876	CRS	-.6335	CST	-.2252
LSA	1679.8	MSA	542.2	SSA	21.5
EL1	564.9	EL2	82.9	ALF	17.67

LAUNCH DATE NOV 10 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 656.665 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.879	GAL	-1.71	AZL	88.28	HCA	202.49	SMA	186.68	ECC	.20859	INC	1.7199	V1	30.080
RP	224.21	LAP	-.66	LOP	250.11	VP	21.747	GAP	-3.26	AZP	91.59	TAL	350.06	TAP	192.55	RCA	147.74	APO	225.62	V2	24.527
RC	255.576	GL	19.21	GP	1.05	ZAL	101.06	ZAP	110.61	ETS	178.38	ZAE	146.51	ETE	175.27	ZAC	88.88	ETC	256.28	CLP	110.61

PLANETOCENTRIC CONIC

C3	8.990	VHL	2.998	DLA	29.56	RAL	159.07	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.898	DPA	1.93	RAP	181.68	ECC	1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.14	11 27 8	3597.28	-24.41	139.47	15.94	72.79	12 27 5	2997.3	-26.54	131.34
98.86	13 52 8	3129.06	-24.40	105.07	15.93	72.78	14 44 17	2529.1	-26.53	96.94
100.00	14 38 20	2981.25	-26.86	94.86	16.68	76.36	15 28 2	2381.2	-28.47	86.42
100.00	13 23 37	3220.33	-22.01	110.94	15.03	69.24	14 17 17	2620.3	-24.63	103.13
110.00	17 22 21	2467.28	-34.06	57.12	17.91	86.93	18 3 28	1867.3	-34.11	47.87
110.00	12 56 6	3307.06	-15.45	114.13	11.69	59.12	13 51 13	2707.1	-19.43	107.27

DIFFERENTIAL CORRECTIONS

TDE	.2728	TRA	-.2847	TC3	-.7958	BAU	.1085
RDE	.1037	RRA	.0117	RC3	.4261	FAU	.57626
FDE	2.1750	FRA	7.9604	FC	-55.4917	BSP	755
BDE	.2918	BRA	.2850	BC3	.9027	FSP	11322

MID-COURSE EXECUTION ACCURACY

SGT	943.7	SGR	324.4	SG3	3267.8		
RRT	-.1132	RRF	-.5893	RTF	.1991		
SGB	997.9	R23	.5674	R13	-.2077		
SG1	944.5	SG2	322.1	THA	177.48		

ORBIT DETERMINATION ACCURACY

ST	554.1	SR	198.5	SS	1694.3
CRT	.9250	CRS	-.6376	CST	-.3189
LSA	1709.6	MSA	542.2	SSA	22.3
EL1	584.3	EL2	71.5	ALF	18.63

LAUNCH DATE NOV 10 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 660.645 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.874	GAL	-1.72	AZL	88.27	HCA	203.57	SMA	186.60	ECC	.20828	INC	1.7267	V1	30.080
RP	223.82	LAP	-.69	LOP	251.19	VP	21.787	GAP	-3.51	AZP	91.58	TAL	350.01	TAP	193.58	RCA	147.74	APO	225.47	V2	24.569
RC	257.180	GL	19.30	GP	1.01	ZAL	101.13	ZAP	108.65	ETS	178.45	ZAE	144.35	ETE	175.59	ZAC	88.66	ETC	256.33	CLP	108.65

PLANETOCENTRIC CONIC

C3	8.975	VHL	2.996	DLA	29.61	RAL	159.20	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.871	DPA	2.26	RAP	180.86	ECC	1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.95	11 26 11	3601.62	-24.46	139.80	16.05	72.77	12 26 12	3001.6	-26.59	131.67
99.05	13 54 6	3124.06	-24.45	104.71	16.05	72.75	14 46 10	2524.1	-26.58	96.59
100.00	14 35 49	2990.66	-26.70	95.51	16.75	76.04	15 25 39	2390.7	-28.36	87.10
100.00	13 27 9	3210.26	-22.25	110.29	15.23	69.50	14 20 39	2610.3	-24.84	102.45
110.00	17 22 7	2469.41	-34.05	57.28	18.03	86.83	18 3 17	1869.4	-34.12	48.04
110.00	12 57 20	3304.27	-15.55	113.97	11.83	59.17	13 52 24	2704.3	-19.52	107.10

DIFFERENTIAL CORRECTIONS

TDE	.2910	TRA	-.2177	TC3	-1.2409	BAU	.1578
RDE	.1087	RRA	.0131	RC3	.4350	FAU	.58647
FDE	2.2273	FRA	8.1290	FC	-56.5728	BSP	1583
BDE	.3106	BRA	.2181	BC3	1.3150	FSP	11564

MID-COURSE EXECUTION ACCURACY

SGT	1045.0	SGR	334.6	SG3	3331.6		
RRT	-.2628	RRF	-.5761	RTF	.4717		
SGB	1097.2	R23	.4550	R13	-.4849		
SG1	1049.1	SG2	321.6	THA	174.69		

ORBIT DETERMINATION ACCURACY

ST	575.2	SR	208.2	SS	1717.9
CRT	.9542	CRS	-.6408	CST	-.4073
LSA	1741.1	MSA	541.7	SSA	23.0
EL1	608.9	EL2	58.9	ALF	19.24

LAUNCH DATE NOV 10 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 664.635 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.870	GAL	-1.73	AZL	88.27	HCA	204.65	SMA	186.53	ECC	.20800	INC	1.7326	V1	30.080
RP	223.44	LAP	-.72	LOP	252.28	VP	21.828	GAP	-3.76	AZP	91.57	TAL	349.95	TAP	194.60	RCA	147.73	APO	225.33	V2	24.611
RC	258.763	GL	19.38	GP	.98	ZAL	101.23	ZAP	106.67	ETS	178.52	ZAE	142.16	ETE	175.88	ZAC	88.43	ETC	256.39	CLP	106.67

PLANETOCENTRIC CONIC

C3	8.963	VHL	2.994	DLA	29.65	RAL	159.35	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.847	DPA	2.60	RAP	180.03	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.84	11 25 53	3604.24	-24.49	140.01	16.19	72.75	12 25 57	3004.2	-26.62	131.88
99.16	13 55 36	3120.93	-24.48	104.49	16.19	72.74	14 47 37	2520.9	-26.61	96.36
100.00	14 34 21	2997.03	-26.60	95.96	16.85	75.83	15 24 18	2397.0	-28.28	87.56
100.00	13 29 49	3203.36	-22.41	109.84	15.42	69.68	14 23 12	2603.4	-24.97	101.98
110.00	17 22 15	2470.71	-34.05	57.38	18.17	86.77	18 3 26	1870.7	-34.12	48.14
110.00	12 58 24	3302.45	-15.61	113.87	11.98	59.20	13 53 26	2702.4	-19.58	107.00

DIFFERENTIAL CORRECTIONS

TDE	.3112	TRA	-.1478	TC3	-1.6976	BAU	.2103
RDE	.1137	RRA	.0146	RC3	.4443	FAU	.59672
FDE	2.2432	FRA	8.2677	FC	-57.6396	BSP	2675
BDE	.3313	BRA	.1485	BC3	1.7547	FSP	11727

MID-COURSE EXECUTION ACCURACY

SGT	1222.2	SGR	345.2	SG3	3391.6		
RRT	-.3584	RRF	-.5655	RTF	.6609		
SGB	1270.0	R23	.3331	R13	-.6706		
SG1	1228.9	SG2	320.5	THA	173.80		

ORBIT DETERMINATION ACCURACY

ST	604.3	SR	218.0	SS	1728.0
CRT	.9750	CRS	-.6392	CST	-.4842
LSA	1761.3	MSA	543.9	SSA	23.7
EL1	640.8	EL2	45.7	ALF	19.48

LAUNCH DATE NOV 10 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 668.632 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.866 GAL -1.74 AZL 88.26 HCA 205.74 SMA 186.47 ECC .20775 INC 1.7383 V1 30.080
RP 223.05 LAP -.75 LOP 253.37 VP 21.870 GAP -4.00 AZP 91.57 TAL 349.88 TAP 195.61 RCA 147.73 APO 225.21 V2 24.653
RC 260.326 GL 19.45 GP .95 ZAL 101.36 ZAP 104.67 ETS 178.59 ZAE 139.95 ETE 176.14 ZAC 88.21 ETC 256.46 CLP 104.67

PLANETOCENTRIC CONIC

C3 8.954 VHL 2.992 DLA 29.66 RAL 159.52 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.827 DPA 2.96 RAP 179.19 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.79	11 26 15	3605.14	-24.51	140.08	16.36	72.75	12 26 20	3005.1	-26.64	131.95
99.21	13 56 38	3119.64	-24.50	104.40	16.36	72.74	14 48 38	2519.6	-26.63	96.27
100.00	14 34 11	2999.62	-26.56	96.14	17.00	75.75	15 24 10	2399.6	-28.25	87.75
100.00	13 31 23	3200.39	-22.48	109.65	15.61	69.76	14 24 44	2600.4	-25.03	101.78
110.00	17 22 46	2471.15	-34.05	57.42	18.33	86.75	18 3 57	1871.2	-34.12	48.17
110.00	12 59 17	3301.63	-15.64	113.82	12.16	59.21	13 54 19	2701.6	-19.61	106.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3290 TRA -.0789 TC3-2.1835 BAU .2669 SGT 1461.0 SGR 355.1 SG3 3439.6 ST 633.3 SR 227.3 SS 1761.7
RDE .1185 RRA .0158 RC3 .4526 FAU .60289 RRT -.4184 RRF -.5516 RTF .7759 CRT .9870 CRS -.6427 CST -.5552
FDE 2.3102 FRA 8.4698 FC-58.2929 BSP 3758 SGB 1503.5 R23 .2318 R13 -.7815 LSA 1806.5 MSA 540.5 SSA 24.5
BDE .3497 BRA .0805 BC3 2.2299 FSP 12013 SG1 1468.9 SG2 320.8 THA 173.90 EL1 672.0 EL2 34.4 ALF 19.56

LAUNCH DATE NOV 10 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 672.640 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.863 GAL -1.75 AZL 88.26 HCA 206.83 SMA 186.41 ECC .20754 INC 1.7435 V1 30.080
RP 222.66 LAP -.79 LOP 254.46 VP 21.912 GAP -4.24 AZP 91.56 TAL 349.79 TAP 196.62 RCA 147.72 APO 225.10 V2 24.695
RC 261.869 GL 19.52 GP .92 ZAL 101.52 ZAP 102.66 ETS 178.66 ZAE 137.72 ETE 176.38 ZAC 87.98 ETC 256.53 CLP 102.66

PLANETOCENTRIC CONIC

C3 8.948 VHL 2.991 DLA 29.65 RAL 159.72 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.811 DPA 3.31 RAP 178.34 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.80	11 27 7	3604.73	-24.51	140.05	16.55	72.76	12 27 12	3004.7	-26.63	131.92
99.20	13 57 20	3119.81	-24.50	104.42	16.54	72.74	14 49 20	2519.8	-26.63	96.28
100.00	14 35 14	2998.68	-26.57	96.07	17.19	75.78	15 25 12	2398.7	-28.26	87.68
100.00	13 31 55	3201.10	-22.46	109.70	15.79	69.74	14 25 16	2601.1	-25.02	101.83
110.00	17 23 37	2470.85	-34.05	57.39	18.52	86.77	18 4 48	1870.8	-34.12	48.15
110.00	13 0 1	3301.70	-15.64	113.83	12.35	59.21	13 55 3	2701.7	-19.60	106.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3510 TRA -.0035 TC3-2.6588 BAU .3228 SGT 1726.9 SGR 366.0 SG3 3488.5 ST 674.0 SR 237.2 SS 1751.9
RDE .1236 RRA .0173 RC3 .4621 FAU .61221 RRT -.4443 RRF -.5446 RTF .8483 CRT .9931 CRS -.6345 CST -.6091
FDE 2.2708 FRA 8.5555 FC-59.2307 BSP 4987 SGB 1765.3 R23 .1715 R13 -.8516 LSA 1811.3 MSA 546.0 SSA 25.0
BDE .3721 BRA .0177 BC3 2.6986 FSP 12057 SG1 1734.8 SG2 326.4 THA 174.42 EL1 714.0 EL2 26.3 ALF 19.29

LAUNCH DATE NOV 10 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 676.656 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.860 GAL -1.77 AZL 88.25 HCA 207.93 SMA 186.36 ECC .20736 INC 1.7483 V1 30.080
RP 222.28 LAP -.82 LOP 255.55 VP 21.954 GAP -4.47 AZP 91.54 TAL 349.68 TAP 197.61 RCA 147.71 APO 225.00 V2 24.737
RC 263.392 GL 19.57 GP .89 ZAL 101.70 ZAP 100.64 ETS 178.72 ZAE 135.48 ETE 176.60 ZAC 87.76 ETC 256.60 CLP 100.64

PLANETOCENTRIC CONIC

C3 8.946 VHL 2.991 DLA 29.63 RAL 159.95 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.797 DPA 3.67 RAP 177.49 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.88	11 28 39	3602.65	-24.49	139.89	16.76	72.77	12 28 42	3002.7	-26.62	131.76
99.12	13 57 36	3121.80	-24.48	104.56	16.76	72.76	14 49 38	2521.8	-26.61	96.42
100.00	14 37 34	2993.97	-26.65	95.74	17.43	75.93	15 27 28	2394.0	-28.32	87.34
100.00	13 31 22	3205.71	-22.36	109.99	15.97	69.62	14 24 47	2605.7	-24.93	102.14
110.00	17 24 49	2469.73	-34.05	57.31	18.73	86.82	18 5 59	1869.7	-34.12	48.06
110.00	13 0 36	3302.72	-15.60	113.88	12.55	59.19	13 55 39	2702.7	-19.57	107.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3709 TRA .0722 TC3-3.1552 BAU .3815 SGT 2023.0 SGR 376.4 SG3 3526.1 ST 714.4 SR 246.8 SS 1757.2
RDE .1286 RRA .0187 RC3 .4707 FAU .61824 RRT -.4594 RRF -.5352 RTF .8924 CRT .9934 CRS -.6294 CST -.6573
FDE 2.2622 FRA 8.6796 FC-59.8289 BSP 6191 SGB 2057.7 R23 .1282 R13 -.8943 LSA 1832.6 MSA 547.5 SSA 25.7
BDE .3926 BRA .0746 BC3 3.1901 FSP 12172 SG1 2030.6 SG2 333.1 THA 174.98 EL1 755.4 EL2 26.8 ALF 18.97

LAUNCH DATE NOV 10 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 680.680 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.857 GAL -1.79 AZL 88.25 HCA 209.03 SMA 186.31 ECC .20721 INC 1.7528 V1 30.080
RP 221.89 LAP -.85 LOP 256.65 VP 21.997 GAP -4.70 AZP 91.53 TAL 349.57 TAP 198.59 RCA 147.71 APO 224.92 V2 24.779
RC 264.895 GL 19.62 GP .87 ZAL 101.91 ZAP 98.61 ETS 178.78 ZAE 133.23 ETE 176.80 ZAC 87.54 ETC 256.67 CLP 98.61

PLANETOCENTRIC CONIC

C3 8.947 VHL 2.991 DLA 29.59 RAL 160.19 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.787 DPA 4.03 RAP 176.63 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.03	11 30 44	3599.17	-24.46	139.62	17.00	72.80	12 30 44	2999.2	-26.58	131.49
98.97	13 57 30	3125.34	-24.45	104.81	17.00	72.78	14 49 35	2525.3	-26.57	96.68
100.00	14 41 1	2986.12	-26.78	95.20	17.72	76.20	15 30 47	2386.1	-28.41	86.77
100.00	13 29 54	3213.62	-22.17	110.51	16.15	69.42	14 23 28	2613.6	-24.77	102.67
110.00	17 26 23	2467.85	-34.06	57.16	18.97	86.91	18 7 31	1867.8	-34.11	47.91
110.00	13 1 1	3304.66	-15.53	113.99	12.78	59.16	13 56 6	2704.7	-19.51	107.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3906 TRA .1502 TC3-3.6625 BAU .4418 SGT 2338.8 SGR 386.7 SG3 3554.3 ST 757.7 SR 256.4 SS 1759.0
RDE .1336 RRA .0201 RC3 .4788 FAU .62256 RRT -.4660 RRF -.5261 RTF .9207 CRT .9896 CRS -.6226 CST -.6973
FDE 2.2403 FRA 8.7933 FC-60.2384 BSP 7436 SGB 2370.6 R23 .0991 R13 -.9218 LSA 1852.4 MSA 549.3 SSA 26.3
BDE .4129 BRA .1515 BC3 3.6936 FSP 12246 SG1 2345.9 SG2 341.1 THA 175.50 EL1 799.1 EL2 35.0 ALF 18.55

LAUNCH DATE NOV 10 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 684.713 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.855 GAL -1.81 AZL 88.24 HCA 210.13 SMA 186.27 ECC .20710 INC 1.7570 V1 30.080
RP 221.51 LAP -.88 LOP 257.75 VP 22.041 GAP -4.92 AZP 91.52 TAL 349.43 TAP 199.56 RCA 147.70 APO 224.85 V2 24.820
RC 266.379 GL 19.67 GP .84 ZAL 102.15 ZAP 96.58 ETS 178.84 ZAE 130.97 ETE 176.98 ZAC 87.31 ETC 256.75 CLP 96.58

PLANETOCENTRIC CONIC

C3 8.952 VHL 2.992 DLA 29.54 RAL 160.47 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.781 DPA 4.40 RAP 175.77 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.23	11 33 28	3594.04	-24.41	139.22	17.27	72.84	12 33 22	2994.0	-26.53	131.10
98.77	13 56 57	3130.67	-24.40	105.19	17.26	72.82	14 49 8	2530.7	-26.52	97.06
100.00	14 45 22	2975.78	-26.94	94.47	18.04	76.54	15 34 57	2375.8	-28.53	86.03
100.00	13 27 44	3224.17	-21.91	111.19	16.33	69.14	14 21 29	2624.2	-24.55	103.38
110.00	17 28 17	2465.22	-34.07	56.96	19.23	87.03	18 9 22	1865.2	-34.11	47.71
110.00	13 1 18	3307.49	-15.43	114.15	13.02	59.11	13 56 26	2707.5	-19.42	107.30

DIFFERENTIAL CORRECTIONS
TDE .4101 TRA .2303 TC3-4.1762 BAU .5032
RDE .1386 RRA .0214 RC3 .4864 FAU .62533
FDE 2.2099 FRA 8.8976 FC-60.4743 BSP 8678
BDE .4329 BRA .2313 BC3 4.2045 FSP 12309

MID-COURSE EXECUTION ACCURACY
SGT 2668.1 SGR 396.7 SG3 3573.9
RRT -.4676 RRF -.5170 RTF .9395
SGB 2697.5 R23 .0792 R13 -.9402
SG1 2674.7 SG2 349.8 THA 175.95

ORBIT DETERMINATION ACCURACY
ST 803.4 SR 266.0 SS 1759.0
CRT .9826 CRS -.6147 CST -.7307
LSA 1872.3 MSA 551.4 SSA 26.8
EL1 845.0 EL2 47.0 ALF 18.08

LAUNCH DATE NOV 10 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 688.754 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.853 GAL -1.83 AZL 88.24 HCA 211.24 SMA 186.24 ECC .20702 INC 1.7610 V1 30.080
RP 221.13 LAP -.91 LOP 258.86 VP 22.085 GAP -5.14 AZP 91.51 TAL 349.29 TAP 200.52 RCA 147.68 APO 224.79 V2 24.862
RC 267.844 GL 19.70 GP .82 ZAL 102.41 ZAP 94.55 ETS 178.90 ZAE 128.72 ETE 177.15 ZAC 87.10 ETC 256.83 CLP 94.55

PLANETOCENTRIC CONIC

C3 8.960 VHL 2.993 DLA 29.46 RAL 160.77 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.778 DPA 4.75 RAP 174.92 ECC 1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.51	11 36 49	3587.27	-24.35	138.70	17.56	72.88	12 36 37	2987.3	-26.46	130.58
98.49	13 55 58	3137.80	-24.33	105.69	17.55	72.86	14 48 16	2537.8	-26.45	97.57
100.00	14 50 24	2963.56	-27.14	93.61	18.39	76.95	15 39 48	2363.6	-28.66	85.14
100.00	13 25 5	3236.74	-21.61	111.99	16.52	68.82	14 19 2	2636.7	-24.29	104.23
110.00	17 30 31	2461.88	-34.08	56.69	19.52	87.18	18 11 33	1861.9	-34.10	47.45
110.00	13 1 27	3311.19	-15.31	114.36	13.28	59.06	13 56 38	2711.2	-19.29	107.51

DIFFERENTIAL CORRECTIONS
TDE .4289 TRA .3127 TC3-4.6935 BAU .5653
RDE .1436 RRA .0229 RC3 .4934 FAU .62674
FDE 2.1660 FRA 8.9907 FC-60.5545 BSP 9942
BDE .4523 BRA .3135 BC3 4.7194 FSP 12343

MID-COURSE EXECUTION ACCURACY
SGT 3007.0 SGR 406.6 SG3 3585.4
RRT -.4660 RRF -.5082 RTF .9525
SGB 3034.4 R23 .0655 R13 -.9530
SG1 3013.1 SG2 359.1 THA 176.34

ORBIT DETERMINATION ACCURACY
ST 850.6 SR 275.5 SS 1755.8
CRT .9732 CRS -.6051 CST -.7581
LSA 1890.6 MSA 554.0 SSA 27.4
EL1 892.1 EL2 60.4 ALF 17.58

LAUNCH DATE NOV 10 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 692.802 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.851 GAL -1.86 AZL 88.24 HCA 212.35 SMA 186.21 ECC .20697 INC 1.7647 V1 30.080
RP 220.75 LAP -.94 LOP 259.97 VP 22.129 GAP -5.36 AZP 91.49 TAL 349.13 TAP 201.47 RCA 147.67 APO 224.75 V2 24.903
RC 269.292 GL 19.73 GP .79 ZAL 102.70 ZAP 92.53 ETS 178.95 ZAE 126.46 ETE 177.31 ZAC 86.88 ETC 256.92 CLP 92.53

PLANETOCENTRIC CONIC

C3 8.972 VHL 2.995 DLA 29.37 RAL 161.09 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.778 DPA 5.11 RAP 174.08 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.87	11 40 54	3578.57	-24.27	138.03	17.88	72.93	12 40 33	2978.6	-26.37	129.91
98.13	13 54 29	3147.01	-24.26	106.35	17.87	72.91	14 46 56	2547.0	-26.37	98.23
100.00	14 56 1	2949.89	-27.34	92.65	18.78	77.42	15 45 11	2349.9	-28.80	84.15
100.00	13 22 3	3250.93	-21.25	112.90	16.73	68.47	14 16 14	2650.9	-23.99	105.17
110.00	17 33 6	2457.81	-34.09	56.38	19.83	87.37	18 14 4	1857.8	-34.08	47.13
110.00	13 1 28	3315.76	-15.14	114.62	13.56	58.98	13 56 44	2715.8	-19.14	107.78

DIFFERENTIAL CORRECTIONS
TDE .4474 TRA .3985 TC3-5.2119 BAU .6280
RDE .1485 RRA .0241 RC3 .4990 FAU .62418
FDE 2.1639 FRA 9.1210 FC-60.2272 BSP 11242
BDE .4713 BRA .3992 BC3 5.2358 FSP 12445

MID-COURSE EXECUTION ACCURACY
SGT 3353.6 SGR 415.7 SG3 3583.0
RRT -.4620 RRF -.4960 RTF .9614
SGB 3379.2 R23 .0523 R13 -.9618
SG1 3359.1 SG2 368.1 THA 176.68

ORBIT DETERMINATION ACCURACY
ST 899.9 SR 284.6 SS 1769.7
CRT .9619 CRS -.6010 CST -.7865
LSA 1928.1 MSA 551.6 SSA 28.0
EL1 940.9 EL2 74.4 ALF 17.03

LAUNCH DATE NOV 10 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 696.860 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.850 GAL -1.89 AZL 88.23 HCA 213.46 SMA 186.19 ECC .20695 INC 1.7683 V1 30.080
RP 220.37 LAP -.97 LOP 261.09 VP 22.173 GAP -5.57 AZP 91.48 TAL 348.95 TAP 202.41 RCA 147.66 APO 224.72 V2 24.945
RC 270.721 GL 19.75 GP .77 ZAL 103.02 ZAP 90.52 ETS 179.00 ZAE 124.22 ETE 177.45 ZAC 86.67 ETC 257.00 CLP 90.52

PLANETOCENTRIC CONIC

C3 8.988 VHL 2.998 DLA 29.26 RAL 161.44 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.781 DPA 5.46 RAP 173.25 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.30	11 45 43	3567.88	-24.17	137.21	18.22	72.99	12 45 11	2967.9	-26.27	129.09
97.70	13 52 26	3158.36	-24.16	107.16	18.21	72.98	14 45 4	2558.4	-26.27	99.04
100.00	15 2 1	2935.34	-27.55	91.62	19.19	77.92	15 50 56	2335.3	-28.94	83.09
100.00	13 18 49	3266.14	-20.87	113.87	16.95	68.10	14 13 16	2666.1	-23.66	106.18
110.00	17 35 58	2453.13	-34.11	56.01	20.16	87.58	18 16 51	1853.1	-34.07	46.77
110.00	13 1 22	3321.12	-14.96	114.92	13.86	58.90	13 56 43	2721.1	-18.97	108.10

DIFFERENTIAL CORRECTIONS
TDE .4641 TRA .4852 TC3-5.7292 BAU .6911
RDE .1536 RRA .0257 RC3 .5052 FAU .62387
FDE 2.0620 FRA 9.1554 FC-60.0928 BSP 12513
BDE .4889 BRA .4859 BC3 5.7515 FSP 12349

MID-COURSE EXECUTION ACCURACY
SGT 3703.7 SGR 425.6 SG3 3579.1
RRT -.4570 RRF -.4893 RTF .9685
SGB 3728.1 R23 .0474 R13 -.9688
SG1 3708.9 SG2 378.1 THA 176.96

ORBIT DETERMINATION ACCURACY
ST 948.2 SR 294.2 SS 1747.7
CRT .9494 CRS -.5836 CST -.8012
LSA 1930.7 MSA 558.3 SSA 28.4
EL1 988.9 EL2 88.6 ALF 16.55

LAUNCH DATE NOV 10 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 700.926 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.849	GAL	-1.92	AZL	88.23	HCA	214.58	SMA	186.17	ECC	.20696	INC	1.7716
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.218	GAP	-5.78	AZP	91.46	TAL	348.77	TAP	203.34	RCA	147.64	APO	224.70
RC	272.134	GL	19.77	GP	.75	ZAL	103.37	ZAP	88.53	ETS	179.05	ZAE	121.98	ETE	177.59	ZAC	86.47	ETC	257.09

PLANETOCENTRIC CONIC

C3	9.007	VHL	3.001	DLA	29.14	RAL	161.81	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	2.788	DPA	5.80	RAP	172.44

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.84	11 51 28	3554.60	-24.07	136.19	18.58	73.06	12 50 43	2954.6	-26.16	128.08
97.16	13 49 39	3172.48	-24.05	108.16	18.58	73.05	14 42 31	2572.5	-26.15	100.05
100.00	15 8 21	2920.01	-27.77	90.53	19.63	78.46	15 57 1	2320.0	-29.08	81.97
100.00	13 15 26	3282.30	-20.46	114.89	17.20	67.72	14 10 9	2682.3	-23.30	107.25
110.00	17 39 8	2447.79	-34.12	55.60	20.52	87.83	18 19 56	1847.8	-34.05	46.35
110.00	13 1 9	3327.29	-14.74	115.27	14.18	58.80	13 56 36	2727.3	-18.76	108.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4790	TRA	.5745	TC3	-6.2450	BAU	.7545	SGT	4057.6	SGR	435.1	SG3	3564.3	ST	995.3	SR	303.7	SS	1731.1
RDE	.1587	RRA	.0273	RC3	.5105	FAU	.62115	RRT	-.4512	RRF	-.4813	RTF	.9738	CRT	.9356	CRS	-.5680	CST	-.8157
FDE	1.9733	FRA	9.1901	FC	-59.7018	BSP	13789	SGB	4080.9	R23	.0425	R13	-.9740	LSA	1939.9	MSA	562.0	SSA	28.8
BDE	.5046	BRA	.5752	BC3	6.2658	FSP	12264	SG1	4062.4	SG2	387.8	THA	177.20	EL1	1035.5	EL2	103.1	ALF	16.10

LAUNCH DATE NOV 10 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 704.999 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.848	GAL	-1.95	AZL	88.23	HCA	215.70	SMA	186.16	ECC	.20700	INC	1.7747
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.263	GAP	-5.99	AZP	91.44	TAL	348.56	TAP	204.26	RCA	147.62	APO	224.69
RC	273.529	GL	19.78	GP	.72	ZAL	103.74	ZAP	86.55	ETS	179.10	ZAE	119.77	ETE	177.71	ZAC	86.27	ETC	257.18

PLANETOCENTRIC CONIC

C3	9.031	VHL	3.005	DLA	28.99	RAL	162.20	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.798	DPA	6.13	RAP	171.65

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.50	11 58 19	3538.11	-23.94	134.94	18.98	73.14	12 57 17	2938.1	-26.02	126.83
96.50	13 45 57	3189.97	-23.93	109.41	18.97	73.13	14 39 7	2590.0	-26.02	101.30
100.00	15 14 59	2904.13	-27.98	89.40	20.09	79.02	16 3 23	2304.1	-29.21	80.81
100.00	13 11 58	3299.18	-20.02	115.95	17.46	67.33	14 6 57	2699.2	-22.92	108.36
110.00	17 42 37	2441.84	-34.14	55.13	20.90	88.10	18 23 19	1841.8	-34.02	45.89
110.00	13 0 50	3334.24	-14.49	115.66	14.51	58.70	13 56 24	2734.2	-18.53	108.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4919	TRA	.6652	TC3	-6.7574	BAU	.8182	SGT	4413.3	SGR	444.4	SG3	3543.2	ST	1041.0	SR	313.2	SS	1711.6
RDE	.1639	RRA	.0290	RC3	.5152	FAU	.61744	RRT	-.4451	RRF	-.4737	RTF	.9777	CRT	.9207	CRS	-.5491	CST	-.8265
FDE	1.8688	FRA	9.2147	FC	-59.1909	BSP	15048	SGB	4435.6	R23	.0391	R13	-.9779	LSA	1946.5	MSA	567.3	SSA	29.2
BDE	.5185	BRA	.6659	BC3	6.7771	FSP	12140	SG1	4417.7	SG2	397.6	THA	177.41	EL1	1080.7	EL2	117.7	ALF	15.67

LAUNCH DATE NOV 10 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 709.081 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.848	GAL	-1.99	AZL	88.22	HCA	216.83	SMA	186.15	ECC	.20707	INC	1.7777
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.308	GAP	-6.19	AZP	91.42	TAL	348.35	TAP	205.17	RCA	147.60	APO	224.69
RC	274.906	GL	19.78	GP	.70	ZAL	104.13	ZAP	84.59	ETS	179.15	ZAE	117.57	ETE	177.83	ZAC	86.08	ETC	257.27

PLANETOCENTRIC CONIC

C3	9.058	VHL	3.010	DLA	28.84	RAL	162.62	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.811	DPA	6.45	RAP	170.88

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.32	12 6 38	3517.29	-23.80	133.36	19.40	73.23	13 5 15	2917.3	-25.88	125.26
95.68	13 40 58	3211.96	-23.79	110.98	19.39	73.21	14 34 30	2612.0	-25.87	102.88
100.00	15 21 50	2887.84	-28.18	88.23	20.57	79.60	16 9 58	2287.8	-29.33	79.62
100.00	13 8 27	3316.64	-19.56	117.04	17.74	66.93	14 3 44	2716.6	-22.51	109.49
110.00	17 46 22	2435.30	-34.15	54.62	21.31	88.41	18 26 58	1835.3	-33.99	45.38
110.00	13 0 25	3341.95	-14.22	116.09	14.87	58.58	13 56 7	2741.9	-18.28	109.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5037	TRA	.7593	TC3	-7.2594	BAU	.8813	SGT	4768.3	SGR	453.3	SG3	3512.0	ST	1087.1	SR	322.5	SS	1693.9
RDE	.1690	RRA	.0307	RC3	.5190	FAU	.61167	RRT	-.4379	RRF	-.4652	RTF	.9808	CRT	.9048	CRS	-.5301	CST	-.8365
FDE	1.7667	FRA	9.2333	FC	-58.4605	BSP	16319	SGB	4789.8	R23	.0363	R13	-.9810	LSA	1956.3	MSA	571.8	SSA	29.4
BDE	.5313	BRA	.7599	BC3	7.2779	FSP	12010	SG1	4772.4	SG2	407.2	THA	177.60	EL1	1126.1	EL2	132.6	ALF	15.24

LAUNCH DATE NOV 10 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 713.170 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.847	GAL	-2.03	AZL	88.22	HCA	217.96	SMA	186.14	ECC	.20716	INC	1.7806
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.353	GAP	-6.38	AZP	91.40	TAL	348.12	TAP	206.07	RCA	147.58	APO	224.71
RC	276.266	GL	19.78	GP	.68	ZAL	104.56	ZAP	82.66	ETS	179.19	ZAE	115.39	ETE	177.95	ZAC	85.90	ETC	257.35

PLANETOCENTRIC CONIC

C3	9.090	VHL	3.015	DLA	28.66	RAL	163.07	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	2.827	DPA	6.75	RAP	170.13

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.39	12 17 8	3489.78	-23.65	131.29	19.84	73.32	13 15 17	2889.8	-25.71	123.20
94.61	13 34 1	3240.81	-23.64	113.05	19.84	73.31	14 28 2	2640.8	-25.70	104.96
100.00	15 28 54	2871.23	-28.38	87.04	21.08	80.20	16 16 45	2271.2	-29.44	78.39
100.00	13 4 56	3334.60	-19.07	118.16	18.05	66.54	14 0 30	2734.6	-22.08	110.66
110.00	17 50 24	2428.20	-34.16	54.07	21.73	88.73	18 30 53	1828.2	-33.96	44.83
110.00	12 59 54	3350.39	-13.92	116.56	15.25	58.46	13 55 45	2750.4	-17.99	109.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5132	TRA	.8553	TC3	-7.7551	BAU	.9445	SGT	5123.4	SGR	462.1	SG3	3472.1	ST	1131.2	SR	331.7	SS	1675.2
RDE	.1741	RRA	.0324	RC3	.5220	FAU	.60427	RRT	-.4305	RRF	-.4565	RTF	.9832	CRT	.8877	CRS	-.5090	CST	-.8445
FDE	1.6565	FRA	9.2426	FC	-57.5526	BSP	17575	SGB	5144.2	R23	.0337	R13	-.9833	LSA	1965.3	MSA	576.7	SSA	29.8
BDE	.5419	BRA	.8559	BC3	7.7726	FSP	11861	SG1	5127.3	SG2	416.7	THA	177.76	EL1	1169.5	EL2	147.7	ALF	14.83

LAUNCH DATE NOV 10 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 717.266 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.847 GAL -2.07 AZL 88.22 HCA 219.09 SMA 186.14 ECC .20729 INC 1.7834 V1 30.080
RP 218.52 LAP -1.12 LOP 266.71 VP 22.399 GAP -6.58 AZP 91.38 TAL 347.87 TAP 206.96 RCA 147.56 APO 224.73 V2 25.148
RC 277.609 GL 19.77 GP .66 ZAL 105.01 ZAP 80.76 ETS 179.23 ZAE 113.24 ETE 178.05 ZAC 85.72 ETC 257.44 CLP 80.76

PLANETOCENTRIC CONIC

C3 9.126 VHL 3.021 DLA 28.47 RAL 163.53 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.846 DPA 7.05 RAP 169.41 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.94	12 31 52	3448.88	-23.48	128.23	20.31	73.43	13 29 21	2848.9	-25.53	120.15
93.06	13 22 59	3283.25	-23.47	116.11	20.31	73.41	14 17 42	2683.2	-25.52	108.03
100.00	15 36 8	2854.39	-28.57	85.82	21.60	80.81	16 23 42	2254.4	-29.54	77.15
100.00	13 1 25	3352.97	-18.57	119.29	18.37	66.15	13 57 17	2753.0	-21.64	111.84
110.00	17 54 42	2420.58	-34.17	53.47	22.18	89.09	18 35 3	1820.6	-33.92	44.24
110.00	12 59 19	3359.53	-13.59	117.06	15.65	58.33	13 55 19	2759.5	-17.68	110.34

DIFFERENTIAL CORRECTIONS
TDE .5209 TRA .9542 TC3-8.2348 BAU 1.0067
RDE .1793 RRA .0341 RC3 .5243 FAU .59584
FDE 1.5398 FRA 9.2373 FC-56.5256 BSP 18832
BDE .5509 BRA .9548 BC3 8.2514 FSP 11699

MID-COURSE EXECUTION ACCURACY
SGT 5474.3 SGR 470.5 SG3 3425.7
RRT -.4226 RRF -.4480 RTF .9852
SGB 5494.4 R23 .0321 R13 -.9852
SG1 5477.9 SG2 426.2 THA 177.91

ORBIT DETERMINATION ACCURACY
ST 1174.6 SR 340.9 SS 1655.2
CRT .8695 CRS -.4860 CST -.8511
LSA 1973.8 MSA 582.1 SSA 30.0
EL1 1212.2 EL2 163.1 ALF 14.43

LAUNCH DATE NOV 10 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 721.370 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.848 GAL -2.12 AZL 88.21 HCA 220.23 SMA 186.15 ECC .20745 INC 1.7859 V1 30.080
RP 218.16 LAP -1.15 LOP 267.85 VP 22.444 GAP -6.77 AZP 91.36 TAL 347.61 TAP 207.84 RCA 147.53 APO 224.77 V2 25.188
RC 278.933 GL 19.75 GP .64 ZAL 105.49 ZAP 78.89 ETS 179.27 ZAE 111.12 ETE 178.15 ZAC 85.55 ETC 257.52 CLP 78.89

PLANETOCENTRIC CONIC

C3 9.166 VHL 3.028 DLA 28.26 RAL 164.02 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.867 DPA 7.33 RAP 168.73 ECC 1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 10	3315.70	-24.29	118.73	21.11	74.97	14 10 26	2715.7	-26.12	110.54
90.00	12 43 35	3418.14	-22.31	125.59	20.47	72.09	13 40 33	2818.1	-24.55	117.64
100.00	15 43 31	2837.36	-28.75	84.59	22.15	81.44	16 30 48	2237.4	-29.63	75.89
100.00	12 57 55	3371.71	-18.05	120.44	18.73	65.76	13 54 7	2771.7	-21.17	113.04
110.00	17 59 15	2412.47	-34.18	52.84	22.66	89.46	18 39 28	1812.5	-33.88	43.61
110.00	12 58 40	3369.37	-13.24	117.61	16.07	58.19	13 54 49	2769.4	-17.35	110.91

DIFFERENTIAL CORRECTIONS
TDE .5251 TRA 1.0541 TC3-8.7068 BAU 1.0689
RDE .1845 RRA .0360 RC3 .5261 FAU .58654
FDE 1.4122 FRA 9.2130 FC-55.3965 BSP 20038
BDE .5566 BRA 1.0547 BC3 8.7227 FSP 11490

MID-COURSE EXECUTION ACCURACY
SGT 5823.5 SGR 478.9 SG3 3373.1
RRT -.4151 RRF -.4398 RTF .9867
SGB 5843.1 R23 .0307 R13 -.9868
SG1 5826.9 SG2 435.5 THA 178.03

ORBIT DETERMINATION ACCURACY
ST 1214.2 SR 350.0 SS 1632.5
CRT .8499 CRS -.4601 CST -.8561
LSA 1978.7 MSA 587.8 SSA 30.2
EL1 1250.9 EL2 179.0 ALF 14.06

LAUNCH DATE NOV 10 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 725.481 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.848 GAL -2.17 AZL 88.21 HCA 221.37 SMA 186.16 ECC .20763 INC 1.7884 V1 30.080
RP 217.80 LAP -1.18 LOP 268.99 VP 22.490 GAP -6.95 AZP 91.34 TAL 347.34 TAP 208.70 RCA 147.51 APO 224.81 V2 25.228
RC 280.240 GL 19.73 GP .62 ZAL 105.99 ZAP 77.05 ETS 179.31 ZAE 109.03 ETE 178.24 ZAC 85.40 ETC 257.60 CLP 77.05

PLANETOCENTRIC CONIC

C3 9.212 VHL 3.035 DLA 28.04 RAL 164.53 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.892 DPA 7.59 RAP 168.08 ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 29	3253.98	-25.31	114.50	21.96	76.86	14 30 43	2654.0	-26.87	106.18
90.00	12 26 20	3481.78	-20.92	129.74	20.56	70.46	13 24 22	2881.8	-23.39	121.94
100.00	15 51 2	2820.20	-28.92	83.34	22.72	82.08	16 38 2	2220.2	-29.71	74.62
100.00	12 54 28	3390.79	-17.51	121.60	19.10	65.38	13 50 58	2790.8	-20.69	114.25
110.00	18 4 3	2403.89	-34.18	52.17	23.15	89.86	18 44 7	1803.9	-33.82	42.94
110.00	12 57 56	3379.87	-12.86	118.19	16.51	58.05	13 54 16	2779.9	-16.99	111.51

DIFFERENTIAL CORRECTIONS
TDE .5278 TRA 1.1577 TC3-9.1594 BAU 1.1299
RDE .1897 RRA .0378 RC3 .5272 FAU .57600
FDE 1.2871 FRA 9.1844 FC-54.1328 BSP 21253
BDE .5609 BRA 1.1583 BC3 9.1746 FSP 11278

MID-COURSE EXECUTION ACCURACY
SGT 6167.4 SGR 487.0 SG3 3314.3
RRT -.4069 RRF -.4313 RTF .9881
SGB 6186.6 R23 .0297 R13 -.9881
SG1 6170.6 SG2 444.6 THA 178.15

ORBIT DETERMINATION ACCURACY
ST 1254.0 SR 359.0 SS 1611.7
CRT .8290 CRS -.4334 CST -.8609
LSA 1986.5 MSA 593.2 SSA 30.3
EL1 1289.6 EL2 195.2 ALF 13.67

LAUNCH DATE NOV 10 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 729.600 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.849 GAL -2.22 AZL 88.21 HCA 222.51 SMA 186.17 ECC .20785 INC 1.7909 V1 30.080
RP 217.44 LAP -1.21 LOP 270.14 VP 22.535 GAP -7.13 AZP 91.32 TAL 347.05 TAP 209.56 RCA 147.48 APO 224.87 V2 25.268
RC 281.529 GL 19.70 GP .61 ZAL 106.51 ZAP 75.25 ETS 179.34 ZAE 106.97 ETE 178.33 ZAC 85.25 ETC 257.68 CLP 75.25

PLANETOCENTRIC CONIC

C3 9.262 VHL 3.043 DLA 27.79 RAL 165.06 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 2.920 DPA 7.84 RAP 167.46 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 18	3213.59	-25.90	111.69	22.70	78.14	14 44 51	2613.6	-27.28	103.30
90.00	12 15 45	3524.29	-19.92	132.46	20.81	69.45	13 14 30	2924.3	-22.54	124.77
100.00	15 58 41	2802.92	-29.07	82.08	23.30	82.72	16 45 24	2202.9	-29.78	73.34
100.00	12 51 3	3410.18	-16.96	122.78	19.50	65.01	13 47 53	2810.2	-20.19	115.47
110.00	18 9 4	2394.86	-34.18	51.46	23.67	90.27	18 48 59	1794.9	-33.77	42.24
110.00	12 57 9	3391.01	-12.46	118.80	16.97	57.91	13 53 40	2791.0	-16.61	112.15

DIFFERENTIAL CORRECTIONS
TDE .5276 TRA 1.2633 TC3-9.5964 BAU 1.1901
RDE .1949 RRA .0397 RC3 .5277 FAU .56447
FDE 1.1574 FRA 9.1469 FC-52.7603 BSP 22445
BDE .5625 BRA 1.2640 BC3 9.6109 FSP 11055

MID-COURSE EXECUTION ACCURACY
SGT 6506.4 SGR 494.9 SG3 3250.1
RRT -.3989 RRF -.4228 RTF .9891
SGB 6525.2 R23 .0286 R13 -.9892
SG1 6509.4 SG2 453.6 THA 178.25

ORBIT DETERMINATION ACCURACY
ST 1291.5 SR 367.9 SS 1591.1
CRT .8065 CRS -.4044 CST -.8647
LSA 1993.7 MSA 599.1 SSA 30.4
EL1 1326.1 EL2 211.8 ALF 13.28

LAUNCH DATE NOV 10 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 733.725 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.850 GAL -2.27 AZL 88.21 HCA 223.66 SMA 186.19 ECC .20809 INC 1.7931 V1 30.080
RP 217.09 LAP -1.24 LOP 271.29 VP 22.581 GAP -7.31 AZP 91.30 TAL 346.74 TAP 210.41 RCA 147.45 APO 224.94 V2 25.307
RC 282.801 GL 19.66 GP .59 ZAL 107.07 ZAP 73.48 ETS 179.38 ZAE 104.95 ETE 178.41 ZAC 85.11 ETC 257.76 CLP 73.48

PLANETOCENTRIC CONIC

C3 9.318 VHL 3.053 DLA 27.54 RAL 165.61 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 2.950 DPA 8.07 RAP 166.89 ECC 1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 4	3180.06	-26.35	109.34	23.41	79.24	14 57 4	2580.1	-27.57	100.89
90.00	12 7 23	3560.14	-19.05	134.73	21.13	68.65	13 6 43	2960.1	-21.78	127.12
100.00	16 0 26	2785.57	-29.22	80.01	23.90	83.38	16 52 52	2185.6	-29.83	72.06
100.00	12 47 42	3429.87	-16.39	123.96	19.93	64.65	13 44 52	2829.9	-19.67	116.70
110.00	18 14 18	2385.43	-34.18	50.73	24.20	90.71	18 54 4	1785.4	-33.70	41.52
110.00	12 56 19	3402.77	-12.04	119.44	17.46	57.76	13 53 2	2802.8	-16.21	112.82

DIFFERENTIAL CORRECTIONS

TDE .5238 TRA 1.3711 TC-10.0164 BAU 1.2495
RDE .2001 RRA .0417 RC3 .5278 FAU .55236
FDE 1.0164 FRA 9.0948 FC-51.3199 BSP 23603
BDE .5607 BRA 1.3717 BC310.0303 FSP 10810

MID-COURSE EXECUTION ACCURACY

SGT 6838.9 SGR 502.7 SG3 3181.5
RRT -.3912 RRF -.4149 RTF .9900
SGB 6858.3 R23 .0281 R13 -.9900
SG1 6842.7 SG2 462.5 THA 178.35

ORBIT DETERMINATION ACCURACY

ST 1326.0 SR 376.7 SS 1568.7
CRT .7819 CRS -.3711 CST -.8671
LSA 1998.1 MSA 606.3 SSA 30.4
EL1 1359.4 EL2 229.1 ALF 12.90

LAUNCH DATE NOV 10 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 737.858 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.851 GAL -2.33 AZL 88.20 HCA 224.81 SMA 186.21 ECC .20836 INC 1.7953 V1 30.080
RP 216.74 LAP -1.27 LOP 272.44 VP 22.626 GAP -7.40 AZP 91.27 TAL 346.43 TAP 211.24 RCA 147.41 APO 225.01 V2 25.346
RC 284.057 GL 19.62 GP .57 ZAL 107.64 ZAP 71.75 ETS 179.41 ZAE 102.96 ETE 178.49 ZAC 84.97 ETC 257.83 CLP 71.75

PLANETOCENTRIC CONIC

C3 9.379 VHL 3.063 DLA 27.26 RAL 166.18 RAD 6567.3 VEL 11.455 PTH 1.98 VHP 2.983 DPA 8.28 RAP 166.35 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 48	3150.19	-26.71	107.23	24.11	80.24	15 8 18	2550.2	-27.79	98.73
90.00	12 0 13	3592.57	-18.23	136.76	21.50	67.95	13 0 6	2992.6	-21.07	129.23
100.00	16 14 18	2768.16	-29.35	79.53	24.52	84.04	17 0 27	2168.2	-29.86	70.76
100.00	12 44 24	3449.83	-15.80	129.15	20.38	64.29	13 41 54	2849.8	-19.13	117.94
110.00	18 19 45	2375.62	-34.17	49.96	24.76	91.16	18 59 20	1775.6	-33.63	40.76
110.00	12 55 27	3415.14	-11.59	120.12	17.97	57.61	13 52 22	2815.1	-15.78	113.52

DIFFERENTIAL CORRECTIONS

TDE .5177 TRA 1.4816 TC-10.4164 BAU 1.3078
RDE .2054 RRA .0436 RC3 .5273 FAU .53935
FDE .8788 FRA 9.0332 FC-49.7853 BSP 24740
BDE .5570 BRA 1.4822 BC310.4297 FSP 10549

MID-COURSE EXECUTION ACCURACY

SGT 7187.1 SGR 510.3 SG3 3108.0
RRT -.3833 RRF -.4070 RTF .9907
SGB 7185.2 R23 .0277 R13 -.9908
SG1 7169.7 SG2 471.2 THA 178.43

ORBIT DETERMINATION ACCURACY

ST 1360.1 SR 385.4 SS 1547.8
CRT .7557 CRS -.3370 CST -.8696
LSA 2004.3 MSA 613.1 SSA 30.4
EL1 1392.0 EL2 246.6 ALF 12.49

LAUNCH DATE NOV 10 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 741.997 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.853 GAL -2.39 AZL 88.20 HCA 225.97 SMA 186.24 ECC .20866 INC 1.7975 V1 30.080
RP 216.39 LAP -1.29 LOP 273.59 VP 22.672 GAP -7.66 AZP 91.25 TAL 346.09 TAP 212.07 RCA 147.38 APO 225.10 V2 25.385
RC 285.296 GL 19.57 GP .55 ZAL 108.24 ZAP 70.07 ETS 179.44 ZAE 101.01 ETE 178.56 ZAC 84.85 ETC 257.90 CLP 70.06

PLANETOCENTRIC CONIC

C3 9.446 VHL 3.073 DLA 26.97 RAL 166.78 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.018 DPA 8.48 RAP 165.84 ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 54	3122.61	-27.02	105.27	24.82	81.18	15 18 57	2522.6	-27.96	96.73
90.00	11 53 51	3622.92	-17.45	138.64	21.91	67.34	12 54 14	3022.9	-20.37	131.18
100.00	16 22 16	2750.70	-29.46	78.24	25.16	84.70	17 8 7	2150.7	-29.88	69.47
100.00	12 41 10	3470.06	-15.20	126.36	20.85	63.95	13 39 0	2870.1	-18.58	119.19
110.00	18 25 23	2365.45	-34.15	49.17	25.34	91.63	19 4 49	1765.4	-33.55	39.98
110.00	12 54 32	3428.08	-11.11	120.82	18.50	57.46	13 51 40	2828.1	-15.33	114.25

DIFFERENTIAL CORRECTIONS

TDE .5079 TRA 1.5942 TC-10.7962 BAU 1.3650
RDE .2107 RRA .0456 RC3 .5264 FAU .52605
FDE .7389 FRA 8.9600 FC-48.2130 BSP 25844
BDE .5498 BRA 1.5948 BC310.8090 FSP 10279

MID-COURSE EXECUTION ACCURACY

SGT 7487.1 SGR 517.8 SG3 3031.9
RRT -.3758 RRF -.3995 RTF .9914
SGB 7505.0 R23 .0274 R13 -.9914
SG1 7489.6 SG2 479.7 THA 178.51

ORBIT DETERMINATION ACCURACY

ST 1391.7 SR 394.0 SS 1527.2
CRT .7270 CRS -.3005 CST -.8718
LSA 2009.9 MSA 619.6 SSA 30.3
EL1 1422.0 EL2 264.8 ALF 12.05

LAUNCH DATE NOV 10 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 746.139 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.854 GAL -2.45 AZL 88.20 HCA 227.13 SMA 186.27 ECC .20899 INC 1.7995 V1 30.080
RP 216.05 LAP -1.32 LOP 274.75 VP 22.717 GAP -7.83 AZP 91.22 TAL 345.75 TAP 212.88 RCA 147.34 APO 225.19 V2 25.423
RC 286.520 GL 19.52 GP .54 ZAL 108.87 ZAP 68.42 ETS 179.46 ZAE 99.10 ETE 178.63 ZAC 84.74 ETC 257.96 CLP 68.42

PLANETOCENTRIC CONIC

C3 9.519 VHL 3.085 DLA 26.66 RAL 167.39 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.056 DPA 8.66 RAP 165.39 ECC 1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 38	3096.55	-27.28	103.40	25.54	82.08	15 29 14	2496.6	-28.09	94.83
90.00	11 48 1	3652.00	-16.68	140.42	22.36	66.78	12 48 53	3052.0	-19.68	133.03
100.00	16 30 21	2733.16	-29.57	76.95	25.82	85.38	17 15 54	2133.2	-29.89	68.16
100.00	12 37 59	3490.63	-14.58	127.57	21.35	63.62	13 36 9	2890.6	-18.01	120.45
110.00	18 31 14	2354.91	-34.13	48.34	25.94	92.12	19 10 29	1754.9	-33.46	39.17
110.00	12 53 35	3441.64	-10.62	121.56	19.05	57.31	13 50 57	2841.6	-14.85	115.02

DIFFERENTIAL CORRECTIONS

TDE .5087 TRA 1.7244 TC-11.1025 BAU 1.4145
RDE .2157 RRA .0472 RC3 .5231 FAU .50753
FDE .6877 FRA 8.9751 FC-46.1586 BSP 27270
BDE .5526 BRA 1.7251 BC311.1149 FSP 10191

MID-COURSE EXECUTION ACCURACY

SGT 7789.0 SGR 523.6 SG3 2943.4
RRT -.3632 RRF -.3841 RTF .9917
SGB 7806.6 R23 .0242 R13 -.9918
SG1 7791.4 SG2 487.7 THA 178.60

ORBIT DETERMINATION ACCURACY

ST 1445.9 SR 401.7 SS 1531.7
CRT .7025 CRS -.2866 CST -.8818
LSA 2053.3 MSA 617.0 SSA 30.5
EL1 1474.2 EL2 280.4 ALF 11.46

LAUNCH DATE NOV 10 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 750.292 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.856 GAL -2.52 AZL 88.20 HCA 228.29 SMA 186.30 ECC .20935 INC 1.8015 V1 30.080
RP 215.71 LAP -1.34 LOP 275.92 VP 22.762 GAP -8.00 AZP 91.20 TAL 345.39 TAP 213.68 RCA 147.30 APO 225.30 V2 25.461
RC 287.729 GL 19.46 GP .52 ZAL 109.52 ZAP 66.81 ETS 179.49 ZAE 97.23 ETE 178.70 ZAC 84.64 ETC 258.01 CLP 66.81

PLANETOCENTRIC CONIC

C3 9.598 VHL 3.098 DLA 26.34 RAL 168.02 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.096 DPA 8.82 RAP 164.97 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 0	3071.82	-27.49	101.63	26.26	82.95	15 39 12	2471.8	-28.19	93.03
90.00	11 42 39	3680.00	-15.92	142.13	22.83	66.27	12 43 59	3080.0	-18.99	134.80
100.00	16 38 28	2715.69	-29.65	75.66	26.49	86.05	17 23 44	2115.7	-29.89	66.86
100.00	12 34 52	3511.36	-13.95	128.79	21.88	63.29	13 33 23	2911.4	-17.43	121.72
110.00	18 37 13	2344.13	-34.10	47.50	26.55	92.62	19 16 18	1744.1	-33.36	38.34
110.00	12 52 36	3455.68	-10.10	122.32	19.62	57.17	13 50 12	2855.7	-14.35	115.80

DIFFERENTIAL CORRECTIONS
TDE .4875 TRA 1.8371 TC-11.4569 BAU 1.4717
RDE .2212 RRA .0494 RC3 .5221 FAU .49514
FDE .5122 FRA 8.8490 FC-44.6600 BSP 28197
BDE .5354 BRA 1.8378 BC311.4688 FSP 9824

MID-COURSE EXECUTION ACCURACY
SGT 8098.2 SGR 531.4 SG3 2865.7
RRT -.3582 RRF -.3804 RTF .9923
SGB 8115.6 R23 .0253 R13 -.9923
SG1 8100.5 SG2 496.0 THA 178.65

ORBIT DETERMINATION ACCURACY
ST 1466.9 SR 410.3 SS 1503.7
CRT .6671 CRS -.2371 CST -.8806
LSA 2046.1 MSA 627.5 SSA 30.3
EL1 1493.3 EL2 300.3 ALF 11.02

LAUNCH DATE NOV 10 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 754.452 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.858 GAL -2.58 AZL 88.20 HCA 229.46 SMA 186.33 ECC .20974 INC 1.8034 V1 30.080
RP 215.38 LAP -1.37 LOP 277.08 VP 22.807 GAP -8.17 AZP 91.17 TAL 345.01 TAP 214.47 RCA 147.25 APO 225.41 V2 25.498
RC 288.924 GL 19.39 GP .51 ZAL 110.19 ZAP 65.25 ETS 179.51 ZAE 95.40 ETE 178.76 ZAC 84.55 ETC 258.07 CLP 65.24

PLANETOCENTRIC CONIC

C3 9.684 VHL 3.112 DLA 26.00 RAL 168.67 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.139 DPA 8.96 RAP 164.59 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 11	3047.99	-27.68	99.91	26.99	83.79	15 48 59	2448.0	-28.25	91.29
90.00	11 37 38	3707.35	-15.16	143.78	23.34	65.79	12 39 25	3107.3	-18.30	136.51
100.00	16 46 41	2698.20	-29.73	74.37	27.18	86.73	17 31 39	2098.2	-29.87	65.56
100.00	12 31 49	3532.36	-13.31	130.01	22.42	62.98	13 30 42	2932.4	-16.83	122.99
110.00	18 43 23	2333.06	-34.06	46.64	27.19	93.13	19 22 16	1733.1	-33.25	37.49
110.00	12 51 37	3470.27	-9.56	123.10	20.22	57.02	13 49 27	2870.3	-13.84	116.61

DIFFERENTIAL CORRECTIONS
TDE .4642 TRA 1.9541 TC-11.7845 BAU 1.5273
RDE .2267 RRA .0515 RC3 .5206 FAU .48185
FDE .3472 FRA 8.7316 FC-43.0741 BSP 29119
BDE .5166 BRA 1.9548 BC311.7960 FSP 9481

MID-COURSE EXECUTION ACCURACY
SGT 8399.5 SGR 538.8 SG3 2785.1
RRT -.3529 RRF -.3761 RTF .9927
SGB 8416.8 R23 .0261 R13 -.9928
SG1 8401.7 SG2 504.0 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 1490.3 SR 418.7 SS 1481.5
CRT .6291 CRS -.1875 CST -.8803
LSA 2045.5 MSA 637.4 SSA 30.0
EL1 1514.5 EL2 320.3 ALF 10.50

LAUNCH DATE NOV 10 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 758.617 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.861 GAL -2.65 AZL 88.19 HCA 230.63 SMA 186.37 ECC .21016 INC 1.8052 V1 30.080
RP 215.05 LAP -1.40 LOP 278.25 VP 22.851 GAP -8.33 AZP 91.15 TAL 344.62 TAP 215.25 RCA 147.20 APO 225.54 V2 25.535
RC 290.105 GL 19.31 GP .49 ZAL 110.89 ZAP 63.72 ETS 179.53 ZAE 93.61 ETE 178.82 ZAC 84.46 ETC 258.11 CLP 63.72

PLANETOCENTRIC CONIC

C3 9.778 VHL 3.127 DLA 25.65 RAL 169.33 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.183 DPA 9.09 RAP 164.25 ECC 1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 12	3024.88	-27.84	98.24	27.73	84.61	15 58 37	2424.9	-28.30	89.60
90.00	11 32 54	3734.24	-14.40	145.39	23.88	65.35	12 35 9	3134.2	-17.61	138.18
100.00	16 54 57	2680.72	-29.79	73.07	27.89	87.41	17 39 38	2080.7	-29.83	64.26
100.00	12 28 50	3553.63	-12.65	131.24	23.00	62.69	13 28 4	2953.6	-16.21	124.26
110.00	18 49 42	2321.74	-34.01	45.76	27.84	93.65	19 28 23	1721.7	-33.13	36.63
110.00	12 50 36	3485.38	-9.00	123.91	20.84	56.88	13 48 41	2885.4	-13.30	117.45

DIFFERENTIAL CORRECTIONS
TDE .4394 TRA 2.0761 TC-12.0823 BAU 1.5808
RDE .2322 RRA .0535 RC3 .5184 FAU .46772
FDE .2003 FRA 8.6253 FC-41.4122 BSP 30070
BDE .4970 BRA 2.0768 BC312.0934 FSP 9171

MID-COURSE EXECUTION ACCURACY
SGT 8692.0 SGR 545.9 SG3 2702.3
RRT -.3473 RRF -.3709 RTF .9931
SGB 8709.2 R23 .0264 R13 -.9931
SG1 8694.1 SG2 511.8 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 1517.3 SR 426.8 SS 1465.7
CRT .5893 CRS -.1408 CST -.8818
LSA 2053.3 MSA 645.0 SSA 29.7
EL1 1539.1 EL2 340.0 ALF 9.90

LAUNCH DATE NOV 10 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 762.788 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.863 GAL -2.73 AZL 88.19 HCA 231.81 SMA 186.41 ECC .21061 INC 1.8070 V1 30.080
RP 214.72 LAP -1.42 LOP 279.43 VP 22.896 GAP -8.49 AZP 91.12 TAL 344.21 TAP 216.02 RCA 147.15 APO 225.67 V2 25.572
RC 291.272 GL 19.23 GP .48 ZAL 111.60 ZAP 62.24 ETS 179.55 ZAE 91.85 ETE 178.88 ZAC 84.39 ETC 258.16 CLP 62.23

PLANETOCENTRIC CONIC

C3 9.879 VHL 3.143 DLA 25.28 RAL 170.01 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.230 DPA 9.20 RAP 163.96 ECC 1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 7	3002.39	-27.97	96.60	28.49	85.42	16 8 9	2402.4	-28.32	87.96
90.00	11 28 26	3760.79	-13.64	146.97	24.45	64.94	12 31 6	3160.8	-16.91	139.82
100.00	17 3 18	2663.26	-29.84	71.77	28.61	88.09	17 47 41	2063.3	-29.78	62.97
100.00	12 25 55	3575.15	-11.97	132.48	23.60	62.40	13 25 31	2975.2	-15.57	125.55
110.00	18 56 9	2310.19	-33.96	44.86	28.52	94.17	19 34 39	1710.2	-33.01	35.75
110.00	12 49 34	3500.99	-8.42	124.75	21.48	56.75	13 47 55	2901.0	-12.73	118.31

DIFFERENTIAL CORRECTIONS
TDE .4117 TRA 2.2016 TC-12.3523 BAU 1.6327
RDE .2378 RRA .0556 RC3 .5159 FAU .45315
FDE .0591 FRA 8.5140 FC-39.7130 BSP 31010
BDE .4754 BRA 2.2023 BC312.3631 FSP 8867

MID-COURSE EXECUTION ACCURACY
SGT 8975.1 SGR 552.8 SG3 2617.5
RRT -.3418 RRF -.3658 RTF .9934
SGB 8992.1 R23 .0268 R13 -.9934
SG1 8977.1 SG2 519.4 THA 178.79

ORBIT DETERMINATION ACCURACY
ST 1546.1 SR 434.8 SS 1452.5
CRT .5470 CRS -.0939 CST -.8838
LSA 2064.8 MSA 651.9 SSA 29.4
EL1 1565.3 EL2 359.5 ALF 9.24

LAUNCH DATE NOV 10 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 766.964 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.866 GAL -2.80 AZL 88.19 HCA 232.98 SMA 186.46 ECC .21109 INC 1.8088 V1 30.080
RP 214.40 LAP -1.44 LOP 280.61 VP 22.940 GAP -8.65 AZP 91.09 TAL 343.79 TAP 216.78 RCA 147.10 APO 225.82 V2 25.608
RC 292.426 GL 19.14 GP .46 ZAL 112.34 ZAP 60.79 ETS 179.56 ZAE 90.14 ETE 178.94 ZAC 84.32 ETC 258.19 CLP 60.79

PLANETOCENTRIC CONIC

C3 9.987 VHL 3.160 DLA 24.89 RAL 170.71 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.279 DPA 9.29 RAP 163.71 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 56	2980.41	-28.08	95.01	29.26	86.21	16 17 36	2380.4	-28.31	86.35
90.00	11 24 10	3787.12	-12.88	148.53	25.04	64.56	12 27 17	3187.1	-16.20	141.42
100.00	17 11 42	2645.83	-29.87	70.48	29.35	88.77	17 55 48	2045.8	-29.72	61.68
100.00	12 23 4	3596.94	-11.28	133.73	24.22	62.13	13 23 1	2996.9	-14.92	126.84
110.00	19 2 44	2298.43	-33.90	43.95	29.21	94.71	19 41 3	1698.4	-32.87	34.86
110.00	12 48 31	3517.10	-7.81	125.61	22.14	56.62	13 47 8	2917.1	-12.15	119.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3814 TRA 2.3311 TC-12.5950 BAU 1.6831 SGT 9249.8 SGR 559.4 SG3 2532.2 ST 1577.6 SR 442.6 SS 1442.6
RDE .2433 RRA .0575 RC3 .5130 FAU .43835 RRT -.3364 RRF -.3608 RTF .9936 CRT .5025 CRS -.0476 CST -.8866
FDE -.0743 FRA 8.4037 FC-37.9982 BSP 31943 SGB 9266.7 R23 .0271 R13 -.9936 LSA 2081.4 MSA 657.9 SSA 29.1
BDE .4524 BRA 2.3318 BC312.6055 FSP 8570 SG1 9251.7 SG2 526.7 THA 178.83 EL1 1594.1 EL2 378.7 ALF 8.51

LAUNCH DATE NOV 10 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 771.146 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.869 GAL -2.88 AZL 88.19 HCA 234.16 SMA 186.51 ECC .21160 INC 1.8105 V1 30.080
RP 214.08 LAP -1.47 LOP 281.79 VP 22.984 GAP -8.80 AZP 91.06 TAL 343.36 TAP 217.52 RCA 147.04 APO 225.97 V2 25.644
RC 293.566 GL 19.04 GP .45 ZAL 113.10 ZAP 59.39 ETS 179.58 ZAE 88.47 ETE 178.99 ZAC 84.27 ETC 258.22 CLP 59.39

PLANETOCENTRIC CONIC

C3 10.104 VHL 3.179 DLA 24.49 RAL 171.42 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.330 DPA 9.37 RAP 163.50 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 40	2958.89	-28.17	93.44	30.04	87.00	16 26 59	2358.9	-28.29	84.77
90.00	11 20 5	3813.29	-12.11	150.06	25.67	64.21	12 23 39	3213.3	-15.48	143.01
100.00	17 20 10	2628.44	-29.89	69.19	30.11	89.45	18 3 58	2028.4	-29.64	60.39
100.00	12 20 17	3618.98	-10.58	134.99	24.87	61.88	13 20 36	3019.0	-14.26	128.13
110.00	19 9 27	2286.50	-33.83	43.02	29.91	95.25	19 47 34	1686.5	-32.73	33.96
110.00	12 47 29	3533.69	-7.19	126.49	22.83	56.49	13 46 22	2933.7	-11.55	120.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3479 TRA 2.4649 TC-12.8114 BAU 1.7320 SGT 9516.6 SGR 565.9 SG3 2446.8 ST 1611.9 SR 450.2 SS 1435.8
RDE .2490 RRA .0594 RC3 .5098 FAU .42342 RRT -.3312 RRF -.3559 RTF .9938 CRT .4558 CRS -.0021 CST -.8902
FDE -.2009 FRA 8.2946 FC-36.2790 BSP 32862 SGB 9533.4 R23 .0273 R13 -.9938 LSA 2102.9 MSA 662.7 SSA 28.8
BDE .4278 BRA 2.4656 BC312.8215 FSP 8281 SG1 9518.4 SG2 533.9 THA 178.87 EL1 1625.7 EL2 397.3 ALF 7.72

LAUNCH DATE NOV 10 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 775.333 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.871 GAL -2.97 AZL 88.19 HCA 235.35 SMA 186.56 ECC .21214 INC 1.8122 V1 30.080
RP 213.77 LAP -1.49 LOP 282.97 VP 23.028 GAP -8.96 AZP 91.03 TAL 342.91 TAP 218.26 RCA 146.98 APO 226.13 V2 25.679
RC 294.693 GL 18.94 GP .44 ZAL 113.88 ZAP 58.03 ETS 179.59 ZAE 86.83 ETE 179.04 ZAC 84.22 ETC 258.24 CLP 58.03

PLANETOCENTRIC CONIC

C3 10.230 VHL 3.198 DLA 24.07 RAL 172.14 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.383 DPA 9.43 RAP 163.33 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 21	2937.78	-28.24	91.90	30.84	87.77	16 36 19	2337.8	-28.25	83.23
90.00	11 16 11	3839.37	-11.33	151.58	26.32	63.88	12 20 11	3239.4	-14.75	144.58
100.00	17 28 40	2611.11	-29.89	67.90	30.88	90.13	18 12 11	2011.1	-29.55	59.11
100.00	12 17 33	3641.27	-9.86	136.26	25.55	61.64	13 18 15	3041.3	-13.57	129.44
110.00	19 16 17	2274.41	-33.75	42.09	30.64	95.80	19 54 11	1674.4	-32.58	33.05
110.00	12 46 26	3550.74	-6.55	127.39	23.54	56.38	13 45 36	2950.7	-10.92	121.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3106 TRA 2.6012 TC-13.0043 BAU 1.7799 SGT 9775.3 SGR 572.3 SG3 2362.1 ST 1648.0 SR 457.7 SS 1430.6
RDE .2547 RRA .0613 RC3 .5064 FAU .40873 RRT -.3267 RRF -.3518 RTF .9940 CRT .4064 CRS .0440 CST -.8942
FDE -.3251 FRA 8.1790 FC-34.5892 BSP 33733 SGB 9792.1 R23 .0276 R13 -.9940 LSA 2127.6 MSA 666.9 SSA 28.4
BDE .4016 BRA 2.6019 BC313.0141 FSP 7991 SG1 9777.1 SG2 540.8 THA 178.90 EL1 1659.2 EL2 415.4 ALF 6.87

LAUNCH DATE NOV 10 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 779.525 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.875 GAL -3.05 AZL 88.19 HCA 236.54 SMA 186.61 ECC .21272 INC 1.8138 V1 30.080
RP 213.46 LAP -1.51 LOP 284.16 VP 23.071 GAP -9.11 AZP 91.00 TAL 342.45 TAP 218.98 RCA 146.92 APO 226.31 V2 25.714
RC 295.805 GL 18.83 GP .43 ZAL 114.68 ZAP 56.70 ETS 179.60 ZAE 85.23 ETE 179.08 ZAC 84.18 ETC 258.26 CLP 56.70

PLANETOCENTRIC CONIC

C3 10.366 VHL 3.220 DLA 23.64 RAL 172.88 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.438 DPA 9.47 RAP 163.19 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 58	2917.03	-28.28	90.38	31.65	88.53	16 45 35	2317.0	-28.19	81.72
90.00	11 12 27	3865.41	-10.55	153.09	27.00	63.57	12 16 52	3265.4	-14.01	146.13
100.00	17 37 13	2593.84	-29.88	66.61	31.66	90.80	18 20 26	1993.8	-29.45	57.84
100.00	12 14 54	3663.82	-9.13	137.53	26.25	61.41	13 15 57	3063.8	-12.88	130.75
110.00	19 23 13	2262.19	-33.66	41.15	31.38	96.35	20 0 55	1662.2	-32.41	32.13
110.00	12 45 22	3568.24	-5.89	128.31	24.28	56.27	13 44 51	2968.2	-10.28	121.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2701 TRA 2.7418 TC-13.1720 BAU 1.8267 SGT10026.9 SGR 578.5 SG3 2277.9 ST 1688.0 SR 465.0 SS 1428.0
RDE .2604 RRA .0631 RC3 .5028 FAU .39402 RRT -.3225 RRF -.3478 RTF .9941 CRT .3555 CRS .0884 CST -.8989
FDE -.4416 FRA 8.0646 FC-32.9086 BSP 34603 SGB10043.6 R23 .0278 R13 -.9941 LSA 2157.7 MSA 669.6 SSA 28.0
BDE .3752 BRA 2.7425 BC313.1816 FSP 7711 SG110028.7 SG2 547.5 THA 178.93 EL1 1696.6 EL2 432.4 ALF 5.98

LAUNCH DATE NOV 10 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 783.721 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.878 GAL -3.14 AZL 88.18 HCA 237.73 SMA 186.67 ECC .21333 INC 1.8153 V1 30.080
RP 213.16 LAP -1.53 LOP 285.35 VP 23.113 GAP -9.26 AZP 90.97 TAL 341.97 TAP 219.69 RCA 146.85 APO 226.49 V2 25.748
RC 296.904 GL 18.71 GP .41 ZAL 115.50 ZAP 55.42 ETS 179.61 ZAE 83.67 ETE 179.13 ZAC 84.15 ETC 258.28 CLP 55.42

PLANETOCENTRIC CONIC

C3 10.511 VHL 3.242 DLA 23.20 RAL 173.63 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 3.495 DPA 9.49 RAP 163.10 ECC 1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 33	2896.61	-28.31	88.89	32.48	89.27	16 54 50	2296.6	-28.11	80.23
90.00	11 8 50	3891.44	-9.75	154.59	27.71	63.28	12 13 42	3291.4	-13.26	147.67
100.00	17 45 47	2576.66	-29.86	65.34	32.46	91.48	18 28 44	1976.7	-29.34	56.57
100.00	12 12 18	3686.63	-8.38	138.81	26.98	61.20	13 13 44	3086.6	-12.16	132.06
110.00	19 30 15	2249.86	-33.56	40.20	32.15	96.91	20 7 45	1649.9	-32.24	31.21
110.00	12 44 20	3586.19	-5.21	129.26	25.03	56.17	13 44 6	2986.2	-9.62	122.94

DIFFERENTIAL CORRECTIONS
TDE .2294 TRA 2.8896 TC-13.3016 BAU 1.8704
RDE .2663 RRA .0648 RC3 .4987 FAU .37888
FDE -.5447 FRA 7.9564 FC-31.2072 BSP 35521
BDE .3514 BRA 2.8903 BC313.3109 FSP 7451

MID-COURSE EXECUTION ACCURACY
SGT10267.4 SGR 584.3 SG3 2193.3
RRT -.3177 RRF -.3432 RTF .9942
SGB10284.0 R23 .0278 R13 -.9942
SG110269.0 SG2 554.0 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 1734.7 SR 472.1 SS 1427.7
CRT .3058 CRS .1287 CST -.9041
LSA 2195.3 MSA 671.1 SSA 27.6
EL1 1741.2 EL2 447.8 ALF 5.10

LAUNCH DATE NOV 10 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 787.923 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.881 GAL -3.24 AZL 88.18 HCA 238.92 SMA 186.73 ECC .21397 INC 1.8169 V1 30.080
RP 212.87 LAP -1.56 LOP 286.55 VP 23.156 GAP -9.41 AZP 90.94 TAL 341.47 TAP 220.40 RCA 146.77 APO 226.68 V2 25.782
RC 297.989 GL 18.58 GP .40 ZAL 116.34 ZAP 54.17 ETS 179.61 ZAE 82.14 ETE 179.17 ZAC 84.13 ETC 258.28 CLP 54.17

PLANETOCENTRIC CONIC

C3 10.666 VHL 3.266 DLA 22.74 RAL 174.39 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 3.553 DPA 9.50 RAP 163.05 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 6	2876.53	-28.32	87.42	33.31	90.01	17 4 2	2276.5	-28.02	78.77
90.00	11 5 22	3917.49	-8.95	156.09	28.44	63.02	12 10 40	3317.5	-12.50	149.21
100.00	17 54 24	2559.57	-29.82	64.07	33.28	92.14	18 37 3	1959.6	-29.21	55.32
100.00	12 9 45	3709.68	-7.62	140.10	27.73	61.01	13 11 35	3109.7	-11.43	133.39
110.00	19 37 22	2237.45	-33.46	39.24	32.92	97.46	20 14 39	1637.5	-32.06	30.29
110.00	12 43 17	3604.56	-4.51	130.22	25.81	56.08	13 43 21	3004.6	-8.94	123.93

DIFFERENTIAL CORRECTIONS
TDE .1782 TRA 3.0341 TC-13.4317 BAU 1.9167
RDE .2723 RRA .0665 RC3 .4949 FAU .36503
FDE -.6635 FRA 7.8259 FC-29.6274 BSP 36250
BDE .3254 BRA 3.0348 BC313.4408 FSP 7159

MID-COURSE EXECUTION ACCURACY
SGT10506.1 SGR 590.5 SG3 2111.9
RRT -.3155 RRF -.3416 RTF .9943
SGB10522.7 R23 .0284 R13 -.9943
SG110507.8 SG2 560.3 THA 178.98

ORBIT DETERMINATION ACCURACY
ST 1778.9 SR 479.3 SS 1428.1
CRT .2492 CRS .1759 CST -.9089
LSA 2231.7 MSA 672.7 SSA 27.2
EL1 1783.2 EL2 463.1 ALF 4.12

LAUNCH DATE NOV 10 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 792.129 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.885 GAL -3.33 AZL 88.18 HCA 240.12 SMA 186.79 ECC .21465 INC 1.8184 V1 30.080
RP 212.57 LAP -1.58 LOP 287.75 VP 23.198 GAP -9.55 AZP 90.91 TAL 340.96 TAP 221.08 RCA 146.69 APO 226.88 V2 25.815
RC 299.061 GL 18.45 GP .39 ZAL 117.20 ZAP 52.96 ETS 179.62 ZAE 80.65 ETE 179.21 ZAC 84.12 ETC 258.28 CLP 52.96

PLANETOCENTRIC CONIC

C3 10.833 VHL 3.291 DLA 22.26 RAL 175.16 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 3.614 DPA 9.50 RAP 163.03 ECC 1.1783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 36	2856.75	-28.31	85.97	34.17	90.74	17 13 13	2256.7	-27.91	77.33
90.00	11 2 1	3943.60	-8.14	157.58	29.20	62.79	12 7 45	3343.6	-11.73	150.74
100.00	18 3 2	2542.60	-29.77	62.81	34.12	92.80	18 45 24	1942.6	-29.07	54.07
100.00	12 7 16	3732.98	-6.85	141.40	28.50	60.83	13 9 29	3133.0	-10.69	134.72
110.00	19 44 33	2224.98	-33.34	38.29	33.72	98.02	20 21 38	1625.0	-31.87	29.37
110.00	12 42 15	3623.36	-3.80	131.21	26.62	56.00	13 42 38	3023.4	-8.24	124.93

DIFFERENTIAL CORRECTIONS
TDE .1274 TRA 3.1862 TC-13.5248 BAU 1.9601
RDE .2784 RRA .0681 RC3 .4907 FAU .35097
FDE -.7656 FRA 7.7041 FC-28.0476 BSP 37049
BDE .3061 BRA 3.1869 BC313.5337 FSP 6893

MID-COURSE EXECUTION ACCURACY
SGT10734.6 SGR 596.3 SG3 2031.2
RRT -.3127 RRF -.3392 RTF .9944
SGB10751.2 R23 .0289 R13 -.9944
SG110736.2 SG2 566.3 THA 179.00

ORBIT DETERMINATION ACCURACY
ST 1831.2 SR 486.2 SS 1430.3
CRT .1954 CRS .2174 CST -.9143
LSA 2276.4 MSA 672.7 SSA 26.7
EL1 1833.8 EL2 476.1 ALF 3.18

LAUNCH DATE NOV 10 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 796.339 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.889 GAL -3.43 AZL 88.18 HCA 241.32 SMA 186.85 ECC .21536 INC 1.8199 V1 30.080
RP 212.29 LAP -1.60 LOP 288.95 VP 23.239 GAP -9.70 AZP 90.87 TAL 340.44 TAP 221.76 RCA 146.61 APO 227.09 V2 25.847
RC 300.120 GL 18.31 GP .38 ZAL 118.07 ZAP 51.79 ETS 179.62 ZAE 79.19 ETE 179.25 ZAC 84.11 ETC 258.28 CLP 51.79

PLANETOCENTRIC CONIC

C3 11.012 VHL 3.318 DLA 21.78 RAL 175.94 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 3.676 DPA 9.48 RAP 163.05 ECC 1.1812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 4	2837.26	-28.28	84.55	35.03	91.45	17 22 21	2237.3	-27.78	75.92
90.00	10 58 47	3969.78	-7.32	159.07	29.99	62.57	12 4 57	3369.8	-10.94	152.26
100.00	18 11 41	2525.74	-29.71	61.56	34.96	93.46	18 53 46	1925.7	-28.91	52.84
100.00	12 4 51	3756.54	-6.07	142.71	29.30	60.67	13 7 28	3156.5	-9.93	136.06
110.00	19 51 48	2212.48	-33.22	37.33	34.53	98.57	20 28 41	1612.5	-31.68	28.44
110.00	12 41 13	3642.56	-3.07	132.22	27.44	55.94	13 41 55	3042.6	-7.52	125.95

DIFFERENTIAL CORRECTIONS
TDE .0726 TRA 3.3425 TC-13.5960 BAU 2.0028
RDE .2846 RRA .0695 RC3 .4864 FAU .33716
FDE -.8630 FRA 7.5818 FC-26.5076 BSP 37811
BDE .2937 BRA 3.3432 BC313.6047 FSP 6630

MID-COURSE EXECUTION ACCURACY
SGT10957.2 SGR 602.0 SG3 1952.0
RRT -.3105 RRF -.3374 RTF .9944
SGB10973.7 R23 .0293 R13 -.9944
SG110958.7 SG2 572.1 THA 179.02

ORBIT DETERMINATION ACCURACY
ST 1888.1 SR 493.0 SS 1434.0
CRT .1410 CRS .2576 CST -.9198
LSA 2326.5 MSA 671.5 SSA 26.3
EL1 1889.5 EL2 487.7 ALF 2.26

LAUNCH DATE NOV 10 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 800.552 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.892	GAL	-3.53	AZL	88.18	HCA	242.53	SMA	186.92	ECC	.21612	INC	1.8213
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.280	GAP	-9.84	AZP	90.84	TAL	339.90	TAP	222.43	RCA	146.52	APO	227.31
RC	301.167	GL	18.16	GP	.37	ZAL	118.96	ZAP	50.65	ETS	179.62	ZAE	77.77	ETE	179.29	ZAC	84.12	ETC	258.27

V1	30.080	V2	25.879	CLP	50.65														

PLANETOCENTRIC CONIC

C3	11.203	VHL	3.347	DLA	21.28	RAL	176.73	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	3.740	DPA	9.44	RAP	163.11
ECC	1.1844																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 30	2818.07	-28.24	83.14	35.91	92.15	17 31 28	2218.1	-27.64	74.53
90.00	10 55 39	3996.05	-6.50	160.56	30.80	62.38	12 2 15	3396.0	-10.15	153.78
100.00	18 20 20	2509.02	-29.63	60.32	35.83	94.11	19 2 9	1909.0	-28.75	51.63
100.00	12 2 29	3780.34	-5.27	144.03	30.13	60.53	13 5 30	3180.3	-9.16	137.40
110.00	19 59 8	2199.96	-33.09	36.38	35.36	99.12	20 35 48	1600.0	-31.47	27.53
110.00	12 40 12	3662.16	-2.32	133.24	28.30	55.89	13 41 14	3062.2	-6.78	126.99

DIFFERENTIAL CORRECTIONS

TDE	.0140	TRA	3.5029	TC-13.6428	BAU	2.0445	
RDE	.2909	RRA	.0709	RC3	.4819	FAU	.32367
FDE	-.9566	FRA	7.4574	FC-25.0129	BSP	38555	
BDE	.2913	BRA	3.5036	BC313.6513	FSP	6374	

MID-COURSE EXECUTION ACCURACY

SGT11172.0	SGR	607.5	SG3	1874.5			
RRT	-.3088	RRF	-.3362	RTF	.9944		
SGB11188.5	R23	.0298	R13	-.9944			
SG111173.5	SG2	577.7	THA	179.04			

ORBIT DETERMINATION ACCURACY

ST	1950.0	SR	499.6	SS	1438.8		
CRT	.0870	CRS	.2966	CST	-.9251		
LSA	2381.8	MSA	669.6	SSA	25.8		
EL1	1950.5	EL2	497.6	ALF	1.37		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 804.769 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.896	GAL	-3.64	AZL	88.18	HCA	243.74	SMA	186.99	ECC	.21691	INC	1.8227
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.320	GAP	-9.98	AZP	90.81	TAL	339.34	TAP	223.08	RCA	146.43	APO	227.55
RC	302.203	GL	18.01	GP	.36	ZAL	119.86	ZAP	49.54	ETS	179.63	ZAE	76.38	ETE	179.33	ZAC	84.13	ETC	258.26

V1	30.080	V2	25.911	CLP	49.54														

PLANETOCENTRIC CONIC

C3	11.407	VHL	3.377	DLA	20.76	RAL	177.53	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	3.806	DPA	9.39	RAP	163.20
ECC	1.1877																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 53	2799.17	-28.19	81.76	36.81	92.84	17 40 33	2199.2	-27.49	73.17
90.00	10 52 37	4022.43	-5.66	162.05	31.64	62.21	11 59 40	3422.4	-9.34	155.30
100.00	18 29 1	2492.44	-29.55	59.10	36.71	94.75	19 10 33	1892.4	-28.58	50.43
100.00	12 0 11	3804.39	-4.47	145.36	30.98	60.41	13 3 35	3204.4	-8.37	138.75
110.00	20 6 30	2187.45	-32.95	35.43	36.20	99.67	20 42 57	1587.4	-31.26	26.61
110.00	12 39 11	3682.15	-1.55	134.28	29.17	55.85	13 40 33	3082.1	-6.03	128.05

DIFFERENTIAL CORRECTIONS

TDE	-.0473	TRA	3.6683	TC-13.6649	BAU	2.0851	
RDE	.2974	RRA	.0722	RC3	.4771	FAU	.31037
FDE	-1.0420	FRA	7.3330	FC-23.5561	BSP	39292	
BDE	.3011	BRA	3.6690	BC313.6732	FSP	6127	

MID-COURSE EXECUTION ACCURACY

SGT11379.8	SGR	612.8	SG3	1798.5			
RRT	-.3074	RRF	-.3353	RTF	.9944		
SGB11396.3	R23	.0303	R13	-.9944			
SG111381.4	SG2	583.1	THA	179.05			

ORBIT DETERMINATION ACCURACY

ST	2017.3	SR	506.1	SS	1443.9		
CRT	.0346	CRS	.3328	CST	-.9305		
LSA	2442.5	MSA	666.5	SSA	25.4		
EL1	2017.4	EL2	505.8	ALF	.53		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 808.990 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.900	GAL	-3.75	AZL	88.18	HCA	244.95	SMA	187.06	ECC	.21773	INC	1.8241
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.360	GAP	-10.13	AZP	90.77	TAL	338.77	TAP	223.72	RCA	146.33	APO	227.79
RC	303.228	GL	17.85	GP	.35	ZAL	120.78	ZAP	48.47	ETS	179.63	ZAE	75.02	ETE	179.36	ZAC	84.14	ETC	258.24

V1	30.080	V2	25.941	CLP	48.47														

PLANETOCENTRIC CONIC

C3	11.625	VHL	3.410	DLA	20.24	RAL	178.33	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	3.873	DPA	9.33	RAP	163.33
ECC	1.1913																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 15	2780.56	-28.12	80.41	37.72	93.52	17 49 35	2180.6	-27.33	71.83
90.00	10 49 41	4048.92	-4.82	163.54	32.50	62.06	11 57 10	3448.9	-8.52	156.81
100.00	18 37 41	2476.04	-29.45	57.89	37.60	95.38	19 18 57	1876.0	-28.39	49.24
100.00	11 57 56	3828.67	-3.65	146.70	31.86	60.31	13 1 45	3228.7	-7.57	140.11
110.00	20 13 55	2174.97	-32.80	34.49	37.07	100.21	20 50 10	1575.0	-31.05	25.70
110.00	12 38 11	3702.51	-.78	135.35	30.07	55.82	13 39 54	3102.5	-5.25	129.12

DIFFERENTIAL CORRECTIONS

TDE	-.1125	TRA	3.8381	TC-13.6652	BAU	2.1250	
RDE	.3040	RRA	.0733	RC3	.4722	FAU	.29743
FDE	-1.1233	FRA	7.2081	FC-22.1505	BSP	39995	
BDE	.3242	BRA	3.8388	BC313.6733	FSP	5886	

MID-COURSE EXECUTION ACCURACY

SGT11581.1	SGR	618.0	SG3	1724.5			
RRT	-.3066	RRF	-.3350	RTF	.9944		
SGB11597.5	R23	.0309	R13	-.9944			
SG111582.6	SG2	588.2	THA	179.06			

ORBIT DETERMINATION ACCURACY

ST	2089.7	SR	512.5	SS	1449.8		
CRT	-.0169	CRS	.3676	CST	-.9357		
LSA	2508.3	MSA	662.7	SSA	24.9		
EL1	2089.7	EL2	512.4	ALF	179.75		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 813.213 EARTH TO MARS

RL	148.13	LAL	.00	LOL	47.64	VL	32.905	GAL	-3.86	AZL	88.17	HCA	246.16	SMA	187.13	ECC	.21860	INC	1.8255
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.400	GAP	-10.27	AZP	90.74	TAL	338.19	TAP	224.35	RCA	146.22	APO	228.04
RC	304.242	GL	17.68	GP	.34	ZAL	121.71	ZAP	47.43	ETS	179.62	ZAE	73.70	ETE	179.39	ZAC	84.17	ETC	258.21

V1	30.080	V2	25.971	CLP	47.42														

PLANETOCENTRIC CONIC

C3	11.858	VHL	3.443	DLA	19.70	RAL	179.14	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	3.942	DPA	9.26	RAP	163.48
ECC	1.1951																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 34	2762.24	-28.03	79.07	38.65	94.18	17 58 36	2162.2	-27.16	70.52
90.00	10 46 50	4075.54	-3.97	165.03	33.40	61.94	11 54 46	3475.5	-7.69	158.33
100.00	18 46 21	2459.81	-29.34	56.69	38.51	95.99	19 27 21	1859.8	-28.20	48.07
100.00	11 55 44	3853.20	-2.82	148.05	32.76	60.23	12 59 57	3253.2	-6.76	141.48
110.00	20 21 22	2162.54	-32.65	33.55	37.95	100.74	20 57 24	1562.5	-30.82	24.80
110.00	12 37 13	3723.24	.02	136.43	30.99	55.82	13 39 16	3123.2	-4.47	130.21

DIFFERENTIAL CORRECTIONS

TDE	-.1809	TRA	4.0134	TC-13.6428	BAU	2.1640	
RDE	.3108	RRA	.0743	RC3	.4671	FAU	.28475
FDE	-1.1977	FRA	7.0831	FC-20.7902	BSP	40693	
BDE	.3596	BRA	4.0141	BC313.6507	FSP	5652	

MID-COURSE EXECUTION ACCURACY

SGT11776.4	SGR	623.1	SG3	1652.2			
RRT	-.3062	RRF	-.3351	RTF	.9943		
SGB11792.8	R23	.0314	R13	-.9944			
SG111777.9	SG2	593.1	THA	179.07			

ORBIT DETERMINATION ACCURACY

ST	2167.5	SR	518.8	SS	1455.4		
CRT	-.0663	CRS	.4000	CST	-.9406		
LSA	2579.2	MSA	658.0	SSA	24.4		
EL1	2167.8	EL2	517.6	ALF	179.04		

LAUNCH DATE NOV 10 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 817.438 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.909 GAL -3.98 AZL 88.17 HCA 247.38 SMA 187.21 ECC .21951 INC 1.8268 V1 30.080
RP 210.95 LAP -1.69 LOP 295.00 VP 23.438 GAP -10.41 AZP 90.70 TAL 337.59 TAP 224.97 RCA 146.11 APO 228.30 V2 26.001
RC 305.247 GL 17.51 GP .33 ZAL 122.66 ZAP 46.41 ETS 179.62 ZAE 72.40 ETE 179.43 ZAC 84.20 ETC 258.19 CLP 46.41

PLANETOCENTRIC CONIC

C3 12.106 VHL 3.479 DLA 19.16 RAL 179.96 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 4.013 DPA 9.17 RAP 163.67 ECC 1.1992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 50	2744.22	-27.94	77.76	39.59	94.83	18 7 34	2144.2	-26.97	69.23
90.00	10 44 5	4102.29	-3.11	166.53	34.31	61.84	11 52 27	3502.3	-6.85	159.85
100.00	18 55 0	2443.78	-29.22	55.52	39.44	96.60	19 35 44	1843.8	-28.00	46.93
100.00	11 53 36	3877.97	-1.98	149.41	33.69	60.17	12 58 14	3278.0	-5.94	142.86
110.00	20 28 51	2150.19	-32.49	32.62	38.84	101.27	21 4 41	1550.2	-30.59	23.91
110.00	12 36 15	3744.32	.82	137.53	31.93	55.83	13 38 39	3144.3	-3.67	131.32

DIFFERENTIAL CORRECTIONS
TDE -.2531 TRA 4.1928 TC-13.6010 BAU 2.2025
RDE .3178 RRA .0752 RC3 .4619 FAU .27251
FDE-1.2681 FRA 6.9563 FC-19.4881 BSP 41367
BDE .4063 BRA 4.1935 BC313.6088 FSP 5423

MID-COURSE EXECUTION ACCURACY
SGT11965.6 SGR 628.0 SG3 1582.1
RRT -.3064 RRF -.3359 RTF .9943
SGB11982.1 R23 .0320 R13 -.9943
SG111967.2 SG2 597.7 THA 179.08

ORBIT DETERMINATION ACCURACY
ST 2250.0 SR 524.9 SS 1461.2
CRT -.1140 CRS .4311 CST -.9452
LSA 2654.5 MSA 652.8 SSA 24.0
EL1 2250.8 EL2 521.3 ALF 178.39

LAUNCH DATE NOV 10 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 821.666 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.913 GAL -4.10 AZL 88.17 HCA 248.60 SMA 187.28 ECC .22047 INC 1.8281 V1 30.080
RP 210.70 LAP -1.70 LOP 296.22 VP 23.476 GAP -10.55 AZP 90.67 TAL 336.97 TAP 225.57 RCA 145.99 APO 228.57 V2 26.029
RC 306.243 GL 17.32 GP .33 ZAL 123.61 ZAP 45.43 ETS 179.62 ZAE 71.13 ETE 179.46 ZAC 84.24 ETC 258.15 CLP 45.43

PLANETOCENTRIC CONIC

C3 12.371 VHL 3.517 DLA 18.60 RAL 180.78 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 4.085 DPA 9.06 RAP 163.89 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 4	2726.51	-27.83	76.48	40.54	95.47	18 16 31	2126.5	-26.78	67.97
90.00	10 41 24	4129.18	-2.25	168.03	35.26	61.76	11 50 13	3529.2	-6.00	161.37
100.00	19 3 39	2427.96	-29.09	54.36	40.38	97.20	19 44 7	1828.0	-27.79	45.80
100.00	11 51 30	3902.96	-1.13	150.78	34.64	60.13	12 56 33	3303.0	-5.10	144.24
110.00	20 36 21	2137.94	-32.32	31.70	39.75	101.79	21 11 59	1537.9	-30.36	23.04
110.00	12 35 18	3765.75	1.64	138.64	32.90	55.85	13 38 3	3165.8	-2.85	132.44

DIFFERENTIAL CORRECTIONS
TDE -.3276 TRA 4.3789 TC-13.5365 BAU 2.2401
RDE .3250 RRA .0759 RC3 .4564 FAU .26049
FDE-1.3313 FRA 6.8308 FC-18.2296 BSP 42035
BDE .4615 BRA 4.3796 BC313.5442 FSP 5203

MID-COURSE EXECUTION ACCURACY
SGT12149.2 SGR 632.7 SG3 1513.8
RRT -.3068 RRF -.3369 RTF .9942
SGB12165.7 R23 .0327 R13 -.9942
SG112150.8 SG2 602.1 THA 179.08

ORBIT DETERMINATION ACCURACY
ST 2337.6 SR 530.9 SS 1466.3
CRT -.1587 CRS .4598 CST -.9495
LSA 2734.4 MSA 647.2 SSA 23.5
EL1 2339.2 EL2 523.8 ALF 177.83

LAUNCH DATE NOV 10 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 825.896 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.918 GAL -4.23 AZL 88.17 HCA 249.82 SMA 187.36 ECC .22146 INC 1.8294 V1 30.080
RP 210.46 LAP -1.72 LOP 297.45 VP 23.514 GAP -10.69 AZP 90.63 TAL 336.34 TAP 226.16 RCA 145.87 APO 228.86 V2 26.057
RC 307.229 GL 17.14 GP .32 ZAL 124.58 ZAP 44.48 ETS 179.61 ZAE 69.89 ETE 179.49 ZAC 84.28 ETC 258.12 CLP 44.48

PLANETOCENTRIC CONIC

C3 12.654 VHL 3.557 DLA 18.03 RAL 181.61 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 4.159 DPA 8.95 RAP 164.14 ECC 1.2082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 15	2709.10	-27.71	75.22	41.51	96.09	18 25 24	2109.1	-26.58	66.74
90.00	10 38 48	4156.22	-1.37	169.54	36.23	61.71	11 48 4	3556.2	-5.15	162.89
100.00	19 12 16	2412.37	-28.95	53.22	41.34	97.78	19 52 29	1812.4	-27.57	44.69
100.00	11 49 28	3928.19	-.28	152.17	35.62	60.11	12 54 56	3328.2	-4.25	145.64
110.00	20 43 52	2125.80	-32.15	30.80	40.68	102.30	21 19 18	1525.8	-30.12	22.17
110.00	12 34 22	3787.52	2.47	139.78	33.90	55.90	13 37 29	3187.5	-2.02	133.58

DIFFERENTIAL CORRECTIONS
TDE -.4060 TRA 4.5699 TC-13.4520 BAU 2.2769
RDE .3323 RRA .0764 RC3 .4507 FAU .24879
FDE-1.3897 FRA 6.7050 FC-17.0218 BSP 42698
BDE .5246 BRA 4.5705 BC313.4595 FSP 4993

MID-COURSE EXECUTION ACCURACY
SGT12326.4 SGR 637.2 SG3 1447.5
RRT -.3078 RRF -.3383 RTF .9941
SGB12342.9 R23 .0333 R13 -.9941
SG112328.0 SG2 606.2 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 2429.6 SR 536.8 SS 1470.8
CRT -.2014 CRS .4868 CST -.9534
LSA 2818.3 MSA 641.2 SSA 23.1
EL1 2432.2 EL2 525.2 ALF 177.33

LAUNCH DATE NOV 10 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 830.126 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.923 GAL -4.35 AZL 88.17 HCA 251.05 SMA 187.44 ECC .22251 INC 1.8307 V1 30.080
RP 210.22 LAP -1.73 LOP 298.67 VP 23.550 GAP -10.82 AZP 90.59 TAL 335.70 TAP 226.74 RCA 145.74 APO 229.15 V2 26.085
RC 308.206 GL 16.94 GP .31 ZAL 125.55 ZAP 43.56 ETS 179.60 ZAE 68.68 ETE 179.52 ZAC 84.33 ETC 258.08 CLP 43.56

PLANETOCENTRIC CONIC

C3 12.955 VHL 3.599 DLA 17.46 RAL 182.43 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 4.235 DPA 8.82 RAP 164.42 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 23	2692.02	-27.58	73.99	42.50	96.69	18 34 16	2092.0	-26.36	65.53
90.00	10 36 16	4183.39	-.50	171.05	37.22	61.69	11 46 0	3583.4	-4.28	164.42
100.00	19 20 52	2397.02	-28.81	52.10	42.32	98.35	20 0 49	1797.0	-27.35	43.60
100.00	11 47 29	3953.63	.58	153.56	36.62	60.11	12 53 22	3353.6	-3.40	147.04
110.00	20 51 23	2113.81	-31.97	29.91	41.63	102.80	21 26 37	1513.8	-29.88	21.32
110.00	12 33 27	3809.60	3.32	140.93	34.91	55.96	13 36 56	3209.6	-1.17	134.73

DIFFERENTIAL CORRECTIONS
TDE -.4871 TRA 4.7666 TC-13.3470 BAU 2.3129
RDE .3399 RRA .0767 RC3 .4449 FAU .23743
FDE-1.4415 FRA 6.5787 FC-15.8673 BSP 43338
BDE .5940 BRA 4.7673 BC313.3545 FSP 4785

MID-COURSE EXECUTION ACCURACY
SGT12497.4 SGR 641.6 SG3 1383.1
RRT -.3091 RRF -.3402 RTF .9940
SGB12513.8 R23 .0339 R13 -.9940
SG112499.0 SG2 610.1 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 2525.6 SR 542.5 SS 1474.1
CRT -.2413 CRS .5117 CST -.9570
LSA 2905.6 MSA 634.8 SSA 22.7
EL1 2529.2 EL2 525.7 ALF 176.90

LAUNCH DATE NOV 10 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 834.358 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.927 GAL -4.49 AZL 88.17 HCA 252.27 SMA 187.53 ECC .22360 INC 1.8320 V1 30.080
RP 209.99 LAP -1.75 LOP 299.90 VP 23.586 GAP -10.96 AZP 90.56 TAL 335.04 TAP 227.31 RCA 145.60 APO 229.46 V2 26.111
RC 309.174 GL 16.74 GP .30 ZAL 126.54 ZAP 42.66 ETS 179.60 ZAE 67.49 ETE 179.55 ZAC 84.39 ETC 258.03 CLP 42.66

PLANETOCENTRIC CONIC

C3 13.276 VHL 3.644 DLA 16.88 RAL 183.27 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 4.312 DPA 8.69 RAP 164.72 ECC 1.2185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 29	2675.27	-27.44	72.78	43.50	97.28	18 43 4	2075.3	-26.15	64.35
90.00	10 33 49	4210.71	.38	172.58	38.24	61.69	11 44 0	3610.7	-3.40	165.95
100.00	19 29 27	2381.92	-28.65	51.01	43.31	98.91	20 9 9	1781.9	-27.12	42.54
100.00	11 45 32	3979.29	1.45	154.97	37.65	60.14	12 51 51	3379.3	-2.53	148.45
110.00	20 58 55	2101.98	-31.79	29.03	42.59	103.28	21 33 57	1502.0	-29.64	20.49
110.00	12 32 33	3832.00	4.17	142.11	35.96	56.04	13 36 25	3232.0	-.32	135.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5716 TRA 4.9694 TC-13.2254 BAU 2.3485 SGT12663.9 SGR 645.8 SG3 1320.9 ST 2625.5 SR 548.1 SS 1476.8
RDE .3477 RRA .0768 RC3 .4389 FAU .22646 RRT -.3108 RRF -.3427 RTF .9938 CRT -.2789 CRS .5355 CST -.9601
FDE-1.4897 FRA 6.4524 FC-14.7680 BSP 43962 SGB12680.4 R23 .0348 R13 -.9938 LSA 2996.5 MSA 628.5 SSA 22.3
BDE .6690 BRA 4.9700 BC313.2326 FSP 4586 SG112665.5 SG2 613.8 THA 179.09 EL1 2630.1 EL2 525.4 ALF 176.53

LAUNCH DATE NOV 10 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 838.590 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.932 GAL -4.62 AZL 88.17 HCA 253.50 SMA 187.61 ECC .22474 INC 1.8332 V1 30.080
RP 209.77 LAP -1.76 LOP 301.13 VP 23.622 GAP -11.10 AZP 90.52 TAL 334.36 TAP 227.86 RCA 145.45 APO 229.78 V2 26.137
RC 310.132 GL 16.53 GP .30 ZAL 127.53 ZAP 41.79 ETS 179.59 ZAE 66.33 ETE 179.57 ZAC 84.45 ETC 257.99 CLP 41.79

PLANETOCENTRIC CONIC

C3 13.617 VHL 3.690 DLA 16.29 RAL 184.10 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 4.391 DPA 8.54 RAP 165.05 ECC 1.2241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 31	2658.86	-27.29	71.60	44.52	97.86	18 51 50	2058.9	-25.92	63.20
90.00	10 31 26	4238.18	1.27	174.11	39.29	61.71	11 42 4	3638.2	-2.52	167.48
100.00	19 37 59	2367.11	-28.49	49.93	44.31	99.45	20 17 26	1767.1	-26.89	41.50
100.00	11 43 39	4005.17	2.33	156.39	38.70	60.19	12 50 24	3405.2	-1.65	149.87
110.00	21 6 26	2090.33	-31.60	28.18	43.57	103.76	21 41 17	1490.3	-29.39	19.67
110.00	12 31 40	3854.71	5.03	143.30	37.02	56.14	13 35 55	3254.7	.55	137.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6592 TRA 5.1783 TC-13.0855 BAU 2.3835 SGT12824.8 SGR 649.9 SG3 1260.3 ST 2728.7 SR 553.6 SS 1477.8
RDE .3557 RRA .0768 RC3 .4326 FAU .21569 RRT -.3130 RRF -.3454 RTF .9936 CRT -.3140 CRS .5576 CST -.9630
FDE-1.5321 FRA 6.3252 FC-13.7131 BSP 44592 SGB12841.3 R23 .0355 R13 -.9936 LSA 3090.2 MSA 622.0 SSA 21.9
BDE .7490 BRA 5.1788 BC313.0926 FSP 4395 SG112826.4 SG2 617.2 THA 179.09 EL1 2734.5 EL2 524.5 ALF 176.22

LAUNCH DATE NOV 10 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 842.823 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.937 GAL -4.76 AZL 88.17 HCA 254.74 SMA 187.70 ECC .22593 INC 1.8345 V1 30.080
RP 209.55 LAP -1.77 LOP 302.37 VP 23.656 GAP -11.24 AZP 90.48 TAL 333.67 TAP 228.40 RCA 145.29 APO 230.11 V2 26.162
RC 311.080 GL 16.32 GP .29 ZAL 128.53 ZAP 40.95 ETS 179.58 ZAE 65.19 ETE 179.60 ZAC 84.52 ETC 257.94 CLP 40.94

PLANETOCENTRIC CONIC

C3 13.981 VHL 3.739 DLA 15.69 RAL 184.93 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 4.472 DPA 8.38 RAP 165.41 ECC 1.2301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 29	2642.80	-27.14	70.45	45.55	98.41	19 0 32	2042.8	-25.69	62.08
90.00	10 29 6	4265.80	2.16	175.65	40.37	61.76	11 40 12	3665.8	-1.63	169.02
100.00	19 46 29	2352.58	-28.32	48.89	45.33	99.98	20 25 41	1752.6	-26.65	40.48
100.00	11 41 48	4031.25	3.21	157.83	39.78	60.26	12 48 59	3431.2	-.77	151.30
110.00	21 13 57	2078.88	-31.42	27.34	44.57	104.22	21 48 36	1478.9	-29.14	18.87
110.00	12 30 49	3877.70	5.90	144.51	38.12	56.27	13 35 27	3277.7	1.43	138.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7504 TRA 5.3930 TC-12.9312 BAU 2.4183 SGT12981.3 SGR 653.8 SG3 1201.9 ST 2835.0 SR 559.0 SS 1477.4
RDE .3640 RRA .0765 RC3 .4263 FAU .20536 RRT -.3156 RRF -.3487 RTF .9934 CRT -.3470 CRS .5782 CST -.9656
FDE-1.5695 FRA 6.1976 FC-12.7165 BSP 45189 SGB12997.8 R23 .0363 R13 -.9934 LSA 3186.5 MSA 615.2 SSA 21.5
BDE .8340 BRA 5.3935 BC312.9382 FSP 4206 SG112982.9 SG2 620.3 THA 179.09 EL1 2841.9 EL2 523.0 ALF 175.95

LAUNCH DATE NOV 10 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 847.054 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.942 GAL -4.91 AZL 88.16 HCA 255.97 SMA 187.79 ECC .22717 INC 1.8357 V1 30.080
RP 209.34 LAP -1.78 LOP 303.60 VP 23.690 GAP -11.38 AZP 90.44 TAL 332.96 TAP 228.93 RCA 145.13 APO 230.45 V2 26.186
RC 312.019 GL 16.10 GP .28 ZAL 129.54 ZAP 40.12 ETS 179.57 ZAE 64.07 ETE 179.63 ZAC 84.60 ETC 257.88 CLP 40.12

PLANETOCENTRIC CONIC

C3 14.368 VHL 3.791 DLA 15.09 RAL 185.77 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 4.554 DPA 8.21 RAP 165.79 ECC 1.2365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 24	2627.10	-26.98	69.33	46.60	98.95	19 9 11	2027.1	-25.46	60.99
90.00	10 26 51	4293.55	3.05	177.20	41.47	61.83	11 38 24	3693.6	-.74	170.57
100.00	19 54 56	2338.35	-28.15	47.86	46.37	100.49	20 33 55	1738.4	-26.41	39.49
100.00	11 40 0	4057.52	4.10	159.27	40.89	60.36	12 47 37	3457.5	.12	152.74
110.00	21 21 27	2067.66	-31.22	26.52	45.58	104.67	21 55 55	1467.7	-28.89	18.09
110.00	12 29 58	3900.98	6.78	145.74	39.23	56.42	13 34 59	3301.0	2.32	139.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8440 TRA 5.6147 TC-12.7612 BAU 2.4526 SGT13133.2 SGR 657.5 SG3 1145.5 ST 2943.6 SR 564.2 SS 1475.5
RDE .3725 RRA .0760 RC3 .4197 FAU .19534 RRT -.3186 RRF -.3524 RTF .9932 CRT -.3775 CRS .5975 CST -.9679
FDE-1.6019 FRA 6.0699 FC-11.7700 BSP 45797 SGB13149.6 R23 .0372 R13 -.9932 LSA 3284.7 MSA 608.7 SSA 21.2
BDE .9225 BRA 5.6152 BC312.7681 FSP 4027 SG113134.9 SG2 623.2 THA 179.08 EL1 2951.6 EL2 521.1 ALF 175.73

LAUNCH DATE NOV 10 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 851.285 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.947 GAL -5.06 AZL 88.16 HCA 257.21 SMA 187.88 ECC .22847 INC 1.8369 V1 30.080
RP 209.14 LAP -1.79 LOP 304.84 VP 23.723 GAP -11.52 AZP 90.41 TAL 332.23 TAP 229.45 RCA 144.95 APO 230.80 V2 26.209
RC 312.950 GL 15.88 GP .28 ZAL 130.55 ZAP 39.33 ETS 179.56 ZAE 62.98 ETE 179.65 ZAC 84.68 ETC 257.83 CLP 39.33

PLANETOCENTRIC CONIC

C3 14.781 VHL 3.845 DLA 14.48 RAL 186.60 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 4.638 DPA 8.02 RAP 166.20 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 16	2611.77	-26.81	68.24	47.67	99.47	19 17 48	2011.8	-25.23	59.93
90.00	10 24 39	4321.45	3.95	178.76	42.59	61.94	11 36 41	3721.4	.17	172.13
100.00	20 3 21	2324.45	-27.97	46.87	47.43	100.99	20 42 6	1724.4	-26.17	38.53
100.00	11 38 15	4084.00	4.99	160.73	42.02	60.49	12 46 19	3484.0	1.02	154.19
110.00	21 28 56	2056.68	-31.03	25.72	46.61	105.11	22 3 13	1456.7	-28.65	17.33
110.00	12 29 9	3924.53	7.67	146.99	40.37	56.59	13 34 34	3324.5	3.22	140.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9412 TRA 5.8426 TC-12.5772 BAU 2.4866 SGT13280.1 SGR 661.1 SG3 1090.9 ST 3054.5 SR 569.3 SS 1471.9
RDE .3813 RRA .0752 RC3 .4130 FAU .18565 RRT -.3220 RRF -.3566 RTF .9929 CRT -.4060 CRS .6158 CST -.9699
FDE-1.6304 FRA 5.9408 FC-10.8741 BSP 46378 SGB13296.5 R23 .0383 R13 -.9930 LSA 3384.9 MSA 602.2 SSA 20.8
BDE 1.0155 BRA 5.8430 BC312.5839 FSP 3851 SG113281.8 SG2 625.8 THA 179.08 EL1 3063.5 EL2 518.8 ALF 175.54

LAUNCH DATE NOV 10 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 855.514 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.953 GAL -5.21 AZL 88.16 HCA 258.45 SMA 187.97 ECC .22983 INC 1.8381 V1 30.080
RP 208.94 LAP -1.80 LOP 306.08 VP 23.755 GAP -11.67 AZP 90.37 TAL 331.49 TAP 229.95 RCA 144.77 APO 231.17 V2 26.232
RC 313.871 GL 15.65 GP .27 ZAL 131.56 ZAP 38.55 ETS 179.55 ZAE 61.91 ETE 179.68 ZAC 84.77 ETC 257.77 CLP 38.55

PLANETOCENTRIC CONIC

C3 15.219 VHL 3.901 DLA 13.86 RAL 187.44 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 4.724 DPA 7.83 RAP 166.63 ECC 1.2505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 3	2596.82	-26.64	67.18	48.75	99.98	19 26 20	1996.8	-24.99	58.90
90.00	10 22 31	4349.48	4.85	180.34	43.75	62.07	11 35 0	3749.5	1.07	173.69
100.00	20 11 43	2310.88	-27.80	45.90	48.50	101.47	20 50 14	1710.9	-25.93	37.59
100.00	11 36 32	4110.65	5.88	162.21	43.18	60.64	12 45 3	3510.7	1.92	155.66
110.00	21 36 23	2045.95	-30.84	24.94	47.66	105.53	22 10 29	1446.0	-28.40	16.59
110.00	12 28 21	3948.34	8.56	148.26	41.54	56.78	13 34 10	3348.3	4.12	141.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0414 TRA 6.0772 TC-12.3795 BAU 2.5202 SGT13422.0 SGR 664.5 SG3 1038.0 ST 3166.9 SR 5743 SS 1466.5
RDE .3903 RRA .0742 RC3 .4060 FAU .17619 RRT -.3257 RRF -.3611 RTF .9927 CRT -.4325 CRS .6328 CST -.9717
FDE-1.6537 FRA 5.8115 FC-10.0224 BSP 46958 SGB13438.4 R23 .0392 R13 -.9927 LSA 3486.3 MSA 595.8 SSA 20.5
BDE 1.1121 BRA 6.0776 BC312.3861 FSP 3683 SG113423.7 SG2 628.2 THA 179.07 EL1 3176.9 EL2 516.2 ALF 175.39

LAUNCH DATE NOV 10 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 859.741 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.958 GAL -5.37 AZL 88.16 HCA 259.70 SMA 188.06 ECC .23124 INC 1.8393 V1 30.080
RP 208.76 LAP -1.81 LOP 307.33 VP 23.786 GAP -11.81 AZP 90.33 TAL 330.74 TAP 230.43 RCA 144.58 APO 231.55 V2 26.254
RC 314.784 GL 15.42 GP .26 ZAL 132.58 ZAP 37.80 ETS 179.53 ZAE 60.86 ETE 179.70 ZAC 84.86 ETC 257.71 CLP 37.80

PLANETOCENTRIC CONIC

C3 15.686 VHL 3.961 DLA 13.25 RAL 188.27 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 4.811 DPA 7.63 RAP 167.08 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 47	2582.26	-26.46	66.15	49.84	100.47	19 34 49	1982.3	-24.75	57.90
90.00	10 20 26	4377.65	5.74	181.92	44.93	62.22	11 33 24	3777.7	1.98	175.26
100.00	20 20 2	2297.65	-27.61	44.96	49.59	101.93	20 58 20	1697.7	-25.69	36.69
100.00	11 34 52	4137.49	6.77	163.70	44.37	60.82	12 43 50	3537.5	2.83	157.13
110.00	21 43 49	2035.51	-30.65	24.19	48.73	105.94	22 17 44	1435.5	-28.16	15.88
110.00	12 27 35	3972.40	9.45	149.55	42.74	57.00	13 33 47	3372.4	5.04	143.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1454 TRA 6.3180 TC-12.1725 BAU 2.5540 SGT13560.3 SGR 667.8 SG3 987.1 ST 3280.9 SR 579.2 SS 1459.4
RDE .3997 RRA .0729 RC3 .3990 FAU .16712 RRT -.3300 RRF -.3663 RTF .9923 CRT -.4574 CRS .6491 CST -.9732
FDE-1.6737 FRA 5.6802 FC3-9.2238 BSP 47510 SGB13576.7 R23 .0404 R13 -.9924 LSA 3589.2 MSA 589.4 SSA 20.1
BDE 1.2131 BRA 6.3184 BC312.1790 FSP 3518 SG113562.1 SG2 630.3 THA 179.07 EL1 3291.9 EL2 513.3 ALF 175.27

LAUNCH DATE NOV 10 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 863.966 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.963 GAL -5.54 AZL 88.16 HCA 260.94 SMA 188.16 ECC .23272 INC 1.8405 V1 30.080
RP 208.58 LAP -1.82 LOP 308.57 VP 23.817 GAP -11.95 AZP 90.29 TAL 329.97 TAP 230.91 RCA 144.37 APO 231.95 V2 26.274
RC 315.690 GL 15.19 GP .26 ZAL 133.60 ZAP 37.07 ETS 179.52 ZAE 59.83 ETE 179.72 ZAC 84.95 ETC 257.65 CLP 37.07

PLANETOCENTRIC CONIC

C3 16.182 VHL 4.023 DLA 12.63 RAL 189.10 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 4.901 DPA 7.42 RAP 167.55 ECC 1.2663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 27	2568.10	-26.28	65.15	50.96	100.94	19 43 15	1968.1	-24.51	56.93
90.00	10 18 24	4405.95	6.64	183.52	46.14	62.41	11 31 50	3806.0	2.89	176.84
100.00	20 28 18	2284.79	-27.43	44.05	50.69	102.38	21 6 22	1684.8	-25.45	35.81
100.00	11 33 15	4164.50	7.67	165.21	45.58	61.02	12 42 39	3564.5	3.74	158.62
110.00	21 51 12	2025.35	-30.45	23.46	49.81	106.33	22 24 58	1425.4	-27.92	15.19
110.00	12 26 49	3996.70	10.35	150.86	43.96	57.24	13 33 26	3396.7	5.96	144.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.2521 TRA 6.5665 TC-11.9531 BAU 2.5874 SGT13694.0 SGR 670.9 SG3 937.8 ST 3395.8 SR 583.9 SS 1450.3
RDE .4093 RRA .0713 RC3 .3918 FAU .15831 RRT -.3345 RRF -.3718 RTF .9920 CRT -.4804 CRS .6642 CST -.9746
FDE-1.6889 FRA 5.5492 FC3-8.4696 BSP 48054 SGB13710.4 R23 .0416 R13 -.9920 LSA 3692.6 MSA 583.2 SSA 19.8
BDE 1.3173 BRA 6.5669 BC311.9596 FSP 3358 SG113695.9 SG2 632.1 THA 179.06 EL1 3407.6 EL2 510.3 ALF 175.17

LAUNCH DATE NOV 10 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 868.187 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.969 GAL -5.71 AZL 88.16 HCA 262.19 SMA 188.26 ECC .23426 INC 1.8417 V1 30.080
RP 208.40 LAP -1.82 LOP 309.82 VP 23.847 GAP -12.10 AZP 90.25 TAL 329.18 TAP 231.37 RCA 144.16 APO 232.36 V2 26.294
RC 316.588 GL 14.95 GP .25 ZAL 134.62 ZAP 36.36 ETS 179.51 ZAE 58.82 ETE 179.75 ZAC 85.06 ETC 257.58 CLP 36.36

PLANETOCENTRIC CONIC

C3 16.710 VHL 4.088 DLA 12.00 RAL 189.93 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 4.992 DPA 7.20 RAP 168.05 ECC 1.2750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 2	2554.36	-26.10	64.19	52.09	101.39	19 51 36	1954.4	-24.27	56.00
90.00	10 16 26	4434.38	7.53	185.13	47.37	62.62	11 30 20	3834.4	3.80	178.43
100.00	20 36 30	2272.29	-27.24	43.17	51.82	102.81	21 14 22	1672.3	-25.21	34.96
100.00	11 31 40	4191.68	8.56	166.73	46.82	61.25	12 41 31	3591.7	4.66	160.12
110.00	21 58 33	2015.50	-30.26	22.76	50.91	106.71	22 32 9	1415.5	-27.68	14.52
110.00	12 26 5	4021.23	11.25	152.19	45.20	57.51	13 33 6	3421.2	6.88	145.81

DIFFERENTIAL CORRECTIONS
TDE-1.3617 TRA 6.8227 TC-11.7251 BAU 2.6208
RDE .4193 RRA .0694 RC3 .3845 FAU .14980
FDE-1.6998 FRA 5.4167 FC3-7.7608 BSP 48600
BDE 1.4248 BRA 6.8231 BC311.7314 FSP 3203

MID-COURSE EXECUTION ACCURACY
SGT13824.5 SGR 673.8 SG3 890.3
RRT -.3395 RRF -.3777 RTF .9916
SGB13840.9 R23 .0429 R13 -.9916
SG113826.4 SG2 635.7 THA 179.05

ORBIT DETERMINATION ACCURACY
ST 3511.1 SR 588.5 SS 1439.1
CRT -.5018 CRS .6785 CST -.9757
LSA 3796.3 MSA 577.2 SSA 19.5
EL1 3523.8 EL2 507.2 ALF 175.09

LAUNCH DATE NOV 10 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 872.404 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.975 GAL -5.88 AZL 88.16 HCA 263.44 SMA 188.36 ECC .23587 INC 1.8429 V1 30.080
RP 208.24 LAP -1.83 LOP 311.07 VP 23.875 GAP -12.25 AZP 90.21 TAL 328.38 TAP 231.82 RCA 143.93 APO 232.78 V2 26.314
RC 317.480 GL 14.70 GP .25 ZAL 135.64 ZAP 35.67 ETS 179.49 ZAE 57.83 ETE 179.77 ZAC 85.16 ETC 257.52 CLP 35.67

PLANETOCENTRIC CONIC

C3 17.272 VHL 4.156 DLA 11.38 RAL 190.76 RAD 6567.7 VEL 11.775 PTH 2.08 VHP 5.085 DPA 6.97 RAP 168.56 ECC 1.2842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 33	2541.03	-25.92	63.25	53.24	101.82	19 59 54	1941.0	-24.03	55.09
90.00	10 14 31	4462.93	8.42	186.76	48.64	62.86	11 28 54	3862.9	4.72	180.03
100.00	20 44 38	2260.18	-27.06	42.31	52.95	103.22	21 22 18	1660.2	-24.97	34.14
100.00	11 30 7	4219.01	9.45	168.27	48.09	61.51	12 40 26	3619.0	5.57	161.63
110.00	22 5 52	2005.98	-30.08	22.08	52.02	107.07	22 39 18	1406.0	-27.45	13.88
110.00	12 25 22	4045.97	12.15	153.54	46.48	57.80	13 32 48	3446.0	7.81	147.13

DIFFERENTIAL CORRECTIONS
TDE-1.4753 TRA 7.0847 TC-11.4914 BAU 2.6549
RDE .4295 RRA .0672 RC3 .3770 FAU .14163
FDE-1.7079 FRA 5.2824 FC3-7.0994 BSP 49095
BDE 1.5365 BRA 7.0850 BC311.4976 FSP 3052

MID-COURSE EXECUTION ACCURACY
SGT13951.1 SGR 676.6 SG3 844.6
RRT -.3449 RRF -.3842 RTF .9912
SGB13967.5 R23 .0444 R13 -.9912
SG113953.1 SG2 635.0 THA 179.04

ORBIT DETERMINATION ACCURACY
ST 3626.7 SR 592.9 SS 1426.4
CRT -.5219 CRS .6923 CST -.9767
LSA 3900.3 MSA 571.2 SSA 19.2
EL1 3640.1 EL2 503.9 ALF 175.03

LAUNCH DATE NOV 10 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 876.616 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.980 GAL -6.06 AZL 88.16 HCA 264.69 SMA 188.45 ECC .23754 INC 1.8441 V1 30.080
RP 208.08 LAP -1.84 LOP 312.32 VP 23.903 GAP -12.40 AZP 90.17 TAL 327.56 TAP 232.25 RCA 143.69 APO 233.22 V2 26.332
RC 318.367 GL 14.46 GP .24 ZAL 136.66 ZAP 35.00 ETS 179.48 ZAE 56.87 ETE 179.79 ZAC 85.28 ETC 257.45 CLP 35.00

PLANETOCENTRIC CONIC

C3 17.869 VHL 4.227 DLA 10.75 RAL 191.58 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 5.180 DPA 6.73 RAP 169.09 ECC 1.2941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 0	2528.14	-25.74	62.35	54.40	102.24	20 8 8	1928.1	-23.79	54.22
90.00	10 12 38	4491.59	9.31	188.40	49.93	63.14	11 27 30	3891.6	5.63	181.65
100.00	20 52 43	2248.47	-26.87	41.49	54.11	103.61	21 30 11	1648.5	-24.73	33.35
100.00	11 28 37	4246.49	10.34	169.83	49.38	61.80	12 39 23	3646.5	6.49	163.16
110.00	22 13 8	1996.79	-29.89	21.43	53.16	107.41	22 46 25	1396.8	-27.22	13.26
110.00	12 24 40	4070.93	13.05	154.91	47.78	58.12	13 32 31	3470.9	8.74	148.46

DIFFERENTIAL CORRECTIONS
TDE-1.5922 TRA 7.3550 TC-11.2482 BAU 2.6885
RDE .4402 RRA .0647 RC3 .3695 FAU .13368
FDE-1.7119 FRA 5.1473 FC3-6.4767 BSP 49594
BDE 1.6519 BRA 7.3552 BC311.2543 FSP 2906

MID-COURSE EXECUTION ACCURACY
SGT14073.3 SGR 679.3 SG3 800.3
RRT -.3506 RRF -.3910 RTF .9997
SGB14089.7 R23 .0459 R13 -.9907
SG114075.3 SG2 636.1 THA 179.03

ORBIT DETERMINATION ACCURACY
ST 3742.5 SR 597.3 SS 1411.6
CRT -.5407 CRS .7053 CST -.9776
LSA 4004.4 MSA 565.4 SSA 18.9
EL1 3756.6 EL2 500.5 ALF 174.98

LAUNCH DATE NOV 10 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 880.823 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 32.986 GAL -6.24 AZL 88.15 HCA 265.94 SMA 188.56 ECC .23929 INC 1.8453 V1 30.080
RP 207.93 LAP -1.84 LOP 313.58 VP 23.930 GAP -12.55 AZP 90.13 TAL 326.72 TAP 232.67 RCA 143.44 APO 233.68 V2 26.349
RC 319.247 GL 14.21 GP .24 ZAL 137.69 ZAP 34.35 ETS 179.46 ZAE 55.91 ETE 179.81 ZAC 85.39 ETC 257.38 CLP 34.35

PLANETOCENTRIC CONIC

C3 18.503 VHL 4.302 DLA 10.13 RAL 192.40 RAD 6567.7 VEL 11.827 PTH 2.09 VHP 5.276 DPA 6.48 RAP 169.64 ECC 1.3045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 22	2515.67	-25.55	61.49	55.58	102.64	20 16 18	1915.7	-23.56	53.38
90.00	10 10 49	4520.37	10.19	190.05	51.25	63.44	11 26 9	3920.4	6.54	183.27
100.00	21 0 44	2237.16	-26.69	40.70	55.28	103.99	21 38 1	1637.2	-24.50	32.58
100.00	11 27 9	4274.12	11.22	171.40	50.70	62.11	12 38 23	3674.1	7.41	164.69
110.00	22 20 22	1987.96	-29.71	20.81	54.31	107.74	22 53 30	1388.0	-27.00	12.67
110.00	12 24 0	4096.08	13.95	156.30	49.11	58.47	13 32 16	3496.1	9.68	149.81

DIFFERENTIAL CORRECTIONS
TDE-1.7124 TRA 7.6326 TC-11.0020 BAU 2.7231
RDE .4511 RRA .0619 RC3 .3619 FAU .12604
FDE-1.7122 FRA 5.0105 FC3-5.8973 BSP 50058
BDE 1.7709 BRA 7.6329 BC311.0079 FSP 2762

MID-COURSE EXECUTION ACCURACY
SGT14193.2 SGR 681.9 SG3 757.7
RRT -.3568 RRF -.3984 RTF .9901
SGB14209.6 R23 .0476 R13 -.9902
SG114195.3 SG2 636.9 THA 179.02

ORBIT DETERMINATION ACCURACY
ST 3857.8 SR 601.4 SS 1394.8
CRT -.5583 CRS .7177 CST -.9783
LSA 4108.0 MSA 559.7 SSA 18.6
EL1 3872.6 EL2 497.1 ALF 174.94

LAUNCH DATE NOV 10 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 15 1965

DISTANCE 885.023

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 32.992 GAL -6.43 AZL 88.15 HCA 267.20 SMA 188.66 ECC .24111 INC 1.8464 V1 30.080
RP 207.79 LAP -1.84 LOP 314.83 VP 23.956 GAP -12.70 AZP 90.09 TAL 325.87 TAP 233.07 RCA 143.17 APO 234.15 V2 26.366
RC 320.122 GL 13.96 GP .23 ZAL 138.70 ZAP 33.71 ETS 179.45 ZAE 54.98 ETE 179.83 ZAC 85.52 ETC 257.31 CLP 33.71

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.178 VHL 4.379 DLA 9.50 RAL 193.22 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 5.375 DPA 6.22 RAP 170.21 ECC 1.3156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 40	2503.65	-25.37	60.65	56.77	103.02	20 24 24	1903.7	-23.33	52.58
90.00	10 9 3	4549.25	11.06	191.72	52.59	63.77	11 24 52	3949.3	7.45	184.91
100.00	21 8 40	2226.26	-26.51	39.94	56.47	104.35	21 45 47	1626.3	-24.27	31.85
100.00	11 25 43	4301.88	12.10	173.00	52.05	62.46	12 37 25	3701.9	8.32	166.25
110.00	22 27 32	1979.48	-29.53	20.21	55.47	108.05	23 0 32	1379.5	-26.78	12.10
110.00	12 23 21	4121.43	14.85	157.72	50.47	58.85	13 32 2	3521.4	10.61	151.17

DIFFERENTIAL CORRECTIONS

TDE-1.8365 TRA 7.9181 TC-10.7511 BAU 2.7563
RDE .4624 RRA .0587 RC3 .3542 FAU .11866
FDE-1.7093 FRA 4.8719 FC3-5.3564 BSP 50505
BDE 1.8938 BRA 7.9183 BC310.7569 FSP 2623

MID-COURSE EXECUTION ACCURACY

SGT14309.8 SGR 684.3 SG3 716.5
RRT -.3633 RRF -.4062 RTF .9895
SGB14326.1 R23 .0494 R13 -.9896
SG114311.9 SG2 637.4 THA 179.00

ORBIT DETERMINATION ACCURACY

ST 3972.7 SR 605.5 SS 1376.1
CRT -.5748 CRS .7296 CST -.9788
LSA 4211.3 MSA 554.0 SSA 18.3
EL1 3988.1 EL2 493.5 ALF 174.92

LAUNCH DATE NOV 10 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 17 1965

DISTANCE 889.217

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 32.998 GAL -6.63 AZL 88.15 HCA 268.45 SMA 188.76 ECC .24301 INC 1.8476 V1 30.080
RP 207.66 LAP -1.85 LOP 316.09 VP 23.982 GAP -12.86 AZP 90.05 TAL 325.01 TAP 233.46 RCA 142.89 APO 234.64 V2 26.381
RC 320.992 GL 13.70 GP .23 ZAL 139.72 ZAP 33.10 ETS 179.43 ZAE 54.06 ETE 179.85 ZAC 85.64 ETC 257.24 CLP 33.10

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.896 VHL 4.460 DLA 8.88 RAL 194.03 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 5.476 DPA 5.96 RAP 170.80 ECC 1.3274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 53	2492.08	-25.19	59.85	57.99	103.38	20 32 25	1892.1	-23.10	51.81
90.00	10 7 19	4578.24	11.93	193.41	53.97	64.13	11 23 37	3978.2	8.35	186.56
100.00	21 16 33	2215.78	-26.33	39.22	57.67	104.69	21 53 29	1615.8	-24.05	31.16
100.00	11 24 20	4329.77	12.98	174.61	53.43	62.83	12 36 29	3729.8	9.23	167.82
110.00	22 34 39	1971.37	-29.36	19.64	56.65	108.35	23 7 31	1371.4	-26.57	11.57
110.00	12 22 43	4146.95	15.74	159.15	51.85	59.26	13 31 50	3546.9	11.55	152.56

DIFFERENTIAL CORRECTIONS

TDE-1.9639 TRA 8.2113 TC-10.4961 BAU 2.7934
RDE .4740 RRA .0551 RC3 .3464 FAU .11153
FDE-1.7030 FRA 4.7321 FC3-4.8531 BSP 50932
BDE 2.0203 BRA 8.2115 BC310.5019 FSP 2488

MID-COURSE EXECUTION ACCURACY

SGT14422.5 SGR 686.6 SG3 676.9
RRT -.3702 RRF -.4145 RTF .9889
SGB14438.8 R23 .0514 R13 -.9889
SG114424.7 SG2 637.7 THA 178.99

ORBIT DETERMINATION ACCURACY

ST 4086.6 SR 609.3 SS 1355.6
CRT -.5903 CRS .7409 CST -.9793
LSA 4313.7 MSA 548.5 SSA 18.1
EL1 4102.6 EL2 489.9 ALF 174.90

LAUNCH DATE NOV 10 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 19 1965

DISTANCE 893.402

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.004 GAL -6.83 AZL 88.15 HCA 269.71 SMA 188.87 ECC .24500 INC 1.8488 V1 30.080
RP 207.54 LAP -1.85 LOP 317.35 VP 24.006 GAP -13.02 AZP 90.01 TAL 324.12 TAP 233.84 RCA 142.60 APO 235.14 V2 26.396
RC 321.856 GL 13.45 GP .22 ZAL 140.73 ZAP 32.50 ETS 179.41 ZAE 53.16 ETE 179.87 ZAC 85.77 ETC 257.17 CLP 32.50

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.659 VHL 4.545 DLA 8.26 RAL 194.84 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 5.579 DPA 5.69 RAP 171.40 ECC 1.3400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 2	2480.96	-25.01	59.09	59.22	103.72	20 40 23	1881.0	-22.88	51.07
90.00	10 5 38	4607.31	12.79	195.12	55.37	64.52	11 22 25	4007.3	9.25	188.22
100.00	21 24 22	2205.72	-26.15	38.52	58.89	105.02	22 1 8	1605.7	-23.83	30.49
100.00	11 22 58	4357.79	13.84	176.24	54.84	63.24	12 35 36	3757.8	10.14	169.40
110.00	22 41 43	1963.64	-29.19	19.10	57.85	108.63	23 14 27	1363.6	-26.37	11.05
110.00	12 22 6	4172.63	16.63	160.61	53.27	59.70	13 31 39	3572.6	12.48	153.96

DIFFERENTIAL CORRECTIONS

TDE-2.0957 TRA 8.5124 TC-10.2397 BAU 2.8297
RDE .4869 RRA .0511 RC3 .3386 FAU .10466
FDE-1.6940 FRA 4.5903 FC3-4.3861 BSP 51326
BDE 2.1513 BRA 8.5125 BC310.2453 FSP 2356

MID-COURSE EXECUTION ACCURACY

SGT14532.4 SGR 688.8 SG3 638.7
RRT -.3775 RRF -.4233 RTF .9881
SGB14548.7 R23 .0535 R13 -.9882
SG114534.8 SG2 637.7 THA 178.97

ORBIT DETERMINATION ACCURACY

ST 4199.7 SR 613.1 SS 1333.4
CRT -.6050 CRS .7520 CST -.9797
LSA 4415.5 MSA 543.1 SSA 17.8
EL1 4216.3 EL2 486.2 ALF 174.88

LAUNCH DATE NOV 10 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 21 1965

DISTANCE 897.579

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.010 GAL -7.04 AZL 88.15 HCA 270.97 SMA 188.98 ECC .24707 INC 1.8499 V1 30.080
RP 207.42 LAP -1.85 LOP 318.61 VP 24.029 GAP -13.18 AZP 89.97 TAL 323.23 TAP 234.20 RCA 142.29 APO 235.66 V2 26.409
RC 322.714 GL 13.19 GP .22 ZAL 141.74 ZAP 31.92 ETS 179.40 ZAE 52.28 ETE 179.89 ZAC 85.91 ETC 257.11 CLP 31.92

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.470 VHL 4.634 DLA 7.63 RAL 195.65 RAD 6567.9 VEL 11.952 PTH 2.13 VHP 5.685 DPA 5.41 RAP 172.02 ECC 1.3533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 6	2470.30	-24.84	58.35	60.46	104.05	20 48 16	1870.3	-22.66	50.36
90.00	10 3 59	4636.48	13.63	196.84	56.81	64.94	11 21 16	4036.5	10.14	189.90
100.00	21 32 7	2196.10	-25.98	37.86	60.13	105.33	22 8 43	1596.1	-23.62	29.85
100.00	11 21 39	4385.91	14.70	177.89	56.28	63.67	12 34 45	3785.9	11.04	171.00
110.00	22 48 44	1956.30	-29.03	18.59	59.07	108.89	23 21 21	1356.3	-26.18	10.57
110.00	12 21 31	4198.48	17.51	162.10	54.71	60.16	13 31 30	3598.5	13.41	155.39

DIFFERENTIAL CORRECTIONS

TDE-2.2301 TRA 8.8222 TC3-9.9808 BAU 2.8664
RDE .4984 RRA .0467 RC3 .3308 FAU .09801
FDE-1.6815 FRA 4.4468 FC3-3.9521 BSP 51691
BDE 2.2851 BRA 8.8223 BC3 9.9863 FSP 2226

MID-COURSE EXECUTION ACCURACY

SGT14638.9 SGR 690.8 SG3 601.8
RRT -.3850 RRF -.4325 RTF .9873
SGB14655.2 R23 .0559 R13 -.9874
SG114641.3 SG2 637.4 THA 178.96

ORBIT DETERMINATION ACCURACY

ST 4310.9 SR 616.6 SS 1309.2
CRT -.6186 CRS .7625 CST -.9799
LSA 4515.4 MSA 537.9 SSA 17.5
EL1 4328.0 EL2 482.6 ALF 174.88

LAUNCH DATE NOV 10 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 901.745 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.016 GAL -7.25 AZL 88.15 HCA 272.23 SMA 189.08 ECC .24922 INC 1.8511 V1 30.080
RP 207.31 LAP -1.85 LOP 319.87 VP 24.051 GAP -13.35 AZP 89.93 TAL 322.31 TAP 234.54 RCA 141.96 APO 236.21 V2 26.422
RC 323.566 GL 12.94 GP .22 ZAL 142.75 ZAP 31.35 ETS 179.38 ZAE 51.41 ETE 179.91 ZAC 86.05 ETC 257.04 CLP 31.35

PLANETOCENTRIC CONIC

C3 22.333 VHL 4.726 DLA 7.02 RAL 196.45 RAD 6567.9 VEL 11.988 PTH 2.14 VHP 5.792 DPA 5.12 RAP 172.66 ECC 1.3675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 5	2460.09	-24.67	57.65	61.72	104.36	20 56 5	1860.1	-22.45	49.68
90.00	10 2 23	4665.73	14.47	198.58	58.27	65.39	11 20 9	4065.7	11.03	191.59
100.00	21 39 47	2186.92	-25.81	37.22	61.38	105.62	22 16 14	1586.9	-23.42	29.24
100.00	11 20 22	4414.14	15.54	179.56	57.74	64.14	12 33 57	3814.1	11.94	172.62
110.00	22 55 42	1949.35	-28.88	18.11	60.30	109.14	23 28 11	1349.3	-25.99	10.11
110.00	12 20 57	4224.47	18.39	163.61	56.19	60.66	13 31 22	3624.5	14.34	156.83

DIFFERENTIAL CORRECTIONS
TDE-2.3690 TRA 9.1409 TC3-9.7205 BAU 2.9038
RDE .5112 RRA .0419 RC3 .3229 FAU .09158
FDE-1.6660 FRA 4.3015 FC3-3.5500 BSP 52037
BDE 2.4235 BRA 9.1410 BC3 9.7258 FSP 2101

MID-COURSE EXECUTION ACCURACY
SGT14742.5 SGR 692.7 SG3 566.2
RRT -.3929 RRF -.4421 RTF .9864
SGB14758.8 R23 .0585 R13 -.9865
SG114745.0 SG2 636.9 THA 178.94

ORBIT DETERMINATION ACCURACY
ST 4421.2 SR 620.0 SS 1283.2
CRT -.6315 CRS .7728 CST -.9800
LSA 4614.6 MSA 532.7 SSA 17.3
EL1 4438.7 EL2 478.8 ALF 174.88

LAUNCH DATE NOV 10 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 905.901 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.022 GAL -7.47 AZL 88.15 HCA 273.49 SMA 189.19 ECC .25147 INC 1.8523 V1 30.080
RP 207.21 LAP -1.85 LOP 321.13 VP 24.073 GAP -13.52 AZP 89.89 TAL 321.38 TAP 234.87 RCA 141.62 APO 236.77 V2 26.434
RC 324.413 GL 12.68 GP .21 ZAL 143.75 ZAP 30.80 ETS 179.36 ZAE 50.56 ETE 179.93 ZAC 86.20 ETC 256.97 CLP 30.80

PLANETOCENTRIC CONIC

C3 23.250 VHL 4.822 DLA 6.40 RAL 197.24 RAD 6567.9 VEL 12.026 PTH 2.15 VHP 5.902 DPA 4.82 RAP 173.31 ECC 1.3826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 0	2450.35	-24.50	56.99	63.00	104.65	21 3 50	1850.3	-22.25	49.04
90.00	10 0 50	4695.05	15.29	200.34	59.76	65.88	11 19 5	4095.1	11.91	193.30
100.00	21 47 23	2178.17	-25.65	36.63	62.65	105.90	22 23 41	1578.2	-23.22	28.67
100.00	11 19 8	4442.46	16.38	181.25	59.24	64.64	12 33 10	3842.5	12.83	174.25
110.00	23 2 36	1942.79	-28.73	17.65	61.55	109.37	23 34 58	1342.8	-25.82	9.69
110.00	12 20 24	4250.59	19.25	165.14	57.70	61.19	13 31 15	3650.6	15.26	158.30

DIFFERENTIAL CORRECTIONS
TDE-2.5107 TRA 9.4677 TC3-9.4615 BAU 2.9425
RDE .5243 RRA .0367 RC3 .3151 FAU .08536
FDE-1.6471 FRA 4.1537 FC3-3.1786 BSP 52371
BDE 2.5649 BRA 9.4678 BC3 9.4667 FSP 1980

MID-COURSE EXECUTION ACCURACY
SGT14842.9 SGR 694.6 SG3 531.9
RRT -.4011 RRF -.4521 RTF .9854
SGB14859.1 R23 .0613 R13 -.9854
SG114845.5 SG2 636.1 THA 178.92

ORBIT DETERMINATION ACCURACY
ST 4528.8 SR 623.2 SS 1255.2
CRT -.6436 CRS .7826 CST -.9800
LSA 4711.2 MSA 527.6 SSA 17.0
EL1 4546.7 EL2 475.1 ALF 174.88

LAUNCH DATE NOV 10 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 910.044 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.028 GAL -7.70 AZL 88.15 HCA 274.76 SMA 189.30 ECC .25382 INC 1.8535 V1 30.080
RP 207.12 LAP -1.85 LOP 322.40 VP 24.093 GAP -13.70 AZP 89.85 TAL 320.43 TAP 235.19 RCA 141.26 APO 237.35 V2 26.444
RC 325.253 GL 12.42 GP .21 ZAL 144.75 ZAP 30.27 ETS 179.34 ZAE 49.72 ETE 179.94 ZAC 86.34 ETC 256.90 CLP 30.27

PLANETOCENTRIC CONIC

C3 24.225 VHL 4.922 DLA 5.79 RAL 198.04 RAD 6568.0 VEL 12.067 PTH 2.16 VHP 6.014 DPA 4.52 RAP 173.98 ECC 1.3987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 50	2441.06	-24.34	56.36	64.29	104.93	21 11 31	1841.1	-22.06	48.43
90.00	9 59 19	4724.44	16.10	202.12	61.28	66.39	11 18 3	4124.4	12.77	195.02
100.00	21 54 55	2169.86	-25.50	36.06	63.94	106.16	22 31 5	1569.9	-23.04	28.12
100.00	11 17 55	4470.88	17.20	182.96	60.77	65.17	12 32 26	3870.9	13.70	175.91
110.00	23 9 26	1936.64	-28.59	17.23	62.82	109.59	23 41 43	1336.6	-25.65	9.28
110.00	12 19 53	4276.86	20.10	166.70	59.23	61.75	13 31 10	3676.9	16.17	159.78

DIFFERENTIAL CORRECTIONS
TDE-2.6579 TRA 9.8028 TC3-9.2047 BAU 2.9828
RDE .5379 RRA .0310 RC3 .3073 FAU .07938
FDE-1.6259 FRA 4.0040 FC3-2.8368 BSP 52616
BDE 2.7118 BRA 9.8029 BC3 9.2098 FSP 1859

MID-COURSE EXECUTION ACCURACY
SGT14941.0 SGR 696.3 SG3 498.8
RRT -.4097 RRF -.4627 RTF .9842
SGB14957.2 R23 .0644 R13 -.9843
SG114943.7 SG2 635.1 THA 178.90

ORBIT DETERMINATION ACCURACY
ST 4635.5 SR 626.3 SS 1225.8
CRT -.6553 CRS .7923 CST -.9799
LSA 4807.2 MSA 522.4 SSA 16.8
EL1 4653.8 EL2 471.2 ALF 174.89

LAUNCH DATE NOV 10 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 914.174 EARTH TO MARS

RL 148.13 LAL .00 LOL 47.64 VL 33.034 GAL -7.94 AZL 88.15 HCA 276.02 SMA 189.42 ECC .25626 INC 1.8547 V1 30.080
RP 207.04 LAP -1.84 LOP 323.66 VP 24.112 GAP -13.88 AZP 89.81 TAL 319.47 TAP 235.49 RCA 140.88 APO 237.96 V2 26.454
RC 326.088 GL 12.16 GP .21 ZAL 145.74 ZAP 29.75 ETS 179.32 ZAE 48.89 ETE 179.96 ZAC 86.50 ETC 256.83 CLP 29.75

PLANETOCENTRIC CONIC

C3 25.263 VHL 5.026 DLA 5.18 RAL 198.82 RAD 6568.0 VEL 12.109 PTH 2.17 VHP 6.129 DPA 4.20 RAP 174.66 ECC 1.4158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 35	2432.24	-24.19	55.76	65.60	105.19	21 19 7	1832.2	-21.87	47.85
90.00	9 57 50	4753.90	16.90	203.91	62.83	66.93	11 17 4	4153.9	13.63	196.76
100.00	22 2 22	2161.99	-25.35	35.52	65.24	106.40	22 38 24	1562.0	-22.86	27.61
100.00	11 16 44	4499.37	18.00	184.69	62.32	65.73	12 31 43	3899.4	14.57	177.58
110.00	23 16 13	1930.89	-28.46	16.84	64.10	109.79	23 48 24	1330.9	-25.50	8.91
110.00	12 19 23	4303.24	20.95	168.28	60.80	62.35	13 31 6	3703.2	17.08	161.29

DIFFERENTIAL CORRECTIONS
TDE-2.8084 TRA10.1482 TC3-8.9473 BAU 3.0235
RDE .5518 RRA .0248 RC3 .2995 FAU .07356
FDE-1.6016 FRA 3.8522 FC3-2.5210 BSP 52870
BDE 2.8621 BRA10.1482 BC3 8.9523 FSP 1743

MID-COURSE EXECUTION ACCURACY
SGT15035.6 SGR 697.9 SG3 466.9
RRT -.4185 RRF -.4736 RTF .9829
SGB15051.8 R23 .0678 R13 -.9830
SG115038.5 SG2 633.8 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 4739.8 SR 629.2 SS 1194.6
CRT -.6662 CRS .8017 CST -.9797
LSA 4901.0 MSA 517.4 SSA 16.5
EL1 4758.4 EL2 467.4 ALF 174.90

LAUNCH DATE NOV 10 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 31 1965

DISTANCE 918.289

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.041 GAL -8.18 AZL 88.14 HCA 277.29 SMA 189.53 ECC .25882 INC 1.8559 V1 30.080
RP 206.96 LAP -1.84 LOP 324.93 VP 24.130 GAP -14.06 AZP 89.76 TAL 318.49 TAP 235.78 RCA 140.48 APO 238.58 V2 26.463
RC 326.917 GL 11.90 GP .20 ZAL 146.72 ZAP 29.25 ETS 179.30 ZAE 48.09 ETE 179.98 ZAC 86.65 ETC 256.76 CLP 29.25

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 26.366 VHL 5.135 DLA 4.58 RAL 199.61 RAD 6568.1 VEL 12.155 PTH 2.18 VHP 6.246 DPA 3.89 RAP 175.35 ECC 1.4339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 16	2423.87	-24.04	55.19	66.92	105.44	21 26 40	1823.9	-21.68	47.31
90.00	9 56 23	4783.41	17.68	205.73	64.41	67.51	11 16 7	4183.4	14.47	198.52
100.00	22 9 46	2154.56	-25.20	35.02	66.55	106.63	22 45 40	1554.6	-22.68	27.12
100.00	11 15 35	4527.94	18.79	186.44	63.91	66.32	12 31 3	3927.9	15.43	179.26
110.00	23 22 56	1925.55	-28.33	16.47	65.39	109.97	23 55 2	1325.5	-25.35	8.56
110.00	12 18 54	4329.72	21.77	169.89	62.40	62.97	13 31 4	3729.7	17.98	162.82

DIFFERENTIAL CORRECTIONS

TDE-2.9631 TRA10.5024 TC3-8.6936 BAU 3.0661
RDE .5662 RRA .0182 RC3 .2917 FAU .06794
FDE-1.5742 FRA 3.6981 FC3-2.2308 BSP 53075
BDE 3.0167 BRA10.5024 BC3 8.6985 FSP 1631

MID-COURSE EXECUTION ACCURACY

SGT15127.9 SGR 699.5 SG3 436.0
RRT -.4275 RRF -.4849 RTF .9814
SGB15144.1 R23 .0714 R13 -.9815
SG115130.9 SG2 632.2 THA 178.87

ORBIT DETERMINATION ACCURACY

ST 4841.7 SR 631.8 SS 1161.6
CRT -.6765 CRS .8109 CST -.9794
LSA 4992.8 MSA 512.4 SSA 16.3
EL1 4860.7 EL2 463.5 ALF 174.91

LAUNCH DATE NOV 10 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 2 1966

DISTANCE 922.389

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.047 GAL -8.43 AZL 88.14 HCA 278.55 SMA 189.64 ECC .26148 INC 1.8570 V1 30.080
RP 206.89 LAP -1.84 LOP 326.20 VP 24.148 GAP -14.25 AZP 89.72 TAL 317.49 TAP 236.04 RCA 140.06 APO 239.23 V2 26.471
RC 327.742 GL 11.65 GP .20 ZAL 147.70 ZAP 28.76 ETS 179.28 ZAE 47.29 ETE 179.99 ZAC 86.82 ETC 256.69 CLP 28.76

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 27.540 VHL 5.248 DLA 3.98 RAL 200.38 RAD 6568.1 VEL 12.203 PTH 2.19 VHP 6.366 DPA 3.56 RAP 176.06 ECC 1.4532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 53	2415.95	-23.89	54.65	68.26	105.67	21 34 9	1815.9	-21.51	46.79
90.00	9 54 59	4812.97	18.44	207.57	66.01	68.12	11 15 12	4213.0	15.30	200.29
100.00	22 17 5	2147.57	-25.07	34.54	67.89	106.84	22 52 52	1547.6	-22.52	26.67
100.00	11 14 28	4556.58	19.57	188.22	65.52	66.94	12 30 25	3956.6	16.28	180.97
110.00	23 29 36	1920.61	-28.22	16.13	66.71	110.14	24 1 37	1320.6	-25.21	8.24
110.00	12 18 26	4356.30	22.59	171.53	64.03	63.63	13 31 3	3756.3	18.86	164.37

DIFFERENTIAL CORRECTIONS

TDE-3.1223 TRA10.8664 TC3-8.4423 BAU 3.1101
RDE .5809 RRA .0110 RC3 .2840 FAU .06249
FDE-1.5443 FRA 3.5415 FC3-1.9644 BSP 53242
BDE 3.1758 BRA10.8664 BC3 8.4471 FSP 1521

MID-COURSE EXECUTION ACCURACY

SGT15217.3 SGR 700.9 SG3 406.3
RRT -.4369 RRF -.4967 RTF .9797
SGB15233.4 R23 .0755 R13 -.9798
SG115220.4 SG2 630.4 THA 178.85

ORBIT DETERMINATION ACCURACY

ST 4941.7 SR 634.3 SS 1127.1
CRT -.6864 CRS .8199 CST -.9789
LSA 5082.8 MSA 507.4 SSA 16.1
EL1 4961.0 EL2 459.5 ALF 174.92

LAUNCH DATE NOV 10 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 4 1966

DISTANCE 926.470

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.054 GAL -8.68 AZL 88.14 HCA 279.82 SMA 189.76 ECC .26425 INC 1.8583 V1 30.080
RP 206.84 LAP -1.83 LOP 327.46 VP 24.164 GAP -14.45 AZP 89.68 TAL 316.48 TAP 236.30 RCA 139.62 APO 239.91 V2 26.477
RC 328.562 GL 11.39 GP .20 ZAL 148.67 ZAP 28.29 ETS 179.27 ZAE 46.51 ETE 180.01 ZAC 86.98 ETC 256.63 CLP 28.29

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 28.789 VHL 5.366 DLA 3.38 RAL 201.16 RAD 6568.2 VEL 12.254 PTH 2.20 VHP 6.489 DPA 3.23 RAP 176.78 ECC 1.4738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 25	2408.48	-23.75	54.15	69.61	105.89	21 41 33	1808.5	-21.35	46.31
90.00	9 53 37	4842.56	19.18	209.42	67.65	68.76	11 14 20	4242.6	16.12	202.08
100.00	22 24 20	2141.01	-24.93	34.10	69.23	107.04	23 0 1	1541.0	-22.36	26.24
100.00	11 13 23	4585.27	20.32	190.01	67.16	67.59	12 29 48	3985.3	17.11	182.70
110.00	23 36 12	1916.06	-28.11	15.82	68.03	110.30	24 8 8	1316.1	-25.09	7.95
110.00	12 18 0	4382.97	23.38	173.19	65.69	64.33	13 31 3	3783.0	19.74	165.95

DIFFERENTIAL CORRECTIONS

TDE-3.2843 TRA11.2415 TC3-8.1932 BAU 3.1552
RDE .5961 RRA .0033 RC3 .2764 FAU .05719
FDE-1.5111 FRA 3.3828 FC3-1.7199 BSP 53411
BDE 3.3380 BRA11.2415 BC3 8.1979 FSP 1415

MID-COURSE EXECUTION ACCURACY

SGT15303.9 SGR 702.3 SG3 377.6
RRT -.4464 RRF -.5088 RTF .9777
SGB15320.0 R23 .0800 R13 -.9778
SG115307.1 SG2 628.3 THA 178.82

ORBIT DETERMINATION ACCURACY

ST 5038.3 SR 636.6 SS 1090.8
CRT -.6956 CRS .8288 CST -.9783
LSA 5169.8 MSA 502.5 SSA 15.8
EL1 5057.8 EL2 455.6 ALF 174.94

LAUNCH DATE NOV 10 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 6 1966

DISTANCE 930.533

HELIOCENTRIC CONIC

RL 148.13 LAL .00 LOL 47.64 VL 33.060 GAL -8.95 AZL 88.14 HCA 281.09 SMA 189.88 ECC .26715 INC 1.8595 V1 30.080
RP 206.79 LAP -1.82 LOP 328.73 VP 24.179 GAP -14.65 AZP 89.64 TAL 315.45 TAP 236.54 RCA 139.15 APO 240.60 V2 26.483
RC 329.378 GL 11.13 GP .19 ZAL 149.64 ZAP 27.83 ETS 179.25 ZAE 45.75 ETE 180.02 ZAC 87.15 ETC 256.56 CLP 27.83

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 30.118 VHL 5.488 DLA 2.79 RAL 201.92 RAD 6568.2 VEL 12.308 PTH 2.22 VHP 6.615 DPA 2.89 RAP 177.52 ECC 1.4957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 52	2401.45	-23.62	53.68	70.98	106.09	21 48 54	1801.4	-21.19	45.85
90.00	9 52 18	4872.19	19.90	211.30	69.32	69.43	11 13 30	4272.2	16.92	203.89
100.00	22 31 31	2134.88	-24.81	33.68	70.59	107.23	23 7 6	1534.9	-22.22	25.85
100.00	11 12 20	4614.00	21.06	191.83	68.84	68.28	12 29 14	4014.0	17.92	184.44
110.00	23 42 45	1911.92	-28.01	15.54	69.37	110.44	24 14 37	1311.9	-24.97	7.68
110.00	12 17 35	4409.72	24.16	174.88	67.39	65.05	13 31 5	3809.7	20.60	167.55

DIFFERENTIAL CORRECTIONS

TDE-3.4512 TRA11.6257 TC3-7.9484 BAU 3.2023
RDE .6117 RRA -.0049 RC3 .2688 FAU .05205
FDE-1.4753 FRA 3.2211 FC3-1.4961 BSP 53505
BDE 3.5050 BRA11.6257 BC3 7.9529 FSP 1311

MID-COURSE EXECUTION ACCURACY

SGT15387.0 SGR 703.5 SG3 349.9
RRT -.4561 RRF -.5213 RTF .9754
SGB15403.1 R23 .0850 R13 -.9755
SG115390.4 SG2 625.9 THA 178.80

ORBIT DETERMINATION ACCURACY

ST 5132.4 SR 638.7 SS 1053.1
CRT -.7044 CRS .8375 CST -.9776
LSA 5254.6 MSA 497.6 SSA 15.6
EL1 5152.2 EL2 451.6 ALF 174.95

LAUNCH DATE NOV 11 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 441.753 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	35.143	GAL	-6.80	AZL	88.12	HCA	141.19	SMA	238.12	ECC	.39366	INC	1.8758
RP	244.80	LAP	1.18	LOP	189.84	VP	22.956	GAP	23.13	AZP	91.46	TAL	335.70	TAP	116.88	RCA	144.38	APO	331.86
RC	127.239	GL	10.62	GP	-.07	ZAL	127.35	ZAP	173.02	ETS	179.28	ZAE	156.07	ETE	357.29	ZAC	88.25	ETC	256.15

V1	30.087	V2	22.407	CLP	173.02														

PLANETOCENTRIC CONIC

C3	38.410	VHL	6.198	DLA	11.02	RAL	181.30	RAD	6568.5	VEL	12.640	PTH	2.29	VHP	10.373	DPA	.03	RAP	183.14
ECC	1.6321																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 50	2725.36	-27.82	76.40	58.43	95.51	19 24 15	2125.4	-26.77	67.89
90.00	9 29 55	4670.91	14.62	198.89	51.44	65.48	10 47 46	4070.9	11.19	191.89
100.00	20 5 42	2445.19	-29.23	55.62	58.26	96.55	20 46 28	1845.2	-28.02	47.03
100.00	10 45 44	4426.32	15.90	180.28	50.82	64.35	11 59 30	3826.3	12.32	173.32
110.00	21 26 29	2192.43	-33.00	35.81	57.64	99.45	22 3 1	1592.4	-31.35	26.97
110.00	11 41 27	4251.81	19.29	165.22	48.99	61.22	12 52 19	3651.8	15.30	158.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1036	TRA	-2.6835	TC3	.6713	BAU	.3468	SGT	2849.9	SGR	445.1	SG3	224.0	ST	1271.4	SR	419.6	SS	641.4
RDE	-.4522	RRA	-.1304	RC3	-.0736	FAU	.06627	RRT	-.1512	RRF	.1350	RTF	-.8737	CRT	-.7471	CRS	-.6088	CST	.9808
FDE	-.5228	FRA	1.8576	FC3	-1.4936	BSP	9629	SGB	2884.4	R23	.0003	R13	.8737	LSA	1452.9	MSA	303.8	SSA	28.9
BDE	1.1926	BRA	2.6867	BC3	.6753	FSP	617	SG1	2850.7	SG2	439.9	THA	178.61	EL1	1311.3	EL2	270.5	ALF	165.52

LAUNCH DATE NOV 11 1964 FLIGHT TIME 168.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 443.945 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	35.040	GAL	-6.61	AZL	88.12	HCA	142.09	SMA	235.08	ECC	.38519	INC	1.8767
RP	244.57	LAP	1.15	LOP	190.75	VP	22.820	GAP	22.54	AZP	91.48	TAL	336.00	TAP	118.10	RCA	144.53	APO	325.64
RC	129.306	GL	10.86	GP	-.07	ZAL	126.88	ZAP	172.55	ETS	179.26	ZAE	155.80	ETE	357.48	ZAC	88.35	ETC	256.13

V1	30.087	V2	22.429	CLP	172.55														

PLANETOCENTRIC CONIC

C3	36.620	VHL	6.051	DLA	11.42	RAL	180.99	RAD	6568.4	VEL	12.569	PTH	2.28	VHP	10.142	DPA	-.16	RAP	183.53
ECC	1.6027																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 21	2726.40	-27.83	76.47	57.38	95.47	19 19 47	2126.4	-26.78	67.96
90.00	9 31 56	4645.75	13.90	197.39	50.35	65.08	10 49 22	4045.7	10.43	190.43
100.00	20 1 27	2445.48	-29.23	55.64	57.21	96.54	20 42 12	1845.5	-28.02	47.05
100.00	10 47 31	4401.90	15.18	178.83	49.72	63.93	12 0 53	3801.9	11.55	171.92
110.00	21 22 44	2191.12	-32.99	35.71	56.60	99.51	21 59 15	1591.1	-31.33	26.88
110.00	11 42 43	4229.02	18.54	163.87	47.88	60.75	12 53 12	3629.0	14.50	157.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0834	TRA	-2.6556	TC3	.7289	BAU	.3588	SGT	2900.0	SGR	437.5	SG3	235.1	ST	1282.6	SR	412.5	SS	650.7
RDE	-.4340	RRA	-.1221	RC3	-.0769	FAU	.06812	RRT	-.1584	RRF	.1419	RTF	-.8781	CRT	-.7454	CRS	-.6020	CST	.9797
FDE	-.5235	FRA	1.8972	FC3	-1.6103	BSP	9810	SGB	2932.9	R23	.0004	R13	.8781	LSA	1465.0	MSA	302.5	SSA	29.0
BDE	1.1671	BRA	2.6584	BC3	.7329	FSP	652	SG1	2900.9	SG2	431.9	THA	178.60	EL1	1320.5	EL2	267.0	ALF	165.93

LAUNCH DATE NOV 11 1964 FLIGHT TIME 170.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 446.246 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	34.942	GAL	-6.42	AZL	88.12	HCA	143.00	SMA	232.25	ECC	.37706	INC	1.8776
RP	244.34	LAP	1.13	LOP	191.66	VP	22.691	GAP	21.96	AZP	91.50	TAL	336.32	TAP	119.32	RCA	144.68	APO	319.82
RC	131.411	GL	11.10	GP	-.07	ZAL	126.40	ZAP	172.08	ETS	179.24	ZAE	155.58	ETE	357.66	ZAC	88.44	ETC	256.11

V1	30.087	V2	22.451	CLP	172.08														

PLANETOCENTRIC CONIC

C3	34.936	VHL	5.911	DLA	11.82	RAL	180.67	RAD	6568.4	VEL	12.502	PTH	2.26	VHP	9.917	DPA	-.34	RAP	183.92
ECC	1.5750																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 42	2727.98	-27.84	76.59	56.34	95.41	19 15 10	2128.0	-26.79	68.07
90.00	9 34 1	4620.38	13.17	195.89	49.26	64.70	10 51 1	4020.4	9.65	188.97
100.00	19 57 3	2446.28	-29.24	55.70	56.17	96.51	20 37 49	1846.3	-28.03	47.11
100.00	10 49 21	4377.31	14.44	177.38	48.62	63.54	12 2 18	3777.3	10.77	170.51
110.00	21 18 52	2190.26	-32.98	35.64	55.56	99.54	21 55 22	1590.3	-31.31	26.82
110.00	11 44 1	4206.09	17.77	162.54	46.77	60.31	12 54 7	3606.1	13.68	155.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0624	TRA	-2.6274	TC3	.7897	BAU	.3707	SGT	2950.1	SGR	429.8	SG3	246.7	ST	1292.6	SR	405.1	SS	659.7
RDE	-.4164	RRA	-.1141	RC3	-.0803	FAU	.07006	RRT	-.1658	RRF	.1491	RTF	-.8823	CRT	-.7435	CRS	-.5949	CST	.9785
FDE	-.5236	FRA	1.9374	FC3	-1.7362	BSP	10001	SGB	2981.2	R23	.0003	R13	.8823	LSA	1476.0	MSA	301.2	SSA	29.1
BDE	1.1411	BRA	2.6299	BC3	.7937	FSP	689	SG1	2951.0	SG2	423.7	THA	178.59	EL1	1328.7	EL2	263.5	ALF	166.34

LAUNCH DATE NOV 11 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 448.649 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	34.847	GAL	-6.24	AZL	88.12	HCA	143.91	SMA	229.60	ECC	.36926	INC	1.8785
RP	244.11	LAP	1.11	LOP	192.57	VP	22.568	GAP	21.38	AZP	91.52	TAL	336.64	TAP	120.55	RCA	144.82	APO	314.38
RC	133.550	GL	11.34	GP	-.08	ZAL	125.90	ZAP	171.59	ETS	179.22	ZAE	155.42	ETE	357.84	ZAC	88.53	ETC	256.09

V1	30.087	V2	22.475	CLP	171.59														

PLANETOCENTRIC CONIC

C3	33.348	VHL	5.775	DLA	12.23	RAL	180.33	RAD	6568.3	VEL	12.439	PTH	2.25	VHP	9.697	DPA	-.52	RAP	184.30
ECC	1.5488																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 53	2730.14	-27.85	76.74	55.30	95.34	19 10 23	2130.1	-26.82	68.23
90.00	9 36 8	4594.75	12.42	194.38	48.18	64.35	10 52 43	3994.8	8.86	187.50
100.00	19 52 29	2447.62	-29.25	55.80	55.13	96.46	20 33 17	1847.6	-28.05	47.20
100.00	10 51 13	4352.51	13.68	175.93	47.54	63.16	12 3 46	3752.5	9.97	169.10
110.00	21 14 52	2189.87	-32.98	35.61	54.52	99.56	21 51 21	1589.9	-31.31	26.79
110.00	11 45 20	4183.02	16.99	161.21	45.68	59.88	12 55 3	3583.0	12.86	154.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0552	TRA	-2.5843	TC3	.8710	BAU	.3901	SGT	2998.6	SGR	422.3	SG3	258.7	ST	1310.1	SR	397.8	SS	666.9
RDE	-.3996	RRA	-.1067	RC3	-.0842	FAU	.07192	RRT	-.1807	RRF	.1550	RTF	-.8897	CRT	-.7475	CRS	-.5833	CST	.9743
FDE	-.5189	FRA	1.9819	FC3	-1.8672	BSP	9847	SGB	3028.2	R23	.0090	R13	.8897	LSA	1492.4	MSA	302.0	SSA	28.5
BDE	1.1283	BRA	2.5865	BC3	.8751	FSP	736	SG1	2999.6	SG2	415.2	THA	178.51	EL1	1344.8	EL2	257.4	ALF	166.72

LAUNCH DATE NOV 11 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 451.143 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.757 GAL -6.06 AZL 88.12 HCA 144.82 SMA 227.12 ECC .36178 INC 1.8794 V1 30.087
RP 243.87 LAP 1.08 LOP 193.48 VP 22.452 GAP 20.80 AZP 91.54 TAL 336.97 TAP 121.79 RCA 144.95 APO 309.29 V2 22.498
RC 135.719 GL 11.59 GP -.08 ZAL 125.39 ZAP 171.10 ETS 179.20 ZAE 155.30 ETE 358.00 ZAC 88.61 ETC 256.07 CLP 171.10

PLANETOCENTRIC CONIC

C3 31.857 VHL 5.644 DLA 12.65 RAL 179.99 RAD 6568.3 VEL 12.379 PTH 2.23 VHP 9.482 DPA -.70 RAP 184.68 ECC 1.5243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 56	2732.83	-27.87	76.94	54.26	95.24	19 5 29	2132.8	-26.85	68.42
90.00	9 38 19	4569.02	11.65	192.87	47.11	64.01	10 54 28	3969.0	8.06	186.03
100.00	19 47 48	2449.46	-29.26	55.93	54.10	96.39	20 28 38	1849.5	-28.07	47.33
100.00	10 53 9	4327.62	12.91	174.48	46.47	62.80	12 5 16	3727.6	9.16	167.70
110.00	21 10 45	2189.93	-32.98	35.62	53.50	99.56	21 47 15	1589.9	-31.31	26.79
110.00	11 46 41	4159.92	16.19	159.89	44.60	59.48	12 56 1	3559.9	12.02	153.27

DIFFERENTIAL CORRECTIONS
TDE 1.0264 TRA-2.5617 TC3 .9310 BAU .3983
RDE -.3828 RRA -.0990 RC3 -.0876 FAU .07418
FDE -.5198 FRA 2.0208 FC3-2.0158 BSP 10193
BDE 1.0955 BRA 2.5636 BC3 .9351 FSP 772

MID-COURSE EXECUTION ACCURACY
SGT 3048.5 SGR 414.0 SG3 271.5
RRT -.1857 RRF .1642 RTF -.8919
SGB 3076.4 R23 .0045 R13 .8919
SG1 3049.4 SG2 406.7 THA 178.53

ORBIT DETERMINATION ACCURACY
ST 1313.7 SR 389.8 SS 676.1
CRT -.7425 CRS -.5775 CST .9744
LSA 1498.0 MSA 300.0 SSA 28.9
EL1 1346.5 EL2 254.8 ALF 167.10

LAUNCH DATE NOV 11 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 453.722 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.670 GAL -5.89 AZL 88.12 HCA 145.73 SMA 224.80 ECC .35460 INC 1.8805 V1 30.087
RP 243.63 LAP 1.06 LOP 194.39 VP 22.341 GAP 20.23 AZP 91.55 TAL 337.30 TAP 123.03 RCA 145.09 APO 304.52 V2 22.522
RC 137.915 GL 11.83 GP -.08 ZAL 124.87 ZAP 170.60 ETS 179.19 ZAE 155.22 ETE 358.15 ZAC 88.70 ETC 256.05 CLP 170.60

PLANETOCENTRIC CONIC

C3 30.454 VHL 5.519 DLA 13.08 RAL 179.63 RAD 6568.2 VEL 12.322 PTH 2.22 VHP 9.273 DPA -.87 RAP 185.06 ECC 1.5012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 50	2736.11	-27.89	77.18	53.24	95.12	19 0 26	2136.1	-26.89	68.65
90.00	9 40 34	4543.09	10.88	191.37	46.06	63.69	10 56 17	3943.1	7.25	184.56
100.00	19 42 59	2451.86	-29.28	56.11	53.08	96.30	20 23 50	1851.9	-28.10	47.50
100.00	10 55 7	4302.58	12.13	173.04	45.41	62.47	12 6 49	3702.6	8.34	166.29
110.00	21 6 31	2190.46	-32.98	35.66	52.48	99.54	21 43 1	1590.5	-31.32	26.83
110.00	11 48 3	4136.74	15.39	158.58	43.53	59.09	12 57 0	3536.7	11.18	152.00

DIFFERENTIAL CORRECTIONS
TDE 1.0001 TRA-2.5356 TC3 .9971 BAU .4077
RDE -.3666 RRA -.0917 RC3 -.0912 FAU .07646
FDE -.5184 FRA 2.0617 FC3-2.1737 BSP 10472
BDE 1.0652 BRA 2.5373 BC3 1.0013 FSP 813

MID-COURSE EXECUTION ACCURACY
SGT 3097.4 SGR 405.6 SG3 284.9
RRT -.1925 RRF .1731 RTF -.8947
SGB 3123.8 R23 .0021 R13 .8947
SG1 3098.4 SG2 397.9 THA 178.53

ORBIT DETERMINATION ACCURACY
ST 1317.8 SR 381.8 SS 684.3
CRT -.7385 CRS -.5697 CST .9735
LSA 1503.5 MSA 298.6 SSA 29.2
EL1 1348.8 EL2 251.5 ALF 167.48

LAUNCH DATE NOV 11 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 456.380 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.586 GAL -5.72 AZL 88.12 HCA 146.65 SMA 222.63 ECC .34771 INC 1.8816 V1 30.087
RP 243.38 LAP 1.03 LOP 195.30 VP 22.237 GAP 19.66 AZP 91.57 TAL 337.64 TAP 124.28 RCA 145.22 APO 300.04 V2 22.547
RC 140.134 GL 12.08 GP -.09 ZAL 124.33 ZAP 170.09 ETS 179.17 ZAE 155.19 ETE 358.30 ZAC 88.79 ETC 256.04 CLP 170.09

PLANETOCENTRIC CONIC

C3 29.133 VHL 5.397 DLA 13.51 RAL 179.26 RAD 6568.2 VEL 12.268 PTH 2.21 VHP 9.067 DPA -1.05 RAP 185.43 ECC 1.4794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 34	2739.99	-27.91	77.46	52.21	94.98	18 55 14	2140.0	-26.93	68.93
90.00	9 42 52	4516.99	10.08	189.86	45.02	63.40	10 58 9	3917.0	6.43	183.08
100.00	19 38 0	2454.81	-29.30	56.33	52.06	96.18	20 18 55	1854.8	-28.14	47.72
100.00	10 57 7	4277.40	11.33	171.59	44.36	62.15	12 8 25	3677.4	7.51	164.88
110.00	21 2 9	2191.48	-32.99	35.73	51.47	99.49	21 38 41	1591.5	-31.33	26.90
110.00	11 49 27	4113.49	14.57	157.27	42.48	58.73	12 58 1	3513.5	10.32	150.74

DIFFERENTIAL CORRECTIONS
TDE .9758 TRA-2.5067 TC3 1.0695 BAU .4182
RDE -.3509 RRA -.0846 RC3 -.0948 FAU .07884
FDE -.5155 FRA 2.1038 FC3-2.3428 BSP 10685
BDE 1.0370 BRA 2.5081 BC3 1.0737 FSP 857

MID-COURSE EXECUTION ACCURACY
SGT 3145.7 SGR 397.2 SG3 298.9
RRT -.2010 RRF .1823 RTF -.8979
SGB 3170.7 R23 .0010 R13 .8979
SG1 3146.7 SG2 389.0 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 1322.2 SR 373.6 SS 691.9
CRT -.7354 CRS -.5607 CST .9721
LSA 1509.0 MSA 297.7 SSA 29.3
EL1 1351.5 EL2 247.7 ALF 167.85

LAUNCH DATE NOV 11 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 459.111 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.507 GAL -5.55 AZL 88.12 HCA 147.56 SMA 220.58 ECC .34110 INC 1.8827 V1 30.087
RP 243.12 LAP 1.01 LOP 196.22 VP 22.138 GAP 19.10 AZP 91.59 TAL 337.98 TAP 125.54 RCA 145.34 APO 295.83 V2 22.572
RC 142.373 GL 12.34 GP -.09 ZAL 123.78 ZAP 169.58 ETS 179.16 ZAE 155.20 ETE 358.44 ZAC 88.87 ETC 256.02 CLP 169.58

PLANETOCENTRIC CONIC

C3 27.889 VHL 5.281 DLA 13.96 RAL 178.87 RAD 6568.1 VEL 12.217 PTH 2.20 VHP 8.867 DPA -1.22 RAP 185.79 ECC 1.4590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 9	2744.47	-27.94	77.78	51.20	94.82	18 49 54	2144.5	-26.97	69.25
90.00	9 45 14	4490.72	9.28	188.35	43.99	63.13	11 0 5	3890.7	5.60	181.60
100.00	19 32 53	2458.32	-29.33	56.58	51.05	96.05	20 13 51	1858.3	-28.18	47.97
100.00	10 59 12	4252.06	10.52	170.15	43.33	61.86	12 10 4	3652.1	6.68	163.47
110.00	20 57 41	2192.98	-33.01	35.85	50.46	99.43	21 34 14	1593.0	-31.36	27.01
110.00	11 50 53	4090.20	13.74	155.97	41.44	58.39	12 59 3	3490.2	9.46	149.49

DIFFERENTIAL CORRECTIONS
TDE .9518 TRA-2.4762 TC3 1.1463 BAU .4290
RDE -.3357 RRA -.0779 RC3 -.0986 FAU .08130
FDE -.5111 FRA 2.1471 FC3-2.5238 BSP 10880
BDE 1.0093 BRA 2.4774 BC3 1.1506 FSP 904

MID-COURSE EXECUTION ACCURACY
SGT 3193.0 SGR 388.7 SG3 313.6
RRT -.2105 RRF .1918 RTF -.9012
SGB 3216.6 R23 .0006 R13 .9012
SG1 3194.1 SG2 379.9 THA 178.51

ORBIT DETERMINATION ACCURACY
ST 1325.7 SR 365.2 SS 699.0
CRT -.7324 CRS -.5505 CST .9703
LSA 1513.3 MSA 297.2 SSA 29.3
EL1 1353.3 EL2 243.6 ALF 168.21

LAUNCH DATE NOV 11 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 461.910 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.430 GAL -5.39 AZL 88.12 HCA 148.48 SMA 218.66 ECC .33476 INC 1.8839 V1 30.087
RP 242.87 LAP .98 LOP 197.14 VP 22.045 GAP 18.54 AZP 91.61 TAL 338.32 TAP 126.80 RCA 145.46 APO 291.86 V2 22.598
RC 144.629 GL 12.59 GP -.10 ZAL 123.21 ZAP 169.05 ETS 179.15 ZAE 155.26 ETE 358.58 ZAC 88.95 ETC 256.00 CLP 169.05

PLANETOCENTRIC CONIC

C3 26.718 VHL 5.169 DLA 14.41 RAL 178.48 RAD 6568.1 VEL 12.169 PTH 2.18 VHP 8.671 DPA -1.39 RAP 186.14 ECC 1.4397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 34	2749.56	-27.97	78.15	50.19	94.64	18 44 24	2149.6	-27.03	69.61
90.00	9 47 40	4464.29	8.46	186.83	42.98	62.88	11 2 5	3864.3	4.76	180.11
100.00	19 27 37	2462.41	-29.36	56.88	50.05	95.90	20 8 39	1862.4	-28.23	48.26
100.00	11 1 19	4226.67	9.70	168.71	42.32	61.59	12 11 46	3626.7	5.83	162.06
110.00	20 53 5	2194.98	-33.03	36.00	49.47	99.34	21 29 40	1595.0	-31.39	27.16
110.00	11 52 20	4066.87	12.91	154.68	40.42	58.07	13 0 7	3466.9	8.59	148.24

DIFFERENTIAL CORRECTIONS
TDE .9275 TRA-2.4455 TC3 1.2269 BAU .4398
RDE -.3209 RRA -.0713 RC3 -.1024 FAU .08388
FDE -.5051 FRA 2.1915 FC3-2.7180 BSP 11065
BDE .9814 BRA 2.4466 BC3 1.2312 FSP 955

MID-COURSE EXECUTION ACCURACY
SGT 3240.2 SGR 380.0 SG3 329.0
RRT -.2205 RRF .2017 RTF -.9045
SGB 3262.4 R23 .0004 R13 .9045
SG1 3241.3 SG2 370.6 THA 178.50

ORBIT DETERMINATION ACCURACY
ST 1327.9 SR 356.6 SS 705.5
CRT -.7292 CRS -.5391 CST .9681
LSA 1516.3 MSA 297.1 SSA 29.2
EL1 1354.0 EL2 239.3 ALF 168.56

LAUNCH DATE NOV 11 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 464.771 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.356 GAL -5.23 AZL 88.11 HCA 149.40 SMA 216.86 ECC .32867 INC 1.8852 V1 30.087
RP 242.60 LAP .96 LOP 198.06 VP 21.957 GAP 17.98 AZP 91.62 TAL 338.67 TAP 128.07 RCA 145.58 APO 288.13 V2 22.624
RC 146.900 GL 12.85 GP -.10 ZAL 122.64 ZAP 168.52 ETS 179.14 ZAE 155.36 ETE 358.71 ZAC 89.03 ETC 255.99 CLP 168.52

PLANETOCENTRIC CONIC

C3 25.616 VHL 5.061 DLA 14.86 RAL 178.07 RAD 6568.0 VEL 12.124 PTH 2.17 VHP 8.479 DPA -1.55 RAP 186.49 ECC 1.4216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 50	2755.28	-28.00	78.57	49.19	94.43	18 38 45	2155.3	-27.09	70.02
90.00	9 50 11	4437.72	7.63	185.32	41.98	62.65	11 4 8	3837.7	3.91	178.62
100.00	19 22 12	2467.07	-29.39	57.23	49.05	95.72	20 3 19	1867.1	-28.29	48.60
100.00	11 3 30	4201.16	8.87	167.27	41.32	61.34	12 13 31	3601.2	4.98	160.64
110.00	20 48 22	2197.47	-33.06	36.19	48.49	99.23	21 24 59	1597.5	-31.43	27.34
110.00	11 53 49	4043.53	12.06	153.40	39.41	57.77	13 1 13	3443.5	7.72	147.00

DIFFERENTIAL CORRECTIONS
TDE .9033 TRA-2.4135 TC3 1.3110 BAU .4505
RDE -.3066 RRA -.0650 RC3 -.1063 FAU .08658
FDE -.4983 FRA 2.2365 FC3-2.9262 BSP 11239
BDE .9539 BRA 2.4144 BC3 1.3153 FSP 1007

MID-COURSE EXECUTION ACCURACY
SGT 3285.9 SGR 371.3 SG3 345.1
RRT -.2314 RRF .2123 RTF -.9076
SGB 3306.9 R23 .0003 R13 .9076
SG1 3287.1 SG2 361.1 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 1329.0 SR 347.9 SS 711.7
CRT -.7261 CRS -.5271 CST .9657
LSA 1518.1 MSA 297.2 SSA 29.1
EL1 1353.6 EL2 234.9 ALF 168.90

LAUNCH DATE NOV 11 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 467.691 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.286 GAL -5.07 AZL 88.11 HCA 150.32 SMA 215.16 ECC .32284 INC 1.8866 V1 30.087
RP 242.34 LAP .93 LOP 198.98 VP 21.874 GAP 17.43 AZP 91.64 TAL 339.03 TAP 129.35 RCA 145.70 APO 284.62 V2 22.651
RC 149.184 GL 13.11 GP -.11 ZAL 122.05 ZAP 167.98 ETS 179.13 ZAE 155.50 ETE 358.84 ZAC 89.11 ETC 255.98 CLP 167.98

PLANETOCENTRIC CONIC

C3 24.579 VHL 4.958 DLA 15.32 RAL 177.66 RAD 6568.0 VEL 12.081 PTH 2.16 VHP 8.292 DPA -1.71 RAP 186.84 ECC 1.4045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 56	2761.63	-28.03	79.03	48.20	94.20	18 32 58	2161.6	-27.15	70.47
90.00	9 52 46	4411.00	6.80	183.80	41.00	62.44	11 6 17	3811.0	3.05	177.13
100.00	19 16 39	2472.32	-29.43	57.61	48.07	95.52	19 57 51	1872.3	-28.35	48.97
100.00	11 5 44	4175.55	8.03	165.83	40.33	61.11	12 15 20	3575.5	4.12	159.23
110.00	20 43 32	2200.45	-33.09	36.42	47.52	99.10	21 20 12	1600.5	-31.48	27.56
110.00	11 55 20	4020.18	11.21	152.13	38.42	57.49	13 2 20	3420.2	6.84	145.76

DIFFERENTIAL CORRECTIONS
TDE .8793 TRA-2.3808 TC3 1.3996 BAU .4613
RDE -.2927 RRA -.0590 RC3 -.1102 FAU .08943
FDE -.4903 FRA 2.2821 FC3-3.1500 BSP 11400
BDE .9267 BRA 2.3815 BC3 1.4039 FSP 1063

MID-COURSE EXECUTION ACCURACY
SGT 3331.2 SGR 362.5 SG3 362.0
RRT -.2433 RRF .2237 RTF -.9107
SGB 3350.9 R23 .0004 R13 .9108
SG1 3332.4 SG2 351.5 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 1329.2 SR 339.0 SS 717.4
CRT -.7230 CRS -.5144 CST .9630
LSA 1518.9 MSA 297.8 SSA 28.9
EL1 1352.3 EL2 230.2 ALF 169.24

LAUNCH DATE NOV 11 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 470.665 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 34.218 GAL -4.92 AZL 88.11 HCA 151.25 SMA 213.55 ECC .31723 INC 1.8879 V1 30.087
RP 242.06 LAP .91 LOP 199.90 VP 21.796 GAP 16.88 AZP 91.66 TAL 339.38 TAP 130.63 RCA 145.81 APO 281.30 V2 22.678
RC 151.478 GL 13.37 GP -.11 ZAL 121.45 ZAP 167.42 ETS 179.13 ZAE 155.67 ETE 358.97 ZAC 89.19 ETC 255.96 CLP 167.42

PLANETOCENTRIC CONIC

C3 23.603 VHL 4.858 DLA 15.79 RAL 177.23 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 8.109 DPA -1.87 RAP 187.17 ECC 1.3885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 52	2768.63	-28.06	79.54	47.22	93.95	18 27 1	2168.6	-27.22	70.97
90.00	9 55 25	4384.13	5.95	182.29	40.04	62.26	11 8 30	3784.1	2.19	175.62
100.00	19 10 57	2478.16	-29.46	58.04	47.09	95.29	19 52 15	1878.2	-28.42	49.40
100.00	11 8 2	4149.85	7.18	164.39	39.37	60.91	12 17 12	3549.8	3.25	157.81
110.00	20 38 35	2203.94	-33.13	36.68	46.56	98.95	21 15 19	1603.9	-31.54	27.82
110.00	11 56 53	3996.83	10.35	150.86	37.44	57.24	13 3 30	3396.8	5.96	144.52

DIFFERENTIAL CORRECTIONS
TDE .8565 TRA-2.3459 TC3 1.4939 BAU .4728
RDE -.2793 RRA -.0532 RC3 -.1142 FAU .09241
FDE -.4807 FRA 2.3289 FC3-3.3894 BSP 11503
BDE .9009 BRA 2.3465 BC3 1.4983 FSP 1120

MID-COURSE EXECUTION ACCURACY
SGT 3375.5 SGR 353.6 SG3 379.7
RRT -.2567 RRF .2356 RTF -.9141
SGB 3394.0 R23 .0015 R13 .9141
SG1 3376.7 SG2 341.7 THA 178.44

ORBIT DETERMINATION ACCURACY
ST 1329.0 SR 330.0 SS 722.8
CRT -.7206 CRS -.5003 CST .9595
LSA 1519.0 MSA 299.1 SSA 28.5
EL1 1350.7 EL2 225.1 ALF 169.56

LAUNCH DATE NOV 11 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 20 1965

DISTANCE 473.690

HELIOCENTRIC CONIC EARTH TO MARS

```
RL  148.09 LAL    .00 LOL  48.64 VL  34.153 GAL  -4.78 AZL  88.11 HCA 152.17 SMA 212.04 ECC .31186 INC 1.8894 V1  30.087
RP  241.79 LAP    .88 LOP 200.83 VP  21.723 GAP  16.34 AZP  91.67 TAL 339.74 TAP 131.91 RCA 145.91 APO 278.17 V2  22.706
RC 153.781 GL   13.63 GP    -.12 ZAL 120.85 ZAP 166.86 ETS 179.12 ZAE 155.89 ETE 359.09 ZAC  89.26 ETC 255.95 CLP 166.86
```

PLANETOCENTRIC CONIC

```
C3  22.685 VHL  4.763 DLA  16.26 RAL 176.80 RAD 6567.9 VEL 12.003 PTH   2.14 VHP  7.929 DPA  -2.03 RAP 187.50 ECC 1.3733
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 39	2776.28	-28.10	80.09	46.25	93.67	18 20 55	2176.3	-27.29	71.52
90.00	9 58 10	4357.15	5.09	180.77	39.09	62.11	11 10 47	3757.2	1.32	174.12
100.00	19 5 6	2484.58	-29.50	58.52	46.13	95.05	19 46 31	1884.6	-28.49	49.86
100.00	11 10 24	4124.08	6.33	162.96	38.42	60.72	12 19 8	3524.1	2.38	156.40
110.00	20 33 32	2207.91	-33.17	36.99	45.61	98.77	21 10 20	1607.9	-31.61	28.11
110.00	11 58 28	3973.51	9.49	149.61	36.49	57.01	13 4 41	3373.5	5.08	143.30

DIFFERENTIAL CORRECTIONS

```
TDE  .8291 TRA-2.3149 TC3 1.5839 BAU  .4817
RDE -.2661 RRA -.0475 RC3 -.1181 FAU .09555
FDE -.4701 FRA 2.3760 FC3-3.6465 BSP  11719
BDE  .8708 BRA 2.3154 BC3 1.5882 FSP   1181
```

MID-COURSE EXECUTION ACCURACY

```
SGT 3418.5 SGR  344.5 SG3  398.3
RRT -.2687 RRF  .2485 RTF -.9164
SGB 3435.8 R23  .0001 R13  .9164
SG1 3419.7 SG2  331.7 THA 178.43
```

ORBIT DETERMINATION ACCURACY

```
ST  1324.4 SR   320.7 SS   727.8
CRT -.7156 CRS -.4857 CST  .9567
LSA 1515.2 MSA  299.8 SSA   28.4
EL1 1344.7 EL2  220.6 ALF 169.89
```

LAUNCH DATE NOV 11 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 22 1965

DISTANCE 476.763

HELIOCENTRIC CONIC EARTH TO MARS

```
RL  148.09 LAL    .00 LOL  48.64 VL  34.091 GAL  -4.63 AZL  88.11 HCA 153.10 SMA 210.61 ECC .30671 INC 1.8910 V1  30.087
RP  241.51 LAP    .86 LOP 201.76 VP  21.654 GAP  15.80 AZP  91.69 TAL 340.10 TAP 133.20 RCA 146.01 APO 275.21 V2  22.734
RC 156.092 GL   13.89 GP    -.12 ZAL 120.23 ZAP 166.28 ETS 179.12 ZAE 156.14 ETE 359.20 ZAC  89.33 ETC 255.94 CLP 166.28
```

PLANETOCENTRIC CONIC

```
C3  21.821 VHL  4.671 DLA  16.74 RAL 176.35 RAD 6567.9 VEL 11.967 PTH   2.13 VHP  7.754 DPA  -2.18 RAP 187.82 ECC 1.3591
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 16	2784.58	-28.13	80.70	45.29	93.37	18 14 41	2184.6	-27.37	72.12
90.00	10 1 0	4330.03	4.22	179.24	38.17	61.97	11 13 10	3730.0	.44	172.61
100.00	18 59 7	2491.60	-29.54	59.03	45.18	94.78	19 40 39	1891.6	-28.57	50.37
100.00	11 12 50	4098.24	5.46	161.52	37.49	60.57	12 21 8	3498.2	1.50	154.98
110.00	20 28 22	2212.39	-33.22	37.33	44.67	98.57	21 5 14	1612.4	-31.68	28.44
110.00	12 0 5	3950.22	8.63	148.36	35.55	56.79	13 5 55	3350.2	4.20	142.07

DIFFERENTIAL CORRECTIONS

```
TDE  .8037 TRA-2.2815 TC3 1.6808 BAU  .4916
RDE -.2534 RRA -.0420 RC3 -.1221 FAU .09884
FDE -.4578 FRA 2.4244 FC3-3.9213 BSP  11881
BDE  .8427 BRA 2.2819 BC3 1.6852 FSP   1245
```

MID-COURSE EXECUTION ACCURACY

```
SGT 3460.8 SGR  335.4 SG3  417.8
RRT -.2827 RRF  .2622 RTF -.9191
SGB 3477.0 R23 -.0000 R13  .9191
SG1 3462.1 SG2  321.6 THA 178.42
```

ORBIT DETERMINATION ACCURACY

```
ST  1320.0 SR   311.3 SS   732.5
CRT -.7117 CRS -.4698 CST  .9531
LSA 1511.4 MSA  301.5 SSA   28.1
EL1 1339.0 EL2  215.6 ALF 170.22
```

LAUNCH DATE NOV 11 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 24 1965

DISTANCE 479.881

HELIOCENTRIC CONIC EARTH TO MARS

```
RL  148.09 LAL    .00 LOL  48.64 VL  34.032 GAL  -4.49 AZL  88.11 HCA 154.03 SMA 209.26 ECC .30176 INC 1.8927 V1  30.087
RP  241.22 LAP    .83 LOP 202.69 VP  21.591 GAP  15.27 AZP  91.70 TAL 340.46 TAP 134.50 RCA 146.11 APO 272.41 V2  22.762
RC 158.408 GL   14.15 GP    -.13 ZAL 119.60 ZAP 165.70 ETS 179.12 ZAE 156.43 ETE 359.32 ZAC  89.40 ETC 255.93 CLP 165.70
```

PLANETOCENTRIC CONIC

```
C3  21.008 VHL  4.583 DLA  17.23 RAL 175.90 RAD 6567.9 VEL 11.933 PTH   2.12 VHP  7.583 DPA  -2.33 RAP 188.13 ECC 1.3457
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 43	2793.57	-28.17	81.36	44.34	93.05	18 8 17	2193.6	-27.45	72.76
90.00	10 3 56	4302.74	3.35	177.72	37.26	61.87	11 15 38	3702.7	-.44	171.08
100.00	18 52 59	2499.24	-29.59	59.60	44.23	94.48	19 34 38	1899.2	-28.65	50.92
100.00	11 15 20	4072.30	4.60	160.09	36.57	60.43	12 23 13	3472.3	.62	153.55
110.00	20 23 5	2217.36	-33.27	37.71	43.75	98.35	21 0 2	1617.4	-31.76	28.80
110.00	12 1 44	3926.95	7.76	147.12	34.63	56.60	13 7 11	3326.9	3.31	140.85

DIFFERENTIAL CORRECTIONS

```
TDE  .7836 TRA-2.2421 TC3 1.7902 BAU  .5041
RDE -.2412 RRA -.0369 RC3 -.1263 FAU .10228
FDE -.4439 FRA 2.4740 FC3-4.2149 BSP  11900
BDE  .8199 BRA 2.2424 BC3 1.7947 FSP   1313
```

MID-COURSE EXECUTION ACCURACY

```
SGT 3501.9 SGR  326.6 SG3  438.2
RRT -.3005 RRF  .2767 RTF -.9226
SGB 3517.1 R23  .0029 R13  .9226
SG1 3503.3 SG2  311.4 THA 178.38
```

ORBIT DETERMINATION ACCURACY

```
ST  1317.9 SR   301.9 SS   736.8
CRT -.7107 CRS -.4526 CST  .9475
LSA 1508.9 MSA  305.4 SSA   27.3
EL1 1335.7 EL2  209.6 ALF 170.52
```

LAUNCH DATE NOV 11 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 26 1965

DISTANCE 483.039

HELIOCENTRIC CONIC EARTH TO MARS

```
RL  148.09 LAL    .00 LOL  48.64 VL  33.974 GAL  -4.36 AZL  88.11 HCA 154.97 SMA 207.98 ECC .29702 INC 1.8946 V1  30.087
RP  240.93 LAP    .80 LOP 203.62 VP  21.531 GAP  14.74 AZP  91.72 TAL 340.83 TAP 135.79 RCA 146.21 APO 269.76 V2  22.791
RC 160.729 GL   14.41 GP    -.14 ZAL 118.97 ZAP 165.10 ETS 179.12 ZAE 156.76 ETE 359.43 ZAC  89.46 ETC 255.92 CLP 165.10
```

PLANETOCENTRIC CONIC

```
C3  20.244 VHL  4.499 DLA  17.71 RAL 175.44 RAD 6567.8 VEL 11.901 PTH   2.11 VHP  7.415 DPA  -2.48 RAP 188.43 ECC 1.3332
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 1	2803.21	-28.20	82.06	43.40	92.69	18 1 44	2203.2	-27.53	73.46
90.00	10 6 57	4275.37	2.47	176.19	36.37	61.78	11 18 12	3675.4	-1.32	169.56
100.00	18 46 44	2507.46	-29.63	60.21	43.31	94.17	19 28 31	1907.5	-28.73	51.52
100.00	11 17 55	4046.35	3.72	158.66	35.68	60.32	12 25 22	3446.3	-.26	152.13
110.00	20 17 42	2222.81	-33.32	38.12	42.84	98.11	20 54 45	1622.8	-31.84	29.21
110.00	12 3 26	3903.77	6.89	145.89	33.72	56.43	13 8 30	3303.8	2.43	139.64

DIFFERENTIAL CORRECTIONS

```
TDE  .7512 TRA-2.2141 TC3 1.8800 BAU  .5100
RDE -.2290 RRA -.0317 RC3 -.1300 FAU .10586
FDE -.4274 FRA 2.5252 FC3-4.5272 BSP  12190
BDE  .7853 BRA 2.2143 BC3 1.8845 FSP   1385
```

MID-COURSE EXECUTION ACCURACY

```
SGT 3540.8 SGR  317.1 SG3  459.5
RRT -.3132 RRF  .2919 RTF -.9241
SGB 3555.0 R23 -.0005 R13  .9242
SG1 3542.2 SG2  301.0 THA 178.38
```

ORBIT DETERMINATION ACCURACY

```
ST  1306.2 SR   292.0 SS   740.7
CRT -.7025 CRS -.4334 CST  .9443
LSA 1498.4 MSA  306.8 SSA   27.2
EL1 1322.6 EL2  205.2 ALF 170.85
```

LAUNCH DATE NOV 11 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 486.237 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	33.919	GAL	-4.22	AZL	88.10	HCA	155.90	SMA	206.78	ECC	.29248	INC	1.8964
RP	240.64	LAP	.77	LOP	204.56	VP	21.476	GAP	14.22	AZP	91.73	TAL	341.19	TAP	137.09	RCA	146.30	APO	267.26
RC	163.052	GL	14.68	GP	-.15	ZAL	118.33	ZAP	164.49	ETS	179.12	ZAE	157.12	ETE	359.54	ZAC	89.53	ETC	255.91

V1	30.087	V2	22.821	CLP	164.49
V1	30.087	V2	22.881	CLP	163.23
V1	30.087	V2	22.912	CLP	162.57

PLANETOCENTRIC CONIC

C3	19.525	VHL	4.419	DLA	18.20	RAL	174.97	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	7.251	DPA	-2.62	RAP	188.72
C3	18.848	VHL	4.341	DLA	18.69	RAL	174.49	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	7.090	DPA	-2.76	RAP	189.00
C3	18.212	VHL	4.268	DLA	19.18	RAL	174.01	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	6.933	DPA	-2.90	RAP	189.27
C3	17.614	VHL	4.197	DLA	19.68	RAL	173.52	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	6.779	DPA	-3.03	RAP	189.53

ECC	1.3213	ECC	1.3102	ECC	1.2997	ECC	1.2899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 8	2833.55	-28.23	82.81	42.48	92.32	17 55 2	2213.6	-27.61	74.20
90.00	10 10 5	4247.82	1.58	174.65	35.50	61.72	11 20 53	3647.8	-2.21	168.02
100.00	18 40 19	2516.30	-29.67	60.86	42.39	93.83	19 22 15	1916.3	-28.82	52.16
100.00	11 20 35	4020.31	2.84	157.22	34.80	60.23	12 27 36	3420.3	-1.14	150.70
110.00	20 12 13	2228.74	-33.38	38.58	41.95	97.85	20 49 22	1628.7	-31.93	29.64
110.00	12 5 10	3880.63	6.01	144.67	32.84	56.29	13 9 51	3280.6	1.54	138.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7258	TRA	-2.1784	TC3	1.9862	BAU	.5196	SGT	3578.8	SGR	308.0	SG3	482.0	ST	1297.8	SR	282.1	SS	744.7
RDE	-.2174	RRA	-.0268	RC3	-.1340	FAU	.10972	RRT	-.3307	RRF	.3091	RTF	-.9266	CRT	-.6984	CRS	-.4150	CST	.9395
FDE	-.4112	FRA	2.5754	FC3	-4.8652	BSP	12306	SGB	3592.0	R23	-.0007	R13	.9266	LSA	1490.5	MSA	309.8	SSA	26.6
BDE	.7577	BRA	2.1786	BC3	1.9907	FSP	1456	SG1	3580.3	SG2	290.5	THA	178.36	EL1	1313.0	EL2	199.6	ALF	171.16
TDE	.6992	TRA	-2.1440	TC3	2.0901	BAU	.5278	SGT	3614.9	SGR	298.7	SG3	505.5	ST	1287.4	SR	272.1	SS	748.3
RDE	-.2061	RRA	-.0221	RC3	-.1380	FAU	.11364	RRT	-.3487	RRF	.3266	RTF	-.9288	CRT	-.6932	CRS	-.3930	CST	.9336
FDE	-.3909	FRA	2.6293	FC3	-5.2198	BSP	12452	SGB	3627.3	R23	-.0008	R13	.9288	LSA	1480.6	MSA	314.3	SSA	26.0
BDE	.7289	BRA	2.1442	BC3	2.0947	FSP	1537	SG1	3616.4	SG2	279.9	THA	178.34	EL1	1301.5	EL2	194.0	ALF	171.47
TDE	.6745	TRA	-2.1071	TC3	2.2017	BAU	.5372	SGT	3650.1	SGR	289.7	SG3	530.1	ST	1277.0	SR	262.0	SS	751.9
RDE	-.1951	RRA	-.0175	RC3	-.1421	FAU	.11779	RRT	-.3693	RRF	.3455	RTF	-.9314	CRT	-.6893	CRS	-.3695	CST	.9262
FDE	-.3685	FRA	2.6843	FC3	-5.5991	BSP	12536	SGB	3661.6	R23	.0003	R13	.9314	LSA	1470.2	MSA	320.4	SSA	25.1
BDE	.7022	BRA	2.1072	BC3	2.2063	FSP	1620	SG1	3651.7	SG2	269.1	THA	178.31	EL1	1290.0	EL2	187.9	ALF	171.77
TDE	.6590	TRA	-2.0609	TC3	2.3344	BAU	.5508	SGT	3684.8	SGR	281.2	SG3	556.0	ST	1271.4	SR	252.1	SS	755.8
RDE	-.1846	RRA	-.0134	RC3	-.1467	FAU	.12225	RRT	-.3958	RRF	.3666	RTF	-.9349	CRT	-.6917	CRS	-.3474	CST	.9158
FDE	-.3470	FRA	2.7375	FC3	-6.0089	BSP	12388	SGB	3695.5	R23	.0056	R13	.9349	LSA	1463.5	MSA	329.9	SSA	23.7
BDE	.6843	BRA	2.0610	BC3	2.3390	FSP	1702	SG1	3686.5	SG2	258.1	THA	178.26	EL1	1283.5	EL2	180.4	ALF	172.03

LAUNCH DATE NOV 11 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 499.381 EARTH TO MARS
RL 148.09 LAL .00 LOL 48.64 VL 33.722 GAL -3.73 AZL 88.09 HCA 159.66 SMA 202.56 ECC .27610 INC 1.9063 V1 30.087
RP 239.42 LAP .66 LOP 208.32 VP 21.294 GAP 12.19 AZP 91.79 TAL 342.64 TAP 142.30 RCA 146.63 APO 258.48 V2 22.943
RC 172.331 GL 15.73 GP -.19 ZAL 115.73 ZAP 161.91 ETS 179.14 ZAE 158.93 ETE 359.97 ZAC 89.75 ETC 255.88 CLP 161.91
PLANETOCENTRIC CONIC
C3 17.053 VHL 4.129 DLA 20.17 RAL 173.03 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 6.629 DPA -3.15 RAP 189.78 ECC 1.2806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 54	2862.11	-28.31	86.36	38.90	90.54	17 26 36	2262.1	-27.94	77.72
90.00	10 23 51	4135.96	-2.03	168.41	32.25	61.75	11 32 47	3536.0	-5.79	161.75
100.00	18 13 16	2557.85	-29.82	63.94	38.86	92.21	18 55 53	1957.8	-29.19	55.19
100.00	11 32 11	3915.45	-.71	151.47	31.52	60.12	12 37 26	3315.5	-4.68	144.93
110.00	19 49 20	2257.25	-33.62	40.77	38.52	96.58	20 26 58	1657.2	-32.35	31.76
110.00	12 12 35	3788.82	2.52	139.85	29.50	55.90	13 15 44	3188.8	-1.97	133.64

DIFFERENTIAL CORRECTIONS
TDE .6180 TRA-2.0402 TC3 2.4102 BAU .5505
RDE -.1738 RRA -.0087 RC3 -.1498 FAU .12676
FDE -.3193 FRA 2.7971 FC3-6.4353 BSP 12839
BDE .6420 BRA 2.0402 BC3 2.4149 FSP 1796

MID-COURSE EXECUTION ACCURACY
SGT 3713.8 SGR 271.3 SG3 583.0
RRT -.4111 RRF .3884 RTF -.9348
SGB 3723.7 R23 -.0026 R13 .9348
SG1 3715.5 SG2 247.2 THA 178.27

ORBIT DETERMINATION ACCURACY
ST 1247.9 SR 241.2 SS 759.8
CRT -.6761 CRS -.3207 CST .9130
LSA 1443.2 MSA 330.7 SSA 23.8
EL1 1258.8 EL2 176.2 ALF 172.41

LAUNCH DATE NOV 11 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 502.745 EARTH TO MARS
RL 148.09 LAL .00 LOL 48.64 VL 33.677 GAL -3.62 AZL 88.09 HCA 160.61 SMA 201.64 ECC .27243 INC 1.9094 V1 30.087
RP 239.11 LAP .63 LOP 209.27 VP 21.258 GAP 11.70 AZP 91.80 TAL 343.00 TAP 143.61 RCA 146.70 APO 256.57 V2 22.975
RC 174.639 GL 15.99 GP -.20 ZAL 115.08 ZAP 161.23 ETS 179.16 ZAE 159.46 ETE .08 ZAC 89.79 ETC 255.88 CLP 161.23
PLANETOCENTRIC CONIC
C3 16.525 VHL 4.065 DLA 20.67 RAL 172.53 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 6.482 DPA -3.27 RAP 190.02 ECC 1.2720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 8	2876.15	-28.32	87.39	38.04	90.02	17 19 4	2276.2	-28.01	78.74
90.00	10 27 40	4107.47	-2.95	166.82	31.50	61.82	11 36 8	3507.5	-6.69	160.14
100.00	18 6 8	2569.83	-29.85	64.83	38.01	91.74	18 48 58	1969.8	-29.29	56.07
100.00	11 35 21	3889.02	-1.61	150.02	30.75	60.15	12 40 10	3289.0	-5.57	143.47
110.00	19 43 24	2265.54	-33.68	41.41	37.70	96.20	20 21 9	1665.5	-32.46	32.39
110.00	12 14 35	3766.07	1.65	138.66	28.72	55.85	13 17 21	3166.1	-2.84	132.46

DIFFERENTIAL CORRECTIONS
TDE .5919 TRA-2.0033 TC3 2.5210 BAU .5580
RDE -.1636 RRA -.0046 RC3 -.1539 FAU .13159
FDE -.2907 FRA 2.8551 FC3-6.8939 BSP 12939
BDE .6141 BRA 2.0033 BC3 2.5257 FSP 1892

MID-COURSE EXECUTION ACCURACY
SGT 3742.2 SGR 262.5 SG3 611.4
RRT -.4358 RRF .4124 RTF -.9368
SGB 3751.4 R23 -.0028 R13 .9368
SG1 3744.0 SG2 236.1 THA 178.24

ORBIT DETERMINATION ACCURACY
ST 1232.7 SR 230.7 SS 763.9
CRT -.6710 CRS -.2938 CST .9041
LSA 1428.8 MSA 338.3 SSA 22.8
EL1 1242.6 EL2 169.7 ALF 172.71

LAUNCH DATE NOV 11 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 506.137 EARTH TO MARS
RL 148.09 LAL .00 LOL 48.64 VL 33.635 GAL -3.51 AZL 88.09 HCA 161.56 SMA 200.76 ECC .26891 INC 1.9126 V1 30.087
RP 238.79 LAP .60 LOP 210.21 VP 21.225 GAP 11.21 AZP 91.81 TAL 343.35 TAP 144.91 RCA 146.77 APO 254.75 V2 23.007
RC 176.939 GL 16.25 GP -.22 ZAL 114.42 ZAP 160.53 ETS 179.17 ZAE 160.04 ETE .18 ZAC 89.83 ETC 255.87 CLP 160.53
PLANETOCENTRIC CONIC
C3 16.029 VHL 4.004 DLA 21.17 RAL 172.03 RAD 6567.6 VEL 11.722 PTH 2.07 VHP 6.337 DPA -3.39 RAP 190.24 ECC 1.2638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 10	2891.03	-28.31	88.48	37.19	89.48	17 11 21	2291.0	-28.09	79.82
90.00	10 31 40	4078.70	-3.87	165.21	30.77	61.93	11 39 38	3478.7	-7.59	158.51
100.00	17 58 51	2582.48	-29.87	65.77	37.18	91.25	18 41 54	1982.5	-29.38	57.00
100.00	11 38 39	3862.47	-2.51	148.56	30.01	60.20	12 43 2	3262.5	-6.45	142.00
110.00	19 37 22	2274.30	-33.75	42.08	36.90	95.81	20 15 16	1674.3	-32.57	33.04
110.00	12 16 39	3743.42	.79	137.48	27.95	55.82	13 19 2	3143.4	-3.70	131.27

DIFFERENTIAL CORRECTIONS
TDE .5655 TRA-1.9671 TC3 2.6312 BAU .5649
RDE -.1537 RRA -.0005 RC3 -.1579 FAU .13667
FDE -.2601 FRA 2.9150 FC3-7.3818 BSP 13021
BDE .5860 BRA 1.9671 BC3 2.6359 FSP 1991

MID-COURSE EXECUTION ACCURACY
SGT 3769.2 SGR 253.7 SG3 641.3
RRT -.4622 RRF .4384 RTF -.9386
SGB 3777.7 R23 -.0034 R13 .9386
SG1 3771.0 SG2 224.9 THA 178.21

ORBIT DETERMINATION ACCURACY
ST 1216.2 SR 220.0 SS 768.7
CRT -.6654 CRS -.2662 CST .8948
LSA 1413.5 MSA 346.4 SSA 21.8
EL1 1225.1 EL2 163.0 ALF 173.01

LAUNCH DATE NOV 11 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 509.557 EARTH TO MARS
RL 148.09 LAL .00 LOL 48.64 VL 33.594 GAL -3.40 AZL 88.08 HCA 162.51 SMA 199.93 ECC .26554 INC 1.9165 V1 30.087
RP 238.47 LAP .58 LOP 211.17 VP 21.196 GAP 10.73 AZP 91.83 TAL 343.71 TAP 146.22 RCA 146.84 APO 253.02 V2 23.040
RC 179.231 GL 16.51 GP -.23 ZAL 113.76 ZAP 159.81 ETS 179.19 ZAE 160.64 ETE .29 ZAC 89.87 ETC 255.87 CLP 159.81
PLANETOCENTRIC CONIC
C3 15.563 VHL 3.945 DLA 21.66 RAL 171.53 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 6.196 DPA -3.51 RAP 190.45 ECC 1.2561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 58	2906.82	-28.30	89.63	36.36	88.90	17 3 25	2306.8	-28.15	80.97
90.00	10 35 52	4049.53	-4.80	163.57	30.06	62.06	11 43 21	3449.5	-8.50	156.85
100.00	17 51 24	2595.86	-29.88	66.76	36.37	90.73	18 34 40	1995.9	-29.46	57.98
100.00	11 42 7	3835.72	-3.41	147.09	29.29	60.28	12 46 2	3235.7	-7.34	140.51
110.00	19 31 14	2283.56	-33.81	42.80	36.12	95.39	20 9 17	1683.6	-32.69	33.74
110.00	12 18 46	3720.79	-.08	136.30	27.22	55.82	13 20 47	3120.8	-4.56	130.08

DIFFERENTIAL CORRECTIONS
TDE .5513 TRA-1.9192 TC3 2.7686 BAU .5770
RDE -.1444 RRA .0031 RC3 -.1628 FAU .14205
FDE -.2288 FRA 2.9748 FC3-7.9021 BSP 12820
BDE .5699 BRA 1.9192 BC3 2.7734 FSP 2092

MID-COURSE EXECUTION ACCURACY
SGT 3795.9 SGR 245.9 SG3 672.6
RRT -.4961 RRF .4665 RTF -.9418
SGB 3803.8 R23 .0025 R13 .9418
SG1 3797.9 SG2 213.4 THA 178.15

ORBIT DETERMINATION ACCURACY
ST 1206.3 SR 209.7 SS 774.1
CRT -.6699 CRS -.2389 CST .8791
LSA 1402.5 MSA 361.7 SSA 20.1
EL1 1214.6 EL2 154.7 ALF 173.25

LAUNCH DATE NOV 11 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 513.000 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.555 GAL -3.29 AZL 88.08 HCA 163.47 SMA 199.15 ECC .26232 INC 1.9201 V1 30.087
RP 238.14 LAP .55 LOP 212.12 VP 21.170 GAP 10.25 AZP 91.84 TAL 344.06 TAP 147.52 RCA 146.91 APO 251.39 V2 23.073
RC 181.513 GL 16.78 GP -.25 ZAL 113.11 ZAP 159.08 ETS 179.21 ZAE 161.28 ETE .39 ZAC 89.90 ETC 255.86 CLP 159.08

PLANETOCENTRIC CONIC

C3 15.127 VHL 3.889 DLA 22.16 RAL 171.04 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 6.059 DPA -3.62 RAP 190.64 ECC 1.2489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 35	2923.46	-28.27	90.85	35.54	88.29	16 55 19	2323.5	-28.21	82.19
90.00	10 40 16	4020.10	-5.74	161.91	29.39	62.22	11 47 17	3420.1	-9.41	155.16
100.00	17 43 50	2609.89	-29.89	67.81	35.57	90.18	18 27 20	2009.9	-29.55	59.02
100.00	11 45 43	3808.91	-4.31	145.61	28.61	60.39	12 49 11	3208.9	-8.22	139.01
110.00	19 25 3	2293.22	-33.87	43.55	35.36	94.95	20 3 16	1693.2	-32.81	34.47
110.00	12 20 59	3698.34	-.94	135.13	26.50	55.83	13 22 37	3098.3	-5.41	128.90

DIFFERENTIAL CORRECTIONS
TDE .5123 TRA-1.8956 TC3 2.8425 BAU .5758
RDE -.1346 RRA .0073 RC3 -.1661 FAU .14759
FDE -.1912 FRA 3.0397 FC3-8.4466 BSP 13209
BDE .5297 BRA 1.8957 BC3 2.8474 FSP 2205

MID-COURSE EXECUTION ACCURACY
SGT 3814.5 SGR 236.9 SG3 705.2
RRT -.5206 RRF .4969 RTF -.9417
SGB 3821.9 R23 -.0063 R13 .9417
SG1 3816.5 SG2 202.2 THA 178.14

ORBIT DETERMINATION ACCURACY
ST 1179.9 SR 198.3 SS 780.3
CRT -.6540 CRS -.2087 CST .8743
LSA 1381.1 MSA 364.3 SSA 19.8
EL1 1187.1 EL2 149.1 ALF 173.63

LAUNCH DATE NOV 11 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 516.468 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.518 GAL -3.19 AZL 88.07 HCA 164.43 SMA 198.40 ECC .25923 INC 1.9248 V1 30.087
RP 237.81 LAP .52 LOP 213.08 VP 21.147 GAP 9.78 AZP 91.85 TAL 344.40 TAP 148.83 RCA 146.97 APO 249.83 V2 23.106
RC 183.786 GL 17.04 GP -.27 ZAL 112.45 ZAP 158.33 ETS 179.23 ZAE 161.95 ETE .49 ZAC 89.92 ETC 255.86 CLP 158.33

PLANETOCENTRIC CONIC

C3 14.717 VHL 3.836 DLA 22.66 RAL 170.54 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 5.924 DPA -3.72 RAP 190.82 ECC 1.2422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 55	2941.19	-28.23	92.15	34.74	87.64	16 46 56	2341.2	-28.26	83.48
90.00	10 44 58	3990.10	-6.69	160.22	28.74	62.42	11 51 28	3390.1	-10.33	153.44
100.00	17 36 4	2624.73	-29.89	68.91	34.79	89.60	18 19 49	2024.7	-29.63	60.11
100.00	11 49 30	3781.79	-5.22	144.11	27.95	60.53	12 52 32	3181.8	-9.11	137.48
110.00	19 18 46	2303.40	-33.92	44.34	34.62	94.48	19 57 10	1703.4	-32.93	35.24
110.00	12 23 17	3675.88	-1.79	133.96	25.81	55.86	13 24 33	3075.9	-6.26	127.72

DIFFERENTIAL CORRECTIONS
TDE .4871 TRA-1.8581 TC3 2.9500 BAU .5814
RDE -.1254 RRA .0111 RC3 -.1704 FAU .15339
FDE -.1511 FRA 3.1060 FC3-9.0232 BSP 13232
BDE .5030 BRA 1.8581 BC3 2.9549 FSP 2320

MID-COURSE EXECUTION ACCURACY
SGT 3833.4 SGR 229.1 SG3 739.5
RRT -.5538 RRF .5294 RTF -.9434
SGB 3840.2 R23 -.0068 R13 .9434
SG1 3835.5 SG2 190.7 THA 178.10

ORBIT DETERMINATION ACCURACY
ST 1161.0 SR 187.4 SS 787.6
CRT -.6499 CRS -.1777 CST .8613
LSA 1364.3 MSA 376.3 SSA 18.6
EL1 1167.4 EL2 141.6 ALF 173.92

LAUNCH DATE NOV 11 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 519.960 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.482 GAL -3.10 AZL 88.07 HCA 165.39 SMA 197.69 ECC .25628 INC 1.9300 V1 30.087
RP 237.48 LAP .49 LOP 214.04 VP 21.127 GAP 9.32 AZP 91.87 TAL 344.74 TAP 150.13 RCA 147.03 APO 248.35 V2 23.140
RC 186.049 GL 17.30 GP -.30 ZAL 111.81 ZAP 157.56 ETS 179.26 ZAE 162.66 ETE .58 ZAC 89.94 ETC 255.86 CLP 157.56

PLANETOCENTRIC CONIC

C3 14.333 VHL 3.786 DLA 23.15 RAL 170.04 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 5.792 DPA -3.82 RAP 190.99 ECC 1.2359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 58	2960.05	-28.17	93.52	33.95	86.95	16 38 19	2360.0	-28.29	84.86
90.00	10 49 57	3959.51	-7.65	158.49	28.13	62.65	11 55 56	3359.5	-11.25	151.66
100.00	17 28 7	2640.41	-29.88	70.07	34.02	88.98	18 12 7	2040.4	-29.70	61.27
100.00	11 53 30	3754.39	-6.14	142.59	27.31	60.69	12 56 4	3154.4	-10.00	135.93
110.00	19 12 25	2314.08	-33.98	45.17	33.90	94.00	19 50 59	1714.1	-33.05	36.05
110.00	12 25 41	3653.47	-2.65	132.79	25.15	55.91	13 26 34	3053.5	-7.11	126.53

DIFFERENTIAL CORRECTIONS
TDE .4600 TRA-1.8236 TC3 3.0486 BAU .5851
RDE -.1163 RRA .0150 RC3 -.1748 FAU .15948
FDE -.1074 FRA 3.1753 FC3-9.6330 BSP 13330
BDE .4744 BRA 1.8236 BC3 3.0536 FSP 2444

MID-COURSE EXECUTION ACCURACY
SGT 3849.9 SGR 221.6 SG3 775.4
RRT -.5884 RRF .5645 RTF -.9446
SGB 3856.3 R23 -.0093 R13 .9446
SG1 3852.1 SG2 179.1 THA 178.06

ORBIT DETERMINATION ACCURACY
ST 1140.2 SR 176.3 SS 796.4
CRT -.6443 CRS -.1465 CST .8487
LSA 1347.1 MSA 387.8 SSA 17.5
EL1 1146.0 EL2 134.1 ALF 174.23

LAUNCH DATE NOV 11 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 523.473 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.447 GAL -3.00 AZL 88.06 HCA 166.35 SMA 197.02 ECC .25346 INC 1.9358 V1 30.087
RP 237.15 LAP .46 LOP 215.00 VP 21.110 GAP 8.86 AZP 91.88 TAL 345.08 TAP 151.43 RCA 147.08 APO 246.95 V2 23.174
RC 188.300 GL 17.57 GP -.33 ZAL 111.16 ZAP 156.77 ETS 179.30 ZAE 163.40 ETE .67 ZAC 89.95 ETC 255.86 CLP 156.77

PLANETOCENTRIC CONIC

C3 13.974 VHL 3.738 DLA 23.65 RAL 169.55 RAD 6567.6 VEL 11.634 PTH 2.04 VHP 5.663 DPA -3.92 RAP 191.13 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 42	2980.22	-28.08	94.99	33.18	86.22	16 29 22	2380.2	-28.31	86.33
90.00	10 55 18	3928.14	-8.62	156.70	27.56	62.92	12 0 46	3328.1	-12.19	149.83
100.00	17 19 57	2657.00	-29.85	71.31	33.28	88.33	18 4 14	2057.0	-29.76	62.50
100.00	11 57 44	3726.59	-7.06	141.05	26.71	60.88	12 59 51	3126.6	-10.89	134.35
110.00	19 5 58	2325.30	-34.03	46.04	33.20	93.48	19 44 43	1725.3	-33.17	36.90
110.00	12 28 12	3631.06	-3.50	131.61	24.52	55.98	13 28 43	3031.1	-7.95	125.34

DIFFERENTIAL CORRECTIONS
TDE .4339 TRA-1.7867 TC3 3.1447 BAU .5884
RDE -.1075 RRA .0187 RC3 -.1795 FAU .16591
FDE -.0618 FRA 3.2443 FC-10.2791 BSP 13390
BDE .4470 BRA 1.7868 BC3 3.1498 FSP 2571

MID-COURSE EXECUTION ACCURACY
SGT 3861.0 SGR 214.8 SG3 813.0
RRT -.6256 RRF .6023 RTF -.9458
SGB 3867.0 R23 -.0121 R13 .9458
SG1 3863.4 SG2 167.5 THA 178.00

ORBIT DETERMINATION ACCURACY
ST 1118.8 SR 165.1 SS 806.1
CRT -.6405 CRS -.1171 CST .8354
LSA 1329.9 MSA 399.8 SSA 16.4
EL1 1123.8 EL2 126.2 ALF 174.53

LAUNCH DATE NOV 11 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 21 1965

DISTANCE 527.008

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.415 GAL -2.91 AZL 88.06 HCA 167.31 SMA 196.38 ECC .25076 INC 1.9425 V1 30.087
RP 236.81 LAP .43 LOP 215.96 VP 21.096 GAP 8.41 AZP 91.90 TAL 345.41 TAP 152.72 RCA 147.13 APO 245.62 V2 23.209
RC 190.540 GL 17.84 GP -.36 ZAL 110.52 ZAP 155.96 ETS 179.34 ZAE 164.18 ETE .75 ZAC 89.95 ETC 255.85 CLP 155.96

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.638 VHL 3.693 DLA 24.14 RAL 169.06 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 5.537 DPA -4.01 RAP 191.26 ECC 1.2244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 1	3001.92	-27.98	96.57	32.43	85.44	16 20 3	2401.9	-28.32	87.92
90.00	11 1 6	3895.77	-9.62	154.84	27.02	63.24	12 6 1	3295.8	-13.14	147.93
100.00	17 11 32	2674.65	-29.81	72.62	32.55	87.65	17 56 6	2074.7	-29.82	63.81
100.00	12 2 16	3698.27	-8.00	139.47	26.15	61.10	13 3 55	3098.3	-11.79	132.73
110.00	18 59 25	2337.10	-34.07	46.96	32.53	92.94	19 38 22	1737.1	-33.29	37.80
110.00	12 30 52	3608.59	-4.36	130.44	23.92	56.06	13 31 1	3008.6	-8.79	124.14

DIFFERENTIAL CORRECTIONS

TDE .4080 TRA-1.7508 TC3 3.2362 BAU .5910
RDE -.0988 RRA .0226 RC3 -.1846 FAU .17263
FDE -.0120 FRA 3.3168 FC-10.9589 BSP 13434
BDE .4198 BRA 1.7509 BC3 3.2415 FSP 2704

MID-COURSE EXECUTION ACCURACY

SGT 3869.7 SGR 208.7 SG3 852.3
RRT -.6650 RRF .6425 RTF -.9468
SGB 3875.3 R23 -.0158 R13 .9469
SG1 3872.2 SG2 155.8 THA 177.94

ORBIT DETERMINATION ACCURACY

ST 1096.9 SR 153.8 SS 817.6
CRT -.6379 CRS -.0887 CST .8213
LSA 1313.3 MSA 412.8 SSA 15.2
EL1 1101.4 EL2 118.0 ALF 174.83

LAUNCH DATE NOV 11 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 23 1965

DISTANCE 530.563

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.383 GAL -2.82 AZL 88.05 HCA 168.28 SMA 195.77 ECC .24818 INC 1.9504 V1 30.087
RP 236.46 LAP .40 LOP 216.93 VP 21.085 GAP 7.97 AZP 91.91 TAL 345.74 TAP 154.02 RCA 147.18 APO 244.35 V2 23.244
RC 192.768 GL 18.12 GP -.40 ZAL 109.89 ZAP 155.12 ETS 179.39 ZAE 164.99 ETE .81 ZAC 89.95 ETC 255.85 CLP 155.13

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.324 VHL 3.650 DLA 24.64 RAL 168.58 RAD 6567.5 VEL 11.606 PTH 2.03 VHP 5.413 DPA -4.10 RAP 191.37 ECC 1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 52	3025.48	-27.84	98.28	31.69	84.59	16 10 17	2425.5	-28.30	89.64
90.00	11 7 26	3862.07	-10.65	152.90	26.52	63.61	12 11 48	3262.1	-14.11	145.93
100.00	17 2 49	2693.52	-29.75	74.02	31.85	86.91	17 47 43	2093.5	-29.86	65.22
100.00	12 7 10	3669.26	-8.95	137.84	25.63	61.36	13 8 19	3069.3	-12.71	131.06
110.00	18 52 46	2349.56	-34.11	47.93	31.88	92.37	19 31 55	1749.6	-33.41	38.76
110.00	12 33 42	3585.99	-5.22	129.25	23.35	56.17	13 33 28	2986.0	-9.63	122.93

DIFFERENTIAL CORRECTIONS

TDE .3844 TRA-1.7131 TC3 3.3289 BAU .5939
RDE -.0903 RRA .0264 RC3 -.1905 FAU .17975
FDE .0404 FRA 3.3912 FC-11.6796 BSP 13429
BDE .3949 BRA 1.7133 BC3 3.3344 FSP 2842

MID-COURSE EXECUTION ACCURACY

SGT 3875.9 SGR 203.8 SG3 893.7
RRT -.7071 RRF .6850 RTF -.9480
SGB 3881.2 R23 -.0195 R13 .9480
SG1 3878.5 SG2 144.0 THA 177.87

ORBIT DETERMINATION ACCURACY

ST 1075.7 SR 142.5 SS 830.9
CRT -.6393 CRS -.0637 CST .8057
LSA 1298.1 MSA 427.4 SSA 13.9
EL1 1079.6 EL2 109.2 ALF 175.11

LAUNCH DATE NOV 11 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 25 1965

DISTANCE 534.137

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.353 GAL -2.74 AZL 88.04 HCA 169.25 SMA 195.19 ECC .24571 INC 1.9599 V1 30.087
RP 236.12 LAP .37 LOP 217.90 VP 21.076 GAP 7.53 AZP 91.93 TAL 346.06 TAP 155.31 RCA 147.23 APO 243.15 V2 23.279
RC 194.983 GL 18.40 GP -.44 ZAL 109.27 ZAP 154.27 ETS 179.45 ZAE 165.84 ETE .86 ZAC 89.93 ETC 255.85 CLP 154.27

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.031 VHL 3.610 DLA 25.15 RAL 168.12 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 5.293 DPA -4.19 RAP 191.46 ECC 1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 5	3051.36	-27.66	100.15	30.97	83.67	15 59 56	2451.4	-28.25	91.54
90.00	11 14 29	3826.59	-11.71	150.84	26.08	64.03	12 18 16	3226.6	-15.11	143.81
100.00	16 53 46	2713.86	-29.66	75.52	31.17	86.12	17 39 0	2113.9	-29.88	66.73
100.00	12 12 29	3639.32	-9.92	136.15	25.15	61.66	13 13 8	3039.3	-13.63	129.32
110.00	18 45 59	2362.78	-34.14	48.96	31.27	91.76	19 25 21	1762.8	-33.52	39.77
110.00	12 36 46	3563.17	-6.08	128.05	22.81	56.30	13 36 9	2963.2	-10.47	121.70

DIFFERENTIAL CORRECTIONS

TDE .3578 TRA-1.6776 TC3 3.4074 BAU .5946
RDE -.0819 RRA .0305 RC3 -.1970 FAU .18701
FDE .1023 FRA 3.4720 FC-12.4241 BSP 13474
BDE .3671 BRA 1.6779 BC3 3.4131 FSP 2995

MID-COURSE EXECUTION ACCURACY

SGT 3876.5 SGR 199.9 SG3 936.7
RRT -.7494 RRF .7289 RTF -.9489
SGB 3881.6 R23 -.0255 R13 .9490
SG1 3879.4 SG2 132.3 THA 177.78

ORBIT DETERMINATION ACCURACY

ST 1052.0 SR 131.0 SS 847.4
CRT -.6404 CRS -.0384 CST .7896
LSA 1282.9 MSA 442.7 SSA 12.7
EL1 1055.4 EL2 100.3 ALF 175.40

LAUNCH DATE NOV 11 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 27 1965

DISTANCE 537.730

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.324 GAL -2.66 AZL 88.03 HCA 170.23 SMA 194.64 ECC .24336 INC 1.9713 V1 30.087
RP 235.77 LAP .33 LOP 218.88 VP 21.070 GAP 7.09 AZP 91.94 TAL 346.37 TAP 156.60 RCA 147.27 APO 242.01 V2 23.315
RC 197.185 GL 18.70 GP -.50 ZAL 108.66 ZAP 153.39 ETS 179.52 ZAE 166.72 ETE .86 ZAC 89.89 ETC 255.85 CLP 153.39

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.760 VHL 3.572 DLA 25.66 RAL 167.66 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 5.175 DPA -4.28 RAP 191.52 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 27	3080.35	-27.42	102.24	30.26	82.65	15 48 47	2480.3	-28.16	93.65
90.00	11 22 29	3788.55	-12.84	148.61	25.70	64.54	12 25 38	3188.5	-16.16	141.51
100.00	16 44 14	2736.06	-29.55	77.17	30.51	85.27	17 29 50	2136.1	-29.89	68.38
100.00	12 18 23	3608.06	-10.93	134.37	24.72	62.00	13 18 31	3008.1	-14.59	127.49
110.00	18 39 1	2376.94	-34.17	50.06	30.69	91.10	19 18 38	1776.9	-33.64	40.86
110.00	12 40 5	3539.95	-6.96	126.82	22.32	56.45	13 39 5	2940.0	-11.32	120.44

DIFFERENTIAL CORRECTIONS

TDE .3342 TRA-1.6399 TC3 3.4851 BAU .5955
RDE -.0736 RRA .0347 RC3 -.2048 FAU .19469
FDE .1668 FRA 3.5540 FC-13.2095 BSP 13446
BDE .3422 BRA 1.6403 BC3 3.4911 FSP 3151

MID-COURSE EXECUTION ACCURACY

SGT 3873.3 SGR 197.9 SG3 981.8
RRT -.7928 RRF .7736 RTF -.9499
SGB 3878.3 R23 -.0324 R13 .9499
SG1 3876.5 SG2 120.5 THA 177.68

ORBIT DETERMINATION ACCURACY

ST 1029.3 SR 119.6 SS 866.0
CRT -.6485 CRS -.0206 CST .7719
LSA 1269.8 MSA 459.5 SSA 11.4
EL1 1032.2 EL2 90.8 ALF 175.66

LAUNCH DATE NOV 11 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 541.341 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.297 GAL -2.58 AZL 88.01 HCA 171.20 SMA 194.12 ECC .24111 INC 1.9844 V1 30.087
RP 235.42 LAP .30 LOP 219.85 VP 21.067 GAP 6.67 AZP 91.96 TAL 346.67 TAP 157.88 RCA 147.32 APO 240.92 V2 23.351
RC 199.372 GL 19.01 GP -.57 ZAL 108.05 ZAP 152.49 ETS 179.61 ZAE 167.64 ETE .81 ZAC 89.84 ETC 255.85 CLP 152.49

PLANETOCENTRIC CONIC

C3 12.509 VHL 3.537 DLA 26.18 RAL 167.22 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 5.060 DPA -4.37 RAP 191.56 ECC 1.2059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 36	3113.65	-27.11	104.63	29.56	81.49	15 36 30	2513.7	-28.01	96.08
90.00	11 31 50	3746.75	-14.05	146.14	25.40	65.16	12 34 17	3146.8	-17.28	138.95
100.00	16 34 5	2760.69	-29.40	78.98	29.89	84.32	17 20 6	2160.7	-29.87	70.21
100.00	12 25 3	3574.94	-11.98	132.47	24.35	62.41	13 24 37	2974.9	-15.58	125.53
110.00	18 31 50	2392.27	-34.18	51.26	30.15	90.39	19 11 42	1792.3	-33.75	42.04
110.00	12 43 47	3516.13	-7.85	125.55	21.88	56.62	13 42 23	2916.1	-12.19	119.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3117 TRA-1.6011 TC3 3.5593 BAU .5963 SGT 3866.1 SGR 198.2 SG3 1029.5 ST 1006.2 SR 108.3 SS 884.4
RDE -.0655 RRA .0392 RC3 -.2147 FAU .20312 RRT -.8352 RRF .8187 RTF -.9506 CRT -.6635 CRS -.0169 CST .7566
FDE .2290 FRA 3.6307 FC-14.0582 BSP 13393 SGB 3871.2 R23 -.0438 R13 .9507 LSA 1257.9 MSA 473.1 SSA 10.2
BDE .3185 BRA 1.6015 BC3 3.5658 FSP 3298 SG1 3869.7 SG2 108.9 THA 177.55 EL1 1008.8 EL2 80.8 ALF 175.89

LAUNCH DATE NOV 11 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 544.969 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.271 GAL -2.50 AZL 88.00 HCA 172.18 SMA 193.63 ECC .23897 INC 2.0015 V1 30.087
RP 235.06 LAP .27 LOP 220.83 VP 21.066 GAP 6.25 AZP 91.98 TAL 346.97 TAP 159.16 RCA 147.36 APO 239.90 V2 23.387
RC 201.544 GL 19.36 GP -.65 ZAL 107.45 ZAP 151.56 ETS 179.73 ZAE 168.59 ETE .67 ZAC 89.77 ETC 255.85 CLP 151.56

PLANETOCENTRIC CONIC

C3 12.279 VHL 3.504 DLA 26.72 RAL 166.81 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 4.947 DPA -4.47 RAP 191.57 ECC 1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 51	3153.61	-26.67	107.47	28.88	80.13	15 22 25	2553.6	-27.77	98.98
90.00	11 43 17	3698.89	-15.40	143.27	25.20	65.94	12 44 56	3098.9	-18.52	135.99
100.00	16 23 2	2788.72	-29.19	81.04	29.29	83.26	17 9 31	2188.7	-29.82	72.29
100.00	12 32 47	3539.02	-13.10	130.40	24.06	62.89	13 31 46	2939.0	-16.63	123.39
110.00	18 24 20	2409.18	-34.18	52.58	29.66	89.61	19 4 29	1809.2	-33.86	43.35
110.00	12 47 58	3491.32	-8.78	124.23	21.51	56.83	13 46 10	2891.3	-13.08	117.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2880 TRA-1.5646 TC3 3.6187 BAU .5952 SGT 3854.5 SGR 201.4 SG3 1079.0 ST 982.8 SR 96.9 SS 908.7
RDE -.0573 RRA .0442 RC3 -.2267 FAU .21162 RRT -.8746 RRF .8612 RTF -.9512 CRT -.6864 CRS -.0217 CST .7392
FDE .3048 FRA 3.7193 FC-14.9207 BSP 13338 SGB 3859.7 R23 -.0593 R13 .9513 LSA 1249.5 MSA 489.5 SSA 8.9
BDE .2936 BRA 1.5652 BC3 3.6258 FSP 3462 SG1 3858.5 SG2 97.6 THA 177.38 EL1 985.0 EL2 70.3 ALF 176.11

LAUNCH DATE NOV 11 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 548.615 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.246 GAL -2.43 AZL 87.98 HCA 173.17 SMA 193.15 ECC .23692 INC 2.0225 V1 30.087
RP 234.71 LAP .24 LOP 221.81 VP 21.067 GAP 5.83 AZP 92.01 TAL 347.26 TAP 160.43 RCA 147.39 APO 238.92 V2 23.424
RC 203.699 GL 19.74 GP -.76 ZAL 106.87 ZAP 150.60 ETS 179.88 ZAE 169.58 ETE .35 ZAC 89.67 ETC 255.85 CLP 150.61

PLANETOCENTRIC CONIC

C3 12.070 VHL 3.474 DLA 27.30 RAL 166.42 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 4.838 DPA -4.59 RAP 191.55 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 39	3205.33	-26.02	111.12	28.17	78.41	15 5 4	2605.3	-27.36	102.70
90.00	11 58 25	3639.94	-17.00	139.68	25.16	67.01	12 59 5	3039.9	-19.97	132.27
100.00	16 10 36	2821.84	-28.90	83.46	28.74	82.02	16 57 38	2221.8	-29.70	74.75
100.00	12 42 9	3498.66	-14.34	128.04	23.89	63.49	13 40 27	2898.7	-17.79	120.94
110.00	18 16 21	2428.34	-34.16	54.08	29.23	88.73	18 56 50	1828.3	-33.96	44.84
110.00	12 52 53	3464.93	-9.76	122.82	21.21	57.08	13 50 38	2864.9	-14.03	116.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2699 TRA-1.5234 TC3 3.6821 BAU .5955 SGT 3838.8 SGR 209.2 SG3 1131.5 ST 960.9 SR 86.0 SS 930.4
RDE -.0493 RRA .0499 RC3 -.2433 FAU .22117 RRT -.9097 RRF .9002 RTF -.9517 CRT -.7274 CRS -.0548 CST .7221
FDE .3726 FRA 3.7965 FC-15.8634 BSP 13180 SGB 3844.5 R23 -.0818 R13 .9518 LSA 1241.9 MSA 504.2 SSA 7.8
BDE .2744 BRA 1.5242 BC3 3.6901 FSP 3606 SG1 3843.5 SG2 86.8 THA 177.16 EL1 963.0 EL2 58.9 ALF 176.26

LAUNCH DATE NOV 11 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 552.275 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.222 GAL -2.36 AZL 87.95 HCA 174.15 SMA 192.71 ECC .23497 INC 2.0526 V1 30.087
RP 234.35 LAP .21 LOP 222.80 VP 21.070 GAP 5.43 AZP 92.04 TAL 347.54 TAP 161.70 RCA 147.43 APO 237.99 V2 23.461
RC 205.837 GL 20.19 GP -.91 ZAL 106.29 ZAP 149.61 ETS 180.08 ZAE 170.62 ETE 359.74 ZAC 89.53 ETC 255.85 CLP 149.63

PLANETOCENTRIC CONIC

C3 11.886 VHL 3.448 DLA 27.93 RAL 166.08 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 4.731 DPA -4.72 RAP 191.49 ECC 1.1956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 55	3285.40	-24.81	116.67	27.36	75.89	14 39 40	2685.4	-26.50	108.41
90.00	12 22 27	3553.40	-19.22	134.30	25.44	68.79	13 21 40	2953.4	-21.93	126.68
100.00	15 55 49	2863.39	-28.47	86.47	28.22	80.49	16 43 33	2263.4	-29.49	77.82
100.00	12 54 13	3450.64	-15.78	125.20	23.88	64.28	13 51 44	2850.6	-19.11	117.99
110.00	18 7 37	2450.88	-34.11	55.84	28.90	87.69	18 48 28	1850.9	-34.06	46.59
110.00	12 58 55	3435.92	-10.83	121.25	21.04	57.38	13 56 10	2835.9	-15.05	114.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2425 TRA-1.4911 TC3 3.7074 BAU .5906 SGT 3816.3 SGR 222.4 SG3 1185.1 ST 936.1 SR 75.0 SS 967.5
RDE -.0406 RRA .0573 RC3 -.2646 FAU .23011 RRT -.9376 RRF .9332 RTF -.9519 CRT -.7802 CRS -.1106 CST .7049
FDE .4763 FRA 3.9051 FC-16.7597 BSP 13194 SGB 3822.7 R23 -.1160 R13 .9520 LSA 1243.6 MSA 521.0 SSA 6.5
BDE .2458 BRA 1.4922 BC3 3.7169 FSP 3806 SG1 3821.9 SG2 77.2 THA 176.87 EL1 937.9 EL2 46.8 ALF 176.41

LAUNCH DATE NOV 11 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 555.952 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.199 GAL -2.29 AZL 87.90 HCA 175.14 SMA 192.28 ECC .23311 INC 2.0963 V1 30.087
RP 233.98 LAP .18 LOP 223.79 VP 21.076 GAP 5.02 AZP 92.09 TAL 347.82 TAP 162.96 RCA 147.46 APO 237.11 V2 23.498
RC 207.958 GL 20.75 GP -1.12 ZAL 105.71 ZAP 148.60 ETS 180.36 ZAE 171.69 ETE 358.53 ZAC 89.32 ETC 255.85 CLP 148.62

PLANETOCENTRIC CONIC

C3 11.732 VHL 3.425 DLA 28.65 RAL 165.81 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.627 DPA -4.91 RAP 191.39 ECC 1.1931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.46	12 24 47	3539.08	-22.60	134.55	26.21	71.91	13 23 46	2939.1	-24.86	126.58
94.54	13 40 23	3294.23	-22.58	116.61	26.21	71.89	14 35 18	2694.2	-24.85	108.65
100.00	15 36 14	2921.53	-27.75	90.64	27.72	78.41	16 24 56	2321.5	-29.06	82.08
100.00	13 11 37	3387.02	-17.62	121.37	24.14	65.46	14 8 4	2787.0	-20.79	114.01
110.00	17 57 34	2479.07	-34.02	58.03	28.69	86.39	18 38 53	1879.1	-34.14	48.79
110.00	13 6 47	3402.24	-12.06	119.41	21.03	57.77	14 3 29	2802.2	-16.23	112.79

DIFFERENTIAL CORRECTIONS
TDE .2144 TRA-1.4591 TC3 3.7114 BAU .5839
RDE -.0313 RRA .0669 RC3 -.2949 FAU .23865
FDE .6122 FRA 4.0370 FC-17.6107 BSP 13201
BDE .2167 BRA 1.4607 BC3 3.7231 FSP 4048

MID-COURSE EXECUTION ACCURACY
SGT 3785.3 SGR 244.6 SG3 1239.5
RRT -.9582 RRF .9590 RTF -.9522
SGB 3793.2 R23 -.1617 R13 .9524
SG1 3792.5 SG2 69.8 THA 176.46

ORBIT DETERMINATION ACCURACY
ST 911.4 SR 65.2 SS 1019.9
CRT -.8618 CRS -.2217 CST .6823
LSA 1256.8 MSA 543.7 SSA 5.2
EL1 913.1 EL2 33.0 ALF 176.47

LAUNCH DATE NOV 11 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 559.644 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.177 GAL -2.23 AZL 87.84 HCA 176.13 SMA 191.88 ECC .23135 INC 2.1547 V1 30.087
RP 233.62 LAP .15 LOP 224.78 VP 21.083 GAP 4.63 AZP 92.15 TAL 348.08 TAP 164.21 RCA 147.49 APO 236.27 V2 23.536
RC 210.060 GL 21.50 GP -1.44 ZAL 105.14 ZAP 147.55 ETS 180.79 ZAE 172.78 ETE 356.09 ZAC 88.99 ETC 255.85 CLP 147.58

PLANETOCENTRIC CONIC

C3 11.620 VHL 3.409 DLA 29.54 RAL 165.65 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 4.526 DPA -5.18 RAP 191.21 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.22	11 50 1	3646.87	-23.32	142.75	26.15	71.33	12 50 48	3046.9	-25.65	134.76
98.78	14 13 50	3182.45	-23.31	108.63	26.15	71.32	15 6 53	2582.4	-25.64	100.64
100.00	15 1 49	3028.92	-26.05	98.17	27.07	74.79	15 52 18	2428.9	-27.88	89.85
100.00	13 44 44	3275.63	-20.63	114.47	25.07	67.87	14 39 19	2675.6	-23.45	106.81
110.00	17 44 57	2517.75	-33.81	61.04	28.69	84.63	18 26 54	1917.8	-34.18	51.81
110.00	13 18 6	3359.56	-13.59	117.06	21.34	58.33	14 14 5	2759.6	-17.68	110.34

DIFFERENTIAL CORRECTIONS
TDE .2083 TRA-1.4036 TC3 3.7801 BAU .5897
RDE -.0228 RRA .0787 RC3 -.3487 FAU .25250
FDE .6664 FRA 4.0698 FC-18.8115 BSP 12661
BDE .2096 BRA 1.4058 BC3 3.7962 FSP 4079

MID-COURSE EXECUTION ACCURACY
SGT 3757.4 SGR 284.7 SG3 1303.3
RRT -.9704 RRF .9780 RTF -.9524
SGB 3768.1 R23 -.2215 R13 .9527
SG1 3767.5 SG2 68.6 THA 175.79

ORBIT DETERMINATION ACCURACY
ST 889.1 SR 60.0 SS 1032.1
CRT -.9574 CRS -.4252 CST .6633
LSA 1246.4 MSA 552.9 SSA 4.1
EL1 890.9 EL2 17.3 ALF 176.30

LAUNCH DATE NOV 11 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 563.355 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.156 GAL -2.17 AZL 87.73 HCA 177.13 SMA 191.50 ECC .22966 INC 2.2639 V1 30.087
RP 233.25 LAP .11 LOP 225.77 VP 21.093 GAP 4.24 AZP 92.26 TAL 348.34 TAP 165.47 RCA 147.52 APO 235.48 V2 23.574
RC 212.144 GL 22.66 GP -1.99 ZAL 104.54 ZAP 146.45 ETS 181.52 ZAE 173.88 ETE 350.64 ZAC 88.44 ETC 255.84 CLP 146.50

PLANETOCENTRIC CONIC

C3 11.582 VHL 3.403 DLA 30.79 RAL 165.70 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.428 DPA -5.64 RAP 190.91 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.38	11 21 24	3738.02	-24.28	149.91	26.51	70.46	12 23 42	3138.0	-26.72	141.88
102.62	14 42 53	3089.93	-24.27	102.10	26.51	70.45	15 34 23	2489.9	-26.71	94.08
77.38	11 21 24	3738.02	-24.28	149.91	26.51	70.46	12 23 42	3138.0	-26.72	141.88
102.62	14 42 53	3089.93	-24.27	102.10	26.51	70.45	15 34 23	2489.9	-26.71	94.08
110.00	17 26 7	2580.37	-33.31	65.85	29.05	81.82	18 9 7	1980.4	-34.08	56.70
110.00	13 37 20	3295.58	-15.85	113.48	22.31	59.31	14 32 15	2695.6	-19.80	106.59

DIFFERENTIAL CORRECTIONS
TDE .2004 TRA-1.3474 TC3 3.8205 BAU .5954
RDE -.0114 RRA .0989 RC3 -.4365 FAU .26385
FDE .8305 FRA 4.1841 FC-19.7216 BSP 12036
BDE .2007 BRA 1.3510 BC3 3.8453 FSP 4242

MID-COURSE EXECUTION ACCURACY
SGT 3721.3 SGR 355.3 SG3 1364.4
RRT -.9764 RRF .9894 RTF -.9544
SGB 3738.2 R23 -.2646 R13 .9549
SG1 3737.5 SG2 76.4 THA 174.67

ORBIT DETERMINATION ACCURACY
ST 864.5 SR 61.9 SS 1093.4
CRT -.9950 CRS -.6778 CST .6105
LSA 1262.3 MSA 594.4 SSA 2.8
EL1 866.7 EL2 6.1 ALF 175.93

LAUNCH DATE NOV 11 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 567.074 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.136 GAL -2.11 AZL 87.51 HCA 178.13 SMA 191.14 ECC .22806 INC 2.4743 V1 30.087
RP 232.88 LAP .08 LOP 226.77 VP 21.105 GAP 3.86 AZP 92.49 TAL 348.58 TAP 166.71 RCA 147.55 APO 234.73 V2 23.612
RC 214.210 GL 24.84 GP -3.11 ZAL 103.86 ZAP 145.27 ETS 183.03 ZAE 174.75 ETE 336.65 ZAC 87.32 ETC 255.83 CLP 145.40

PLANETOCENTRIC CONIC

C3 11.736 VHL 3.426 DLA 32.95 RAL 166.31 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.335 DPA -6.62 RAP 190.34 ECC 1.1931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.40	10 49 56	3846.89	-25.84	158.81	27.99	68.80	11 54 3	3246.9	-28.48	150.74
107.60	15 19 14	2986.55	-25.83	94.89	27.98	68.79	16 9 1	2386.5	-28.48	86.82
72.40	10 49 56	3846.89	-25.84	158.81	27.99	68.80	11 54 3	3246.9	-28.48	150.74
107.60	15 19 14	2986.55	-25.83	94.89	27.98	68.79	16 9 1	2386.5	-28.48	86.82
110.00	16 43 27	2727.62	-31.33	76.88	29.99	75.58	17 28 55	2127.6	-32.99	68.05
110.00	14 24 53	3153.82	-20.58	105.21	25.37	62.09	15 17 27	2553.8	-24.15	97.89

DIFFERENTIAL CORRECTIONS
TDE .2018 TRA-1.2768 TC3 3.8551 BAU .6129
RDE .0021 RRA .1349 RC3 -.6324 FAU .28548
FDE .8834 FRA 4.1162 FC-21.0599 BSP 10991
BDE .2018 BRA 1.2839 BC3 3.9066 FSP 3947

MID-COURSE EXECUTION ACCURACY
SGT 3683.2 SGR 509.9 SG3 1439.8
RRT -.9729 RRF .9959 RTF -.9530
SGB 3718.4 R23 -.2935 R13 .9542
SG1 3716.5 SG2 116.8 THA 172.32

ORBIT DETERMINATION ACCURACY
ST 838.5 SR 81.7 SS 1087.5
CRT -.8959 CRS -.8817 CST .5812
LSA 1237.3 MSA 601.2 SSA 1.9
EL1 841.7 EL2 36.2 ALF 175.00

LAUNCH DATE NOV 11 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 570.811 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	33.117	GAL	-2.06	AZL	86.77	HCA	179.13	SMA	190.79	ECC	.22654	INC	3.2211
RP	232.51	LAP	.05	LOP	227.77	VP	21.118	GAP	3.48	AZP	93.23	TAL	348.82	TAP	167.94	RCA	147.57	APO	234.01
RC	216.258	GL	31.30	GP	-6.81	ZAL	102.70	ZAP	143.65	ETS	187.86	ZAE	173.31	ETE	301.05	ZAC	83.67	ETC	255.77

V1 30.087 V2 23.650 CLP 144.21

PLANETOCENTRIC CONIC

C3	12.848	VHL	3.584	DLA	38.90	RAL	169.46	RAD	6567.5	VEL	11.586	PTH	2.03	VHP	4.268	DPA	-9.90	RAP	188.61

ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.13	10 5 16	4037.20	-29.64	175.87	34.64	63.55	11 12 34	3437.2	-32.93	167.75
117.87	16 28 59	2834.64	-29.63	84.70	34.63	63.54	17 16 13	2234.6	-32.92	76.58
62.13	10 5 16	4037.20	-29.64	175.87	34.64	63.55	11 12 34	3437.2	-32.93	167.75
117.87	16 28 59	2834.64	-29.63	84.70	34.63	63.54	17 16 13	2234.6	-32.92	76.58
62.13	10 5 16	4037.20	-29.64	175.87	34.64	63.55	11 12 34	3437.2	-32.93	167.75
117.87	16 28 59	2834.64	-29.63	84.70	34.63	63.54	17 16 13	2234.6	-32.92	76.58

DIFFERENTIAL CORRECTIONS

TDE	.1074	TRA	-1.2799	TC3	3.3818	BAU	.6119
RDE	.0782	RRA	.2849	RC3	-1.1203	FAU	.28681
FDE	1.7693	FRA	4.6138	FC	-19.3267	BSP	11682
BDE	.1329	BRA	1.3113	BC3	3.5626	FSP	4475

MID-COURSE EXECUTION ACCURACY

SGT	3580.4	SGR	1001.6	SG3	1470.8		
RRT	-.9660	RRF	.9987	RTF	-.9520		
SGB	3717.8	R23	-.2885	R13	.9574		
SG1	3709.4	SG2	249.8	THA	164.81		

ORBIT DETERMINATION ACCURACY

ST	810.5	SR	216.9	SS	1486.8		
CRT	-.6756	CRS	-.9867	CST	.5470		
LSA	1581.0	MSA	644.2	SSA	.7		
EL1	824.1	EL2	157.3	ALF	169.36		

LAUNCH DATE NOV 11 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 574.623 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	33.099	GAL	-2.00	AZL	97.22	HCA	180.13	SMA	190.47	ECC	.22509	INC	5.5902
RP	232.14	LAP	.02	LOP	228.78	VP	21.134	GAP	3.10	AZP	82.78	TAL	349.08	TAP	169.21	RCA	147.59	APO	233.34
RC	218.287	GL	-54.77	GP	38.00	ZAL	98.52	ZAP	127.74	ETS	140.96	ZAE	140.83	ETE	87.77	ZAC	126.74	ETC	252.26

V1 30.087 V2 23.689 CLP 140.96

PLANETOCENTRIC CONIC

C3	25.906	VHL	5.090	DLA	-40.32	RAL	132.63	RAD	6568.0	VEL	12.136	PTH	2.18	VHP	5.407	DPA	31.41	RAP	206.85

ECC 1.4264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.00	19 26 23	1584.94	25.01	20.07	9.26	122.72	19 52 48	984.9	29.14	12.79
120.00	2 14 2	5613.63	25.03	262.04	9.27	122.71	3 47 36	5013.6	29.15	254.75
60.00	19 26 23	1584.94	25.01	20.07	9.26	122.72	19 52 48	984.9	29.14	12.79
120.00	2 14 2	5613.63	25.03	262.04	9.27	122.71	3 47 36	5013.6	29.15	254.75
60.00	19 26 23	1584.94	25.01	20.07	9.26	122.72	19 52 48	984.9	29.14	12.79
120.00	2 14 2	5613.63	25.03	262.04	9.27	122.71	3 47 36	5013.6	29.15	254.75

DIFFERENTIAL CORRECTIONS

TDE	20.1585	TRA	16.3821	TC3	20.7732	BAU	15.9406
RDE	24.3225	RRA	21.5684	RC3	35.9224	FAU	2.35713
FD-	53.6386	FR-	47.5121	FC-	78.7699	BSP	649910
BDE	31.5903	BRA	27.0845	BC3	46.0252	FSP	-96530

MID-COURSE EXECUTION ACCURACY

SGT	44248.1	SGR	55686.2	SG3	10580.5		
RRT	.9994	RRF	-1.0000	RTF	-.9994		
SGB	71125.5	R23	-.0131	R13	-.9999		
SG1	71116.2	SG2	1155.3	THA	51.53		

ORBIT DETERMINATION ACCURACY

ST	23840.3	SR	29019.2	SS	29893.9		
CRT	.9997	CRS	1.0000	CST	.9997		
LSA	47998.2	MSA	538.9	SSA	5.7		
EL1	37553.2	EL2	483.0	ALF	50.60		

LAUNCH DATE NOV 11 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 578.313 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	33.082	GAL	-1.96	AZL	89.20	HCA	181.14	SMA	190.16	ECC	.22372	INC	.6864
RP	231.76	LAP	-.02	LOP	229.78	VP	21.151	GAP	2.74	AZP	90.80	TAL	349.25	TAP	170.39	RCA	147.62	APO	232.70
RC	220.299	GL	8.52	GP	5.47	ZAL	103.62	ZAP	141.54	ETS	171.60	ZAE	173.27	ETE	79.47	ZAC	95.59	ETC	255.79

V1 30.087 V2 23.728 CLP 141.87

PLANETOCENTRIC CONIC

C3	9.602	VHL	3.099	DLA	18.55	RAL	157.61	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	4.076	DPA	1.41	RAP	193.44

ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 13	2672.73	-27.42	72.60	13.39	97.37	16 39 45	2072.7	-26.11	64.17
90.00	9 4 31	4079.24	-3.85	165.24	8.95	61.92	10 12 31	3479.2	-7.58	158.54
100.00	17 27 44	2374.34	-28.57	50.46	13.20	99.19	18 7 19	1774.3	-27.00	42.00
100.00	10 14 41	3852.86	-2.83	148.03	8.39	60.23	11 18 53	3252.9	-6.77	141.46
110.00	19 0 21	2084.62	-31.51	27.76	12.50	103.99	19 35 5	1484.6	-29.27	19.27
110.00	10 58 34	3715.34	-.29	136.01	6.80	55.82	12 0 29	3115.3	-4.77	129.80

DIFFERENTIAL CORRECTIONS

TDE	.4195	TRA	-1.0879	TC3	4.5730	BAU	.6032
RDE	.0431	RRA	-.1125	RC3	1.0796	FAU	.33184
FDE	-1.1013	FRA	3.3948	FC	-29.9188	BSP	9829
BDE	.4217	BRA	1.0938	BC3	4.6987	FSP	3866

MID-COURSE EXECUTION ACCURACY

SGT	3624.4	SGR	708.6	SG3	1710.2		
RRT	.9437	RRF	-.9996	RTF	-.9504		
SGB	3693.0	R23	-.2996	R13	-.9539		
SG1	3685.8	SG2	230.6	THA	10.50		

ORBIT DETERMINATION ACCURACY

ST	1007.0	SR	105.3	SS	1020.7		
CRT	.9942	CRS	.9967	CST	.9905		
LSA	1434.2	MSA	98.7	SSA	6.6		
EL1	1012.4	EL2	11.2	ALF	5.93		

LAUNCH DATE NOV 11 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 582.088 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	33.066	GAL	-1.91	AZL	88.71	HCA	182.15	SMA	189.86	ECC	.22242	INC	1.2660
RP	231.38	LAP	-.05	LOP	230.79	VP	21.169	GAP	2.38	AZP	91.29	TAL	349.45	TAP	171.60	RCA	147.64	APO	232.09
RC	222.292	GL	13.78	GP	2.97	ZAL	102.98	ZAP	140.57	ETS	174.91	ZAE	175.84	ETE	92.24	ZAC	93.10	ETC	255.84

V1 30.087 V2 23.768 CLP 140.66

PLANETOCENTRIC CONIC

C3	9.782	VHL	3.128	DLA	23.57	RAL	159.34	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.975	DPA	-.79	RAP	192.22

ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 11	2901.46	-28.30	89.24	17.20	89.10	15 48 33	2301.5	-28.13	80.58
90.00	10 13 23	3857.84	-10.78	152.66	12.71	63.65	11 17 41	3257.8	-14.23	145.68
100.00	16 40 15	2578.85	-29.86	65.50	17.19	91.39	17 23 13	1978.8	-29.35	56.73
100.00	11 16 0	3655.68	-9.39	137.07	11.98	61.49	12 16 56	3055.7	-13.13	130.27
110.00	18 25 59	2248.04	-33.55	40.06	16.87	96.99	19 3 27	1648.0	-32.22	31.08
110.00	11 46 45	3559.26	-6.23	127.84	10.06	56.32	12 46 5	2959.3	-10.61	121.49

DIFFERENTIAL CORRECTIONS

TDE	.2617	TRA	-1.1304	TC3	4.1056	BAU	.5411
RDE	.0081	RRA	-.0569	RC3	.5120	FAU	.32834
FDE	.0017	FRA	4.1689	FC	-29.0582	BSP	11041
BDE	.2619	BRA	1.1318	BC3	4.1374	FSP	5043

MID-COURSE EXECUTION ACCURACY

SGT	3453.9	SGR	340.2	SG3	1727.6		
RRT	.9247	RRF	-.9951	RTF	-.9485		
SGB	3470.6	R23	-.3069	R13	-.9495		
SG1	3468.3	SG2	129.0	THA	5.21		

ORBIT DETERMINATION ACCURACY

ST	833.8	SR	38.4	SS	878.7		
CRT	.9671	CRS	.9200	CST	.8132		
LSA	1154.2	MSA	369.7	SSA	4.2		
EL1	834.6	EL2	9.8	ALF	2.55		

LAUNCH DATE NOV 11 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 585.875 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.050 GAL -1.87 AZL 88.53 HCA 183.16 SMA 189.59 ECC .22118 INC 1.4697 V1 30.087
RP 231.01 LAP -.08 LOP 231.81 VP 21.190 GAP 2.03 AZP 91.47 TAL 349.65 TAP 172.81 RCA 147.65 APO 231.52 V2 23.807
RC 224.266 GL 15.71 GP 2.07 ZAL 102.49 ZAP 139.35 ETS 176.13 ZAE 176.35 ETE 115.59 ZAC 92.16 ETC 255.85 CLP 139.39

PLANETOCENTRIC CONIC

C3 9.808 VHL 3.132 DLA 25.49 RAL 159.77 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.889 DPA -1.50 RAP 191.61 ECC 1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 15	3014.97	-27.90	97.52	18.19	84.97	15 19 30	2415.0	-28.31	88.88
90.00	10 47 46	3745.39	-14.09	146.06	14.26	65.18	11 50 11	3145.4	-17.32	138.87
100.00	16 15 19	2673.02	-29.81	72.50	18.33	87.71	16 59 52	2073.0	-29.81	63.69
100.00	11 44 23	3562.57	-12.37	131.76	13.39	62.57	12 43 46	2962.6	-15.95	124.80
110.00	18 9 14	2316.60	-33.99	45.36	18.26	93.88	18 47 51	1716.6	-33.08	36.24
110.00	12 6 57	3491.76	-8.76	124.25	11.25	56.83	13 5 9	2891.8	-13.07	117.80

DIFFERENTIAL CORRECTIONS
TDE .1794 TRA-1.1414 TC3 3.7806 BAU .4976
RDE .0071 RRA -.0320 RC3 .3275 FAU .32808
FDE .6156 FRA 4.6859 FC-28.9575 BSP 11827
BDE .1796 BRA 1.1419 BC3 3.7947 FSP 5972

MID-COURSE EXECUTION ACCURACY
SGT 3326.7 SGR 215.5 SG3 1771.6
RRT .8926 RRF -.9779 RTF -.9463
SGB 3333.7 R23 -.2939 R13 -.9468
SG1 3332.3 SG2 97.0 THA 3.31

ORBIT DETERMINATION ACCURACY
ST 771.0 SR 24.2 SS 1045.5
CRT .9758 CRS .5852 CST .6863
LSA 1204.5 MSA 487.0 SSA 4.5
EL1 771.4 EL2 5.3 ALF 1.75

LAUNCH DATE NOV 11 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 589.674 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.036 GAL -1.83 AZL 88.44 HCA 184.18 SMA 189.33 ECC .22002 INC 1.5588 V1 30.087
RP 230.62 LAP -.11 LOP 232.82 VP 21.212 GAP 1.68 AZP 91.56 TAL 349.83 TAP 174.01 RCA 147.67 APO 230.98 V2 23.847
RC 226.222 GL 16.74 GP 1.60 ZAL 102.06 ZAP 138.06 ETS 176.77 ZAE 175.84 ETE 136.57 ZAC 91.65 ETC 255.86 CLP 138.08

PLANETOCENTRIC CONIC

C3 9.780 VHL 3.127 DLA 26.58 RAL 159.85 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.807 DPA -1.81 RAP 191.15 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 37	3095.20	-27.29	103.31	18.39	82.13	14 57 12	2495.2	-28.10	94.73
90.00	11 12 0	3664.01	-16.35	141.16	15.10	66.56	12 13 4	3064.0	-19.39	133.79
100.00	15 57 44	2733.72	-29.56	76.99	18.68	85.36	16 43 18	2133.7	-29.89	68.20
100.00	12 2 33	3500.72	-14.28	128.16	14.09	63.46	13 0 54	2900.7	-17.73	121.07
110.00	17 58 5	2357.17	-34.13	48.52	18.80	92.02	18 37 22	1757.2	-33.48	39.34
110.00	12 18 42	3450.03	-10.31	122.01	11.78	57.23	13 16 12	2850.0	-14.55	115.49

DIFFERENTIAL CORRECTIONS
TDE .1708 TRA-1.0932 TC3 3.7092 BAU .4861
RDE .0136 RRA -.0151 RC3 .2510 FAU .34464
FDE .7540 FRA 4.7883 FC-30.5081 BSP 11186
BDE .1714 BRA 1.0933 BC3 3.7177 FSP 6110

MID-COURSE EXECUTION ACCURACY
SGT 3239.8 SGR 162.0 SG3 1857.6
RRT .8410 RRF -.9376 RTF -.9447
SGB 3243.9 R23 -.2633 R13 -.9450
SG1 3242.7 SG2 87.5 THA 2.41

ORBIT DETERMINATION ACCURACY
ST 744.5 SR 27.0 SS 1085.9
CRT .7139 CRS -.0502 CST .6449
LSA 1214.3 MSA 509.5 SSA 5.7
EL1 744.7 EL2 18.9 ALF 1.49

LAUNCH DATE NOV 11 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 593.486 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.022 GAL -1.79 AZL 88.38 HCA 185.20 SMA 189.08 ECC .21891 INC 1.6199 V1 30.087
RP 230.24 LAP -.15 LOP 233.84 VP 21.235 GAP 1.34 AZP 91.61 TAL 349.99 TAP 175.20 RCA 147.69 APO 230.47 V2 23.887
RC 228.159 GL 17.40 GP 1.32 ZAL 101.68 ZAP 136.71 ETS 177.16 ZAE 174.78 ETE 149.91 ZAC 91.30 ETC 255.87 CLP 136.73

PLANETOCENTRIC CONIC

C3 9.728 VHL 3.119 DLA 27.33 RAL 159.79 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 3.729 DPA -1.93 RAP 190.74 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 10	3164.57	-26.54	108.25	18.25	79.76	14 36 55	2564.6	-27.69	99.77
90.00	11 32 58	3592.52	-18.24	136.75	15.65	67.95	12 32 50	2992.5	-21.07	129.23
100.00	15 43 31	2779.81	-29.26	80.39	18.70	83.60	16 29 51	2179.8	-29.84	71.63
100.00	12 16 18	3452.51	-15.73	125.31	14.49	64.25	13 13 50	2852.5	-19.06	118.11
110.00	17 49 32	2385.48	-34.18	50.73	18.99	90.71	18 29 18	1785.5	-33.70	41.52
110.00	12 26 46	3419.60	-11.42	120.36	12.02	57.56	13 23 46	2819.6	-15.62	113.77

DIFFERENTIAL CORRECTIONS
TDE .1510 TRA-1.0602 TC3 3.5552 BAU .4631
RDE .0194 RRA -.0052 RC3 .2060 FAU .35533
FDE .9899 FRA 5.0165 FC-31.6233 BSP 10988
BDE .1523 BRA 1.0602 BC3 3.5612 FSP 6551

MID-COURSE EXECUTION ACCURACY
SGT 3130.7 SGR 133.8 SG3 1932.0
RRT .7598 RRF -.8627 RTF -.9425
SGB 3133.6 R23 -.2245 R13 -.9427
SG1 3132.3 SG2 86.9 THA 1.86

ORBIT DETERMINATION ACCURACY
ST 716.9 SR 36.0 SS 1176.8
CRT .4747 CRS -.3999 CST .6040
LSA 1272.7 MSA 529.5 SSA 6.5
EL1 717.1 EL2 31.7 ALF 1.37

LAUNCH DATE NOV 11 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 597.307 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.009 GAL -1.76 AZL 88.34 HCA 186.23 SMA 188.84 ECC .21787 INC 1.6576 V1 30.087
RP 229.86 LAP -.18 LOP 234.87 VP 21.260 GAP 1.01 AZP 91.65 TAL 350.15 TAP 176.38 RCA 147.70 APO 229.99 V2 23.927
RC 230.076 GL 17.88 GP 1.12 ZAL 101.33 ZAP 135.33 ETS 177.43 ZAE 173.47 ETE 157.84 ZAC 91.03 ETC 255.88 CLP 135.34

PLANETOCENTRIC CONIC

C3 9.667 VHL 3.109 DLA 27.89 RAL 159.67 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.654 DPA -1.96 RAP 190.33 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 18	3236.84	-25.57	113.31	17.89	77.40	14 15 15	2636.8	-27.05	104.96
90.00	11 54 53	3517.76	-20.08	132.04	16.12	69.60	12 53 30	2917.8	-22.68	124.33
100.00	15 31 7	2818.39	-28.93	83.21	18.57	82.14	16 18 5	2218.4	-29.72	74.49
100.00	12 27 46	3411.45	-16.92	122.85	14.73	64.99	13 24 37	2811.4	-20.16	115.55
110.00	17 42 30	2407.18	-34.18	52.43	19.01	89.70	18 22 37	1807.2	-33.85	43.20
110.00	12 32 52	3395.42	-12.30	119.04	12.13	57.85	13 29 27	2795.4	-16.46	112.40

DIFFERENTIAL CORRECTIONS
TDE .1375 TRA-1.0258 TC3 3.3917 BAU .4389
RDE .0257 RRA .0023 RC3 .1815 FAU .36880
FDE 1.1466 FRA 5.1856 FC-33.0292 BSP 10699
BDE .1399 BRA 1.0258 BC3 3.3965 FSP 6871

MID-COURSE EXECUTION ACCURACY
SGT 3014.4 SGR 122.5 SG3 2013.7
RRT .6499 RRF -.7590 RTF -.9381
SGB 3016.9 R23 -.1958 R13 -.9382
SG1 3015.4 SG2 93.1 THA 1.51

ORBIT DETERMINATION ACCURACY
ST 692.8 SR 47.5 SS 1237.4
CRT .3437 CRS -.5508 CST .5836
LSA 1315.9 MSA 530.8 SSA 7.6
EL1 692.9 EL2 44.6 ALF 1.36

LAUNCH DATE NOV 11 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 601.140 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.996	GAL	-1.73	AZL	88.31	HCA	187.26	SMA	188.62	ECC	.21689	INC	1.6841	V1	30.087
RP	229.47	LAP	-.21	LOP	235.90	VP	21.286	GAP	.68	AZP	91.67	TAL	350.29	TAP	177.55	RCA	147.71	APO	229.53	V2	23.968
RC	231.973	GL	18.24	GP	.99	ZAL	101.02	ZAP	133.91	ETS	177.62	ZAE	172.02	ETE	162.79	ZAC	90.81	ETC	255.89	CLP	133.92

PLANETOCENTRIC CONIC

C3	9.602	VHL	3.099	DLA	28.34	RAL	159.53	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	3.581	DPA	-1.92	RAP	189.90	ECC	1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.88	12 28 13	3406.14	-23.18	125.01	16.98	73.23	13 24 59	2806.1	-25.26	116.95
91.12	12 46 49	3345.84	-23.17	120.59	16.97	73.22	13 42 35	2745.8	-25.25	112.54
100.00	15 19 41	2852.93	-28.59	85.72	18.36	80.87	16 7 14	2252.9	-29.55	77.04
100.00	12 38 2	3374.28	-17.98	120.60	14.89	65.71	13 34 16	2774.3	-21.11	113.20
110.00	17 36 26	2424.85	-34.17	53.81	18.94	88.89	18 16 51	1824.9	-33.94	44.57
110.00	12 37 46	3375.12	-13.04	117.93	12.16	58.12	13 34 1	2775.1	-17.16	111.24

DIFFERENTIAL CORRECTIONS

TDE	.1298	TRA	-.9853	TC3	3.2345	BAU	.4158
RDE	.0319	RRA	.0079	RC3	.1676	FAU	.38346
FDE	1.2800	FRA	5.3334	FC-34.5725		BSP	10280
BDE	.1336	BRA	.9853	BC3	3.2388	FSP	7163

MID-COURSE EXECUTION ACCURACY

SGT	2891.3	SGR	120.6	SG3	2099.0		
RRT	.5398	RRF	-.6489	RTF	-.9335		
SGB	2893.8	R23	-.1715	R13	-.9336		
SG1	2892.1	SG2	101.5	THA	1.29		

ORBIT DETERMINATION ACCURACY

ST	668.4	SR	59.3	SS	1287.4
CRT	.2844	CRS	-.6254	CST	.5602
LSA	1351.6	MSA	529.9	SSA	8.7
EL1	668.6	EL2	56.8	ALF	1.45

LAUNCH DATE NOV 11 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 604.987 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.984	GAL	-1.70	AZL	88.29	HCA	188.29	SMA	188.41	ECC	.21596	INC	1.7044	V1	30.087
RP	229.09	LAP	-.25	LOP	236.93	VP	21.313	GAP	.35	AZP	91.69	TAL	350.43	TAP	178.72	RCA	147.72	APO	229.10	V2	24.009
RC	233.848	GL	18.53	GP	.88	ZAL	100.72	ZAP	132.44	ETS	177.77	ZAE	170.47	ETE	166.07	ZAC	90.61	ETC	255.90	CLP	132.45

PLANETOCENTRIC CONIC

C3	9.538	VHL	3.088	DLA	28.71	RAL	159.37	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.512	DPA	-1.83	RAP	189.46	ECC	1.1570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.05	11 55 42	3508.03	-23.51	132.58	16.82	73.02	12 54 10	2908.0	-25.61	124.51
94.95	13 18 5	3241.30	-23.49	113.04	16.82	73.01	14 12 6	2641.3	-25.60	104.97
100.00	15 8 43	2885.53	-28.21	88.07	18.09	79.69	15 56 48	2285.5	-29.35	79.45
100.00	12 47 46	3339.02	-18.95	118.43	15.02	66.44	13 43 25	2739.0	-21.98	110.94
110.00	17 31 4	2439.84	-34.14	54.98	18.83	88.20	18 11 44	1839.8	-34.01	45.73
110.00	12 41 54	3357.49	-13.67	116.95	12.14	58.36	13 37 51	2757.5	-17.75	110.22

DIFFERENTIAL CORRECTIONS

TDE	.1370	TRA	-.9328	TC3	3.1048	BAU	.3964
RDE	.0378	RRA	.0122	RC3	.1601	FAU	.39980
FDE	1.3698	FRA	5.4473	FC-36.2894		BSP	9584
BDE	.1422	BRA	.9329	BC3	3.1090	FSP	7397

MID-COURSE EXECUTION ACCURACY

SGT	2763.3	SGR	124.0	SG3	2188.6		
RRT	.4574	RRF	-.5546	RTF	-.9297		
SGB	2766.0	R23	-.1447	R13	-.9298		
SG1	2763.8	SG2	110.2	THA	1.18		

ORBIT DETERMINATION ACCURACY

ST	646.8	SR	70.7	SS	1317.6
CRT	.2940	CRS	-.6617	CST	.5123
LSA	1367.2	MSA	538.6	SSA	9.7
EL1	647.1	EL2	67.5	ALF	1.86

LAUNCH DATE NOV 11 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 608.846 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.973	GAL	-1.67	AZL	88.28	HCA	189.32	SMA	188.22	ECC	.21508	INC	1.7220	V1	30.087
RP	228.70	LAP	-.28	LOP	237.96	VP	21.342	GAP	.04	AZP	91.70	TAL	350.55	TAP	179.87	RCA	147.73	APO	228.70	V2	24.049
RC	235.703	GL	18.77	GP	.80	ZAL	100.46	ZAP	130.93	ETS	177.89	ZAE	168.86	ETE	168.36	ZAC	90.43	ETC	255.91	CLP	130.94

PLANETOCENTRIC CONIC

C3	9.475	VHL	3.078	DLA	29.03	RAL	159.22	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	3.445	DPA	-1.70	RAP	189.00	ECC	1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.33	11 41 5	3551.91	-23.78	135.90	16.67	72.85	12 40 17	2951.9	-25.91	127.82
96.67	13 31 30	3194.82	-23.77	109.71	16.66	72.83	14 24 44	2594.8	-25.90	101.63
100.00	14 57 54	2917.49	-27.80	90.35	17.80	78.55	15 46 31	2317.5	-29.10	81.79
100.00	12 57 22	3304.47	-19.88	116.28	15.14	67.20	13 52 27	2704.5	-22.79	108.70
110.00	17 26 18	2452.79	-34.11	55.99	18.70	87.60	18 7 10	1852.8	-34.07	46.74
110.00	12 45 28	3341.93	-14.22	116.08	12.11	58.58	13 41 10	2741.9	-18.28	109.32

DIFFERENTIAL CORRECTIONS

TDE	.1368	TRA	-.8899	TC3	2.9123	BAU	.3694
RDE	.0436	RRA	.0156	RC3	.1571	FAU	.41357
FDE	1.5169	FRA	5.6298	FC-37.7884		BSP	9050
BDE	.1436	BRA	.8900	BC3	2.9165	FSP	7758

MID-COURSE EXECUTION ACCURACY

SGT	2620.7	SGR	130.5	SG3	2274.1		
RRT	.3838	RRF	-.4727	RTF	-.9234		
SGB	2623.9	R23	-.1273	R13	-.9235		
SG1	2621.2	SG2	120.5	THA	1.10		

ORBIT DETERMINATION ACCURACY

ST	625.1	SR	81.7	SS	1376.5
CRT	.2966	CRS	-.6948	CST	.4711
LSA	1414.1	MSA	540.8	SSA	10.5
EL1	625.6	EL2	78.0	ALF	2.26

LAUNCH DATE NOV 11 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 612.711 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.963	GAL	-1.65	AZL	88.26	HCA	190.36	SMA	188.03	ECC	.21427	INC	1.7342	V1	30.087
RP	228.31	LAP	-.31	LOP	239.00	VP	21.372	GAP	-.28	AZP	91.71	TAL	350.66	TAP	181.02	RCA	147.74	APO	228.32	V2	24.090
RC	237.537	GL	18.97	GP	.74	ZAL	100.23	ZAP	129.38	ETS	178.00	ZAE	167.18	ETE	170.04	ZAC	90.25	ETC	255.93	CLP	129.38

PLANETOCENTRIC CONIC

C3	9.415	VHL	3.068	DLA	29.30	RAL	159.08	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.381	DPA	-1.55	RAP	188.50	ECC	1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.12	11 30 57	3581.46	-24.03	138.16	16.51	72.70	12 30 38	2981.5	-26.17	130.07
97.88	13 40 30	3162.78	-24.02	107.43	16.51	72.69	14 33 13	2562.8	-26.16	99.34
100.00	14 46 50	2950.23	-27.34	92.67	17.49	77.41	15 36 0	2350.2	-28.80	84.18
100.00	13 7 18	3269.24	-20.79	114.07	15.26	68.03	14 1 47	2669.2	-23.59	106.39
110.00	17 22 1	2464.16	-34.07	56.87	18.55	87.08	18 3 5	1864.2	-34.10	47.63
110.00	12 48 37	3328.07	-14.71	115.31	12.07	58.79	13 44 5	2728.1	-18.74	108.51

DIFFERENTIAL CORRECTIONS

TDE	.1416	TRA	-.8434	TC3	2.7147	BAU	.3423
RDE	.0493	RRA	.0185	RC3	.1580	FAU	.42960
FDE	1.6143	FRA	5.7689	FC-39.5043		BSP	8431
BDE	.1500	BRA	.8436	BC3	2.7193	FSP	8033

MID-COURSE EXECUTION ACCURACY

SGT	2471.3	SGR	139.4	SG3	2365.2		
RRT	.3315	RRF	-.4147	RTF	-.9150		
SGB	2475.2	R23	-.1172	R13	-.9151		
SG1	2471.7	SG2	131.5	THA	1.07		

ORBIT DETERMINATION ACCURACY

ST	605.0	SR	92.8	SS	1411.7
CRT	.3211	CRS	-.7120	CST	.4266
LSA	1440.3	MSA	541.2	SSA	11.6
EL1	605.7	EL2	87.8	ALF	2.88

LAUNCH DATE NOV 11 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 616.588 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.953 GAL -1.62 AZL 88.25 HCA 191.40 SMA 187.86 ECC .21350 INC 1.7453 V1 30.087
RP 227.92 LAP -.35 LOP 240.04 VP 21.403 GAP -.58 AZP 91.71 TAL 350.75 TAP 182.15 RCA 147.75 APO 227.97 V2 24.132
RC 239.350 GL 19.15 GP .68 ZAL 100.02 ZAP 127.79 ETS 178.08 ZAE 165.44 ETE 171.31 ZAC 90.08 ETC 255.95 CLP 127.79

PLANETOCENTRIC CONIC

C3 9.358 VHL 3.059 DLA 29.54 RAL 158.95 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.321 DPA -1.37 RAP 187.98 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.20	11 23 13	3603.45	-24.24	139.86	16.36	72.58	12 23 16	3003.5	-26.40	131.76
98.80	13 47 13	3138.41	-24.23	105.70	16.36	72.56	14 39 32	2538.4	-26.39	97.60
100.00	14 34 54	2985.88	-26.78	95.18	17.15	76.20	15 24 39	2385.9	-28.42	86.76
100.00	13 18 13	3231.21	-21.74	111.64	15.41	68.96	14 12 5	2631.2	-24.41	103.86
110.00	17 18 10	2474.21	-34.04	57.66	18.42	86.61	17 59 25	1874.2	-34.13	48.41
110.00	12 51 26	3315.65	-15.15	114.61	12.02	58.98	13 46 42	2715.6	-19.15	107.78

DIFFERENTIAL CORRECTIONS
TDE .1434 TRA -.8005 TC3 2.4752 BAU .3103
RDE .0549 RRA .0210 RC3 .1614 FAU .44396
FDE 1.7508 FRA 5.9521 FC-41.0745 BSP 7861
BDE .1535 BRA .8008 BC3 2.4805 FSP 8388

MID-COURSE EXECUTION ACCURACY
SGT 2309.9 SGR 149.5 SG3 2453.6
RRT .2875 RRF -.3687 RTF -.9034
SGB 2314.7 R23 -.1128 R13 -.9035
SG1 2310.3 SG2 143.2 THA 1.07

ORBIT DETERMINATION ACCURACY
ST 584.4 SR 103.7 SS 1465.8
CRT .3420 CRS -.7302 CST .3822
LSA 1487.0 MSA 538.1 SSA 12.5
EL1 585.5 EL2 97.3 ALF 3.57

LAUNCH DATE NOV 11 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 620.476 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.944 GAL -1.61 AZL 88.25 HCA 192.45 SMA 187.70 ECC .21278 INC 1.7540 V1 30.087
RP 227.53 LAP -.38 LOP 241.09 VP 21.436 GAP -.89 AZP 91.71 TAL 350.83 TAP 183.28 RCA 147.76 APO 227.63 V2 24.173
RC 241.142 GL 19.31 GP .64 ZAL 99.84 ZAP 126.16 ETS 178.16 ZAE 163.66 ETE 172.30 ZAC 89.90 ETC 255.97 CLP 126.16

PLANETOCENTRIC CONIC

C3 9.304 VHL 3.050 DLA 29.75 RAL 158.84 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.263 DPA -1.17 RAP 187.43 ECC 1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.46	11 17 3	3620.59	-24.43	141.20	16.23	72.47	12 17 24	3020.6	-26.60	133.08
99.54	13 52 29	3119.03	-24.42	104.33	16.22	72.45	14 44 28	2519.0	-26.59	96.21
100.00	14 20 19	3030.06	-26.03	98.25	16.75	74.76	15 10 49	2430.1	-27.87	89.93
100.00	13 31 54	3184.80	-22.84	108.63	15.64	70.18	14 24 59	2584.8	-25.34	100.72
110.00	17 14 44	2483.14	-34.00	58.35	18.29	86.20	17 56 7	1883.1	-34.15	49.11
110.00	12 53 58	3304.48	-15.54	113.98	11.98	59.16	13 49 3	2704.5	-19.51	107.12

DIFFERENTIAL CORRECTIONS
TDE .1514 TRA -.7512 TC3 2.2311 BAU .2783
RDE .0603 RRA .0231 RC3 .1669 FAU .45961
FDE 1.8542 FRA 6.1026 FC-42.7670 BSP 7167
BDE .1630 BRA .7515 BC3 2.2374 FSP 8691

MID-COURSE EXECUTION ACCURACY
SGT 2138.9 SGR 160.4 SG3 2544.3
RRT .2610 RRF -.3391 RTF -.8888
SGB 2144.9 R23 -.1097 R13 -.8889
SG1 2139.3 SG2 154.8 THA 1.13

ORBIT DETERMINATION ACCURACY
ST 565.9 SR 114.4 SS 1503.3
CRT .3868 CRS -.7408 CST .3224
LSA 1518.1 MSA 537.2 SSA 13.5
EL1 567.7 EL2 105.1 ALF 4.63

LAUNCH DATE NOV 11 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 624.375 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.935 GAL -1.59 AZL 88.24 HCA 193.50 SMA 187.54 ECC .21211 INC 1.7622 V1 30.087
RP 227.14 LAP -.41 LOP 242.13 VP 21.469 GAP -1.18 AZP 91.71 TAL 350.90 TAP 184.40 RCA 147.76 APO 227.32 V2 24.214
RC 242.914 GL 19.44 GP .60 ZAL 99.69 ZAP 124.49 ETS 178.23 ZAE 161.83 ETE 173.10 ZAC 89.73 ETC 255.99 CLP 124.49

PLANETOCENTRIC CONIC

C3 9.254 VHL 3.042 DLA 29.94 RAL 158.74 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.208 DPA -.94 RAP 186.85 ECC 1.1523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.86	11 12 3	3634.35	-24.60	142.28	16.11	72.38	12 12 37	3034.3	-26.78	134.15
100.14	13 56 45	3103.17	-24.59	103.21	16.11	72.36	14 48 28	2503.2	-26.77	95.09
79.86	11 12 3	3634.35	-24.60	142.28	16.11	72.38	12 12 37	3034.3	-26.78	134.15
100.14	13 56 45	3103.17	-24.59	103.21	16.11	72.36	14 48 28	2503.2	-26.77	95.09
110.00	17 11 42	2491.02	-33.96	58.96	18.17	85.84	17 53 13	1891.0	-34.16	49.72
110.00	12 56 16	3294.49	-15.89	113.42	11.95	59.33	13 51 11	2694.5	-19.84	106.52

DIFFERENTIAL CORRECTIONS
TDE .1580 TRA -.7052 TC3 1.9537 BAU .2427
RDE .0657 RRA .0250 RC3 .1740 FAU .47395
FDE 1.9844 FRA 6.2928 FC-44.3408 BSP 6497
BDE .1711 BRA .7056 BC3 1.9614 FSP 9053

MID-COURSE EXECUTION ACCURACY
SGT 1962.3 SGR 171.6 SG3 2633.1
RRT .2360 RRF -.3155 RTF -.8681
SGB 1969.8 R23 -.1124 R13 -.8683
SG1 1962.7 SG2 166.8 THA 1.19

ORBIT DETERMINATION ACCURACY
ST 548.9 SR 124.9 SS 1554.8
CRT .4298 CRS -.7521 CST .2609
LSA 1564.9 MSA 534.0 SSA 14.4
EL1 551.6 EL2 112.2 ALF 5.83

LAUNCH DATE NOV 11 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 628.283 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.927 GAL -1.58 AZL 88.23 HCA 194.55 SMA 187.40 ECC .21148 INC 1.7686 V1 30.087
RP 226.75 LAP -.44 LOP 243.19 VP 21.503 GAP -1.47 AZP 91.71 TAL 350.95 TAP 185.50 RCA 147.77 APO 227.03 V2 24.256
RC 244.666 GL 19.56 GP .57 ZAL 99.56 ZAP 122.78 ETS 178.29 ZAE 159.94 ETE 173.75 ZAC 89.56 ETC 256.01 CLP 122.78

PLANETOCENTRIC CONIC

C3 9.207 VHL 3.034 DLA 30.10 RAL 158.67 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.157 DPA -.70 RAP 186.23 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.36	11 7 59	3645.43	-24.75	143.16	16.01	72.30	12 8 44	3045.4	-26.93	135.02
100.64	14 0 14	3090.14	-24.73	102.29	16.01	72.29	14 51 44	2490.1	-26.92	94.16
79.36	11 7 59	3645.43	-24.75	143.16	16.01	72.30	12 8 44	3045.4	-26.93	135.02
100.64	14 0 14	3090.14	-24.73	102.29	16.01	72.29	14 51 44	2490.1	-26.92	94.16
110.00	17 9 2	2497.96	-33.92	59.50	18.07	85.53	17 50 40	1898.0	-34.17	50.27
110.00	12 58 21	3285.60	-16.20	112.91	11.93	59.48	13 53 7	2685.6	-20.13	105.99

DIFFERENTIAL CORRECTIONS
TDE .1694 TRA -.6547 TC3 1.6619 BAU .2058
RDE .0710 RRA .0266 RC3 .1825 FAU .48914
FDE 2.0841 FRA 6.4569 FC-45.9921 BSP 5727
BDE .1837 BRA .6553 BC3 1.6719 FSP 9363

MID-COURSE EXECUTION ACCURACY
SGT 1778.0 SGR 183.3 SG3 2722.8
RRT .2196 RRF -.3020 RTF -.8393
SGB 1787.4 R23 -.1187 R13 -.8396
SG1 1778.5 SG2 178.8 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 535.7 SR 135.2 SS 1591.8
CRT .4902 CRS -.7583 CST .1851
LSA 1598.4 MSA 532.8 SSA 15.3
EL1 540.0 EL2 116.9 ALF 7.40

LAUNCH DATE NOV 11 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 632.202 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.919 GAL -1.56 AZL 88.23 HCA 195.61 SMA 187.27 ECC .21090 INC 1.7749 V1 30.087
RP 226.36 LAP -.48 LOP 244.24 VP 21.538 GAP -1.76 AZP 91.71 TAL 351.00 TAP 186.60 RCA 147.77 APO 226.76 V2 24.297
RC 246.398 GL 19.67 GP .54 ZAL 99.46 ZAP 121.02 ETS 178.34 ZAE 158.02 ETE 174.29 ZAC 89.38 ETC 256.04 CLP 121.03

PLANETOCENTRIC CONIC

C3 9.164 VHL 3.027 DLA 30.23 RAL 158.62 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.108 DPA -.43 RAP 185.59 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.94	11 4 39	3654.49	-24.87	143.88	15.93	72.24	12 5 33	3054.5	-27.07	135.74
101.06	14 3 10	3079.27	-24.86	101.53	15.93	72.22	14 54 29	2479.3	-27.06	93.39
78.94	11 4 39	3654.49	-24.87	143.88	15.93	72.24	12 5 33	3054.5	-27.07	135.74
101.06	14 3 10	3079.27	-24.86	101.53	15.93	72.22	14 54 29	2479.3	-27.06	93.39
110.00	17 6 45	2504.00	-33.89	59.97	17.99	85.25	17 48 29	1904.0	-34.18	50.74
110.00	13 0 14	3277.76	-16.47	112.47	11.92	59.61	13 54 52	2677.8	-20.38	105.53

DIFFERENTIAL CORRECTIONS
TDE .1811 TRA -.6037 TC3 1.3470 BAU .1667
RDE .0762 RRA .0281 RC3 .1919 FAU .50326
FDE 2.2036 FRA 6.6436 FC-47.5407 BSP 4937
BDE .1964 BRA .6043 BC3 1.3606 FSP 9717

MID-COURSE EXECUTION ACCURACY
SGT 1591.0 SGR 195.1 SG3 2809.9
RRT .2026 RRF -.2913 RTF -.7980
SGB 1602.9 R23 -.1300 R13 -.7984
SG1 1591.5 SG2 191.0 THA 1.44

ORBIT DETERMINATION ACCURACY
ST 524.8 SR 145.4 SS 1638.1
CRT .5528 CRS -.7654 CST .1012
LSA 1642.7 MSA 530.1 SSA 16.1
EL1 531.3 EL2 119.7 ALF 9.18

LAUNCH DATE NOV 11 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 636.131 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.912 GAL -1.56 AZL 88.22 HCA 196.67 SMA 187.14 ECC .21036 INC 1.7798 V1 30.087
RP 225.97 LAP -.51 LOP 245.30 VP 21.575 GAP -2.04 AZP 91.71 TAL 351.02 TAP 187.69 RCA 147.78 APO 226.51 V2 24.339
RC 248.110 GL 19.77 GP .51 ZAL 99.38 ZAP 119.24 ETS 178.40 ZAE 156.05 ETE 174.76 ZAC 89.19 ETC 256.07 CLP 119.24

PLANETOCENTRIC CONIC

C3 9.125 VHL 3.021 DLA 30.35 RAL 158.59 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.063 DPA -.15 RAP 184.92 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.60	11 2 0	3661.74	-24.98	144.46	15.88	72.18	12 3 1	3061.7	-27.18	136.31
101.40	14 5 35	3070.36	-24.97	100.90	15.88	72.17	14 56 46	2470.4	-27.17	92.75
78.60	11 2 0	3661.74	-24.98	144.46	15.88	72.18	12 3 1	3061.7	-27.18	136.31
101.40	14 5 35	3070.36	-24.97	100.90	15.88	72.17	14 56 46	2470.4	-27.17	92.75
110.00	17 4 50	2509.15	-33.86	60.37	17.93	85.02	17 46 39	1909.1	-34.18	51.14
110.00	13 1 55	3270.95	-16.70	112.08	11.93	59.73	13 56 26	2671.0	-20.59	105.12

DIFFERENTIAL CORRECTIONS
TDE .1963 TRA -.5504 TC3 1.0147 BAU .1262
RDE .0813 RRA .0294 RC3 .2024 FAU .51810
FDE 2.2890 FRA 6.8072 FC-49.1524 BSP 4059
BDE .2125 BRA .5512 BC3 1.0347 FSP 10007

MID-COURSE EXECUTION ACCURACY
SGT 1406.4 SGR 207.2 SG3 2897.4
RRT .1861 RRF -.2872 RTF -.7355
SGB 1421.6 R23 -.1500 R13 -.7361
SG1 1406.9 SG2 203.5 THA 1.60

ORBIT DETERMINATION ACCURACY
ST 520.3 SR 155.5 SS 1669.4
CRT .6238 CRS -.7681 CST .0087
LSA 1673.7 MSA 529.4 SSA 17.0
EL1 529.8 EL2 119.4 ALF 11.13

LAUNCH DATE NOV 11 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 640.069 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.905 GAL -1.55 AZL 88.22 HCA 197.73 SMA 187.03 ECC .20987 INC 1.7839 V1 30.087
RP 225.58 LAP -.54 LOP 246.36 VP 21.612 GAP -2.31 AZP 91.70 TAL 351.04 TAP 188.77 RCA 147.78 APO 226.28 V2 24.381
RC 249.803 GL 19.86 GP .49 ZAL 99.34 ZAP 117.41 ETS 178.45 ZAE 154.04 ETE 175.15 ZAC 89.00 ETC 256.11 CLP 117.41

PLANETOCENTRIC CONIC

C3 9.090 VHL 3.015 DLA 30.45 RAL 158.59 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 3.021 DPA .15 RAP 184.22 ECC 1.1496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.32	10 59 54	3667.57	-25.08	144.93	15.85	72.14	12 1 2	3067.6	-27.28	136.77
101.68	14 7 39	3063.02	-25.07	100.38	15.85	72.13	14 58 42	2463.0	-27.27	92.23
78.32	10 59 54	3667.57	-25.08	144.93	15.85	72.14	12 1 2	3067.6	-27.28	136.77
101.68	14 7 39	3063.02	-25.07	100.38	15.85	72.13	14 58 42	2463.0	-27.27	92.23
110.00	17 3 18	2513.43	-33.84	60.70	17.90	84.82	17 45 11	1913.4	-34.18	51.47
110.00	13 3 26	3265.16	-16.90	111.75	11.95	59.83	13 57 51	2665.2	-20.78	104.77

DIFFERENTIAL CORRECTIONS
TDE .2119 TRA -.4960 TC3 .6561 BAU .0839
RDE .0864 RRA .0307 RC3 .2137 FAU .53230
FDE 2.3729 FRA 6.9724 FC-50.6974 BSP 3195
BDE .2289 BRA .4969 BC3 .6901 FSP 10309

MID-COURSE EXECUTION ACCURACY
SGT 1230.5 SGR 219.4 SG3 2981.8
RRT .1602 RRF -.2854 RTF -.6377
SGB 1249.9 R23 -.1823 R13 -.6387
SG1 1231.0 SG2 216.5 THA 1.69

ORBIT DETERMINATION ACCURACY
ST 519.6 SR 165.5 SS 1700.3
CRT .6924 CRS -.7702 CST -.0866
LSA 1705.8 MSA 527.5 SSA 18.0
EL1 532.7 EL2 116.5 ALF 13.07

LAUNCH DATE NOV 11 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 644.017 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.899 GAL -1.55 AZL 88.21 HCA 198.80 SMA 186.92 ECC .20942 INC 1.7880 V1 30.087
RP 225.19 LAP -.58 LOP 247.43 VP 21.649 GAP -2.58 AZP 91.69 TAL 351.04 TAP 189.84 RCA 147.78 APO 226.07 V2 24.423
RC 251.477 GL 19.94 GP .47 ZAL 99.32 ZAP 115.56 ETS 178.50 ZAE 151.99 ETE 175.49 ZAC 88.81 ETC 256.15 CLP 115.56

PLANETOCENTRIC CONIC

C3 9.058 VHL 3.010 DLA 30.53 RAL 158.61 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.982 DPA .46 RAP 183.49 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.10	10 58 22	3672.03	-25.15	145.29	15.84	72.11	11 59 34	3072.0	-27.36	137.13
101.90	14 9 21	3057.21	-25.14	99.98	15.84	72.09	15 0 18	2457.2	-27.35	91.82
78.10	10 58 22	3672.03	-25.15	145.29	15.84	72.11	11 59 34	3072.0	-27.36	137.13
101.90	14 9 21	3057.21	-25.14	99.98	15.84	72.09	15 0 18	2457.2	-27.35	91.82
110.00	17 2 7	2516.87	-33.81	60.97	17.88	84.67	17 44 4	1916.9	-34.18	51.74
110.00	13 4 45	3260.36	-17.06	111.47	11.99	59.92	13 59 6	2660.4	-20.93	104.48

DIFFERENTIAL CORRECTIONS
TDE .2294 TRA -.4400 TC3 .2763 BAU .0432
RDE .0914 RRA .0318 RC3 .2255 FAU .54551
FDE 2.4561 FRA 7.1479 FC-52.1393 BSP 2249
BDE .2469 BRA .4412 BC3 .3567 FSP 10603

MID-COURSE EXECUTION ACCURACY
SGT 1079.0 SGR 231.6 SG3 3062.5
RRT .1211 RRF -.2847 RTF -.4848
SGB 1103.6 R23 -.2249 R13 -.4861
SG1 1079.4 SG2 229.8 THA 1.56

ORBIT DETERMINATION ACCURACY
ST 525.2 SR 175.3 SS 1732.4
CRT .7587 CRS -.7716 CST -.1853
LSA 1740.9 MSA 526.2 SSA 18.8
EL1 542.6 EL2 110.6 ALF 14.84

LAUNCH DATE NOV 11 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 647.974 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.893 GAL -1.55 AZL 88.21 HCA 199.87 SMA 186.82 ECC .20900 INC 1.7917 V1 30.087
RP 224.80 LAP -.61 LOP 248.50 VP 21.688 GAP -2.85 AZP 91.69 TAL 351.03 TAP 190.90 RCA 147.78 APO 225.87 V2 24.465
RC 253.132 GL 20.01 GP .45 ZAL 99.32 ZAP 113.67 ETS 178.54 ZAE 149.90 ETE 175.80 ZAC 88.62 ETC 256.19 CLP 113.67

PLANETOCENTRIC CONIC

C3 9.029 VHL 3.005 DLA 30.59 RAL 158.65 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.947 DPA .78 RAP 182.74 ECC 1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.93	10 57 18	3675.33	-25.22	145.56	15.86	72.09	11 58 34	3075.3	-27.43	137.40
102.07	14 10 45	3052.68	-25.20	99.66	15.86	72.07	15 1 38	2452.7	-27.42	91.50
77.93	10 57 18	3675.33	-25.22	145.56	15.86	72.09	11 58 34	3075.3	-27.43	137.40
102.07	14 10 45	3052.68	-25.20	99.66	15.86	72.07	15 1 38	2452.7	-27.42	91.50
110.00	17 1 20	2519.47	-33.80	61.17	17.90	84.55	17 43 19	1919.5	-34.18	51.95
110.00	13 5 54	3256.54	-17.19	111.25	12.04	59.99	14 0 11	2656.5	-21.05	104.25

DIFFERENTIAL CORRECTIONS
TDE .2483 TRA -.3818 TC3 -.1216 BAU .0322
RDE .0964 RRA .0328 RC3 .2378 FAU .55820
FDE 2.5303 FRA 7.3164 FC-55.5211 BSP 1272
BDE .2663 BRA .3832 BC3 .2671 FSP 10882

MID-COURSE EXECUTION ACCURACY
SGT 972.0 SGR 243.9 SG3 3139.6
RRT .0633 RRF -.2856 RTF -.2568
SGB 1002.1 R23 -.2688 R13 -.2579
SG1 972.1 SG2 243.3 THA .97

ORBIT DETERMINATION ACCURACY
ST 537.1 SR 185.1 SS 1761.0
CRT .8192 CRS -.7721 CST -.2834
LSA 1774.2 MSA 525.0 SSA 19.6
EL1 558.9 EL2 102.0 ALF 16.32

LAUNCH DATE NOV 11 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 651.940 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.888 GAL -1.55 AZL 88.20 HCA 200.94 SMA 186.73 ECC .20862 INC 1.7948 V1 30.087
RP 224.41 LAP -.64 LOP 249.58 VP 21.727 GAP -3.11 AZP 91.68 TAL 351.00 TAP 191.95 RCA 147.78 APO 225.69 V2 24.506
RC 254.766 GL 20.07 GP .44 ZAL 99.36 ZAP 111.75 ETS 178.59 ZAE 147.78 ETE 176.06 ZAC 88.42 ETC 256.24 CLP 111.75

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA 30.63 RAL 158.72 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.914 DPA 1.12 RAP 181.97 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.81	10 56 42	3677.59	-25.26	145.74	15.90	72.08	11 58 0	3077.6	-27.47	137.58
102.19	14 11 55	3049.36	-25.25	99.43	15.90	72.06	15 2 44	2449.4	-27.46	91.26
77.81	10 56 42	3677.59	-25.26	145.74	15.90	72.08	11 58 0	3077.6	-27.47	137.58
102.19	14 11 55	3049.36	-25.25	99.43	15.90	72.06	15 2 44	2449.4	-27.46	91.26
110.00	17 0 55	2521.23	-33.79	61.30	17.94	84.47	17 42 56	1921.2	-34.18	52.08
110.00	13 6 53	3253.71	-17.29	111.09	12.11	60.04	14 1 6	2653.7	-21.14	104.08

DIFFERENTIAL CORRECTIONS
TDE .2681 TRA -.3221 TC3 -.5398 BAU .0716
RDE .1013 RRA .0339 RC3 .2504 FAU .57036
FDE 2.5903 FRA 7.4789 FC-54.8393 BSP 353
BDE .2866 BRA .3239 BC3 .5951 FSP 11137

MID-COURSE EXECUTION ACCURACY
SGT 937.0 SGR 256.2 SG3 3213.1
RRT -.0142 RRF -.2879 RTF .0383
SGB 971.4 R23 .2874 R13 -.0386
SG1 937.0 SG2 256.1 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 555.1 SR 194.7 SS 1784.5
CRT .8707 CRS -.7711 CST -.3747
LSA 1804.4 MSA 524.0 SSA 20.5
EL1 581.1 EL2 91.5 ALF 17.43

LAUNCH DATE NOV 11 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 655.916 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.883 GAL -1.55 AZL 88.20 HCA 202.02 SMA 186.65 ECC .20828 INC 1.7979 V1 30.087
RP 224.02 LAP -.67 LOP 250.65 VP 21.767 GAP -3.36 AZP 91.67 TAL 350.96 TAP 192.98 RCA 147.77 APO 225.53 V2 24.548
RC 256.380 GL 20.13 GP .42 ZAL 99.42 ZAP 109.80 ETS 178.63 ZAE 145.63 ETE 176.30 ZAC 88.21 ETC 256.29 CLP 109.80

PLANETOCENTRIC CONIC

C3 8.983 VHL 2.997 DLA 30.66 RAL 158.82 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.886 DPA 1.47 RAP 181.17 ECC 1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.74	10 56 34	3678.78	-25.29	145.84	15.97	72.07	11 57 52	3078.8	-27.50	137.67
102.26	14 12 49	3047.24	-25.28	99.28	15.97	72.06	15 3 36	2447.2	-27.49	91.11
77.74	10 56 34	3678.78	-25.29	145.84	15.97	72.07	11 57 52	3078.8	-27.50	137.67
102.26	14 12 49	3047.24	-25.28	99.28	15.97	72.06	15 3 36	2447.2	-27.49	91.11
110.00	17 0 52	2522.17	-33.78	61.38	18.00	84.42	17 42 54	1922.2	-34.18	52.16
110.00	13 7 41	3251.84	-17.35	110.98	12.20	60.08	14 1 53	2651.8	-21.20	103.96

DIFFERENTIAL CORRECTIONS
TDE .2892 TRA -.2603 TC3 -.9767 BAU .1215
RDE .1061 RRA .0348 RC3 .2632 FAU .58113
FDE 2.6480 FRA 7.6471 FC-56.0090 BSP 889
BDE .3081 BRA .2626 BC3 1.0116 FSP 11393

MID-COURSE EXECUTION ACCURACY
SGT 991.5 SGR 268.4 SG3 3280.4
RRT -.0938 RRF -.2899 RTF .3353
SGB 1027.2 R23 .2571 R13 -.3372
SG1 991.8 SG2 267.1 THA 178.43

ORBIT DETERMINATION ACCURACY
ST 579.7 SR 204.3 SS 1808.7
CRT .9125 CRS -.7697 CST -.4593
LSA 1837.1 MSA 523.2 SSA 21.3
EL1 609.5 EL2 79.5 ALF 18.14

LAUNCH DATE NOV 11 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 659.901 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.879 GAL -1.56 AZL 88.20 HCA 203.10 SMA 186.57 ECC .20798 INC 1.8006 V1 30.087
RP 223.63 LAP -.71 LOP 251.74 VP 21.808 GAP -3.61 AZP 91.66 TAL 350.91 TAP 194.01 RCA 147.77 APO 225.38 V2 24.590
RC 257.974 GL 20.18 GP .41 ZAL 99.51 ZAP 107.84 ETS 178.67 ZAE 143.46 ETE 176.52 ZAC 88.01 ETC 256.35 CLP 107.84

PLANETOCENTRIC CONIC

C3 8.964 VHL 2.994 DLA 30.67 RAL 158.94 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.860 DPA 1.82 RAP 180.36 ECC 1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.71	10 56 51	3678.99	-25.31	145.86	16.07	72.08	11 58 10	3079.0	-27.52	137.70
102.29	14 13 29	3046.24	-25.30	99.21	16.07	72.06	15 4 16	2446.2	-27.51	91.04
77.71	10 56 51	3678.99	-25.31	145.86	16.07	72.08	11 58 10	3079.0	-27.52	137.70
102.29	14 13 29	3046.24	-25.30	99.21	16.07	72.06	15 4 16	2446.2	-27.51	91.04
110.00	17 1 11	2522.30	-33.78	61.39	18.09	84.42	17 43 14	1922.3	-34.18	52.17
110.00	13 8 19	3250.93	-17.38	110.93	12.30	60.09	14 2 30	2650.9	-21.23	103.91

DIFFERENTIAL CORRECTIONS
TDE .3120 TRA -.1955 TC3-1.4259 BAU .1741
RDE .1110 RRA .0358 RC3 .2761 FAU .59142
FDE 2.6825 FRA 7.7945 FC-57.1178 BSP 1988
BDE .3311 BRA .1988 BC3 1.4524 FSP 11600

MID-COURSE EXECUTION ACCURACY
SGT 1129.0 SGR 280.6 SG3 3342.8
RRT -.1547 RRF -.2933 RTF .5661
SGB 1163.4 R23 .2025 R13 -.5681
SG1 1129.9 SG2 277.0 THA 177.66

ORBIT DETERMINATION ACCURACY
ST 611.6 SR 213.7 SS 1823.7
CRT .9449 CRS -.7665 CST -.5343
LSA 1863.1 MSA 523.6 SSA 22.0
EL1 644.5 EL2 66.4 ALF 18.48

LAUNCH DATE NOV 11 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 663.896 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.875 GAL -1.57 AZL 88.20 HCA 204.19 SMA 186.51 ECC .20771 INC 1.8031 V1 30.087
RP 223.24 LAP -.74 LOP 252.82 VP 21.849 GAP -3.86 AZP 91.64 TAL 350.84 TAP 195.03 RCA 147.77 APO 225.24 V2 24.632
RC 259.547 GL 20.22 GP .39 ZAL 99.62 ZAP 105.85 ETS 178.71 ZAE 141.25 ETE 176.71 ZAC 87.80 ETC 256.41 CLP 105.85

PLANETOCENTRIC CONIC

C3 8.949 VHL 2.992 DLA 30.66 RAL 159.08 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.838 DPA 2.19 RAP 179.54 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.73	10 57 34	3678.26	-25.31	145.81	16.19	72.09	11 58 52	3078.3	-27.52	137.64
102.27	14 13 57	3046.33	-25.30	99.22	16.19	72.08	15 4 43	2446.3	-27.51	91.05
77.73	10 57 34	3678.26	-25.31	145.81	16.19	72.09	11 58 52	3078.3	-27.52	137.64
102.27	14 13 57	3046.33	-25.30	99.22	16.19	72.08	15 4 43	2446.3	-27.51	91.05
110.00	17 1 53	2521.62	-33.78	61.33	18.21	84.45	17 43 55	1921.6	-34.18	52.11
110.00	13 8 48	3250.96	-17.38	110.93	12.42	60.09	14 2 59	2651.0	-21.23	103.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3351 TRA -.1287 TC3-1.8887 BAU .2286 SGT 1330.7 SGR 292.8 SG3 3400.1 ST 648.3 SR 223.1 SS 1831.8
RDE .1158 RRA .0367 RC3 .2890 FAU .60112 RRT -.1963 RRF -.2975 RTF .7175 CRT .9678 CRS -.7618 CST -.5979
FDE 2.6975 FRA 7.9264 FC-58.1513 BSP 3135 SGB 1362.5 R23 .1527 R13 -.7191 LSA 1884.2 MSA 524.2 SSA 22.8
BDE .3545 BRA .1338 BC3 1.9107 FSP 11765 SG1 1332.0 SG2 286.8 THA 177.41 EL1 683.6 EL2 53.3 ALF 18.54

LAUNCH DATE NOV 11 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 667.897 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.871 GAL -1.58 AZL 88.19 HCA 205.28 SMA 186.44 ECC .20748 INC 1.8052 V1 30.087
RP 222.85 LAP -.77 LOP 253.91 VP 21.891 GAP -4.10 AZP 91.63 TAL 350.76 TAP 196.04 RCA 147.76 APO 225.13 V2 24.674
RC 261.100 GL 20.26 GP .38 ZAL 99.77 ZAP 103.85 ETS 178.75 ZAE 139.04 ETE 176.89 ZAC 87.59 ETC 256.47 CLP 103.85

PLANETOCENTRIC CONIC

C3 8.938 VHL 2.990 DLA 30.63 RAL 159.26 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.819 DPA 2.56 RAP 178.70 ECC 1.1471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.79	10 58 45	3676.48	-25.30	145.67	16.34	72.12	12 0 1	3076.5	-27.50	137.50
102.21	14 14 10	3047.61	-25.28	99.31	16.34	72.10	15 4 57	2447.6	-27.49	91.14
77.79	10 58 45	3676.48	-25.30	145.67	16.34	72.12	12 0 1	3076.5	-27.50	137.50
102.21	14 14 10	3047.61	-25.28	99.31	16.34	72.10	15 4 57	2447.6	-27.49	91.14
110.00	17 2 58	2520.11	-33.79	61.22	18.36	84.52	17 44 58	1920.1	-34.18	52.00
110.00	13 9 7	3251.98	-17.35	110.99	12.56	60.07	14 3 19	2652.0	-21.19	103.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3565 TRA -.0623 TC3-2.3829 BAU .2870 SGT 1586.2 SGR 304.8 SG3 3444.9 ST 685.8 SR 232.4 SS 1859.4
RDE .1205 RRA .0376 RC3 .3017 FAU .60694 RRT -.2292 RRF -.2970 RTF .8092 CRT .9821 CRS -.7599 CST -.6536
FDE 2.7509 FRA 8.1099 FC-58.7902 BSP 4255 SGB 1615.2 R23 .1077 R13 -.8102 LSA 1925.9 MSA 521.6 SSA 23.6
BDE .3763 BRA .0727 BC3 2.4019 FSP 12025 SG1 1587.8 SG2 296.4 THA 177.39 EL1 722.9 EL2 41.5 ALF 18.47

LAUNCH DATE NOV 11 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 671.911 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.868 GAL -1.60 AZL 88.19 HCA 206.37 SMA 186.39 ECC .20728 INC 1.8074 V1 30.087
RP 222.47 LAP -.80 LOP 255.00 VP 21.933 GAP -4.33 AZP 91.62 TAL 350.66 TAP 197.04 RCA 147.75 APO 225.02 V2 24.716
RC 262.633 GL 20.29 GP .37 ZAL 99.94 ZAP 101.83 ETS 178.79 ZAE 136.80 ETE 177.05 ZAC 87.38 ETC 256.54 CLP 101.83

PLANETOCENTRIC CONIC

C3 8.929 VHL 2.988 DLA 30.60 RAL 159.46 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.804 DPA 2.93 RAP 177.85 ECC 1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.90	11 0 18	3673.90	-25.27	145.47	16.52	72.15	12 1 32	3073.9	-27.47	137.30
102.10	14 14 11	3049.84	-25.26	99.47	16.51	72.13	15 5 1	2449.8	-27.46	91.30
77.90	11 0 18	3673.90	-25.27	145.47	16.52	72.15	12 1 32	3073.9	-27.47	137.30
102.10	14 14 11	3049.84	-25.26	99.47	16.51	72.13	15 5 1	2449.8	-27.46	91.30
110.00	17 4 22	2517.89	-33.81	61.05	18.53	84.62	17 46 20	1917.9	-34.18	51.82
110.00	13 9 17	3253.85	-17.28	111.10	12.72	60.04	14 3 31	2653.8	-21.14	104.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3815 TRA .0104 TC3-2.8653 BAU .3441 SGT 1862.3 SGR 316.9 SG3 3490.5 ST 733.4 SR 241.8 SS 1844.2
RDE .1253 RRA .0386 RC3 .3144 FAU .61570 RRT -.2439 RRF -.3039 RTF .8680 CRT .9909 CRS -.7505 CST -.6961
FDE 2.7045 FRA 8.1849 FC-59.6944 BSP 5493 SGB 1889.1 R23 .0889 R13 -.8687 LSA 1928.9 MSA 525.6 SSA 24.2
BDE .4016 BRA .0399 BC3 2.8825 FSP 12060 SG1 1863.9 SG2 307.1 THA 177.56 EL1 771.6 EL2 30.9 ALF 18.12

LAUNCH DATE NOV 11 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 675.931 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.865 GAL -1.62 AZL 88.19 HCA 207.47 SMA 186.34 ECC .20711 INC 1.8094 V1 30.087
RP 222.08 LAP -.83 LOP 256.10 VP 21.976 GAP -4.56 AZP 91.61 TAL 350.55 TAP 198.03 RCA 147.75 APO 224.93 V2 24.758
RC 264.145 GL 20.32 GP .36 ZAL 100.14 ZAP 99.80 ETS 178.83 ZAE 134.55 ETE 177.20 ZAC 87.18 ETC 256.62 CLP 99.80

PLANETOCENTRIC CONIC

C3 8.925 VHL 2.987 DLA 30.54 RAL 159.68 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.792 DPA 3.30 RAP 177.01 ECC 1.1469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.05	11 2 19	3670.22	-25.23	145.18	16.72	72.19	12 3 29	3070.2	-27.42	137.01
101.95	14 13 58	3053.30	-25.21	99.71	16.71	72.17	15 4 51	2453.3	-27.41	91.55
78.05	11 2 19	3670.22	-25.23	145.18	16.72	72.19	12 3 29	3070.2	-27.42	137.01
101.95	14 13 58	3053.30	-25.21	99.71	16.71	72.17	15 4 51	2453.3	-27.41	91.55
110.00	17 6 9	2514.87	-33.83	60.81	18.73	84.76	17 48 4	1914.9	-34.18	51.59
110.00	13 9 18	3256.65	-17.19	111.26	12.90	59.99	14 3 35	2656.7	-21.05	104.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4048 TRA .0828 TC3-3.3704 BAU .4040 SGT 2166.1 SGR 328.8 SG3 3523.9 ST 780.7 SR 251.0 SS 1846.1
RDE .1301 RRA .0395 RC3 .3267 FAU .62082 RRT -.2571 RRF -.3063 RTF .9041 CRT .9943 CRS -.7432 CST -.7327
FDE 2.6899 FRA 8.3059 FC-60.2239 BSP 6719 SGB 2190.9 R23 .0712 R13 -.9046 LSA 1949.9 MSA 527.0 SSA 24.9
BDE .4252 BRA .0918 BC3 3.3862 FSP 12163 SG1 2167.8 SG2 317.5 THA 177.72 EL1 819.7 EL2 25.4 ALF 17.74

LAUNCH DATE NOV 11 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 679.960 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.863 GAL -1.64 AZL 88.19 HCA 208.57 SMA 186.30 ECC .20698 INC 1.8112 V1 30.087
RP 221.70 LAP -.87 LOP 257.20 VP 22.019 GAP -4.79 AZP 91.59 TAL 350.43 TAP 199.00 RCA 147.74 APO 224.85 V2 24.799
RC 265.639 GL 20.34 GP .35 ZAL 100.36 ZAP 97.78 ETS 178.87 ZAE 132.30 ETE 177.34 ZAC 86.97 ETC 256.69 CLP 97.78

PLANETOCENTRIC CONIC

C3 8.923 VHL 2.987 DLA 30.47 RAL 159.93 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.783 DPA 3.68 RAP 176.16 ECC 1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.25	11 4 45	3665.64	-25.17	144.82	16.95	72.23	12 5 51	3065.6	-27.36	136.65
101.75	14 13 32	3057.82	-25.16	100.03	16.94	72.22	15 4 30	2457.8	-27.35	91.87
78.25	11 4 45	3665.64	-25.17	144.82	16.95	72.23	12 5 51	3065.6	-27.36	136.65
101.75	14 13 32	3057.82	-25.16	100.03	16.94	72.22	15 4 30	2457.8	-27.35	91.87
110.00	17 8 17	2511.12	-33.85	60.52	18.96	84.93	17 50 8	1911.1	-34.18	51.29
110.00	13 9 11	3260.34	-17.06	111.47	13.10	59.92	14 3 31	2660.3	-20.93	104.48

DIFFERENTIAL CORRECTIONS
TDE .4279 TRA .1581 TC3-3.8821 BAU .4649
RDE .1349 RRA .0405 RC3 .3386 FAU .62455
FDE 2.6610 FRA 8.4096 FC-60.5957 BSP 7967
BDE .4487 BRA .1632 BC3 3.8969 FSP 12232

MID-COURSE EXECUTION ACCURACY
SGT 2485.3 SGR 340.5 SG3 3548.6
RRT -.2661 RRF -.3086 RTF .9281
SGB 2508.5 R23 .0594 R13 -.9284
SG1 2487.0 SG2 328.0 THA 177.87

ORBIT DETERMINATION ACCURACY
ST 830.5 SR 260.1 SS 1843.3
CRT .9940 CRS -.7349 CST -.7631
LSA 1968.5 MSA 528.5 SSA 25.6
EL1 869.9 EL2 27.2 ALF 17.31

LAUNCH DATE NOV 11 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 683.998 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.861 GAL -1.66 AZL 88.19 HCA 209.68 SMA 186.26 ECC .20687 INC 1.8130 V1 30.087
RP 221.32 LAP -.90 LOP 258.31 VP 22.063 GAP -5.01 AZP 91.58 TAL 350.29 TAP 199.97 RCA 147.73 APO 224.79 V2 24.841
RC 267.114 GL 20.36 GP .34 ZAL 100.61 ZAP 95.75 ETS 178.91 ZAE 130.04 ETE 177.47 ZAC 86.76 ETC 256.77 CLP 95.75

PLANETOCENTRIC CONIC

C3 8.925 VHL 2.987 DLA 30.38 RAL 160.21 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.778 DPA 4.05 RAP 175.31 ECC 1.1469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.50	11 7 42	3659.85	-25.10	144.36	17.20	72.29	12 8 42	3059.8	-27.28	136.20
101.50	14 12 48	3063.70	-25.09	100.44	17.20	72.28	15 3 52	2463.7	-27.28	92.28
78.50	11 7 42	3659.85	-25.10	144.36	17.20	72.29	12 8 42	3059.8	-27.28	136.20
101.50	14 12 48	3063.70	-25.09	100.44	17.20	72.28	15 3 52	2463.7	-27.28	92.28
110.00	17 10 45	2506.65	-33.88	60.18	19.21	85.13	17 52 32	1906.7	-34.18	50.94
110.00	13 8 55	3264.89	-16.91	111.73	13.31	59.84	14 3 20	2664.9	-20.79	104.75

DIFFERENTIAL CORRECTIONS
TDE .4505 TRA .2350 TC3-4.4004 BAU .5267
RDE .1396 RRA .0415 RC3 .3501 FAU .62668
FDE 2.6198 FRA 8.5110 FC-60.7889 BSP 9216
BDE .4716 BRA .2386 BC3 4.4143 FSP 12294

MID-COURSE EXECUTION ACCURACY
SGT 2816.4 SGR 352.1 SG3 3565.0
RRT -.2727 RRF -.3101 RTF .9442
SGB 2838.3 R23 .0508 R13 -.9444
SG1 2818.0 SG2 338.6 THA 178.02

ORBIT DETERMINATION ACCURACY
ST 881.6 SR 269.3 SS 1838.4
CRT .9907 CRS -.7253 CST -.7874
LSA 1986.6 MSA 530.9 SSA 26.2
EL1 921.1 EL2 35.0 ALF 16.86

LAUNCH DATE NOV 11 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 688.043 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.859 GAL -1.68 AZL 88.19 HCA 210.79 SMA 186.23 ECC .20680 INC 1.8145 V1 30.087
RP 220.94 LAP -.93 LOP 259.42 VP 22.107 GAP -5.23 AZP 91.56 TAL 350.14 TAP 200.93 RCA 147.72 APO 224.74 V2 24.883
RC 268.570 GL 20.37 GP .33 ZAL 100.89 ZAP 93.72 ETS 178.95 ZAE 127.78 ETE 177.59 ZAC 86.56 ETC 256.85 CLP 93.72

PLANETOCENTRIC CONIC

C3 8.930 VHL 2.988 DLA 30.28 RAL 160.52 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.776 DPA 4.42 RAP 174.47 ECC 1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.80	11 11 7	3652.93	-25.02	143.81	17.49	72.35	12 12 0	3052.9	-27.19	135.65
101.20	14 11 48	3070.84	-25.01	100.95	17.48	72.34	15 2 59	2470.8	-27.18	92.79
78.80	11 11 7	3652.93	-25.02	143.81	17.49	72.35	12 12 0	3052.9	-27.19	135.65
101.20	14 11 48	3070.84	-25.01	100.95	17.48	72.34	15 2 59	2470.8	-27.18	92.79
110.00	17 13 33	2501.50	-33.91	59.78	19.49	85.37	17 55 15	1901.5	-34.18	50.54
110.00	13 8 33	3270.27	-16.72	112.04	13.55	59.74	14 3 3	2670.3	-20.62	105.08

DIFFERENTIAL CORRECTIONS
TDE .4717 TRA .3141 TC3-4.9230 BAU .5893
RDE .1444 RRA .0426 RC3 .3612 FAU .62781
FDE 2.5585 FRA 8.5867 FC-60.8623 BSP 10484
BDE .4933 BRA .3169 BC3 4.9363 FSP 12282

MID-COURSE EXECUTION ACCURACY
SGT 3156.2 SGR 363.6 SG3 3573.6
RRT -.2779 RRF -.3120 RTF .9557
SGB 3177.1 R23 .0449 R13 -.9559
SG1 3157.8 SG2 349.1 THA 178.14

ORBIT DETERMINATION ACCURACY
ST 932.5 SR 278.4 SS 1826.3
CRT .9852 CRS -.7140 CST -.8070
LSA 1999.3 MSA 533.3 SSA 26.8
EL1 972.1 EL2 45.7 ALF 16.43

LAUNCH DATE NOV 11 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 692.096 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.857 GAL -1.71 AZL 88.18 HCA 211.90 SMA 186.20 ECC .20676 INC 1.8159 V1 30.087
RP 220.56 LAP -.96 LOP 260.53 VP 22.151 GAP -5.44 AZP 91.54 TAL 349.97 TAP 201.87 RCA 147.70 APO 224.70 V2 24.924
RC 270.009 GL 20.37 GP .32 ZAL 101.20 ZAP 91.71 ETS 178.98 ZAE 125.54 ETE 177.70 ZAC 86.36 ETC 256.94 CLP 91.71

PLANETOCENTRIC CONIC

C3 8.939 VHL 2.990 DLA 30.16 RAL 160.85 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.778 DPA 4.78 RAP 173.64 ECC 1.1471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.15	11 15 6	3644.69	-24.92	143.16	17.80	72.43	12 15 50	3044.7	-27.08	135.01
100.85	14 10 28	3079.47	-24.91	101.56	17.79	72.41	15 1 48	2479.5	-27.08	93.41
79.15	11 15 6	3644.69	-24.92	143.16	17.80	72.43	12 15 50	3044.7	-27.08	135.01
100.85	14 10 28	3079.47	-24.91	101.56	17.79	72.41	15 1 48	2479.5	-27.08	93.41
110.00	17 16 41	2495.65	-33.94	59.32	19.80	85.63	17 58 17	1895.7	-34.17	50.08
110.00	13 8 3	3276.51	-16.51	112.39	13.81	59.63	14 2 39	2676.5	-20.42	105.45

DIFFERENTIAL CORRECTIONS
TDE .4930 TRA .3969 TC3-5.4466 BAU .6524
RDE .1491 RRA .0436 RC3 .3713 FAU .62415
FDE 2.5493 FRA 8.7166 FC-60.4463 BSP 11777
BDE .5150 BRA .3993 BC3 5.4593 FSP 12392

MID-COURSE EXECUTION ACCURACY
SGT 3503.4 SGR 374.5 SG3 3566.1
RRT -.2806 RRF -.3081 RTF .9636
SGB 3523.4 R23 .0363 R13 -.9637
SG1 3505.0 SG2 359.3 THA 178.26

ORBIT DETERMINATION ACCURACY
ST 985.8 SR 287.3 SS 1837.8
CRT .9780 CRS -.7077 CST -.8281
LSA 2036.9 MSA 531.2 SSA 27.5
EL1 1025.1 EL2 57.7 ALF 15.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 696.159 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.856	GAL	-1.74	AZL	88.18	HCA	213.01	SMA	186.18	ECC	.20674	INC	1.8175
RP	220.18	LAP	-.99	LOP	261.64	VP	22.196	GAP	-5.65	AZP	91.52	TAL	349.79	TAP	202.81	RCA	147.69	APO	224.67
RC	271.430	GL	20.37	GP	.31	ZAL	101.53	ZAP	89.71	ETS	179.02	ZAE	123.29	ETE	177.81	ZAC	86.17	ETC	257.02

PLANETOCENTRIC CONIC

C3	8.952	VHL	2.992	DLA	30.03	RAL	161.20	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.783	DPA	5.14	RAP	172.83

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.56	11 19 37	3635.05	-24.81	142.41	18.13	72.51	12 20 12	3035.1	-26.96	134.26
100.44	14 8 46	3089.65	-24.79	102.28	18.13	72.49	15 0 16	2489.6	-26.95	94.13
79.56	11 19 37	3635.05	-24.81	142.41	18.13	72.51	12 20 12	3035.1	-26.96	134.26
100.44	14 8 46	3089.65	-24.79	102.28	18.13	72.49	15 0 16	2489.6	-26.95	94.13
110.00	17 20 7	2489.23	-33.97	58.82	20.13	85.93	18 1 36	1889.2	-34.16	49.58
110.00	13 7 27	3283.47	-16.27	112.79	14.08	59.51	14 2 10	2683.5	-20.19	105.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5123	TRA	.4804	TC3	-5.9663	BAU	.7155	SGT	3852.0	SGR	385.7	SG3	3560.2	ST	1037.1	SR	296.3	SS	1809.8
RDE	.1539	RRA	.0448	RC3	.3813	FAU	.62345	RRT	-.2828	RRF	-.3108	RTF	.9699	CRT	.9694	CRS	-.6910	CST	-.8386
FDE	2.4385	FRA	8.7478	FC	-60.2945	BSP	13050	SGB	3871.2	R23	.0354	R13	-.9700	LSA	2037.0	MSA	537.3	SSA	27.9
BDE	.5349	BRA	.4825	BC3	5.9785	FSP	12285	SG1	3853.5	SG2	369.8	THA	178.36	EL1	1076.3	EL2	70.1	ALF	15.55

LAUNCH DATE NOV 11 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 700.229 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.855	GAL	-1.78	AZL	88.18	HCA	214.13	SMA	186.16	ECC	.20676	INC	1.8188
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.241	GAP	-5.86	AZP	91.51	TAL	349.60	TAP	203.73	RCA	147.67	APO	224.66
RC	272.833	GL	20.37	GP	.30	ZAL	101.89	ZAP	87.72	ETS	179.05	ZAE	121.07	ETE	177.91	ZAC	85.98	ETC	257.11

PLANETOCENTRIC CONIC

C3	8.968	VHL	2.995	DLA	29.88	RAL	161.58	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.790	DPA	5.49	RAP	172.03

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.04	11 24 45	3623.84	-24.68	141.53	18.50	72.60	12 25 9	3023.8	-26.83	133.39
99.96	14 6 40	3101.55	-24.67	103.12	18.49	72.58	14 58 21	2501.6	-26.82	94.98
100.00	14 14 17	3077.21	-25.14	101.47	18.65	73.28	15 5 34	2477.2	-27.19	93.27
100.00	13 59 49	3123.42	-24.20	104.58	18.33	71.90	14 51 52	2523.4	-26.45	96.50
110.00	17 23 50	2482.19	-34.00	58.28	20.49	86.25	18 5 12	1882.2	-34.15	49.03
110.00	13 6 45	3291.20	-16.00	113.23	14.38	59.38	14 1 36	2691.2	-19.94	106.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5294	TRA	.5659	TC3	-6.4862	BAU	.7791	SGT	4204.4	SGR	396.6	SG3	3544.1	ST	1086.1	SR	305.3	SS	1784.9
RDE	.1587	RRA	.0460	RC3	.3907	FAU	.62060	RRT	-.2847	RRF	-.3120	RTF	.9747	CRT	.9595	CRS	-.6742	CST	-.8480
FDE	2.3309	FRA	8.7779	FC	-59.9100	BSP	14314	SGB	4223.0	R23	.0336	R13	-.9748	LSA	2040.7	MSA	541.9	SSA	28.4
BDE	.5526	BRA	.5678	BC3	6.4979	FSP	12175	SG1	4205.9	SG2	380.0	THA	178.45	EL1	1125.2	EL2	83.0	ALF	15.18

LAUNCH DATE NOV 11 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 704.308 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.855	GAL	-1.81	AZL	88.18	HCA	215.26	SMA	186.15	ECC	.20681	INC	1.8201
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.286	GAP	-6.06	AZP	91.49	TAL	349.39	TAP	204.65	RCA	147.66	APO	224.65
RC	274.220	GL	20.36	GP	.29	ZAL	102.28	ZAP	85.75	ETS	179.09	ZAE	118.86	ETE	178.00	ZAC	85.80	ETC	257.20

PLANETOCENTRIC CONIC

C3	8.988	VHL	2.998	DLA	29.71	RAL	161.98	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.801	DPA	5.82	RAP	171.25

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.60	11 30 38	3610.64	-24.54	140.50	18.89	72.69	12 30 48	3010.6	-26.67	132.37
99.40	14 4 0	3115.62	-24.53	104.11	18.88	72.68	14 55 56	2515.6	-26.66	95.98
100.00	14 36 3	3013.22	-26.32	97.08	19.45	75.30	15 26 16	2413.2	-28.09	88.72
100.00	13 41 17	3188.27	-22.76	108.86	18.23	70.09	14 34 25	2588.3	-25.27	100.96
110.00	17 27 51	2474.58	-34.03	57.68	20.87	86.60	18 9 5	1874.6	-34.13	48.44
110.00	13 5 58	3299.68	-15.71	113.71	14.70	59.24	14 0 58	2699.7	-19.67	106.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5450	TRA	.6540	TC3	-7.0015	BAU	.8427	SGT	4558.5	SGR	407.2	SG3	3517.8	ST	1134.4	SR	314.2	SS	1762.3
RDE	.1635	RRA	.0473	RC3	.3993	FAU	.61562	RRT	-.2855	RRF	-.3117	RTF	.9783	CRT	.9485	CRS	-.6567	CST	-.8561
FDE	2.2241	FRA	8.8074	FC	-59.2957	BSP	15575	SGB	4576.7	R23	.0317	R13	-.9784	LSA	2047.5	MSA	546.2	SSA	28.8
BDE	.5690	BRA	.6557	BC3	7.0128	FSP	12059	SG1	4560.0	SG2	390.2	THA	178.53	EL1	1173.2	EL2	96.2	ALF	14.82

LAUNCH DATE NOV 11 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 708.394 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.854	GAL	-1.85	AZL	88.18	HCA	216.39	SMA	186.15	ECC	.20688	INC	1.8213
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.331	GAP	-6.26	AZP	91.47	TAL	349.17	TAP	205.55	RCA	147.64	APO	224.66
RC	275.589	GL	20.34	GP	.28	ZAL	102.70	ZAP	83.81	ETS	179.12	ZAE	116.67	ETE	178.09	ZAC	85.62	ETC	257.28

PLANETOCENTRIC CONIC

C3	9.012	VHL	3.002	DLA	29.53	RAL	162.41	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	2.816	DPA	6.15	RAP	170.50

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.24	11 37 19	3595.21	-24.38	139.30	19.30	72.80	12 37 15	2995.2	-26.51	131.18
98.76	14 0 44	3132.08	-24.37	105.28	19.30	72.78	14 52 56	2532.1	-26.50	97.16
100.00	14 49 17	2976.77	-26.93	94.54	20.08	76.51	15 38 53	2376.8	-28.52	86.10
100.00	13 31 28	3225.76	-21.87	111.29	18.36	69.10	14 25 14	2625.8	-24.52	103.49
110.00	17 32 8	2466.43	-34.06	57.05	21.28	86.97	18 13 14	1866.4	-34.11	47.80
110.00	13 5 6	3308.86	-15.39	114.23	15.04	59.09	14 0 15	2708.9	-19.37	107.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5588	TRA	.7448	TC3	-7.5073	BAU	.9059	SGT	4911.6	SGR	417.6	SG3	3483.4	ST	1181.4	SR	323.0	SS	1737.9
RDE	.1684	RRA	.0486	RC3	.4073	FAU	.60920	RRT	-.2854	RRF	-.3110	RTF	.9812	CRT	.9364	CRS	-.6375	CST	-.8626
FDE	2.1086	FRA	8.8253	FC	-58.5197	BSP	16839	SGB	4929.3	R23	.0303	R13	-.9812	LSA	2053.3	MSA	550.9	SSA	29.2
BDE	.5836	BRA	.7464	BC3	7.5183	FSP	11924	SG1	4913.0	SG2	400.1	THA	178.60	EL1	1219.9	EL2	109.8	ALF	14.48

LAUNCH DATE NOV 11 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 712.487 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.854 GAL -1.89 AZL 88.18 HCA 217.52 SMA 186.15 ECC .20698 INC 1.8224 V1 30.087
RP 218.70 LAP -1.11 LOP 266.15 VP 22.376 GAP -6.46 AZP 91.45 TAL 348.93 TAP 206.45 RCA 147.62 APO 224.68 V2 25.128
RC 276.940 GL 20.32 GP .27 ZAL 103.14 ZAP 81.89 ETS 179.15 ZAE 114.50 ETE 178.17 ZAC 85.45 ETC 257.37 CLP 81.89

PLANETOCENTRIC CONIC

C3 9.041 VHL 3.007 DLA 29.34 RAL 162.87 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.833 DPA 6.46 RAP 169.77 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.00	11 45 2	3576.90	-24.21	137.89	19.74	72.91	12 44 39	2976.9	-26.32	129.77
98.00	13 56 39	3151.60	-24.20	106.67	19.74	72.90	14 49 10	2551.6	-26.32	98.55
100.00	15 0 35	2946.78	-27.39	92.43	20.68	77.53	15 49 42	2346.8	-28.83	83.92
100.00	13 23 47	3256.96	-21.10	113.29	18.56	68.32	14 18 4	2657.0	-23.86	105.57
110.00	17 36 41	2457.78	-34.09	56.38	21.71	87.37	18 17 39	1857.8	-34.08	47.13
110.00	13 4 10	3318.72	-15.04	114.79	15.40	58.94	13 59 29	2718.7	-19.05	107.96

DIFFERENTIAL CORRECTIONS
TDE .5699 TRA .8374 TC3-8.0037 BAU .9687
RDE .1732 RRA .0499 RC3 .4146 FAU .60192
FDE 1.9828 FRA 8.8292 FC-57.6400 BSP 18078
BDE .5957 BRA .8389 BC3 8.0145 FSP 11751

MID-COURSE EXECUTION ACCURACY
SGT 5262.7 SGR 427.8 SG3 3443.2
RRT -.2850 RRF -.3102 RTF .9835
SGB 5280.1 R23 .0294 R13 -.9835
SG1 5264.1 SG2 410.0 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 1225.5 SR 331.8 SS 1711.2
CRT .9232 CRS -.6160 CST -.8675
LSA 2056.7 MSA 556.2 SSA 29.5
EL1 1263.6 EL2 123.7 ALF 14.17

LAUNCH DATE NOV 11 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 716.589 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.854 GAL -1.94 AZL 88.18 HCA 218.65 SMA 186.15 ECC .20712 INC 1.8235 V1 30.087
RP 218.34 LAP -1.14 LOP 267.28 VP 22.422 GAP -6.65 AZP 91.42 TAL 348.68 TAP 207.33 RCA 147.60 APO 224.71 V2 25.168
RC 278.273 GL 20.30 GP .26 ZAL 103.60 ZAP 80.00 ETS 179.18 ZAE 112.37 ETE 178.25 ZAC 85.29 ETC 257.45 CLP 80.00

PLANETOCENTRIC CONIC

C3 9.073 VHL 3.012 DLA 29.12 RAL 163.34 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.853 DPA 6.76 RAP 169.08 ECC 1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.89	11 54 4	3554.67	-24.03	136.19	20.21	73.03	12 53 19	2954.7	-26.12	128.08
97.11	13 51 25	3175.22	-24.02	108.35	20.21	73.02	14 44 20	2575.2	-26.12	100.24
100.00	15 10 59	2919.97	-27.77	90.53	21.27	78.46	15 59 39	2320.0	-29.08	81.97
100.00	13 17 11	3285.15	-20.38	115.07	18.81	67.65	14 11 56	2685.2	-23.24	107.44
110.00	17 41 29	2448.64	-34.12	55.66	22.16	87.79	18 22 18	1848.6	-34.05	46.42
110.00	13 3 10	3329.25	-14.67	115.38	15.79	58.77	13 58 39	2729.2	-18.70	108.58

DIFFERENTIAL CORRECTIONS
TDE .5794 TRA .9330 TC3-8.4877 BAU 1.0308
RDE .1781 RRA .0513 RC3 .4212 FAU .59282
FDE 1.8536 FRA 8.8237 FC-56.5644 BSP 19319
BDE .6062 BRA .9344 BC3 8.4982 FSP 11582

MID-COURSE EXECUTION ACCURACY
SGT 5611.4 SGR 437.8 SG3 3393.6
RRT -.2838 RRF -.3085 RTF .9853
SGB 5628.4 R23 .0285 R13 -.9853
SG1 5612.8 SG2 419.7 THA 178.72

ORBIT DETERMINATION ACCURACY
ST 1268.7 SR 340.5 SS 1684.4
CRT .9088 CRS -.5930 CST -.8715
LSA 2060.6 MSA 561.8 SSA 29.8
EL1 1306.3 EL2 137.9 ALF 13.87

LAUNCH DATE NOV 11 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 720.697 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.855 GAL -1.98 AZL 88.18 HCA 219.79 SMA 186.16 ECC .20728 INC 1.8245 V1 30.087
RP 217.98 LAP -1.17 LOP 268.42 VP 22.467 GAP -6.83 AZP 91.40 TAL 348.41 TAP 208.20 RCA 147.57 APO 224.74 V2 25.208
RC 279.589 GL 20.27 GP .26 ZAL 104.10 ZAP 78.15 ETS 179.20 ZAE 110.26 ETE 178.33 ZAC 85.14 ETC 257.54 CLP 78.15

PLANETOCENTRIC CONIC

C3 9.110 VHL 3.018 DLA 28.89 RAL 163.84 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.876 DPA 7.04 RAP 168.41 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.00	12 4 58	3526.76	-23.83	134.06	20.71	73.16	13 3 45	2926.8	-25.91	125.97
96.00	13 44 30	3204.71	-23.82	110.46	20.71	73.14	14 37 54	2604.7	-25.90	102.36
100.00	15 20 53	2895.10	-28.09	88.75	21.87	79.34	16 9 8	2295.1	-29.28	80.15
100.00	13 11 16	3311.59	-19.69	116.73	19.10	67.04	14 6 28	2711.6	-22.63	109.17
110.00	17 46 31	2439.06	-34.14	54.92	22.64	88.23	18 27 10	1839.1	-34.01	45.67
110.00	13 2 7	3340.40	-14.28	116.00	16.19	58.61	13 57 47	2740.4	-18.33	109.23

DIFFERENTIAL CORRECTIONS
TDE .5856 TRA 1.0301 TC3-8.9609 BAU 1.0926
RDE .1830 RRA .0528 RC3 .4273 FAU .58313
FDE 1.7145 FRA 8.8038 FC-55.4142 BSP 20520
BDE .6135 BRA 1.0315 BC3 8.9711 FSP 11366

MID-COURSE EXECUTION ACCURACY
SGT 5957.0 SGR 447.6 SG3 3339.5
RRT -.2826 RRF -.3071 RTF .9868
SGB 5973.8 R23 .0279 R13 -.9868
SG1 5958.3 SG2 429.2 THA 178.78

ORBIT DETERMINATION ACCURACY
ST 1308.0 SR 349.1 SS 1655.5
CRT .8931 CRS -.5672 CST -.8741
LSA 2061.6 MSA 568.0 SSA 30.1
EL1 1345.2 EL2 152.7 ALF 13.59

LAUNCH DATE NOV 11 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 724.813 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.856 GAL -2.03 AZL 88.17 HCA 220.94 SMA 186.17 ECC .20746 INC 1.8256 V1 30.087
RP 217.62 LAP -1.20 LOP 269.56 VP 22.513 GAP -7.02 AZP 91.38 TAL 348.13 TAP 209.06 RCA 147.55 APO 224.79 V2 25.248
RC 280.887 GL 20.23 GP .25 ZAL 104.62 ZAP 76.33 ETS 179.23 ZAE 108.18 ETE 178.40 ZAC 84.99 ETC 257.62 CLP 76.33

PLANETOCENTRIC CONIC

C3 9.152 VHL 3.025 DLA 28.65 RAL 164.36 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.902 DPA 7.31 RAP 167.78 ECC 1.1506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.46	12 18 58	3489.19	-23.62	131.23	21.23	73.29	13 17 7	2889.2	-25.68	123.14
94.54	13 34 40	3244.04	-23.61	113.28	21.23	73.28	14 28 44	2644.0	-25.67	105.19
100.00	15 30 27	2871.54	-28.38	87.06	22.48	80.19	16 18 19	2271.5	-29.44	78.42
100.00	13 5 52	3336.92	-19.01	118.30	19.42	66.49	14 1 29	2736.9	-22.03	110.81
110.00	17 51 47	2429.06	-34.16	54.13	23.14	88.69	18 32 17	1829.1	-35.96	44.89
110.00	13 1 1	3352.17	-13.86	116.65	16.62	58.43	13 56 53	2752.2	-17.93	109.91

DIFFERENTIAL CORRECTIONS
TDE .5894 TRA 1.1303 TC3-9.4160 BAU 1.1533
RDE .1879 RRA .0543 RC3 .4327 FAU .57223
FDE 1.5753 FRA 8.7813 FC-54.1299 BSP 21721
BDE .6186 BRA 1.1316 BC3 9.4259 FSP 11151

MID-COURSE EXECUTION ACCURACY
SGT 6297.2 SGR 457.1 SG3 3279.4
RRT -.2808 RRF -.3050 RTF .9880
SGB 6313.7 R23 .0273 R13 -.9880
SG1 6298.5 SG2 438.6 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 1345.7 SR 357.7 SS 1628.4
CRT .8760 CRS -.5397 CST -.8762
LSA 2063.9 MSA 574.3 SSA 30.3
EL1 1382.3 EL2 168.0 ALF 13.31

LAUNCH DATE NOV 11 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 728.936 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.856 GAL -2.08 AZL 88.17 HCA 222.08 SMA 186.19 ECC .20768 INC 1.8265 V1 30.087
RP 217.27 LAP -1.22 LOP 270.71 VP 22.558 GAP -7.20 AZP 91.36 TAL 347.83 TAP 209.92 RCA 147.52 APO 224.85 V2 25.287
RC 282.167 GL 20.19 GP .24 ZAL 105.16 ZAP 74.54 ETS 179.26 ZAE 106.14 ETE 178.47 ZAC 84.86 ETC 257.69 CLP 74.54

PLANETOCENTRIC CONIC

C3 9.199 VHL 3.033 DLA 28.39 RAL 164.91 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.930 DPA 7.56 RAP 167.19 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.90	12 41 27	3424.47	-23.39	126.42	21.78	73.43	13 38 31	2824.5	-25.44	118.34
92.10	13 16 32	3310.73	-23.38	118.09	21.77	73.42	14 11 43	2710.7	-25.43	110.01
100.00	15 39 49	2848.92	-28.63	85.42	23.10	81.02	16 27 18	2248.9	-29.58	76.75
100.00	13 0 50	3361.51	-18.34	119.82	19.78	65.97	13 56 52	2761.5	-21.43	112.39
110.00	17 57 16	2418.66	-34.17	53.32	23.66	89.17	18 37 35	1818.7	-33.91	44.09
110.00	12 59 53	3364.54	-13.42	117.34	17.07	58.26	13 55 57	2764.5	-17.52	110.63

DIFFERENTIAL CORRECTIONS

TDE .5905 TRA 1.2332 TC3-9.8545 BAU 1.2131
RDE .1928 RRA .0558 RC3 .4374 FAU .56041
FDE 1.4356 FRA 8.7465 FC-52.7430 BSP 22895
BDE .6212 BRA 1.2345 BC3 9.8642 FSP 10921

MID-COURSE EXECUTION ACCURACY

SGT 6632.4 SGR 466.3 SG3 3213.9
RRT -.2788 RRF -.3026 RTF .9890
SGB 6648.8 R23 .0267 R13 -.9891
SG1 6633.7 SG2 447.8 THA 178.87

ORBIT DETERMINATION ACCURACY

ST 1381.2 SR 366.1 SS 1601.6
CRT .8572 CRS -.5107 CST -.8782
LSA 2066.3 MSA 580.2 SSA 30.5
EL1 1417.1 EL2 183.8 ALF 13.03

LAUNCH DATE NOV 11 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 733.067 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.858 GAL -2.14 AZL 88.17 HCA 223.23 SMA 186.21 ECC .20793 INC 1.8274 V1 30.087
RP 216.91 LAP -1.25 LOP 271.86 VP 22.604 GAP -7.38 AZP 91.33 TAL 347.52 TAP 210.76 RCA 147.49 APO 224.92 V2 25.327
RC 283.431 GL 20.14 GP .23 ZAL 105.73 ZAP 72.79 ETS 179.28 ZAE 104.13 ETE 178.53 ZAC 84.73 ETC 257.77 CLP 72.79

PLANETOCENTRIC CONIC

C3 9.250 VHL 3.041 DLA 28.11 RAL 165.47 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 2.961 DPA 7.79 RAP 166.64 ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 31 14	3271.38	-25.03	115.70	22.90	76.32	14 25 45	2671.4	-26.67	107.42
90.00	12 31 16	3466.00	-21.27	128.72	21.70	70.86	13 29 2	2866.0	-23.69	120.88
100.00	15 49 4	2827.01	-28.85	83.83	23.73	81.82	16 36 11	2227.0	-29.68	75.13
100.00	12 56 7	3385.60	-17.66	121.29	20.17	65.48	13 52 33	2785.6	-20.82	113.92
110.00	18 2 58	2407.91	-34.18	52.48	24.20	89.67	18 43 6	1807.9	-33.85	43.25
110.00	12 58 42	3377.47	-12.95	118.05	17.55	58.09	13 55 0	2777.5	-17.08	111.37

DIFFERENTIAL CORRECTIONS

TDE .5882 TRA 1.3381 TC-10.2759 BAU 1.2720
RDE .1978 RRA .0574 RC3 .4416 FAU .54797
FDE 1.2841 FRA 8.7004 FC-51.2839 BSP 24040
BDE .6206 BRA 1.3393 BC310.2854 FSP 10666

MID-COURSE EXECUTION ACCURACY

SGT 6961.9 SGR 475.4 SG3 3144.2
RRT -.2767 RRF -.3006 RTF .9899
SGB 6978.1 R23 .0265 R13 -.9899
SG1 6963.1 SG2 456.8 THA 178.91

ORBIT DETERMINATION ACCURACY

ST 1413.6 SR 374.5 SS 1573.1
CRT .8367 CRS -.4772 CST -.8785
LSA 2065.4 MSA 588.2 SSA 30.6
EL1 1448.6 EL2 200.2 ALF 12.75

LAUNCH DATE NOV 11 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 737.204 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.859 GAL -2.20 AZL 88.17 HCA 224.39 SMA 186.23 ECC .20820 INC 1.8282 V1 30.087
RP 216.57 LAP -1.28 LOP 273.02 VP 22.649 GAP -7.55 AZP 91.31 TAL 347.20 TAP 211.59 RCA 147.46 APO 225.00 V2 25.365
RC 284.679 GL 20.08 GP .23 ZAL 106.33 ZAP 71.08 ETS 179.30 ZAE 102.16 ETE 178.59 ZAC 84.62 ETC 257.83 CLP 71.08

PLANETOCENTRIC CONIC

C3 9.308 VHL 3.051 DLA 27.82 RAL 166.06 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.995 DPA 8.00 RAP 166.12 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 15	3218.18	-25.84	112.02	23.76	78.00	14 43 53	2618.2	-27.24	103.63
90.00	12 16 56	3521.60	-19.99	132.29	21.91	69.51	13 15 38	2921.6	-22.60	124.59
100.00	15 58 12	2805.66	-29.05	82.28	24.38	82.62	16 44 58	2205.7	-29.77	73.55
100.00	12 51 39	3409.35	-16.98	122.73	20.58	65.03	13 48 29	2809.3	-20.21	115.42
110.00	18 8 50	2396.81	-34.18	51.62	24.76	90.18	18 48 47	1796.8	-33.78	42.40
110.00	12 57 30	3390.96	-12.46	118.80	18.04	57.91	13 54 1	2791.0	-16.61	112.15

DIFFERENTIAL CORRECTIONS

TDE .5824 TRA 1.4451 TC-10.6788 BAU 1.3300
RDE .2028 RRA .0590 RC3 .4453 FAU .53497
FDE 1.1346 FRA 8.6403 FC-49.7598 BSP 25151
BDE .6167 BRA 1.4464 BC310.6881 FSP 10404

MID-COURSE EXECUTION ACCURACY

SGT 7284.9 SGR 484.4 SG3 3070.5
RRT -.2747 RRF -.2986 RTF .9906
SGB 7301.0 R23 .0263 R13 -.9906
SG1 7286.1 SG2 465.6 THA 178.95

ORBIT DETERMINATION ACCURACY

ST 1443.0 SR 382.8 SS 1545.3
CRT .8140 CRS -.4423 CST -.8791
LSA 2064.4 MSA 595.2 SSA 30.6
EL1 1477.0 EL2 217.2 ALF 12.46

LAUNCH DATE NOV 11 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 741.348 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.861 GAL -2.26 AZL 88.17 HCA 225.54 SMA 186.26 ECC .20850 INC 1.8292 V1 30.087
RP 216.22 LAP -1.31 LOP 274.17 VP 22.695 GAP -7.72 AZP 91.28 TAL 346.86 TAP 212.40 RCA 147.42 APO 225.09 V2 25.404
RC 285.910 GL 20.02 GP .22 ZAL 106.95 ZAP 69.41 ETS 179.32 ZAE 100.23 ETE 178.65 ZAC 84.51 ETC 257.90 CLP 69.41

PLANETOCENTRIC CONIC

C3 9.370 VHL 3.061 DLA 27.51 RAL 166.67 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.031 DPA 8.20 RAP 165.64 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 22	3177.83	-26.38	109.18	24.55	79.32	14 58 20	2577.8	-27.59	100.73
90.00	12 6 39	3564.57	-18.94	135.01	22.23	68.55	13 6 4	2964.6	-21.69	127.41
100.00	16 7 18	2784.76	-29.22	80.75	25.04	83.41	16 53 42	2184.8	-29.83	72.00
100.00	12 47 24	3432.87	-16.30	124.14	21.03	64.59	13 44 37	2832.9	-19.59	116.89
110.00	18 14 54	2385.41	-34.18	50.73	25.34	90.71	18 54 40	1785.4	-33.70	41.51
110.00	12 56 17	3404.98	-11.96	119.56	18.57	57.74	13 53 2	2805.0	-16.13	112.95

DIFFERENTIAL CORRECTIONS

TDE .5745 TRA 1.5558 TC-11.0577 BAU 1.3864
RDE .2078 RRA .0607 RC3 .4484 FAU .52118
FDE .9882 FRA 8.5807 FC-48.1515 BSP 26264
BDE .6110 BRA 1.5570 BC311.0668 FSP 10141

MID-COURSE EXECUTION ACCURACY

SGT 7600.4 SGR 493.0 SG3 2993.4
RRT -.2722 RRF -.2960 RTF .9912
SGB 7616.4 R23 .0261 R13 -.9912
SG1 7601.6 SG2 474.3 THA 178.98

ORBIT DETERMINATION ACCURACY

ST 1472.4 SR 390.9 SS 1520.6
CRT .7895 CRS -.4056 CST -.8796
LSA 2066.1 MSA 602.7 SSA 30.6
EL1 1505.2 EL2 234.7 ALF 12.14

LAUNCH DATE NOV 11 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 11 1965

DISTANCE 745.494

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.862 GAL -2.32 AZL 88.17 HCA 226.71 SMA 186.29 ECC .20883 INC 1.8299 V1 30.087
RP 215.88 LAP -1.33 LOP 275.33 VP 22.740 GAP -7.89 AZP 91.26 TAL 346.50 TAP 213.21 RCA 147.38 APO 225.19 V2 25.442
RC 287.127 GL 19.96 GP .21 ZAL 107.59 ZAP 67.78 ETS 179.34 ZAE 98.34 ETE 178.71 ZAC 84.41 ETC 257.96 CLP 67.78

PLANETOCENTRIC CONIC

C3 9.439 VHL 3.072 DLA 27.18 RAL 167.30 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.070 DPA 8.38 RAP 165.21 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 49	3143.15	-26.79	106.73	25.32	80.48	15 11 12	2543.1	-27.84	98.22
90.00	11 58 13	3602.11	-17.99	137.35	22.62	67.76	12 58 15	3002.1	-20.85	129.84
100.00	16 16 23	2764.15	-29.37	79.23	25.72	84.19	17 2 27	2164.2	-29.87	70.47
100.00	12 43 20	3456.34	-15.61	125.54	21.51	64.18	13 40 57	2856.3	-18.96	118.35
110.00	18 21 10	2373.68	-34.16	49.81	25.94	91.25	19 0 43	1773.7	-33.61	40.61
110.00	12 55 3	3419.58	-11.42	120.36	19.11	57.56	13 52 3	2819.6	-15.62	113.77

DIFFERENTIAL CORRECTIONS

TDE .5767 TRA 1.6841 TC-11.3621 BAU 1.4350
RDE .2126 RRA .0620 RC3 .4498 FAU .50268
FDE .9261 FRA 8.6003 FC-46.1039 BSP 27679
BDE .6146 BRA 1.6853 BC311.3710 FSP 10054

MID-COURSE EXECUTION ACCURACY

SGT 7897.2 SGR 500.5 SG3 2905.2
RRT -.2642 RRF -.2853 RTF .9916
SGB 7913.1 R23 .0232 R13 -.9916
SG1 7898.3 SG2 482.7 THA 179.04

ORBIT DETERMINATION ACCURACY

ST 1523.9 SR 398.5 SS 1522.6
CRT .7674 CRS -.3885 CST -.8875
LSA 2106.5 MSA 601.1 SSA 30.8
EL1 1555.2 EL2 250.4 ALF 11.65

LAUNCH DATE NOV 11 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 13 1965

DISTANCE 749.653

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.864 GAL -2.39 AZL 88.17 HCA 227.87 SMA 186.32 ECC .20919 INC 1.8307 V1 30.087
RP 215.54 LAP -1.36 LOP 276.50 VP 22.785 GAP -8.06 AZP 91.23 TAL 346.14 TAP 214.01 RCA 147.34 APO 225.30 V2 25.480
RC 288.329 GL 19.88 GP .21 ZAL 108.26 ZAP 66.20 ETS 179.36 ZAE 96.49 ETE 178.76 ZAC 84.32 ETC 258.01 CLP 66.20

PLANETOCENTRIC CONIC

C3 9.514 VHL 3.085 DLA 26.84 RAL 167.94 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.110 DPA 8.54 RAP 164.81 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 13	3112.05	-27.13	104.51	26.09	81.54	15 23 5	2512.1	-28.02	95.96
90.00	11 50 57	3636.31	-17.09	139.46	23.05	67.08	12 51 34	3036.3	-20.05	132.04
100.00	16 25 24	2743.96	-29.50	77.75	26.41	84.96	17 11 8	2144.0	-29.89	68.96
100.00	12 39 28	3479.63	-14.92	126.92	22.02	63.79	13 37 27	2879.6	-18.32	119.78
110.00	18 27 33	2361.75	-34.14	48.88	26.56	91.80	19 6 54	1761.8	-33.51	39.69
110.00	12 53 48	3434.61	-10.87	121.18	19.68	57.39	13 51 3	2834.6	-15.10	114.62

DIFFERENTIAL CORRECTIONS

TDE .5556 TRA 1.7937 TC-11.7207 BAU 1.4920
RDE .2178 RRA .0638 RC3 .4525 FAU .49024
FDE .7382 FRA 8.4830 FC-44.6077 BSP 28579
BDE .5968 BRA 1.7949 BC311.7294 FSP 9684

MID-COURSE EXECUTION ACCURACY

SGT 8203.1 SGR 509.2 SG3 2827.6
RRT -.2645 RRF -.2869 RTF .9921
SGB 8218.9 R23 .0244 R13 -.9921
SG1 8204.2 SG2 491.0 THA 179.06

ORBIT DETERMINATION ACCURACY

ST 1538.6 SR 406.7 SS 1487.4
CRT .7359 CRS -.3372 CST -.8842
LSA 2090.0 MSA 613.1 SSA 30.6
EL1 1568.3 EL2 270.1 ALF 11.35

LAUNCH DATE NOV 11 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 15 1965

DISTANCE 753.817

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.866 GAL -2.45 AZL 88.17 HCA 229.04 SMA 186.36 ECC .20958 INC 1.8315 V1 30.087
RP 215.21 LAP -1.38 LOP 277.67 VP 22.830 GAP -8.22 AZP 91.20 TAL 345.75 TAP 214.80 RCA 147.30 APO 225.42 V2 25.517
RC 289.516 GL 19.80 GP .20 ZAL 108.95 ZAP 64.65 ETS 179.37 ZAE 94.67 ETE 178.81 ZAC 84.24 ETC 258.06 CLP 64.65

PLANETOCENTRIC CONIC

C3 9.596 VHL 3.098 DLA 26.48 RAL 168.60 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.154 DPA 8.69 RAP 164.46 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 0	3083.23	-27.40	102.45	26.85	82.55	15 34 23	2483.2	-28.14	93.86
90.00	11 44 28	3668.50	-16.23	141.43	23.53	66.47	12 45 37	3068.5	-19.28	134.08
100.00	16 34 25	2724.04	-29.61	76.28	27.11	85.73	17 19 49	2124.0	-29.89	67.48
100.00	12 35 44	3502.92	-14.21	128.29	22.55	63.42	13 34 7	2902.9	-17.67	121.20
110.00	18 34 5	2349.58	-34.11	47.93	27.20	92.37	19 13 15	1749.6	-33.41	38.76
110.00	12 52 33	3450.14	-10.30	122.02	20.27	57.23	13 50 3	2850.1	-14.55	115.49

DIFFERENTIAL CORRECTIONS

TDE .5330 TRA 1.9084 TC-12.0493 BAU 1.5469
RDE .2230 RRA .0656 RC3 .4546 FAU .47680
FDE .5650 FRA 8.3744 FC-43.0149 BSP 29497
BDE .5778 BRA 1.9095 BC312.0579 FSP 9350

MID-COURSE EXECUTION ACCURACY

SGT 8500.2 SGR 517.6 SG3 2746.9
RRT -.2641 RRF -.2875 RTF .9925
SGB 8515.9 R23 .0254 R13 -.9925
SG1 8501.3 SG2 499.1 THA 179.08

ORBIT DETERMINATION ACCURACY

ST 1556.2 SR 414.6 SS 1459.3
CRT .7019 CRS -.2861 CST -.8820
LSA 2081.5 MSA 624.2 SSA 30.4
EL1 1584.2 EL2 290.1 ALF 10.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 17 1965

DISTANCE 757.987

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.869 GAL -2.53 AZL 88.17 HCA 230.21 SMA 186.40 ECC .21000 INC 1.8322 V1 30.087
RP 214.88 LAP -1.41 LOP 278.84 VP 22.874 GAP -8.38 AZP 91.17 TAL 345.36 TAP 215.57 RCA 147.26 APO 225.54 V2 25.554
RC 290.691 GL 19.72 GP .19 ZAL 109.67 ZAP 63.14 ETS 179.38 ZAE 92.90 ETE 178.86 ZAC 84.17 ETC 258.11 CLP 63.14

PLANETOCENTRIC CONIC

C3 9.685 VHL 3.112 DLA 26.11 RAL 169.28 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.199 DPA 8.81 RAP 164.14 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 20	3056.05	-27.62	100.49	27.63	83.50	15 45 16	2456.0	-28.23	91.88
90.00	11 38 33	3699.30	-15.38	143.29	24.04	65.93	12 40 13	3099.3	-18.51	136.01
100.00	16 43 26	2704.34	-29.70	74.82	27.83	86.49	17 28 30	2104.3	-29.87	66.02
100.00	12 32 9	3526.25	-13.50	129.65	23.11	63.07	13 30 55	2926.8	-17.00	122.62
110.00	18 40 46	2337.19	-34.07	46.96	27.86	92.94	19 19 43	1737.2	-33.29	37.81
110.00	12 51 17	3466.16	-9.71	122.88	20.89	57.06	13 49 4	2866.2	-13.98	116.39

DIFFERENTIAL CORRECTIONS

TDE .5086 TRA 2.0275 TC-12.3476 BAU 1.5998
RDE .2283 RRA .0673 RC3 .4561 FAU .46264
FDE .4058 FRA 8.2738 FC-41.3556 BSP 30432
BDE .5575 BRA 2.0286 BC312.3560 FSP 9035

MID-COURSE EXECUTION ACCURACY

SGT 8787.6 SGR 525.6 SG3 2664.3
RRT -.2630 RRF -.2871 RTF .9928
SGB 8803.3 R23 .0260 R13 -.9929
SG1 8788.7 SG2 507.0 THA 179.10

ORBIT DETERMINATION ACCURACY

ST 1576.5 SR 422.4 SS 1437.6
CRT .6655 CRS -.2357 CST -.8810
LSA 2080.2 MSA 634.2 SSA 30.1
EL1 1602.3 EL2 310.2 ALF 10.51

LAUNCH DATE NOV 11 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 762.162 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.871	GAL	-2.60	AZL	88.17	HCA	231.39	SMA	186.44	ECC	.21045	INC	1.8330
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.919	GAP	-8.54	AZP	91.14	TAL	344.95	TAP	216.33	RCA	147.21	APO	225.68
RC	291.851	GL	19.62	GP	.19	ZAL	110.40	ZAP	61.68	ETS	179.40	ZAE	91.16	ETE	178.91	ZAC	84.11	ETC	258.15

V1 30.087 V2 25.590 CLP 61.68

PLANETOCENTRIC CONIC

C3	9.781	VHL	3.127	DLA	25.72	RAL	169.98	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.246	DPA	8.92	RAP	163.87

ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 21	3030.13	-27.81	98.62	28.40	84.42	15 55 51	2430.1	-28.29	89.98
90.00	11 33 6	3729.12	-14.55	145.08	24.59	65.44	12 55 15	3129.1	-17.74	137.87
100.00	16 52 27	2684.85	-29.78	73.38	28.57	87.25	17 37 12	2084.9	-29.84	64.57
100.00	12 28 41	3549.63	-12.77	131.01	23.70	62.74	13 27 51	2949.6	-16.32	124.02
110.00	18 47 35	2324.60	-34.02	45.98	28.54	93.51	19 26 20	1724.6	-33.16	36.85
110.00	12 50 2	3482.65	-9.10	123.77	21.52	56.91	13 48 5	2882.7	-13.39	117.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4816	TRA	2.1514	TC	-12.6186	BAU	1.6511	SGT	9067.3	SGR	533.4	SG3	2580.2	ST	1599.0	SR	430.0	SS	1420.2
RDE	.2336	RRA	.0689	RC3	.4571	FAU	.44808	RRT	-.2618	RRF	-.2863	RTF	.9932	CRT	.6263	CRS	-.1866	CST	-.8817
FDE	.2589	FRA	8.1729	FC	-39.6596	BSP	31356	SGB	9082.9	R23	.0264	R13	-.9932	LSA	2084.7	MSA	642.1	SSA	29.9
BDE	.5352	BRA	2.1525	BC	312.6269	FSP	8731	SG1	9068.3	SG2	514.7	THA	179.11	EL1	1622.6	EL2	330.4	ALF	9.98

LAUNCH DATE NOV 11 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 766.343 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.874	GAL	-2.68	AZL	88.17	HCA	232.57	SMA	186.49	ECC	.21093	INC	1.8337
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.963	GAP	-8.69	AZP	91.11	TAL	344.52	TAP	217.09	RCA	147.15	APO	225.83
RC	292.998	GL	19.52	GP	.18	ZAL	111.16	ZAP	60.25	ETS	179.41	ZAE	89.47	ETE	178.95	ZAC	84.06	ETC	258.18

V1 30.087 V2 25.626 CLP 60.25

PLANETOCENTRIC CONIC

C3	9.885	VHL	3.144	DLA	25.32	RAL	170.69	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	3.296	DPA	9.01	RAP	163.64

ECC 1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 7	3005.23	-27.96	96.81	29.19	85.32	16 6 12	2405.2	-28.31	88.16
90.00	11 28 1	3758.22	-13.72	146.82	25.17	64.98	12 30 39	3158.2	-16.98	139.66
100.00	17 1 28	2665.57	-29.83	71.94	29.32	88.00	17 45 54	2065.6	-29.79	63.14
100.00	12 25 21	3573.11	-12.04	132.37	24.31	62.43	13 24 54	2973.1	-15.63	125.42
110.00	18 54 32	2311.85	-33.97	44.99	29.23	94.10	19 33 3	1711.8	-33.03	35.88
110.00	12 48 47	3499.60	-8.47	124.67	22.19	56.76	13 47 6	2899.6	-12.78	118.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4516	TRA	2.2790	TC	-12.8628	BAU	1.7010	SGT	9338.4	SGR	540.9	SG3	2496.0	ST	1623.6	SR	437.5	SS	1406.7
RDE	.2389	RRA	.0706	RC3	.4577	FAU	.43335	RRT	-.2805	RRF	-.2855	RTF	.9934	CRT	.5842	CRS	-.1364	CST	-.8827
FDE	.1168	FRA	8.0739	FC	-37.9528	BSP	32274	SGB	9354.1	R23	.0268	R13	-.9934	LSA	2093.5	MSA	650.0	SSA	29.6
BDE	.5109	BRA	2.2801	BC	312.8709	FSP	8437	SG1	9339.5	SG2	522.2	THA	179.13	EL1	1644.6	EL2	350.6	ALF	9.38

LAUNCH DATE NOV 11 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 770.530 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.877	GAL	-2.76	AZL	88.17	HCA	233.75	SMA	186.54	ECC	.21144	INC	1.8343
RP	213.93	LAP	-1.48	LOP	282.38	VP	23.006	GAP	-8.85	AZP	91.08	TAL	344.08	TAP	217.83	RCA	147.10	APO	225.98
RC	294.131	GL	19.42	GP	.18	ZAL	111.94	ZAP	58.87	ETS	179.42	ZAE	87.81	ETE	179.00	ZAC	84.01	ETC	258.21

V1 30.087 V2 25.662 CLP 58.87

PLANETOCENTRIC CONIC

C3	9.997	VHL	3.162	DLA	24.90	RAL	171.42	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	3.347	DPA	9.09	RAP	163.45

ECC 1.1645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 42	2981.15	-28.08	95.06	29.99	86.19	16 16 23	2381.1	-28.31	86.40
90.00	11 23 14	3786.79	-12.89	148.51	25.78	64.57	12 26 21	3186.8	-16.21	141.40
100.00	17 10 30	2646.47	-29.87	70.53	30.08	88.75	17 54 37	2046.5	-29.72	61.72
100.00	12 22 7	3596.71	-11.29	133.72	24.96	62.14	13 22 4	2996.7	-14.93	126.82
110.00	19 1 35	2298.94	-33.90	43.99	29.94	94.69	19 39 54	1698.9	-32.88	34.90
110.00	12 47 32	3516.99	-7.82	125.60	22.87	56.62	13 46 9	2917.0	-12.16	119.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4178	TRA	2.4101	TC	-13.0828	BAU	1.7497	SGT	9602.2	SGR	548.3	SG3	2411.7	ST	1649.6	SR	444.9	SS	1396.2
RDE	.2443	RRA	.0722	RC3	.4580	FAU	.41859	RRT	-.2596	RRF	-.2847	RTF	.9936	CRT	.5389	CRS	-.0863	CST	-.8848
FDE	-.0191	FRA	7.9723	FC	-36.2485	BSP	33165	SGB	9617.8	R23	.0270	R13	-.9936	LSA	2106.3	MSA	656.6	SSA	29.3
BDE	.4840	BRA	2.4111	BC	313.0908	FSP	8150	SG1	9603.3	SG2	529.5	THA	179.15	EL1	1667.9	EL2	370.7	ALF	8.70

LAUNCH DATE NOV 11 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 774.721 EARTH TO MARS

RL	148.09	LAL	.00	LOL	48.64	VL	32.880	GAL	-2.84	AZL	88.16	HCA	234.94	SMA	186.59	ECC	.21198	INC	1.8350
RP	213.62	LAP	-1.50	LOP	283.57	VP	23.050	GAP	-9.00	AZP	91.05	TAL	343.62	TAP	218.56	RCA	147.04	APO	226.15
RC	295.251	GL	19.30	GP	.17	ZAL	112.75	ZAP	57.52	ETS	179.42	ZAE	86.19	ETE	179.04	ZAC	83.98	ETC	258.23

V1 30.087 V2 25.697 CLP 57.52

PLANETOCENTRIC CONIC

C3	10.118	VHL	3.181	DLA	24.47	RAL	172.16	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	3.401	DPA	9.15	RAP	163.30

ECC 1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 7	2957.77	-28.17	93.36	30.81	87.04	16 26 25	2357.8	-28.29	84.69
90.00	11 18 44	3814.98	-12.06	150.16	26.42	64.18	12 22 19	3215.0	-15.44	143.11
100.00	17 19 32	2627.55	-29.89	69.12	30.87	89.49	18 3 20	2027.5	-29.64	60.32
100.00	12 19 0	3620.43	-10.53	135.07	25.63	61.86	13 19 20	3020.4	-14.21	128.22
110.00	19 8 44	2285.92	-33.82	42.98	30.67	95.28	19 46 50	1685.9	-32.72	33.92
110.00	12 46 18	3534.82	-7.15	126.55	23.58	56.48	13 45 12	2934.8	-11.51	120.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3812	TRA	2.5448	TC	-13.2751	BAU	1.7968	SGT	9856.9	SGR	555.5	SG3	2327.4	ST	1678.7	SR	452.1	SS	1388.2
RDE	.2498	RRA	.0737	RC3	.4578	FAU	.40381	RRT	-.2588	RRF	-.2841	RTF	.9938	CRT	.4912	CRS	-.0368	CST	-.8877
FDE	-.1481	FRA	7.8675	FC	-34.5502	BSP	34046	SGB	9872.6	R23	.0272	R13	-.9938	LSA	2123.8	MSA	662.2	SSA	28.9
BDE	.4557	BRA	2.5459	BC	313.2830	FSP	7867	SG1	9858.0	SG2	536.5	THA	179.16	EL1	1694.2	EL2	390.2	ALF	7.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 778.918 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.883 GAL -2.93 AZL 88.16 HCA 236.13 SMA 186.65 ECC .21255 INC 1.8356 V1 30.087
RP 213.31 LAP -1.52 LOP 284.76 VP 23.093 GAP -9.15 AZP 91.02 TAL 343.15 TAP 219.28 RCA 146.98 APO 226.32 V2 25.731
RC 296.356 GL 19.18 GP .17 ZAL 113.57 ZAP 56.22 ETS 179.43 ZAE 84.60 ETE 179.08 ZAC 83.95 ETC 258.24 CLP 56.22

PLANETOCENTRIC CONIC

C3 10.249 VHL 3.201 DLA 24.02 RAL 172.92 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.456 DPA 9.19 RAP 163.19 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 25	2935.00	-28.24	91.69	31.63	87.87	16 36 20	2335.0	-28.24	83.03
90.00	11 14 27	3842.88	-11.23	151.79	27.09	63.83	12 18 30	3242.9	-14.65	144.79
100.00	17 28 35	2608.81	-29.89	67.73	31.66	90.22	18 12 4	2008.8	-29.54	58.94
100.00	12 15 59	3644.30	-9.76	136.43	26.32	61.61	13 16 43	3044.3	-13.48	129.61
110.00	19 15 59	2272.80	-33.74	41.97	31.42	95.87	19 53 52	1672.8	-32.55	32.93
110.00	12 45 4	3553.07	-6.46	127.51	24.32	56.36	13 44 17	2953.1	-10.84	121.16

DIFFERENTIAL CORRECTIONS
TDE .3406 TRA 2.6838 TC-13.4425 BAU 1.8429
RDE .2554 RRA .0752 RC3 .4573 FAU .38917
FDE -.2747 FRA 7.7618 FC-32.8737 BSP 34891
BDE .4257 BRA 2.6848 BC313.4502 FSP 7586

MID-COURSE EXECUTION ACCURACY
SGT10104.5 SGR 562.4 SG3 2244.0
RRT -.2580 RRF -.2838 RTF .9939
SGB10120.1 R23 .0276 R13 -.9939
SG110105.5 SG2 543.3 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 1710.8 SR 459.2 SS 1383.2
CRT .4405 CRS .0134 CST -.8910
LSA 2145.9 MSA 667.4 SSA 28.6
EL1 1723.5 EL2 409.2 ALF 7.15

LAUNCH DATE NOV 11 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 783.119 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.887 GAL -3.02 AZL 88.16 HCA 237.32 SMA 186.71 ECC .21316 INC 1.8363 V1 30.087
RP 213.01 LAP -1.55 LOP 285.95 VP 23.135 GAP -9.30 AZP 90.99 TAL 342.66 TAP 219.98 RCA 146.91 APO 226.50 V2 25.765
RC 297.448 GL 19.06 GP .16 ZAL 114.41 ZAP 54.95 ETS 179.43 ZAE 83.06 ETE 179.11 ZAC 83.93 ETC 258.25 CLP 54.95

PLANETOCENTRIC CONIC

C3 10.389 VHL 3.223 DLA 23.55 RAL 173.69 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.513 DPA 9.21 RAP 163.12 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 37	2912.75	-28.29	90.07	32.47	88.68	16 46 9	2312.7	-28.17	81.40
90.00	11 10 23	3870.59	-10.39	153.39	27.79	63.51	12 14 54	3270.6	-13.87	146.44
100.00	17 37 38	2590.24	-29.88	66.35	32.47	90.95	18 20 48	1990.2	-29.43	57.57
100.00	12 13 3	3668.33	-8.98	137.78	27.05	61.37	13 14 11	3068.3	-12.73	131.01
110.00	19 23 19	2259.59	-33.64	40.95	32.19	96.47	20 0 59	1659.6	-32.38	31.94
110.00	12 43 51	3571.75	-5.76	128.50	25.08	56.25	13 43 23	2971.7	-10.15	122.17

DIFFERENTIAL CORRECTIONS
TDE .3015 TRA 2.8309 TC-13.5682 BAU 1.8855
RDE .2609 RRA .0766 RC3 .4562 FAU .37401
FDE -.3779 FRA 7.6673 FC-31.1678 BSP 35831
BDE .3987 BRA 2.8320 BC313.5758 FSP 7344

MID-COURSE EXECUTION ACCURACY
SGT10340.5 SGR 569.0 SG3 2160.3
RRT -.2563 RRF -.2819 RTF .9940
SGB10356.1 R23 .0274 R13 -.9940
SG110341.5 SG2 549.9 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 1751.7 SR 466.1 SS 1381.4
CRT .3916 CRS .0556 CST -.8962
LSA 2178.3 MSA 669.4 SSA 28.2
EL1 1761.8 EL2 426.4 ALF 6.32

LAUNCH DATE NOV 11 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 787.326 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.890 GAL -3.11 AZL 88.16 HCA 238.52 SMA 186.77 ECC .21380 INC 1.8369 V1 30.087
RP 212.72 LAP -1.57 LOP 287.15 VP 23.178 GAP -9.44 AZP 90.96 TAL 342.16 TAP 220.68 RCA 146.84 APO 226.70 V2 25.798
RC 298.526 GL 18.92 GP .16 ZAL 115.27 ZAP 53.72 ETS 179.44 ZAE 81.55 ETE 179.15 ZAC 83.92 ETC 258.26 CLP 53.72

PLANETOCENTRIC CONIC

C3 10.539 VHL 3.246 DLA 23.08 RAL 174.46 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.572 DPA 9.22 RAP 163.09 ECC 1.1734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 42	2891.01	-28.31	88.48	33.31	89.48	16 55 53	2291.0	-28.08	79.82
90.00	11 6 30	3898.14	-9.55	154.98	28.52	63.21	12 11 28	3298.1	-13.07	148.07
100.00	17 46 41	2571.87	-29.85	64.98	33.30	91.66	18 29 33	1971.9	-29.30	56.22
100.00	12 10 13	3692.51	-8.19	139.14	27.79	61.15	13 11 45	3092.5	-11.98	132.40
110.00	19 30 44	2246.34	-33.53	39.93	32.97	97.07	20 8 10	1646.3	-32.19	30.95
110.00	12 42 39	3590.81	-5.03	129.50	25.86	56.14	13 42 30	2990.8	-9.45	123.19

DIFFERENTIAL CORRECTIONS
TDE .2491 TRA 2.9727 TC-13.7033 BAU 1.9319
RDE .2668 RRA .0781 RC3 .4554 FAU .36046
FDE -.5096 FRA 7.5425 FC-29.6094 BSP 36525
BDE .3650 BRA 2.9737 BC313.7108 FSP 7044

MID-COURSE EXECUTION ACCURACY
SGT10577.2 SGR 575.8 SG3 2080.4
RRT -.2577 RRF -.2842 RTF .9941
SGB10592.8 R23 .0283 R13 -.9941
SG110578.2 SG2 556.3 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 1786.5 SR 473.1 SS 1379.8
CRT .3332 CRS .1104 CST -.8997
LSA 2205.4 MSA 674.0 SSA 27.8
EL1 1793.9 EL2 444.2 ALF 5.37

LAUNCH DATE NOV 11 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 791.536 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.894 GAL -3.21 AZL 88.16 HCA 239.72 SMA 186.83 ECC .21447 INC 1.8375 V1 30.087
RP 212.43 LAP -1.59 LOP 288.35 VP 23.219 GAP -9.59 AZP 90.93 TAL 341.64 TAP 221.36 RCA 146.76 APO 226.90 V2 25.831
RC 299.592 GL 18.78 GP .15 ZAL 116.15 ZAP 52.52 ETS 179.44 ZAE 80.07 ETE 179.19 ZAC 83.92 ETC 258.26 CLP 52.52

PLANETOCENTRIC CONIC

C3 10.701 VHL 3.271 DLA 22.58 RAL 175.25 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.633 DPA 9.22 RAP 163.09 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 43	2869.70	-28.32	86.92	34.18	90.26	17 5 33	2269.7	-27.98	78.27
90.00	11 2 47	3925.63	-8.70	156.55	29.28	62.95	12 8 13	3325.6	-12.26	149.69
100.00	17 55 43	2553.68	-29.81	63.63	34.14	92.37	18 38 17	1953.7	-29.16	54.89
100.00	12 7 28	3716.88	-7.38	140.51	28.57	60.95	13 9 24	3116.9	-11.20	133.80
110.00	19 38 13	2233.04	-33.42	38.91	33.77	97.66	20 15 26	1633.0	-32.00	29.96
110.00	12 41 28	3610.28	-4.30	130.52	26.67	56.06	13 41 38	3010.3	-8.72	124.23

DIFFERENTIAL CORRECTIONS
TDE .1980 TRA 3.1236 TC-13.7975 BAU 1.9749
RDE .2727 RRA .0794 RC3 .4540 FAU .34658
FDE -.6179 FRA 7.4312 FC-28.0400 BSP 37303
BDE .3370 BRA 3.1246 BC313.8050 FSP 6780

MID-COURSE EXECUTION ACCURACY
SGT10803.4 SGR 582.3 SG3 2001.1
RRT -.2580 RRF -.2849 RTF .9941
SGB10819.1 R23 .0287 R13 -.9942
SG110804.5 SG2 562.5 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 1831.2 SR 479.8 SS 1381.1
CRT .2772 CRS .1566 CST -.9049
LSA 2243.8 MSA 675.3 SSA 27.3
EL1 1836.4 EL2 459.8 ALF 4.43

LAUNCH DATE NOV 11 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 795.751 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.898 GAL -3.31 AZL 88.16 HCA 240.92 SMA 186.90 ECC .21518 INC 1.8380 V1 30.087
RP 212.15 LAP -1.61 LOP 289.55 VP 23.260 GAP -9.73 AZP 90.89 TAL 341.11 TAP 222.03 RCA 146.68 APO 227.11 V2 25.863
RC 300.645 GL 18.63 GP .15 ZAL 117.04 ZAP 51.36 ETS 179.44 ZAE 78.63 ETE 179.22 ZAC 83.92 ETC 258.25 CLP 51.36

PLANETOCENTRIC CONIC

C3 10.874 VHL 3.298 DLA 22.08 RAL 176.05 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 3.695 DPA 9.19 RAP 163.13 ECC 1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 39	2848.80	-28.30	85.39	35.05	91.03	17 15 8	2248.8	-27.86	76.75
90.00	10 59 13	3953.07	-7.85	158.12	30.06	62.71	12 5 6	3353.1	-11.45	151.29
100.00	18 4 46	2535.67	-29.75	62.29	34.99	93.07	18 47 2	1935.7	-29.00	53.57
100.00	12 4 47	3741.44	-6.57	141.87	29.37	60.77	13 7 9	3141.4	-10.42	135.20
110.00	19 45 45	2219.74	-33.29	37.89	34.58	98.25	20 22 45	1619.7	-31.79	28.98
110.00	12 40 18	3630.13	-3.54	131.57	27.50	55.98	13 40 48	3030.1	-7.98	125.29

DIFFERENTIAL CORRECTIONS
TDE .1432 TRA 3.2782 TC-13.8676 BAU 2.0170
RDE .2787 RRA .0806 RC3 .4522 FAU .33282
FDE -.7216 FRA 7.3170 FC-26.4978 BSP 38063
BDE .3133 BRA 3.2792 BC313.8749 FSP 6524

MID-COURSE EXECUTION ACCURACY
SGT11022.2 SGR 588.5 SG3 1922.7
RRT -.2586 RRF -.2859 RTF .9942
SGB11037.9 R23 .0291 R13 -.9942
SG111023.2 SG2 568.4 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 1880.8 SR 486.5 SS 1384.0
CRT .2204 CRS .2016 CST -.9104
LSA 2287.5 MSA 675.5 SSA 26.9
EL1 1884.1 EL2 473.7 ALF 3.48

LAUNCH DATE NOV 11 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 799.969 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.902 GAL -3.42 AZL 88.16 HCA 242.13 SMA 186.96 ECC .21593 INC 1.8386 V1 30.087
RP 211.87 LAP -1.63 LOP 290.76 VP 23.301 GAP -9.87 AZP 90.86 TAL 340.57 TAP 222.69 RCA 146.59 APO 227.33 V2 25.895
RC 301.687 GL 18.47 GP .15 ZAL 117.95 ZAP 50.24 ETS 179.44 ZAE 77.22 ETE 179.25 ZAC 83.93 ETC 258.24 CLP 50.24

PLANETOCENTRIC CONIC

C3 11.059 VHL 3.326 DLA 21.56 RAL 176.86 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 3.760 DPA 9.16 RAP 163.20 ECC 1.1820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 31	2828.30	-28.27	83.89	35.94	91.78	17 24 40	2228.3	-27.72	75.27
90.00	10 55 47	3980.51	-6.99	159.68	30.88	62.49	12 2 8	3380.5	-10.62	152.88
100.00	18 13 48	2517.86	-29.68	60.98	35.87	93.76	18 55 46	1917.9	-28.84	52.27
100.00	12 2 12	3766.18	-5.75	143.25	30.20	60.61	13 4 58	3166.2	-9.62	136.60
110.00	19 53 20	2206.44	-33.16	36.87	35.41	98.84	20 30 7	1606.4	-31.58	28.00
110.00	12 39 9	3650.36	-2.77	132.62	28.35	55.92	13 39 59	3050.4	-7.22	126.37

DIFFERENTIAL CORRECTIONS
TDE .0847 TRA 3.4378 TC-13.9127 BAU 2.0581
RDE .2849 RRA .0818 RC3 .4502 FAU .31943
FDE -.8185 FRA 7.2039 FC-25.0056 BSP 38800
BDE .2972 BRA 3.4388 BC313.9200 FSP 6273

MID-COURSE EXECUTION ACCURACY
SGT11234.2 SGR 594.6 SG3 1846.4
RRT -.2596 RRF -.2873 RTF .9942
SGB11249.9 R23 .0295 R13 -.9942
SG111235.2 SG2 574.1 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 1936.2 SR 493.0 SS 1388.3
CRT .1634 CRS .2443 CST -.9163
LSA 2337.6 MSA 674.1 SSA 26.4
EL1 1937.9 EL2 486.0 ALF 2.54

LAUNCH DATE NOV 11 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 804.191 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.906 GAL -3.52 AZL 88.16 HCA 243.34 SMA 187.03 ECC .21672 INC 1.8392 V1 30.087
RP 211.60 LAP -1.64 LOP 291.97 VP 23.341 GAP -10.01 AZP 90.83 TAL 340.01 TAP 223.34 RCA 146.50 APO 227.57 V2 25.926
RC 302.717 GL 18.31 GP .14 ZAL 118.88 ZAP 49.15 ETS 179.43 ZAE 75.85 ETE 179.28 ZAC 83.95 ETC 258.22 CLP 49.15

PLANETOCENTRIC CONIC

C3 11.258 VHL 3.355 DLA 21.03 RAL 177.67 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 3.826 DPA 9.11 RAP 163.31 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 20	2808.18	-28.21	82.42	36.85	92.51	17 34 8	2208.2	-27.57	73.82
90.00	10 52 29	4007.96	-6.12	161.23	31.72	62.30	11 59 17	3408.0	-9.78	154.46
100.00	18 22 49	2500.26	-29.59	59.67	36.75	94.44	19 4 29	1900.3	-28.66	50.99
100.00	11 59 41	3791.11	-4.91	144.63	31.05	60.48	13 2 52	3191.1	-8.81	138.01
110.00	20 0 59	2193.17	-33.01	35.86	36.26	99.42	20 37 32	1593.2	-31.36	27.03
110.00	12 38 1	3670.96	-1.98	133.70	29.23	55.87	13 39 12	3071.0	-6.45	127.46

DIFFERENTIAL CORRECTIONS
TDE .0226 TRA 3.6014 TC-13.9364 BAU 2.0985
RDE .2912 RRA .0828 RC3 .4479 FAU .30638
FDE -.9114 FRA 7.0870 FC-23.5614 BSP 39504
BDE .2921 BRA 3.6023 BC313.9435 FSP 6025

MID-COURSE EXECUTION ACCURACY
SGT11439.9 SGR 600.5 SG3 1771.8
RRT -.2610 RRF -.2892 RTF .9942
SGB11455.7 R23 .0301 R13 -.9942
SG111441.0 SG2 579.6 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 1996.8 SR 499.5 SS 1393.6
CRT .1068 CRS .2856 CST -.9219
LSA 2393.0 MSA 672.1 SSA 25.9
EL1 1997.6 EL2 496.4 ALF 1.63

LAUNCH DATE NOV 11 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 808.416 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.910 GAL -3.63 AZL 88.16 HCA 244.55 SMA 187.11 ECC .21754 INC 1.8397 V1 30.087
RP 211.33 LAP -1.66 LOP 293.18 VP 23.381 GAP -10.15 AZP 90.79 TAL 339.43 TAP 223.98 RCA 146.40 APO 227.81 V2 25.956
RC 303.736 GL 18.14 GP .14 ZAL 119.82 ZAP 48.09 ETS 179.43 ZAE 74.50 ETE 179.31 ZAC 83.98 ETC 258.20 CLP 48.09

PLANETOCENTRIC CONIC

C3 11.470 VHL 3.387 DLA 20.49 RAL 178.50 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 3.893 DPA 9.05 RAP 163.45 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 4	2788.42	-28.15	80.98	37.77	93.23	17 43 33	2188.4	-27.40	72.39
90.00	10 49 19	4035.46	-5.25	162.78	32.58	62.13	11 56 34	3435.5	-8.94	156.04
100.00	18 31 50	2482.87	-29.49	58.39	37.65	95.11	19 13 12	1882.9	-28.47	49.74
100.00	11 57 14	3816.24	-4.07	146.02	31.93	60.36	13 0 51	3216.2	-7.98	139.42
110.00	20 8 39	2179.96	-32.86	34.86	37.13	99.99	20 44 59	1580.0	-31.13	26.07
110.00	12 36 55	3691.92	-1.18	134.79	30.13	55.83	13 38 26	3091.9	-5.66	128.57

DIFFERENTIAL CORRECTIONS
TDE -.0430 TRA 3.7702 TC-13.9366 BAU 2.1381
RDE .2977 RRA .0837 RC3 .4452 FAU .29352
FDE -.9977 FRA 6.9714 FC-22.1545 BSP 40209
BDE .3008 BRA 3.7711 BC313.9437 FSP 5788

MID-COURSE EXECUTION ACCURACY
SGT11639.6 SGR 606.2 SG3 1698.7
RRT -.2627 RRF -.2913 RTF .9942
SGB11655.3 R23 .0305 R13 -.9942
SG111640.7 SG2 584.8 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 2063.5 SR 505.8 SS 1399.8
CRT .0512 CRS .3244 CST -.9276
LSA 2454.7 MSA 668.8 SSA 25.5
EL1 2063.7 EL2 505.1 ALF .77

LAUNCH DATE NOV 11 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 12 1965

DISTANCE 812.644

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 32.914 GAL -3.75 AZL 88.16 HCA 245.76 SMA 187.18 ECC .21840 INC 1.8403 V1 30.087
RP 211.08 LAP -1.68 LOP 294.40 VP 23.420 GAP -10.29 AZP 90.76 TAL 338.84 TAP 224.60 RCA 146.30 APO 228.06 V2 25.986
RC 304.746 GL 17.96 GP .14 ZAL 120.78 ZAP 47.06 ETS 179.43 ZAE 73.19 ETE 179.34 ZAC 84.01 ETC 258.18 CLP 47.06

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.697 VHL 3.420 DLA 19.93 RAL 179.33 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 3.962 DPA 8.97 RAP 163.63 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 45	2769.03	-28.06	79.57	38.70	93.94	17 52 54	2169.0	-27.22	71.00
90.00	10 46 15	4063.02	-4.37	164.33	33.48	61.99	11 53 58	3463.0	-8.08	157.62
100.00	18 40 49	2465.71	-29.38	57.13	38.57	95.77	19 21 54	1865.7	-28.27	48.50
100.00	11 54 52	3841.57	-3.21	147.41	32.84	60.26	12 58 54	3241.6	-7.15	140.83
110.00	20 16 21	2166.82	-32.70	33.87	38.01	100.56	20 52 28	1566.8	-30.90	25.11
110.00	12 35 49	3713.23	-.37	135.90	31.06	55.82	13 37 43	3113.2	-4.85	129.69

DIFFERENTIAL CORRECTIONS

TDE -.1115 TRA 3.9445 TC-13.9110 BAU 2.1764
RDE .3044 RRA .0845 RC3 .4422 FAU .28106
FDE-1.0775 FRA 6.8545 FC-20.8027 BSP 40903
BDE .3241 BRA 3.9454 BC313.9181 FSP 5558

MID-COURSE EXECUTION ACCURACY

SGT11831.6 SGR 611.7 SG3 1627.8
RRT -.2646 RRF -.2938 RTF .9941
SGB11847.4 R23 .0312 R13 -.9941
SG111832.7 SG2 589.8 THA 179.21

ORBIT DETERMINATION ACCURACY

ST 2136.2 SR 512.0 SS 1406.1
CRT -.0023 CRS .3608 CST -.9331
LSA 2521.9 MSA 664.7 SSA 24.7
EL1 2136.2 EL2 512.0 ALF 179.97

LAUNCH DATE NOV 11 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 14 1965

DISTANCE 816.874

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 32.918 GAL -3.87 AZL 88.16 HCA 246.98 SMA 187.26 ECC .21931 INC 1.8408 V1 30.087
RP 210.82 LAP -1.69 LOP 295.61 VP 23.458 GAP -10.43 AZP 90.72 TAL 338.23 TAP 225.21 RCA 146.19 APO 228.32 V2 26.015
RC 305.746 GL 17.78 GP .13 ZAL 121.74 ZAP 46.06 ETS 179.42 ZAE 71.90 ETE 179.37 ZAC 84.05 ETC 258.15 CLP 46.06

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.939 VHL 3.455 DLA 19.37 RAL 180.16 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 4.033 DPA 8.88 RAP 163.83 ECC 1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 22	2749.99	-27.97	78.18	39.65	94.62	18 2 12	2150.0	-27.03	69.64
90.00	10 43 17	4090.66	-3.48	165.88	34.40	61.88	11 51 28	3490.7	-7.22	159.19
100.00	18 49 47	2448.79	-29.26	55.88	39.50	96.41	19 30 35	1848.8	-28.06	47.28
100.00	11 52 34	3867.10	-2.35	148.81	33.77	60.19	12 57 1	3267.1	-6.30	142.25
110.00	20 24 4	2153.78	-32.53	32.89	38.91	101.12	20 59 58	1553.8	-30.66	24.17
110.00	12 34 45	3734.87	.46	137.03	32.01	55.82	13 37 0	3134.9	-4.03	130.82

DIFFERENTIAL CORRECTIONS

TDE -.1836 TRA 4.1235 TC-13.8662 BAU 2.2143
RDE .3112 RRA .0851 RC3 .4390 FAU .26886
FDE-1.1529 FRA 6.7375 FC-19.4960 BSP 41574
BDE .3613 BRA 4.1244 BC313.8732 FSP 5335

MID-COURSE EXECUTION ACCURACY

SGT12018.6 SGR 617.0 SG3 1558.6
RRT -.2669 RRF -.2966 RTF .9940
SGB12034.4 R23 .0318 R13 -.9941
SG112019.7 SG2 594.6 THA 179.21

ORBIT DETERMINATION ACCURACY

ST 2214.3 SR 518.1 SS 1412.8
CRT -.0541 CRS .3955 CST -.9382
LSA 2594.5 MSA 660.1 SSA 24.6
EL1 2214.5 EL2 517.3 ALF 179.23

LAUNCH DATE NOV 11 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 16 1965

DISTANCE 821.106

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 32.923 GAL -3.99 AZL 88.16 HCA 248.20 SMA 187.34 ECC .22025 INC 1.8413 V1 30.087
RP 210.58 LAP -1.71 LOP 296.84 VP 23.496 GAP -10.57 AZP 90.68 TAL 337.61 TAP 225.81 RCA 146.08 APO 228.60 V2 26.043
RC 306.737 GL 17.59 GP .13 ZAL 122.72 ZAP 45.09 ETS 179.42 ZAE 70.65 ETE 179.40 ZAC 84.10 ETC 258.11 CLP 45.09

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.198 VHL 3.493 DLA 18.80 RAL 181.00 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 4.105 DPA 8.78 RAP 164.06 ECC 1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 56	2731.32	-27.86	76.83	40.61	95.29	18 11 27	2131.3	-26.83	68.31
90.00	10 40 25	4118.39	-2.59	167.43	35.35	61.79	11 49 3	3518.4	-6.35	160.76
100.00	18 58 43	2432.12	-29.13	54.66	40.45	97.04	19 39 15	1832.1	-27.85	46.09
100.00	11 50 19	3892.82	-1.48	150.23	34.73	60.14	12 55 12	3292.8	-5.44	143.68
110.00	20 31 48	2140.86	-32.36	31.92	39.83	101.66	21 7 29	1540.9	-30.42	23.25
110.00	12 33 43	3756.85	1.30	138.18	32.99	55.84	13 36 20	3156.8	-3.19	131.97

DIFFERENTIAL CORRECTIONS

TDE -.2589 TRA 4.3084 TC-13.7995 BAU 2.2514
RDE .3182 RRA .0856 RC3 .4354 FAU .25701
FDE-1.2209 FRA 6.6201 FC-18.2411 BSP 42234
BDE .4103 BRA 4.3093 BC313.8064 FSP 5119

MID-COURSE EXECUTION ACCURACY

SGT12199.8 SGR 622.2 SG3 1491.4
RRT -.2695 RRF -.2997 RTF .9940
SGB12215.7 R23 .0324 R13 -.9940
SG112201.0 SG2 599.1 THA 179.21

ORBIT DETERMINATION ACCURACY

ST 2298.1 SR 524.1 SS 1419.0
CRT -.1036 CRS .4274 CST -.9431
LSA 2672.2 MSA 654.3 SSA 24.1
EL1 2298.7 EL2 521.1 ALF 178.57

LAUNCH DATE NOV 11 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 18 1965

DISTANCE 825.340

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 32.928 GAL -4.11 AZL 88.16 HCA 249.43 SMA 187.42 ECC .22124 INC 1.8419 V1 30.087
RP 210.34 LAP -1.72 LOP 298.06 VP 23.533 GAP -10.71 AZP 90.65 TAL 336.97 TAP 226.40 RCA 145.95 APO 228.88 V2 26.071
RC 307.719 GL 17.39 GP .13 ZAL 123.71 ZAP 44.15 ETS 179.41 ZAE 69.42 ETE 179.43 ZAC 84.15 ETC 258.08 CLP 44.15

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.474 VHL 3.532 DLA 18.21 RAL 181.84 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 4.179 DPA 8.66 RAP 164.33 ECC 1.2053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 25	2713.00	-27.74	75.50	41.59	95.95	18 20 38	2113.0	-26.62	67.01
90.00	10 37 39	4146.21	-1.70	168.98	36.32	61.73	11 46 45	3546.2	-5.46	162.33
100.00	19 7 37	2415.71	-28.98	53.46	41.42	97.66	19 47 53	1815.7	-27.62	44.93
100.00	11 48 8	3918.74	-.60	151.65	35.71	60.11	12 53 27	3318.7	-4.57	145.11
110.00	20 39 33	2128.07	-32.18	30.97	40.77	102.20	21 15 1	1528.1	-30.17	22.33
110.00	12 32 42	3779.14	2.15	139.34	33.99	55.88	13 35 41	3179.1	-2.34	133.14

DIFFERENTIAL CORRECTIONS

TDE -.3369 TRA 4.4987 TC-13.7124 BAU 2.2879
RDE .3255 RRA .0860 RC3 .4315 FAU .24544
FDE-1.2822 FRA 6.5026 FC-17.0343 BSP 42887
BDE .4684 BRA 4.4995 BC313.7191 FSP 4912

MID-COURSE EXECUTION ACCURACY

SGT12375.1 SGR 627.1 SG3 1426.1
RRT -.2723 RRF -.3030 RTF .9939
SGB12391.0 R23 .0329 R13 -.9939
SG112376.3 SG2 603.3 THA 179.21

ORBIT DETERMINATION ACCURACY

ST 2386.5 SR 529.9 SS 1424.2
CRT -.1500 CRS .4569 CST -.9477
LSA 2753.9 MSA 648.2 SSA 23.7
EL1 2387.9 EL2 523.6 ALF 178.00

LAUNCH DATE NOV 11 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 829.576 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.932 GAL -4.24 AZL 88.16 HCA 250.65 SMA 187.50 ECC .22228 INC 1.8423 V1 30.087
RP 210.10 LAP -1.74 LOP 299.29 VP 23.570 GAP -10.84 AZP 90.61 TAL 336.32 TAP 226.97 RCA 145.82 APO 229.18 V2 26.098
RC 308.691 GL 17.19 GP .12 ZAL 124.71 ZAP 43.24 ETS 179.40 ZAE 68.22 ETE 179.45 ZAC 84.21 ETC 258.03 CLP 43.24

PLANETOCENTRIC CONIC

C3 12.769 VHL 3.573 DLA 17.62 RAL 182.69 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 4.255 DPA 8.53 RAP 164.62 ECC 1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 51	2695.05	-27.60	74.20	42.58	96.59	18 29 46	2095.1	-26.40	65.74
90.00	10 34 58	4174.14	-.80	170.54	37.33	61.69	11 44 32	3574.1	-4.57	163.90
100.00	19 16 29	2399.58	-28.83	52.29	42.40	98.26	19 56 28	1799.6	-27.39	43.78
100.00	11 46 1	3944.85	.29	153.08	36.72	60.11	12 51 46	3344.9	-3.69	146.55
110.00	20 47 18	2115.44	-32.00	30.03	41.72	102.73	21 22 33	1515.4	-29.91	21.44
110.00	12 31 42	3801.75	3.02	140.52	35.02	55.93	13 35 4	3201.7	-1.47	134.32

DIFFERENTIAL CORRECTIONS
TDE -.4197 TRA 4.6938 TC-13.6075 BAU 2.3240
RDE .3330 RRA .0861 RC3 .4274 FAU .23429
FDE-1.3414 FRA 6.3825 FC-15.8856 BSP 43505
BDE .5358 BRA 4.6946 BC313.6143 FSP 4707

MID-COURSE EXECUTION ACCURACY
SGT12545.2 SGR 631.9 SG3 1362.9
RRT -.2757 RRF -.3070 RTF .9937
SGB12561.2 R23 .0337 R13 -.9938
SG112546.5 SG2 607.4 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 2480.0 SR 535.7 SS 1429.5
CRT -.1950 CRS .4855 CST -.9518
LSA 2840.5 MSA 641.8 SSA 23.2
EL1 2482.3 EL2 524.9 ALF 177.48

LAUNCH DATE NOV 11 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 833.812 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.937 GAL -4.38 AZL 88.16 HCA 251.88 SMA 187.59 ECC .22336 INC 1.8429 V1 30.087
RP 209.88 LAP -1.75 LOP 300.52 VP 23.605 GAP -10.98 AZP 90.57 TAL 335.65 TAP 227.53 RCA 145.69 APO 229.48 V2 26.124
RC 309.654 GL 16.98 GP .12 ZAL 125.72 ZAP 42.36 ETS 179.39 ZAE 67.04 ETE 179.48 ZAC 84.27 ETC 257.99 CLP 42.36

PLANETOCENTRIC CONIC

C3 13.083 VHL 3.617 DLA 17.02 RAL 183.54 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 4.332 DPA 8.40 RAP 164.94 ECC 1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 13	2677.48	-27.46	72.94	43.59	97.21	18 38 51	2077.5	-26.18	64.51
90.00	10 32 22	4202.18	.11	172.10	38.35	61.68	11 42 24	3602.2	-3.68	165.47
100.00	19 25 19	2383.73	-28.67	51.14	43.39	98.84	20 5 2	1783.7	-27.15	42.67
100.00	11 43 58	3971.15	1.18	154.52	37.76	60.13	12 50 9	3371.2	-2.81	148.00
110.00	20 55 2	2103.00	-31.81	29.11	42.69	103.24	21 30 5	1503.0	-29.66	20.56
110.00	12 30 43	3824.65	3.89	141.72	36.07	56.01	13 34 28	3224.7	-.60	135.51

DIFFERENTIAL CORRECTIONS
TDE -.5040 TRA 4.8966 TC-13.4809 BAU 2.3590
RDE .3406 RRA .0861 RC3 .4229 FAU .22341
FDE-1.3920 FRA 6.2645 FC-14.7838 BSP 44139
BDE .6083 BRA 4.8973 BC313.4876 FSP 4513

MID-COURSE EXECUTION ACCURACY
SGT12709.9 SGR 636.5 SG3 1301.6
RRT -.2791 RRF -.3110 RTF .9936
SGB12725.8 R23 .0344 R13 -.9936
SG112711.1 SG2 611.1 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 2577.8 SR 541.4 SS 1433.1
CRT -.2360 CRS .5112 CST -.9556
LSA 2930.5 MSA 635.2 SSA 22.8
EL1 2581.1 EL2 525.4 ALF 177.04

LAUNCH DATE NOV 11 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 838.049 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.942 GAL -4.51 AZL 88.16 HCA 253.12 SMA 187.67 ECC .22450 INC 1.8433 V1 30.087
RP 209.66 LAP -1.76 LOP 301.75 VP 23.640 GAP -11.12 AZP 90.54 TAL 334.97 TAP 228.08 RCA 145.54 APO 229.80 V2 26.149
RC 310.607 GL 16.76 GP .12 ZAL 126.73 ZAP 41.50 ETS 179.38 ZAE 65.89 ETE 179.50 ZAC 84.34 ETC 257.94 CLP 41.50

PLANETOCENTRIC CONIC

C3 13.418 VHL 3.663 DLA 16.41 RAL 184.39 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 4.411 DPA 8.25 RAP 165.28 ECC 1.2208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 31	2660.28	-27.31	71.70	44.61	97.81	18 47 51	2060.3	-25.94	63.30
90.00	10 29 51	4230.33	1.02	173.67	39.41	61.70	11 40 21	3630.3	-2.77	167.04
100.00	19 34 6	2368.20	-28.50	50.01	44.41	99.41	20 13 34	1768.2	-26.91	41.57
100.00	11 41 57	3997.64	2.08	155.98	38.82	60.17	12 48 35	3397.6	-1.91	149.46
110.00	21 2 46	2090.75	-31.61	28.21	43.67	103.74	21 37 37	1490.8	-29.40	19.70
110.00	12 29 46	3847.85	4.77	142.94	37.14	56.11	13 33 54	3247.8	.29	136.72

DIFFERENTIAL CORRECTIONS
TDE -.5922 TRA 5.1042 TC-13.3393 BAU 2.3940
RDE .3486 RRA .0858 RC3 .4182 FAU .21287
FDE-1.4382 FRA 6.1440 FC-13.7347 BSP 44744
BDE .6872 BRA 5.1049 BC313.3459 FSP 4322

MID-COURSE EXECUTION ACCURACY
SGT12869.7 SGR 640.9 SG3 1242.1
RRT -.2830 RRF -.3155 RTF .9934
SGB12885.7 R23 .0352 R13 -.9934
SG112871.0 SG2 614.6 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 2679.3 SR 546.9 SS 1435.5
CRT -.2750 CRS .5355 CST -.9590
LSA 3023.8 MSA 628.2 SSA 22.4
EL1 2683.7 EL2 525.0 ALF 176.66

LAUNCH DATE NOV 11 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 842.286 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.947 GAL -4.66 AZL 88.16 HCA 254.35 SMA 187.76 ECC .22568 INC 1.8438 V1 30.087
RP 209.44 LAP -1.78 LOP 302.99 VP 23.674 GAP -11.26 AZP 90.50 TAL 334.27 TAP 228.62 RCA 145.39 APO 230.13 V2 26.174
RC 311.551 GL 16.54 GP .11 ZAL 127.76 ZAP 40.66 ETS 179.37 ZAE 64.76 ETE 179.53 ZAC 84.42 ETC 257.89 CLP 40.66

PLANETOCENTRIC CONIC

C3 13.774 VHL 3.711 DLA 15.80 RAL 185.24 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 4.492 DPA 8.08 RAP 165.65 ECC 1.2267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 45	2643.47	-27.14	70.50	45.65	98.39	18 56 49	2043.5	-25.70	62.13
90.00	10 27 24	4258.60	1.93	175.25	40.49	61.74	11 38 23	3658.6	-1.86	168.62
100.00	19 42 50	2352.97	-28.33	48.92	45.44	99.97	20 22 3	1753.0	-26.66	40.51
100.00	11 40 1	4024.32	2.98	157.44	39.91	60.24	12 47 5	3424.3	-1.00	150.92
110.00	21 10 29	2078.73	-31.41	27.33	44.67	104.23	21 45 8	1478.7	-29.14	18.86
110.00	12 28 51	3871.33	5.66	144.17	38.25	56.23	13 33 22	3271.3	1.19	137.95

DIFFERENTIAL CORRECTIONS
TDE -.6830 TRA 5.3189 TC-13.1784 BAU 2.4280
RDE .3567 RRA .0854 RC3 .4132 FAU .20262
FDE-1.4791 FRA 6.0243 FC-12.7349 BSP 45363
BDE .7706 BRA 5.3195 BC313.1849 FSP 4140

MID-COURSE EXECUTION ACCURACY
SGT13023.8 SGR 645.1 SG3 1184.6
RRT -.2871 RRF -.3203 RTF .9932
SGB13039.8 R23 .0360 R13 -.9932
SG113025.2 SG2 617.9 THA 179.18

ORBIT DETERMINATION ACCURACY
ST 2784.2 SR 552.3 SS 1436.6
CRT -.3110 CRS .5581 CST -.9620
LSA 3119.9 MSA 621.4 SSA 22.0
EL1 2789.7 EL2 523.9 ALF 176.34

LAUNCH DATE NOV 11 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 846.522 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.952 GAL -4.80 AZL 88.16 HCA 255.59 SMA 187.85 ECC .22691 INC 1.8443 V1 30.087
RP 209.24 LAP -1.79 LOP 304.22 VP 23.708 GAP -11.39 AZP 90.46 TAL 333.55 TAP 229.14 RCA 145.22 APO 230.48 V2 26.198
RC 312.486 GL 16.31 GP .11 ZAL 128.79 ZAP 39.85 ETS 179.36 ZAE 63.65 ETE 179.55 ZAC 84.50 ETC 257.84 CLP 39.85

PLANETOCENTRIC CONIC

C3 14.155 VHL 3.762 DLA 15.18 RAL 186.09 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 4.574 DPA 7.91 RAP 166.04 ECC 1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 55	2627.05	-26.98	69.33	46.71	98.95	19 5 42	2027.0	-25.46	60.99
90.00	10 25 2	4286.97	2.84	176.83	41.60	61.81	11 36 29	3687.0	-.95	170.20
100.00	19 51 31	2338.09	-28.15	47.85	46.48	100.50	20 30 29	1738.1	-26.41	39.48
100.00	11 38 7	4051.17	3.88	158.92	41.03	60.34	12 45 38	3451.2	-.09	152.39
110.00	21 18 10	2066.95	-31.21	26.47	45.69	104.70	21 52 37	1466.9	-28.88	18.04
110.00	12 27 57	3895.07	6.56	145.43	39.37	56.38	13 32 52	3295.1	2.09	139.19

DIFFERENTIAL CORRECTIONS
TDE -.7772 TRA 5.5398 TC-13.0038 BAU 2.4620
RDE .3652 RRA .0847 RC3 .4079 FAU .19272
FDE-1.5157 FRA 5.9031 FC-11.7872 BSP 45960
BDE .8588 BRA 5.5405 BC313.0102 FSP 3963

MID-COURSE EXECUTION ACCURACY
SGT13174.1 SGR 649.1 SG3 1129.0
RRT -.2915 RRF -.3255 RTF .9930
SGB13190.1 R23 .0370 R13 -.9930
SG113175.4 SG2 620.9 THA 179.18

ORBIT DETERMINATION ACCURACY
ST 2892.1 SR 557.7 SS 1436.3
CRT -.3446 CRS .5793 CST -.9646
LSA 3218.7 MSA 614.7 SSA 21.6
EL1 2898.7 EL2 522.3 ALF 176.07

LAUNCH DATE NOV 11 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 850.758 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.958 GAL -4.95 AZL 88.16 HCA 256.83 SMA 187.94 ECC .22820 INC 1.8448 V1 30.087
RP 209.04 LAP -1.80 LOP 305.46 VP 23.740 GAP -11.53 AZP 90.42 TAL 332.82 TAP 229.65 RCA 145.05 APO 230.83 V2 26.221
RC 313.411 GL 16.08 GP .11 ZAL 129.82 ZAP 39.06 ETS 179.34 ZAE 62.57 ETE 179.57 ZAC 84.59 ETC 257.78 CLP 39.06

PLANETOCENTRIC CONIC

C3 14.559 VHL 3.816 DLA 14.55 RAL 186.94 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 4.658 DPA 7.73 RAP 166.46 ECC 1.2396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 0	2611.03	-26.80	68.19	47.78	99.50	19 14 31	2011.0	-25.21	59.88
90.00	10 22 44	4315.47	3.76	178.43	42.74	61.91	11 34 39	3715.5	-.03	171.79
100.00	20 0 9	2323.54	-27.96	46.80	47.54	101.02	20 38 53	1723.5	-26.16	38.47
100.00	11 36 16	4078.19	4.79	160.41	42.17	60.46	12 44 14	3478.2	.82	153.88
110.00	21 25 50	2055.42	-31.01	25.63	46.73	105.16	22 0 6	1455.4	-28.62	17.24
110.00	12 27 4	3919.08	7.46	146.70	40.52	56.54	13 32 23	3319.1	3.01	140.44

DIFFERENTIAL CORRECTIONS
TDE -.8748 TRA 5.7678 TC-12.8143 BAU 2.4955
RDE .3739 RRA .0838 RC3 .4023 FAU .18311
FDE-1.5475 FRA 5.7819 FC-10.8882 BSP 46544
BDE .9514 BRA 5.7684 BC312.8206 FSP 3792

MID-COURSE EXECUTION ACCURACY
SGT13319.9 SGR 653.0 SG3 1075.3
RRT -.2963 RRF -.3310 RTF .9927
SGB13335.9 R23 .0379 R13 -.9927
SG113321.3 SG2 623.6 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 3002.9 SR 562.9 SS 1434.3
CRT -.3760 CRS .5992 CST -.9670
LSA 3319.9 MSA 607.8 SSA 21.2
EL1 3010.6 EL2 520.2 ALF 175.84

LAUNCH DATE NOV 11 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 854.991 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.963 GAL -5.11 AZL 88.15 HCA 258.07 SMA 188.04 ECC .22955 INC 1.8453 V1 30.087
RP 208.85 LAP -1.81 LOP 306.71 VP 23.772 GAP -11.67 AZP 90.38 TAL 332.08 TAP 230.15 RCA 144.87 APO 231.20 V2 26.243
RC 314.329 GL 15.85 GP .11 ZAL 130.86 ZAP 38.30 ETS 179.33 ZAE 61.51 ETE 179.60 ZAC 84.68 ETC 257.72 CLP 38.30

PLANETOCENTRIC CONIC

C3 14.991 VHL 3.872 DLA 13.92 RAL 187.79 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 4.744 DPA 7.54 RAP 166.90 ECC 1.2467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 1	2595.43	-26.62	67.08	48.87	100.03	19 23 17	1995.4	-24.96	58.80
90.00	10 20 30	4344.08	4.67	180.03	43.90	62.04	11 32 54	3744.1	.90	173.39
100.00	20 8 43	2309.36	-27.77	45.79	48.62	101.52	20 47 13	1709.4	-25.90	37.49
100.00	11 34 29	4105.38	5.70	161.92	43.34	60.61	12 42 54	3505.4	1.74	155.37
110.00	21 33 29	2044.17	-30.81	24.82	47.78	105.60	22 7 33	1444.2	-28.36	16.47
110.00	12 26 13	3943.33	8.37	147.99	41.70	56.74	13 31 56	3343.3	3.93	141.71

DIFFERENTIAL CORRECTIONS
TDE -.9754 TRA 6.0013 TC-12.6131 BAU 2.5290
RDE .3829 RRA .0826 RC3 .3965 FAU .17383
FDE-1.5741 FRA 5.6583 FC-10.0393 BSP 47104
BDE 1.0479 BRA 6.0019 BC312.6193 FSP 3625

MID-COURSE EXECUTION ACCURACY
SGT13460.9 SGR 656.7 SG3 1023.3
RRT -.3014 RRF -.3369 RTF .9924
SGB13476.9 R23 .0389 R13 -.9924
SG113462.3 SG2 626.1 THA 179.16

ORBIT DETERMINATION ACCURACY
ST 3115.1 SR 568.0 SS 1430.3
CRT -.4052 CRS .6177 CST -.9691
LSA 3422.1 MSA 600.9 SSA 20.8
EL1 3123.9 EL2 517.8 ALF 175.66

LAUNCH DATE NOV 11 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 859.223 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.968 GAL -5.27 AZL 88.15 HCA 259.31 SMA 188.13 ECC .23096 INC 1.8457 V1 30.087
RP 208.67 LAP -1.81 LOP 307.95 VP 23.803 GAP -11.82 AZP 90.34 TAL 331.32 TAP 230.63 RCA 144.68 APO 231.58 V2 26.264
RC 315.238 GL 15.61 GP .10 ZAL 131.90 ZAP 37.55 ETS 179.32 ZAE 60.46 ETE 179.62 ZAC 84.78 ETC 257.66 CLP 37.55

PLANETOCENTRIC CONIC

C3 15.449 VHL 3.931 DLA 13.29 RAL 188.64 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 4.831 DPA 7.33 RAP 167.36 ECC 1.2543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 58	2580.24	-26.44	66.01	49.97	100.53	19 31 58	1980.2	-24.71	57.76
90.00	10 18 19	4372.81	5.59	181.65	45.09	62.19	11 31 12	3772.8	1.82	174.99
100.00	20 17 14	2295.55	-27.58	44.81	49.72	102.00	20 55 30	1695.5	-25.65	36.54
100.00	11 32 44	4132.74	6.62	163.44	44.53	60.78	12 41 37	3532.7	2.67	156.87
110.00	21 41 5	2033.22	-30.60	24.03	48.85	106.03	22 14 58	1433.2	-28.10	15.72
110.00	12 25 23	3967.83	9.28	149.30	42.91	56.95	13 31 31	3367.8	4.86	143.00

DIFFERENTIAL CORRECTIONS
TDE-1.0795 TRA 6.2421 TC-12.3989 BAU 2.5622
RDE .3922 RRA .0812 RC3 .3905 FAU .16484
FDE-1.5970 FRA 5.5337 FC3-9.2370 BSP 47658
BDE 1.1486 BRA 6.2426 BC312.4051 FSP 3463

MID-COURSE EXECUTION ACCURACY
SGT13597.4 SGR 660.2 SG3 973.1
RRT -.3068 RRF -.3432 RTF .9921
SGB13613.4 R23 .0401 R13 -.9921
SG113598.9 SG2 628.3 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 3229.3 SR 573.0 SS 1424.6
CRT -.4324 CRS .6352 CST -.9709
LSA 3526.0 MSA 594.3 SSA 20.5
EL1 3239.1 EL2 515.1 ALF 175.50

LAUNCH DATE NOV 11 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 863.452 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.974 GAL -5.43 AZL 88.15 HCA 260.56 SMA 188.23 ECC .23242 INC 1.8462 V1 30.087
RP 208.49 LAP -1.82 LOP 309.20 VP 23.833 GAP -11.96 AZP 90.30 TAL 330.54 TAP 231.10 RCA 144.48 APO 231.97 V2 26.285
RC 316.140 GL 15.36 GP .10 ZAL 132.94 ZAP 36.83 ETS 179.30 ZAE 59.44 ETE 179.64 ZAC 84.88 ETC 257.60 CLP 36.83

PLANETOCENTRIC CONIC

C3 15.938 VHL 3.992 DLA 12.65 RAL 189.48 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 4.920 DPA 7.12 RAP 167.85 ECC 1.2623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 50	2565.49	-26.25	64.97	51.09	101.02	19 40 35	1965.5	-24.46	56.75
90.00	10 16 13	4401.64	6.50	183.28	46.31	62.38	11 29 35	3801.6	2.75	176.60
100.00	20 25 42	2282.12	-27.39	43.86	50.83	102.47	21 3 44	1682.1	-25.40	35.63
100.00	11 31 2	4160.24	7.53	164.97	45.76	60.99	12 40 22	3560.2	3.60	158.38
110.00	21 48 38	2022.58	-30.40	23.26	49.94	106.44	22 22 21	1422.6	-27.85	15.00
110.00	12 24 35	3992.55	10.20	150.63	44.14	57.19	13 31 7	3392.5	5.80	144.30

DIFFERENTIAL CORRECTIONS
TDE-1.1866 TRA 6.4903 TC-12.1759 BAU 2.5957
RDE .4018 RRA .0795 RC3 .3842 FAU .15616
FDE-1.6155 FRA 5.4088 FC3-8.4823 BSP 48214
BDE 1.2528 BRA 6.4908 BC312.1819 FSP 3306

MID-COURSE EXECUTION ACCURACY
SGT13731.3 SGR 663.6 SG3 924.7
RRT -.3126 RRF -.3499 RTF .9917
SGB13747.4 R23 .0413 R13 -.9918
SG113732.9 SG2 630.3 THA 179.13

ORBIT DETERMINATION ACCURACY
ST 3344.8 SR 577.8 SS 1417.1
CRT -.4576 CRS .6516 CST -.9725
LSA 3630.9 MSA 587.8 SSA 20.1
EL1 3355.5 EL2 512.2 ALF 175.37

LAUNCH DATE NOV 11 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 867.678 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.979 GAL -5.60 AZL 88.15 HCA 261.81 SMA 188.32 ECC .23395 INC 1.8467 V1 30.087
RP 208.32 LAP -1.83 LOP 310.45 VP 23.863 GAP -12.10 AZP 90.26 TAL 329.74 TAP 231.55 RCA 144.27 APO 232.38 V2 26.304
RC 317.035 GL 15.11 GP .10 ZAL 133.98 ZAP 36.13 ETS 179.29 ZAE 58.44 ETE 179.66 ZAC 84.99 ETC 257.53 CLP 36.13

PLANETOCENTRIC CONIC

C3 16.458 VHL 4.057 DLA 12.01 RAL 190.33 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 5.011 DPA 6.90 RAP 168.35 ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 37	2551.17	-26.06	63.96	52.23	101.49	19 49 8	1951.2	-24.21	55.78
90.00	10 14 10	4430.59	7.41	184.92	47.56	62.59	11 28 1	3830.6	3.68	178.22
100.00	20 34 5	2269.09	-27.19	42.94	51.96	102.91	21 11 54	1669.1	-25.14	34.74
100.00	11 29 23	4187.90	8.44	166.52	47.01	61.22	12 39 11	3587.9	4.53	159.91
110.00	21 56 9	2012.26	-30.20	22.53	51.05	106.83	22 29 42	1412.3	-27.60	14.30
110.00	12 23 48	4017.49	11.11	151.98	45.40	57.46	13 30 45	3417.5	6.74	145.61

DIFFERENTIAL CORRECTIONS
TDE-1.2965 TRA 6.7456 TC-11.9415 BAU 2.6287
RDE .4117 RRA .0775 RC3 .3777 FAU .14775
FDE-1.6293 FRA 5.2823 FC3-7.7720 BSP 48737
BDE 1.3603 BRA 6.7461 BC311.9475 FSP 3155

MID-COURSE EXECUTION ACCURACY
SGT13860.1 SGR 666.8 SG3 877.9
RRT -.3186 RRF -.3568 RTF .9913
SGB13876.1 R23 .0425 R13 -.9914
SG113861.7 SG2 631.9 THA 179.12

ORBIT DETERMINATION ACCURACY
ST 3460.7 SR 582.6 SS 1407.3
CRT -.4809 CRS .6670 CST -.9738
LSA 3736.0 MSA 581.4 SSA 19.8
EL1 3472.3 EL2 509.1 ALF 175.27

LAUNCH DATE NOV 11 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 871.899 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.985 GAL -5.77 AZL 88.15 HCA 263.06 SMA 188.42 ECC .23555 INC 1.8472 V1 30.087
RP 208.16 LAP -1.83 LOP 311.70 VP 23.891 GAP -12.25 AZP 90.22 TAL 328.94 TAP 231.99 RCA 144.04 APO 232.81 V2 26.323
RC 317.924 GL 14.86 GP .10 ZAL 135.02 ZAP 35.45 ETS 179.27 ZAE 57.46 ETE 179.68 ZAC 85.10 ETC 257.47 CLP 35.45

PLANETOCENTRIC CONIC

C3 17.010 VHL 4.124 DLA 11.37 RAL 191.17 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 5.104 DPA 6.67 RAP 168.87 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 19	2537.30	-25.87	62.99	53.39	101.94	19 57 37	1937.3	-23.96	54.84
90.00	10 12 10	4459.63	8.32	186.57	48.83	62.84	11 26 30	3859.6	4.61	179.85
100.00	20 42 24	2256.46	-27.00	42.05	53.10	103.34	21 20 1	1656.5	-24.89	33.88
100.00	11 27 47	4215.70	9.34	168.08	48.29	61.48	12 38 2	3615.7	5.46	161.45
110.00	22 3 38	2002.28	-30.00	21.82	52.17	107.21	22 37 0	1402.3	-27.35	13.63
110.00	12 23 3	4042.64	12.03	153.35	46.68	57.76	13 30 25	3442.6	7.69	146.95

DIFFERENTIAL CORRECTIONS
TDE-1.4104 TRA 7.0078 TC-11.7006 BAU 2.6622
RDE .4220 RRA .0752 RC3 .3710 FAU .13965
FDE-1.6400 FRA 5.1537 FC3-7.1076 BSP 49241
BDE 1.4722 BRA 7.0082 BC311.7064 FSP 3006

MID-COURSE EXECUTION ACCURACY
SGT13985.7 SGR 669.8 SG3 832.8
RRT -.3251 RRF -.3644 RTF .9909
SGB14001.7 R23 .0440 R13 -.9909
SG113987.4 SG2 633.4 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 3577.4 SR 587.2 SS 1395.9
CRT -.5028 CRS .6817 CST -.9750
LSA 3841.9 MSA 575.1 SSA 19.5
EL1 3589.8 EL2 505.8 ALF 175.19

LAUNCH DATE NOV 11 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 876.116 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 32.991 GAL -5.95 AZL 88.15 HCA 264.31 SMA 188.53 ECC .23721 INC 1.8476 V1 30.087
RP 208.01 LAP -1.84 LOP 312.95 VP 23.919 GAP -12.40 AZP 90.18 TAL 328.11 TAP 232.42 RCA 143.81 APO 233.25 V2 26.341
RC 318.808 GL 14.61 GP .10 ZAL 136.07 ZAP 34.78 ETS 179.26 ZAE 56.50 ETE 179.70 ZAC 85.22 ETC 257.40 CLP 34.78

PLANETOCENTRIC CONIC

C3 17.599 VHL 4.195 DLA 10.73 RAL 192.01 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 5.198 DPA 6.43 RAP 169.41 ECC 1.2896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 57	2523.87	-25.67	62.06	54.56	102.37	20 6 1	1923.9	-23.71	53.93
90.00	10 10 14	4488.78	9.22	188.23	50.14	63.11	11 25 3	3888.8	5.54	181.49
100.00	20 50 39	2244.25	-26.80	41.20	54.26	103.75	21 28 3	1644.2	-24.65	33.06
100.00	11 26 13	4243.63	10.25	169.67	49.59	61.77	12 36 57	3643.6	6.40	163.00
110.00	22 11 3	1992.66	-29.81	21.14	53.31	107.57	22 44 16	1392.7	-27.11	12.98
110.00	12 22 19	4067.99	12.95	154.74	48.00	58.08	13 30 6	3468.0	8.64	148.30

DIFFERENTIAL CORRECTIONS
TDE-1.5279 TRA 7.2771 TC-11.4535 BAU 2.6961
RDE .4326 RRA .0725 RC3 .3642 FAU .13184
FDE-1.6469 FRA 5.0239 FC3-6.4856 BSP 49727
BDE 1.5880 BRA 7.2775 BC311.4593 FSP 2861

MID-COURSE EXECUTION ACCURACY
SGT14107.9 SGR 672.7 SG3 789.2
RRT -.3319 RRF -.3723 RTF .9904
SGB14123.9 R23 .0455 R13 -.9904
SG114109.7 SG2 634.5 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 3694.3 SR 591.6 SS 1382.5
CRT -.5233 CRS .6957 CST -.9760
LSA 3947.8 MSA 568.9 SSA 19.2
EL1 3707.5 EL2 502.4 ALF 175.12

LAUNCH DATE NOV 11 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 14 1965

DISTANCE 880.328

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 32.997 GAL -6.14 AZL 88.15 HCA 265.56 SMA 188.63 ECC .23895 INC 1.8481 V1 30.087
RP 207.86 LAP -1.84 LOP 314.21 VP 23.945 GAP -12.55 AZP 90.14 TAL 327.27 TAP 232.84 RCA 143.56 APO 233.70 V2 26.357
RC 319.685 GL 14.35 GP .09 ZAL 137.11 ZAP 34.14 ETS 179.24 ZAE 55.56 ETE 179.72 ZAC 85.34 ETC 257.33 CLP 34.14

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.224 VHL 4.269 DLA 10.09 RAL 192.84 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 5.295 DPA 6.18 RAP 169.97 ECC 1.2999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 30	2510.91	-25.48	61.16	55.74	102.79	20 14 21	1910.9	-23.47	53.06
90.00	10 8 21	4518.02	10.12	189.92	51.47	63.41	11 23 39	3918.0	6.46	183.14
100.00	20 58 50	2232.46	-26.61	40.37	55.44	104.15	21 36 2	1632.5	-24.40	32.27
100.00	11 24 42	4271.70	11.15	171.26	50.93	62.08	12 35 54	3671.7	7.33	164.56
110.00	22 18 25	1983.40	-29.61	20.49	54.47	107.91	22 51 29	1383.4	-26.88	12.36
110.00	12 21 36	4093.52	13.86	156.16	49.34	58.44	13 29 49	3493.5	9.58	149.67

DIFFERENTIAL CORRECTIONS

TDE-1.6482 TRA 7.5547 TC-11.1994 BAU 2.7301
RDE .4435 RRA .0696 RC3 .3572 FAU .12427
FDE-1.6498 FRA 4.8926 FC3-5.9034 BSP 50192
BDE 1.7068 BRA 7.5551 BC311.2051 FSP 2720

MID-COURSE EXECUTION ACCURACY

SGT14226.5 SGR 675.5 SG3 747.2
RRT -.3389 RRF -.3805 RTF .9898
SGB14242.5 R23 .0472 R13 -.9899
SG114228.3 SG2 635.4 THA 179.08

ORBIT DETERMINATION ACCURACY

ST 3810.7 SR 596.0 SS 1367.0
CRT -.5422 CRS .7089 CST -.9769
LSA 4053.2 MSA 563.0 SSA 18.9
EL1 3824.7 EL2 498.9 ALF 175.07

LAUNCH DATE NOV 11 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 16 1965

DISTANCE 884.533

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.002 GAL -6.33 AZL 88.15 HCA 266.82 SMA 188.73 ECC .24076 INC 1.8486 V1 30.087
RP 207.73 LAP -1.85 LOP 315.46 VP 23.971 GAP -12.70 AZP 90.10 TAL 326.41 TAP 233.23 RCA 143.29 APO 234.17 V2 26.373
RC 320.558 GL 14.09 GP .09 ZAL 138.15 ZAP 33.51 ETS 179.22 ZAE 54.63 ETE 179.74 ZAC 85.47 ETC 257.27 CLP 33.51

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.890 VHL 4.346 DLA 9.45 RAL 193.67 RAD 6567.8 VEL 11.844 PTH 2.10 VHP 5.393 DPA 5.92 RAP 170.55 ECC 1.3109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 58	2498.42	-25.29	60.29	56.95	103.18	20 22 36	1898.4	-23.23	52.23
90.00	10 6 31	4547.35	11.00	191.61	52.83	63.74	11 22 18	3947.3	7.39	184.80
100.00	21 6 56	2221.11	-26.42	39.59	56.64	104.52	21 43 58	1621.1	-24.16	31.51
100.00	11 23 13	4299.89	12.04	172.88	52.29	62.43	12 34 53	3699.9	8.26	166.14
110.00	22 25 44	1974.52	-29.43	19.86	55.64	108.24	22 58 39	1374.5	-26.65	11.77
110.00	12 20 55	4119.23	14.77	157.59	50.71	58.82	13 29 34	3519.2	10.53	151.05

DIFFERENTIAL CORRECTIONS

TDE-1.7716 TRA 7.8405 TC-10.9407 BAU 2.7644
RDE .4547 RRA .0662 RC3 .3501 FAU .11695
FDE-1.6488 FRA 4.7598 FC3-5.3598 BSP 50650
BDE 1.8290 BRA 7.8408 BC310.9463 FSP 2585

MID-COURSE EXECUTION ACCURACY

SGT14342.0 SGR 678.1 SG3 706.7
RRT -.3462 RRF -.3891 RTF .9892
SGB14358.0 R23 .0490 R13 -.9893
SG114343.9 SG2 636.1 THA 179.06

ORBIT DETERMINATION ACCURACY

ST 3926.5 SR 600.1 SS 1349.4
CRT -.5598 CRS .7213 CST -.9775
LSA 4157.8 MSA 557.2 SSA 18.6
EL1 3941.1 EL2 495.4 ALF 175.03

LAUNCH DATE NOV 11 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 18 1965

DISTANCE 888.732

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.008 GAL -6.53 AZL 88.15 HCA 268.08 SMA 188.84 ECC .24265 INC 1.8490 V1 30.087
RP 207.60 LAP -1.85 LOP 316.72 VP 23.995 GAP -12.85 AZP 90.06 TAL 325.54 TAP 233.62 RCA 143.02 APO 234.66 V2 26.388
RC 321.425 GL 13.83 GP .09 ZAL 139.18 ZAP 32.90 ETS 179.21 ZAE 53.72 ETE 179.76 ZAC 85.60 ETC 257.20 CLP 32.90

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.598 VHL 4.427 DLA 8.81 RAL 194.50 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 5.494 DPA 5.65 RAP 171.14 ECC 1.3225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 20	2486.39	-25.10	59.46	58.17	103.55	20 30 47	1886.4	-22.99	51.43
90.00	10 4 44	4576.76	11.88	193.32	54.22	64.11	11 21 1	3976.8	8.31	186.47
100.00	21 14 58	2210.20	-26.23	38.83	57.85	104.87	21 51 49	1610.2	-23.93	30.78
100.00	11 21 47	4328.19	12.93	174.51	53.68	62.81	12 33 55	3728.2	9.18	167.73
110.00	22 33 0	1966.03	-29.24	19.27	56.83	108.54	23 5 46	1366.0	-26.43	11.21
110.00	12 20 15	4145.11	15.68	159.05	52.11	59.23	13 29 20	3545.1	11.48	152.46

DIFFERENTIAL CORRECTIONS

TDE-1.8992 TRA 8.1336 TC-10.6798 BAU 2.7996
RDE .4664 RRA .0625 RC3 .3429 FAU .10992
FDE-1.6453 FRA 4.6251 FC3-4.8558 BSP 51063
BDE 1.9556 BRA 8.1338 BC310.6853 FSP 2451

MID-COURSE EXECUTION ACCURACY

SGT14454.6 SGR 680.6 SG3 667.6
RRT -.3539 RRF -.3982 RTF .9885
SGB14470.6 R23 .0510 R13 -.9886
SG114456.6 SG2 636.5 THA 179.04

ORBIT DETERMINATION ACCURACY

ST 4041.7 SR 604.2 SS 1330.2
CRT -.5765 CRS .7335 CST -.9781
LSA 4262.1 MSA 551.6 SSA 18.3
EL1 4057.0 EL2 491.8 ALF 175.00

LAUNCH DATE NOV 11 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 20 1965

DISTANCE 892.922

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.014 GAL -6.73 AZL 88.15 HCA 269.34 SMA 188.94 ECC .24462 INC 1.8495 V1 30.087
RP 207.48 LAP -1.85 LOP 317.98 VP 24.019 GAP -13.01 AZP 90.02 TAL 324.65 TAP 233.99 RCA 142.73 APO 235.16 V2 26.402
RC 322.286 GL 13.57 GP .09 ZAL 140.21 ZAP 32.31 ETS 179.19 ZAE 52.82 ETE 179.78 ZAC 85.73 ETC 257.13 CLP 32.31

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.351 VHL 4.511 DLA 8.18 RAL 195.32 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 5.596 DPA 5.38 RAP 171.75 ECC 1.3349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 38	2474.83	-24.91	58.66	59.41	103.91	20 38 53	1874.8	-22.76	50.66
90.00	10 3 0	4606.25	12.75	195.05	55.63	64.50	11 19 46	4006.3	9.22	188.16
100.00	21 22 56	2199.73	-26.05	38.11	59.08	105.21	21 59 36	1599.7	-23.70	30.09
100.00	11 20 23	4356.59	13.80	176.17	55.10	63.22	12 33 0	3756.6	10.10	169.33
110.00	22 40 12	1957.94	-29.07	18.70	58.04	108.84	23 12 50	1357.9	-26.22	10.68
110.00	12 19 37	4171.15	16.58	160.53	53.54	59.67	13 29 8	3571.1	12.43	153.88

DIFFERENTIAL CORRECTIONS

TDE-2.0300 TRA 8.4346 TC-10.4161 BAU 2.8354
RDE .4784 RRA .0585 RC3 .3355 FAU .10311
FDE-1.6378 FRA 4.4881 FC3-4.3865 BSP 51469
BDE 2.0856 BRA 8.4348 BC310.4215 FSP 2321

MID-COURSE EXECUTION ACCURACY

SGT14563.5 SGR 682.9 SG3 629.9
RRT -.3619 RRF -.4077 RTF .9878
SGB14579.5 R23 .0531 R13 -.9878
SG114565.6 SG2 636.6 THA 179.03

ORBIT DETERMINATION ACCURACY

ST 4155.6 SR 608.1 SS 1308.8
CRT -.5920 CRS .7450 CST -.9785
LSA 4365.0 MSA 546.0 SSA 18.0
EL1 4171.3 EL2 488.2 ALF 174.98

LAUNCH DATE NOV 11 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 897.103 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.021 GAL -6.94 AZL 88.15 HCA 270.60 SMA 189.05 ECC .24667 INC 1.8499 V1 30.087
RP 207.36 LAP -1.85 LOP 319.24 VP 24.042 GAP -13.18 AZP 89.98 TAL 323.75 TAP 234.35 RCA 142.42 APO 235.69 V2 26.416
RC 323.141 GL 13.30 GP .09 ZAL 141.24 ZAP 31.74 ETS 179.17 ZAE 51.94 ETE 179.79 ZAC 85.87 ETC 257.06 CLP 31.74

PLANETOCENTRIC CONIC

C3 21.151 VHL 4.599 DLA 7.54 RAL 196.14 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 5.701 DPA 5.10 RAP 172.38 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 51	2463.76	-24.73	57.91	60.66	104.25	20 46 55	1863.8	-22.53	49.93
90.00	10 1 19	4635.82	13.61	196.80	57.08	64.93	11 18 34	4035.8	10.12	189.86
100.00	21 30 49	2189.71	-25.87	37.42	60.32	105.53	22 7 19	1589.7	-23.48	29.43
100.00	11 19 2	4385.10	14.67	177.84	56.55	63.66	12 32 7	3785.1	11.02	170.96
110.00	22 47 20	1950.24	-28.90	18.17	59.26	109.11	23 19 51	1350.2	-26.02	10.17
110.00	12 19 0	4197.33	17.47	162.03	55.00	60.14	13 28 57	3597.3	13.37	155.32

DIFFERENTIAL CORRECTIONS
TDE-2.1656 TRA 8.7435 TC-10.1518 BAU 2.8722
RDE .4908 RRA .0540 RC3 .3281 FAU .09655
FDE-1.6279 FRA 4.3491 FC3-3.9520 BSP 51819
BDE 2.2205 BRA 8.7436 BC310.1571 FSP 2194

MID-COURSE EXECUTION ACCURACY
SGT14669.9 SGR 685.2 SG3 593.6
RRT -.3703 RRF -.4177 RTF .9870
SGB14685.9 R23 .0555 R13 -.9870
SG114672.1 SG2 636.4 THA 179.01

ORBIT DETERMINATION ACCURACY
ST 4268.9 SR 611.8 SS 1285.8
CRT -.6069 CRS .7562 CST -.9788
LSA 4467.5 MSA 540.4 SSA 17.8
EL1 4285.2 EL2 484.4 ALF 174.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 901.275 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.027 GAL -7.15 AZL 88.15 HCA 271.86 SMA 189.16 ECC .24881 INC 1.8504 V1 30.087
RP 207.26 LAP -1.85 LOP 320.50 VP 24.064 GAP -13.34 AZP 89.94 TAL 322.83 TAP 234.69 RCA 142.10 APO 236.23 V2 26.428
RC 323.990 GL 13.04 GP .09 ZAL 142.27 ZAP 31.18 ETS 179.15 ZAE 51.08 ETE 179.81 ZAC 86.02 ETC 256.99 CLP 31.18

PLANETOCENTRIC CONIC

C3 22.003 VHL 4.691 DLA 6.91 RAL 196.96 RAD 6567.9 VEL 11.974 PTH 2.13 VHP 5.808 DPA 4.81 RAP 173.02 ECC 1.3621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 59	2453.16	-24.55	57.18	61.93	104.57	20 54 52	1853.2	-22.31	49.23
90.00	9 59 40	4665.46	14.46	198.56	58.55	65.39	11 17 26	4065.5	11.02	191.57
100.00	21 38 38	2180.15	-25.69	36.76	61.59	105.83	22 14 58	1580.2	-23.27	28.80
100.00	11 17 43	4413.70	15.53	179.53	58.03	64.13	12 31 16	3813.7	11.92	172.59
110.00	22 54 25	1942.96	-28.73	17.67	60.50	109.37	23 26 48	1343.0	-25.82	9.70
110.00	12 18 24	4223.65	18.36	163.56	56.49	60.65	13 28 48	3623.7	14.31	156.79

DIFFERENTIAL CORRECTIONS
TDE-2.3040 TRA 9.0616 TC3-9.8848 BAU 2.9092
RDE .5035 RRA .0491 RC3 .3206 FAU .09018
FDE-1.6143 FRA 4.2082 FC3-3.5483 BSP 52174
BDE 2.3584 BRA 9.0617 BC3 9.8900 FSP 2071

MID-COURSE EXECUTION ACCURACY
SGT14772.5 SGR 687.3 SG3 558.5
RRT -.3788 RRF -.4279 RTF .9860
SGB14788.4 R23 .0580 R13 -.9861
SG114774.8 SG2 636.0 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 4380.1 SR 615.4 SS 1260.7
CRT -.6206 CRS .7668 CST -.9790
LSA 4568.0 MSA 535.1 SSA 17.5
EL1 4396.9 EL2 480.7 ALF 174.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 905.435 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.033 GAL -7.37 AZL 88.15 HCA 273.12 SMA 189.27 ECC .25105 INC 1.8508 V1 30.087
RP 207.16 LAP -1.85 LOP 321.77 VP 24.085 GAP -13.51 AZP 89.90 TAL 321.89 TAP 235.01 RCA 141.76 APO 236.79 V2 26.439
RC 324.833 GL 12.77 GP .08 ZAL 143.28 ZAP 30.63 ETS 179.13 ZAE 50.23 ETE 179.83 ZAC 86.17 ETC 256.92 CLP 30.63

PLANETOCENTRIC CONIC

C3 22.909 VHL 4.786 DLA 6.28 RAL 197.76 RAD 6567.9 VEL 12.012 PTH 2.14 VHP 5.918 DPA 4.51 RAP 173.68 ECC 1.3770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 2	2443.04	-24.38	56.49	63.21	104.87	21 2 45	1843.0	-22.10	48.56
90.00	9 58 4	4695.16	15.30	200.34	60.06	65.88	11 16 19	4095.2	11.91	193.30
100.00	21 46 21	2171.05	-25.52	36.14	62.86	106.12	22 22 33	1571.1	-23.06	28.20
100.00	11 16 26	4442.38	16.37	181.24	59.54	64.64	12 30 28	3842.4	12.82	174.25
110.00	23 1 26	1936.09	-28.58	17.19	61.76	109.61	23 33 42	1336.1	-25.64	9.25
110.00	12 17 50	4250.10	19.23	165.11	58.01	61.18	13 28 40	3650.1	15.24	158.27

DIFFERENTIAL CORRECTIONS
TDE-2.4458 TRA 9.3884 TC3-9.6195 BAU 2.9477
RDE .5167 RRA .0438 RC3 .3131 FAU .08405
FDE-1.5978 FRA 4.0654 FC3-3.1763 BSP 52475
BDE 2.4998 BRA 9.3885 BC3 9.6246 FSP 1950

MID-COURSE EXECUTION ACCURACY
SGT14872.9 SGR 689.3 SG3 524.7
RRT -.3877 RRF -.4387 RTF .9850
SGB14888.9 R23 .0609 R13 -.9850
SG114875.4 SG2 635.3 THA 178.97

ORBIT DETERMINATION ACCURACY
ST 4489.3 SR 618.8 SS 1233.9
CRT -.6335 CRS .7772 CST -.9791
LSA 4666.7 MSA 529.9 SSA 17.2
EL1 4506.6 EL2 476.9 ALF 174.95

LAUNCH DATE NOV 11 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 909.584 EARTH TO MARS

RL 148.09 LAL .00 LOL 48.64 VL 33.039 GAL -7.60 AZL 88.15 HCA 274.38 SMA 189.38 ECC .25338 INC 1.8513 V1 30.087
RP 207.08 LAP -1.85 LOP 323.03 VP 24.105 GAP -13.68 AZP 89.86 TAL 320.94 TAP 235.32 RCA 141.40 APO 237.37 V2 26.449
RC 325.671 GL 12.51 GP .08 ZAL 144.30 ZAP 30.11 ETS 179.11 ZAE 49.40 ETE 179.84 ZAC 86.32 ETC 256.85 CLP 30.11

PLANETOCENTRIC CONIC

C3 23.872 VHL 4.886 DLA 5.66 RAL 198.57 RAD 6568.0 VEL 12.052 PTH 2.15 VHP 6.029 DPA 4.21 RAP 174.35 ECC 1.3929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 0	2433.40	-24.21	55.84	64.51	105.16	21 10 33	1833.4	-21.89	47.93
90.00	9 56 31	4724.91	16.12	202.14	61.59	66.40	11 15 16	4124.9	12.79	195.05
100.00	21 54 1	2162.41	-25.35	35.55	64.16	106.39	22 30 3	1562.4	-22.86	27.63
100.00	11 15 11	4471.14	17.20	182.97	61.08	65.17	12 29 42	3871.1	13.71	175.92
110.00	23 8 23	1929.64	-28.43	16.75	63.03	109.83	23 40 33	1329.6	-25.46	8.83
110.00	12 17 18	4276.67	20.10	166.69	59.56	61.75	13 28 34	3676.7	16.17	159.77

DIFFERENTIAL CORRECTIONS
TDE-2.5915 TRA 9.7243 TC3-9.3553 BAU 2.9873
RDE .5302 RRA .0380 RC3 .3056 FAU .07811
FDE-1.5780 FRA 3.9200 FC3-2.8328 BSP 52762
BDE 2.6452 BRA 9.7244 BC3 9.3603 FSP 1833

MID-COURSE EXECUTION ACCURACY
SGT14970.8 SGR 691.2 SG3 492.0
RRT -.3968 RRF -.4497 RTF .9838
SGB14986.8 R23 .0639 R13 -.9838
SG114973.4 SG2 634.4 THA 178.95

ORBIT DETERMINATION ACCURACY
ST 4596.7 SR 622.0 SS 1205.1
CRT -.6456 CRS .7872 CST -.9790
LSA 4763.7 MSA 524.7 SSA 17.0
EL1 4614.4 EL2 473.2 ALF 174.95

LAUNCH DATE NOV 11 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 30 1965

DISTANCE 913.719

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.045 GAL -7.83 AZL 88.15 HCA 275.65 SMA 189.50 ECC .25580 INC 1.8518 V1 30.087
RP 207.00 LAP -1.84 LOP 324.30 VP 24.123 GAP -13.86 AZP 89.82 TAL 319.97 TAP 235.62 RCA 141.02 APO 237.97 V2 26.459
RC 326.503 GL 12.24 GP .08 ZAL 145.30 ZAP 29.59 ETS 179.09 ZAE 48.58 ETE 179.86 ZAC 86.48 ETC 256.78 CLP 29.59

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 24.897 VHL 4.990 DLA 5.04 RAL 199.37 RAD 6568.0 VEL 12.094 PTH 2.16 VHP 6.144 DPA 3.89 RAP 175.04 ECC 1.4097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 53	2424.24	-24.04	55.21	65.83	105.43	21 18 17	1824.2	-21.69	47.33
90.00	9 55 0	4754.71	16.92	203.96	63.16	66.95	11 14 15	4154.7	13.65	196.81
100.00	22 1 36	2154.22	-25.20	34.99	65.47	106.64	22 37 30	1554.2	-22.67	27.10
100.00	11 13 58	4499.97	18.02	184.73	62.65	65.74	12 28 58	3900.0	14.59	177.61
110.00	23 15 17	1923.61	-28.29	16.34	64.32	110.04	23 47 20	1323.6	-25.30	8.44
110.00	12 16 46	4303.35	20.95	168.29	61.14	62.35	13 28 30	3703.3	17.08	161.30

DIFFERENTIAL CORRECTIONS

TDE-2.7419 TRA10.0683 TC3-9.0922 BAU 3.0280
RDE .5442 RRA .0318 RC3 .2981 FAU .07237
FDE-1.5556 FRA 3.7721 FC3-2.5165 BSP 53010
BDE 2.7954 BRA10.0684 BC3 9.0971 FSP 1719

MID-COURSE EXECUTION ACCURACY

SGT15064.7 SGR 693.0 SG3 460.5
RRT -.4062 RRF -.4613 RTF .9824
SGB15080.6 R23 .0673 R13 -.9825
SG115067.3 SG2 633.2 THA 178.93

ORBIT DETERMINATION ACCURACY

ST 4702.1 SR 625.0 SS 1174.8
CRT -.6572 CRS .7970 CST -.9788
LSA 4859.1 MSA 519.6 SSA 16.7
EL1 4720.2 EL2 469.3 ALF 174.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 1 1966

DISTANCE 917.839

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.052 GAL -8.07 AZL 88.15 HCA 276.91 SMA 189.61 ECC .25834 INC 1.8522 V1 30.087
RP 206.93 LAP -1.84 LOP 325.56 VP 24.141 GAP -14.04 AZP 89.78 TAL 318.99 TAP 235.90 RCA 140.63 APO 238.60 V2 26.467
RC 327.330 GL 11.98 GP .08 ZAL 146.30 ZAP 29.10 ETS 179.07 ZAE 47.78 ETE 179.87 ZAC 86.64 ETC 256.72 CLP 29.10

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 25.987 VHL 5.098 DLA 4.43 RAL 200.16 RAD 6568.1 VEL 12.139 PTH 2.18 VHP 6.260 DPA 3.58 RAP 175.74 ECC 1.4277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 41	2415.56	-23.88	54.63	67.16	105.68	21 25 56	1815.6	-21.50	46.77
90.00	9 53 32	4784.56	17.71	205.80	64.75	67.53	11 13 16	4184.6	14.51	198.58
100.00	22 9 6	2146.49	-25.04	34.47	66.79	106.88	22 44 52	1546.5	-22.49	26.60
100.00	11 12 47	4528.86	18.82	186.50	64.25	66.34	12 28 16	3928.9	15.46	179.32
110.00	23 22 6	1917.99	-28.16	15.95	65.62	110.23	23 54 4	1318.0	-25.14	8.08
110.00	12 16 16	4330.12	21.79	169.92	62.75	62.98	13 28 26	3730.1	17.99	162.84

DIFFERENTIAL CORRECTIONS

TDE-2.8954 TRA10.4230 TC3-8.8318 BAU 3.0701
RDE .5585 RRA .0251 RC3 .2906 FAU .06681
FDE-1.5300 FRA 3.6223 FC3-2.2256 BSP 53220
BDE 2.9488 BRA10.4230 BC3 8.8366 FSP 1608

MID-COURSE EXECUTION ACCURACY

SGT15156.9 SGR 694.7 SG3 430.1
RRT -.4158 RRF -.4731 RTF .9809
SGB15172.8 R23 .0710 R13 -.9809
SG115159.6 SG2 631.7 THA 178.91

ORBIT DETERMINATION ACCURACY

ST 4805.0 SR 627.8 SS 1142.6
CRT -.6680 CRS .8065 CST -.9785
LSA 4952.1 MSA 514.5 SSA 16.5
EL1 4823.5 EL2 465.4 ALF 174.96

LAUNCH DATE NOV 11 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 3 1966

DISTANCE 921.944

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.058 GAL -8.32 AZL 88.15 HCA 278.18 SMA 189.73 ECC .26098 INC 1.8527 V1 30.087
RP 206.86 LAP -1.83 LOP 326.83 VP 24.158 GAP -14.23 AZP 89.74 TAL 317.99 TAP 236.17 RCA 140.21 APO 239.24 V2 26.474
RC 328.152 GL 11.71 GP .08 ZAL 147.30 ZAP 28.61 ETS 179.05 ZAE 46.99 ETE 179.89 ZAC 86.80 ETC 256.65 CLP 28.61

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 27.148 VHL 5.210 DLA 3.82 RAL 200.95 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 6.380 DPA 3.25 RAP 176.45 ECC 1.4468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 24	2407.34	-23.73	54.07	68.51	105.92	21 33 31	1807.3	-21.32	46.23
90.00	9 52 6	4814.44	18.47	207.66	66.37	68.15	11 12 20	4214.4	15.35	200.38
100.00	22 16 32	2139.21	-24.90	33.98	68.13	107.10	22 52 11	1539.2	-22.32	26.13
100.00	11 11 39	4557.80	19.60	188.29	65.88	66.97	12 27 37	3957.8	16.31	181.04
110.00	23 28 52	1912.79	-28.03	15.60	66.94	110.41	24 0 45	1312.8	-25.00	7.74
110.00	12 15 48	4356.98	22.61	171.57	64.40	63.65	13 28 25	3757.0	18.88	164.41

DIFFERENTIAL CORRECTIONS

TDE-3.0541 TRA10.7856 TC3-8.5743 BAU 3.1136
RDE .5733 RRA .0179 RC3 .2831 FAU .06140
FDE-1.5020 FRA 3.4698 FC3-1.9581 BSP 53382
BDE 3.1074 BRA10.7857 BC3 8.5790 FSP 1499

MID-COURSE EXECUTION ACCURACY

SGT15245.0 SGR 696.3 SG3 400.8
RRT -.4256 RRF -.4854 RTF .9791
SGB15260.9 R23 .0751 R13 -.9792
SG115247.9 SG2 630.0 THA 178.88

ORBIT DETERMINATION ACCURACY

ST 4905.9 SR 630.5 SS 1109.0
CRT -.6784 CRS .8159 CST -.9781
LSA 5043.3 MSA 509.5 SSA 16.2
EL1 4924.7 EL2 461.5 ALF 174.97

LAUNCH DATE NOV 11 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 5 1966

DISTANCE 926.031

HELIOCENTRIC CONIC

RL 148.09 LAL .00 LOL 48.64 VL 33.065 GAL -8.58 AZL 88.15 HCA 279.45 SMA 189.85 ECC .26374 INC 1.8532 V1 30.087
RP 206.81 LAP -1.83 LOP 328.10 VP 24.174 GAP -14.43 AZP 89.70 TAL 316.97 TAP 236.42 RCA 139.78 APO 239.91 V2 26.480
RC 328.970 GL 11.45 GP .08 ZAL 148.28 ZAP 28.15 ETS 179.03 ZAE 46.21 ETE 179.90 ZAC 86.97 ETC 256.59 CLP 28.15

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 28.382 VHL 5.327 DLA 3.21 RAL 201.73 RAD 6568.1 VEL 12.238 PTH 2.20 VHP 6.502 DPA 2.92 RAP 177.18 ECC 1.4671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 3	2399.59	-23.59	53.55	69.87	106.14	21 41 2	1799.6	-21.15	45.73
90.00	9 50 42	4844.34	19.22	209.53	68.02	68.80	11 11 26	4244.3	16.17	202.19
100.00	22 23 53	2132.38	-24.76	33.51	69.49	107.30	22 59 25	1532.4	-22.16	25.68
100.00	11 10 32	4586.78	20.36	190.11	67.54	67.63	12 26 59	3986.8	17.15	182.79
110.00	23 35 34	1908.01	-27.92	15.27	68.28	110.57	24 7 22	1308.0	-24.87	7.43
110.00	12 15 21	4383.91	23.41	173.25	66.07	64.35	13 28 25	3783.9	19.77	166.00

DIFFERENTIAL CORRECTIONS

TDE-3.2146 TRA11.1605 TC3-8.3188 BAU 3.1582
RDE .5885 RRA .0102 RC3 .2756 FAU .05615
FDE-1.4704 FRA 3.3148 FC3-1.7126 BSP 53552
BDE 3.2680 BRA11.1605 BC3 8.3234 FSP 1395

MID-COURSE EXECUTION ACCURACY

SGT15331.0 SGR 697.8 SG3 372.4
RRT -.4355 RRF -.4979 RTF .9770
SGB15346.8 R23 .0796 R13 -.9771
SG115334.0 SG2 628.0 THA 178.86

ORBIT DETERMINATION ACCURACY

ST 5003.0 SR 632.9 SS 1073.5
CRT -.6880 CRS .8250 CST -.9775
LSA 5131.1 MSA 504.6 SSA 16.0
EL1 5022.1 EL2 457.6 ALF 174.98

LAUNCH DATE NOV 11 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 930.099 EARTH TO MARS

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RL  148.09 LAL    .00 LOL  48.64 VL  33.071 GAL  -8.85 AZL  88.15 HCA 280.72 SMA 189.96 ECC .26661 INC 1.8537 V1  30.087
RP  206.77 LAP  -1.82 LOP 329.37 VP  24.189 GAP -14.63 AZP  89.66 TAL 315.93 TAP 236.65 RCA 139.32 APO 240.61 V2  26.486
RC 329.784 GL   11.18 GP     .08 ZAL 149.26 ZAP  27.69 ETS 179.01 ZAE  45.45 ETE 179.91 ZAC  87.14 ETC 256.53 CLP  27.69
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PLANETOCENTRIC CONIC

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C3  29.696 VHL  5.449 DLA   2.61 RAL 202.51 RAD 6568.2 VEL 12.291 PTH   2.21 VHP  6.627 DPA   2.58 RAP 177.92 ECC 1.4887
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 37	2392.29	-23.45	53.06	71.25	106.35	21 48 29	1792.3	-20.98	45.26
90.00	9 49 20	4874.27	19.95	211.43	69.70	69.47	11 10 35	4274.3	16.97	204.01
100.00	22 31 10	2125.99	-24.63	33.08	70.86	107.49	23 6 36	1526.0	-22.01	25.27
100.00	11 9 28	4615.80	21.10	191.95	69.23	68.32	12 26 24	4015.8	17.97	184.55
110.00	23 42 12	1903.65	-27.82	14.98	69.63	110.72	24 13 56	1303.6	-24.74	7.15
110.00	12 14 55	4410.92	24.20	174.95	67.78	65.08	13 28 26	3810.9	20.63	167.62

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE-3.3811 TRA11.5447 TC3-8.0688 BAU 3.2052   SGT15414.8 SGR  699.2 SG3  345.1     ST  5098.6 SR   635.2 SS  1036.6
 RDE  .6041 RRA  .0019 RC3  .2682 FAU .05107   RRT -.4458 RRF -.5110 RTF  .9747     CRT -.6972 CRS  .8341 CST -.9768
 FDE-1.4365 FRA 3.1571 FC3-1.4887 BSP  53653   SGB15430.7 R23  .0846 R13 -.9747     LSA 5217.6 MSA  499.6 SSA   15.7
 BDE 3.4347 BRA11.5447 BC3 8.0733 FSP   1293   SG115418.0 SG2  625.7 THA 178.84     EL1 5117.9 EL2  453.6 ALF 175.00
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LAUNCH DATE NOV 12 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 438.226 EARTH TO MARS

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RL  148.06 LAL    .00 LOL  49.65 VL  35.227 GAL  -6.73 AZL  88.16 HCA 139.73 SMA 240.49 ECC .39931 INC 1.8363 V1  30.094
RP  244.91 LAP   1.19 LOP 189.39 VP  23.064 GAP  23.51 AZP  91.40 TAL 336.20 TAP 115.93 RCA 144.46 APO 336.52 V2  22.396
RC 126.220 GL   10.35 GP     .04 ZAL 126.73 ZAP 173.40 ETS 178.42 ZAE 156.08 ETE 357.43 ZAC  88.34 ETC 256.16 CLP 173.40
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PLANETOCENTRIC CONIC

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C3  38.955 VHL  6.241 DLA  10.64 RAL 181.50 RAD 6568.5 VEL 12.662 PTH   2.30 VHP 10.535 DPA    .15 RAP 183.11 ECC 1.6411
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 51	2716.18	-27.76	75.73	58.71	95.84	19 24 7	2116.2	-26.66	67.24
90.00	9 23 37	4687.21	15.07	199.87	51.89	65.74	10 41 44	4087.2	-11.67	192.84
100.00	20 5 30	2436.73	-29.16	55.00	58.54	96.87	20 46 6	1836.7	-27.91	46.42
100.00	10 39 39	4441.90	16.36	181.21	51.28	64.63	11 53 41	3841.9	12.81	174.22
110.00	21 25 46	2185.51	-32.93	35.28	57.89	99.75	22 2 12	1585.5	-31.23	26.47
110.00	11 35 51	4265.88	19.75	166.05	49.47	61.52	12 46 57	3665.9	15.79	159.16

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.0868 TRA-2.6443 TC3  .6511 BAU  .3410   SGT 2785.1 SGR  456.7 SG3  215.7     ST  1243.0 SR   429.6 SS   622.3
 RDE -.4659 RRA -.1440 RC3 -.0696 FAU .06485   RRT -.1298 RRF  .1139 RTF -.8692     CRT -.7432 CRS -.6056 CST  .9811
 FDE -.5040 FRA 1.7855 FC3-1.4412 BSP   9391   SGB 2822.3 R23 .0020 R13  .8692     LSA 1421.3 MSA  309.5 SSA   29.0
 BDE 1.1824 BRA 2.6482 BC3  .6548 FSP    591   SG1 2785.7 SG2  452.7 THA 178.75     EL1 1285.4 EL2  277.9 ALF 164.87
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LAUNCH DATE NOV 12 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 440.336 EARTH TO MARS

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RL  148.06 LAL    .00 LOL  49.65 VL  35.121 GAL  -6.54 AZL  88.16 HCA 140.63 SMA 237.28 ECC .39056 INC 1.8359 V1  30.094
RP  244.68 LAP   1.16 LOP 190.30 VP  22.923 GAP  22.92 AZP  91.42 TAL 336.51 TAP 117.14 RCA 144.61 APO 329.95 V2  22.418
RC 128.267 GL   10.57 GP     .04 ZAL 126.26 ZAP 172.93 ETS 178.42 ZAE 155.79 ETE 357.63 ZAC  88.43 ETC 256.14 CLP 172.93
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PLANETOCENTRIC CONIC

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C3  37.111 VHL  6.092 DLA  11.03 RAL 181.18 RAD 6568.4 VEL 12.589 PTH   2.28 VHP 10.300 DPA   -.03 RAP 183.51 ECC 1.6108
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 24	2716.72	-27.76	75.77	57.64	95.82	19 19 41	2116.7	-26.67	67.27
90.00	9 25 30	4662.16	14.37	198.37	50.76	65.34	10 43 13	4062.2	10.92	191.38
100.00	20 1 16	2436.54	-29.16	54.99	57.46	96.88	20 41 53	1836.5	-27.90	46.41
100.00	10 41 19	4417.57	15.64	179.76	50.14	64.20	11 54 57	3817.6	12.05	172.82
110.00	21 22 3	2183.78	-32.91	35.15	56.82	99.83	21 58 27	1583.8	-31.20	26.34
110.00	11 37 2	4243.10	19.00	164.70	48.32	61.04	12 47 45	3643.1	15.00	157.88

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.0664 TRA-2.6170 TC3  .7079 BAU  .3530   SGT 2835.2 SGR  449.2 SG3  226.4     ST  1254.0 SR   422.6 SS   631.2
 RDE -.4474 RRA -.1357 RC3 -.0726 FAU .06665   RRT -.1353 RRF  .1191 RTF -.8737     CRT -.7411 CRS -.5985 CST  .9800
 FDE -.5045 FRA 1.8229 FC3-1.5547 BSP   9585   SGB 2870.5 R23  .0021 R13  .8737     LSA 1433.0 MSA  308.3 SSA   29.2
 BDE 1.1564 BRA 2.6205 BC3  .7116 FSP    625   SG1 2835.8 SG2  445.0 THA 178.74     EL1 1294.4 EL2  274.9 ALF 165.30
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LAUNCH DATE NOV 12 1964 FLIGHT TIME 168.00 ARRIVAL DATE APR 29 1965

DISTANCE 442.563

HELIOCENTRIC CONIC

RL 148.06 LAL .00 LOL 49.65 VL 35.019 GAL -6.35 AZL 88.16 HCA 141.54 SMA 234.29 ECC .38217 INC 1.8354 V1 30.094
RP 244.46 LAP 1.14 LOP 191.20 VP 22.789 GAP 22.34 AZP 91.44 TAL 336.83 TAP 118.37 RCA 144.75 APO 323.83 V2 22.440
RC 130.354 GL 10.80 GP .04 ZAL 125.78 ZAP 172.46 ETS 178.42 ZAE 155.55 ETE 357.82 ZAC 88.53 ETC 256.11 CLP 172.46

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 35.376 VHL 5.948 DLA 11.42 RAL 180.84 RAD 6568.4 VEL 12.520 PTH 2.27 VHP 10.071 DPA -.21 RAP 183.90 ECC 1.5822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 48	2717.77	-27.77	75.85	56.57	95.78	19 15 6	2117.8	-26.68	67.35
90.00	9 27 27	4636.92	13.65	196.86	49.64	64.95	10 44 44	4036.9	10.16	189.92
100.00	19 56 54	2436.85	-29.16	55.01	56.39	96.86	20 37 31	1836.8	-27.91	46.43
100.00	10 43 1	4393.08	14.91	178.31	49.02	63.79	11 56 14	3793.1	11.27	171.41
110.00	21 18 12	2182.48	-32.89	35.05	55.75	99.88	21 54 34	1582.5	-31.18	26.25
110.00	11 38 13	4220.21	18.24	163.36	47.18	60.58	12 48 34	3620.2	14.19	156.60

DIFFERENTIAL CORRECTIONS

TDE 1.0459 TRA-2.5889 TC3 .7680 BAU .3650
RDE -.4294 RRA -.1277 RC3 -.0758 FAU .06854
FDE -.5048 FRA 1.8607 FC3-1.6772 BSP 9772
BDE 1.1307 BRA 2.5921 BC3 .7717 FSP 660

MID-COURSE EXECUTION ACCURACY

SGT 2885.0 SGR 441.6 SG3 237.6
RRT -.1412 RRF .1248 RTF -.8780
SGB 2918.6 R23 .0021 R13 .8780
SG1 2885.7 SG2 437.0 THA 178.73

ORBIT DETERMINATION ACCURACY

ST 1264.3 SR 415.4 SS 640.0
CRT -.7390 CRS -.5913 CST .9789
LSA 1444.2 MSA 307.0 SSA 29.3
EL1 1302.8 EL2 271.6 ALF 165.72

LAUNCH DATE NOV 12 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 1 1965

DISTANCE 444.896

HELIOCENTRIC CONIC

RL 148.06 LAL .00 LOL 49.65 VL 34.921 GAL -6.17 AZL 88.17 HCA 142.45 SMA 231.50 ECC .37412 INC 1.8349 V1 30.094
RP 244.23 LAP 1.12 LOP 192.11 VP 22.661 GAP 21.75 AZP 91.46 TAL 337.15 TAP 119.60 RCA 144.89 APO 318.11 V2 22.463
RC 132.477 GL 11.03 GP .04 ZAL 125.28 ZAP 171.97 ETS 178.41 ZAE 155.36 ETE 358.01 ZAC 88.62 ETC 256.09 CLP 171.97

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 33.744 VHL 5.809 DLA 11.82 RAL 180.50 RAD 6568.3 VEL 12.455 PTH 2.25 VHP 9.847 DPA -.38 RAP 184.29 ECC 1.5553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 3	2719.37	-27.78	75.96	55.50	95.72	19 10 22	2119.4	-26.70	67.46
90.00	9 29 26	4611.48	12.91	195.36	48.53	64.58	10 46 17	4011.5	9.38	188.46
100.00	19 52 24	2437.65	-29.17	55.07	55.33	96.83	20 33 2	1837.7	-27.92	46.49
100.00	10 44 46	4368.43	14.17	176.86	47.90	63.40	11 57 34	3768.4	10.48	170.01
110.00	21 14 13	2181.62	-32.88	34.99	54.69	99.92	21 50 35	1581.6	-31.16	26.19
110.00	11 39 26	4197.23	17.47	162.03	46.06	60.14	12 49 23	3597.2	13.37	155.32

DIFFERENTIAL CORRECTIONS

TDE 1.0259 TRA-2.5594 TC3 .8331 BAU .3775
RDE -.4120 RRA -.1200 RC3 -.0790 FAU .07053
FDE -.5042 FRA 1.8989 FC3-1.8096 BSP 9934
BDE 1.1055 BRA 2.5622 BC3 .8368 FSP 697

MID-COURSE EXECUTION ACCURACY

SGT 2934.7 SGR 433.8 SG3 249.3
RRT -.1478 RRF .1307 RTF -.8824
SGB 2966.6 R23 .0026 R13 .8824
SG1 2935.4 SG2 428.9 THA 178.72

ORBIT DETERMINATION ACCURACY

ST 1274.1 SR 408.0 SS 648.4
CRT -.7372 CRS -.5835 CST .9775
LSA 1454.6 MSA 305.9 SSA 29.4
EL1 1310.7 EL2 268.0 ALF 166.13

LAUNCH DATE NOV 12 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 3 1965

DISTANCE 447.329

HELIOCENTRIC CONIC

RL 148.06 LAL .00 LOL 49.65 VL 34.828 GAL -5.99 AZL 88.17 HCA 143.36 SMA 228.89 ECC .36639 INC 1.8344 V1 30.094
RP 243.99 LAP 1.09 LOP 193.02 VP 22.540 GAP 21.17 AZP 91.47 TAL 337.48 TAP 120.84 RCA 145.03 APO 312.76 V2 22.486
RC 134.631 GL 11.27 GP .04 ZAL 124.76 ZAP 171.49 ETS 178.41 ZAE 155.21 ETE 358.18 ZAC 88.72 ETC 256.07 CLP 171.49

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 32.208 VHL 5.675 DLA 12.24 RAL 180.14 RAD 6568.3 VEL 12.393 PTH 2.24 VHP 9.628 DPA -.56 RAP 184.67 ECC 1.5301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 8	2721.52	-27.79	76.12	54.43	95.65	19 5 30	2121.5	-26.72	67.61
90.00	9 31 28	4585.84	12.15	193.85	47.43	64.23	10 47 54	3985.8	8.59	186.99
100.00	19 47 44	2438.99	-29.18	55.17	54.26	96.78	20 28 23	1839.0	-27.94	46.58
100.00	10 46 33	4343.60	13.40	175.41	46.79	63.03	11 58 56	3743.6	9.68	168.60
110.00	21 10 7	2181.22	-32.88	34.96	53.63	99.94	21 46 28	1581.2	-31.16	26.16
110.00	11 40 39	4174.13	16.68	160.70	44.94	59.72	12 50 13	3574.1	12.54	154.05

DIFFERENTIAL CORRECTIONS

TDE 1.0166 TRA-2.5174 TC3 .9160 BAU .3960
RDE -.3953 RRA -.1128 RC3 -.0825 FAU .07245
FDE -.4990 FRA 1.9411 FC3-1.9474 BSP 9815
BDE 1.0907 BRA 2.5199 BC3 .9197 FSP 744

MID-COURSE EXECUTION ACCURACY

SGT 2982.9 SGR 426.2 SG3 261.5
RRT -.1605 RRF .1352 RTF -.8895
SGB 3013.2 R23 .0105 R13 .8894
SG1 2983.7 SG2 420.6 THA 178.66

ORBIT DETERMINATION ACCURACY

ST 1289.6 SR 400.7 SS 655.1
CRT -.7402 CRS -.5712 CST .9734
LSA 1468.9 MSA 306.5 SSA 28.9
EL1 1324.6 EL2 262.3 ALF 166.51

LAUNCH DATE NOV 12 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 5 1965

DISTANCE 449.851

HELIOCENTRIC CONIC

RL 148.06 LAL .00 LOL 49.65 VL 34.738 GAL -5.81 AZL 88.17 HCA 144.27 SMA 226.45 ECC .35899 INC 1.8338 V1 30.094
RP 243.75 LAP 1.07 LOP 193.93 VP 22.425 GAP 20.60 AZP 91.49 TAL 337.81 TAP 122.08 RCA 145.16 APO 307.75 V2 22.510
RC 136.814 GL 11.50 GP .04 ZAL 124.23 ZAP 170.99 ETS 178.40 ZAE 155.12 ETE 358.35 ZAC 88.81 ETC 256.06 CLP 170.99

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 30.765 VHL 5.547 DLA 12.66 RAL 179.76 RAD 6568.2 VEL 12.334 PTH 2.22 VHP 9.414 DPA -.73 RAP 185.05 ECC 1.5063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 5	2724.20	-27.81	76.31	53.37	95.55	19 0 30	2124.2	-26.75	67.81
90.00	9 33 32	4560.10	11.39	192.35	46.34	63.90	10 49 32	3960.1	7.79	185.52
100.00	19 42 57	2440.82	-29.20	55.30	53.20	96.71	20 23 38	1840.8	-27.96	46.71
100.00	10 48 21	4318.71	12.63	173.97	45.70	62.68	12 0 20	3718.7	8.87	167.19
110.00	21 5 54	2181.26	-32.88	34.96	52.57	99.93	21 42 16	1581.3	-31.16	26.16
110.00	11 41 54	4151.03	15.88	159.39	43.84	59.33	12 51 5	3551.0	11.70	152.78

DIFFERENTIAL CORRECTIONS

TDE .9872 TRA-2.4949 TC3 .9781 BAU .4038
RDE -.3787 RRA -.1054 RC3 -.0856 FAU .07472
FDE -.4985 FRA 1.9787 FC3-2.1026 BSP 10183
BDE 1.0574 BRA 2.4971 BC3 .9819 FSP 782

MID-COURSE EXECUTION ACCURACY

SGT 3032.2 SGR 417.8 SG3 274.5
RRT -.1635 RRF .1424 RTF -.8916
SGB 3060.9 R23 .0062 R13 .8916
SG1 3033.0 SG2 412.1 THA 178.69

ORBIT DETERMINATION ACCURACY

ST 1291.9 SR 392.7 SS 663.3
CRT -.7344 CRS -.5640 CST .9733
LSA 1472.9 MSA 304.8 SSA 29.3
EL1 1325.0 EL2 259.9 ALF 166.90

LAUNCH DATE NOV 12 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 452.456 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.652 GAL -5.64 AZL 88.17 HCA 145.18 SMA 224.17 ECC .35189 INC 1.8333 V1 30.094
RP 243.50 LAP 1.05 LOP 194.85 VP 22.316 GAP 20.03 AZP 91.51 TAL 338.15 TAP 123.34 RCA 145.29 APO 303.05 V2 22.535
RC 139.022 GL 11.74 GP .05 ZAL 123.68 ZAP 170.48 ETS 178.40 ZAE 155.06 ETE 358.51 ZAC 88.90 ETC 256.04 CLP 170.48

PLANETOCENTRIC CONIC

C3 29.406 VHL 5.423 DLA 13.08 RAL 179.38 RAD 6568.2 VEL 12.279 PTH 2.21 VHP 9.205 DPA -.90 RAP 185.42 ECC 1.4840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 53	2727.45	-27.83	76.55	52.32	95.43	18 55 21	2127.4	-26.79	68.04
90.00	9 35 40	4534.21	10.61	190.85	45.26	63.59	10 51 14	3934.2	6.98	184.05
100.00	19 38 2	2443.19	-29.22	55.47	52.15	96.63	20 18 45	1843.2	-27.99	46.88
100.00	10 50 13	4293.70	11.85	172.52	44.62	62.35	12 1 46	3693.7	8.05	165.79
110.00	21 1 34	2181.77	-32.88	35.00	51.53	99.91	21 37 56	1581.8	-31.17	26.20
110.00	11 43 9	4127.88	15.08	158.08	42.75	58.95	12 51 57	3527.9	10.85	151.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9619 TRA-2.4677 TC3 1.0480 BAU .4135 SGT 3080.5 SGR 409.3 SG3 288.1 ST 1295.7 SR 384.6 SS 670.9
RDE -.3627 RRA -.0984 RC3 -.0887 FAU .07704 RRT -.1690 RRF .1495 RTF -.8945 CRT -.7302 CRS -.5553 CST .9723
FDE -.4963 FRA 2.0177 FC3-2.2680 BSP 10430 SGB 3107.6 R23 .0044 R13 .8945 LSA 1477.8 MSA 303.6 SSA 29.6
BDE 1.0280 BRA 2.4697 BC3 1.0517 FSP 823 SG1 3081.3 SG2 403.3 THA 178.69 EL1 1327.0 EL2 256.6 ALF 167.29

LAUNCH DATE NOV 12 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 455.139 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.569 GAL -5.47 AZL 88.17 HCA 146.10 SMA 222.03 ECC .34507 INC 1.8327 V1 30.094
RP 243.25 LAP 1.02 LOP 195.76 VP 22.213 GAP 19.46 AZP 91.52 TAL 338.50 TAP 124.60 RCA 145.41 APO 298.64 V2 22.560
RC 141.251 GL 11.98 GP .05 ZAL 123.13 ZAP 169.97 ETS 178.39 ZAE 155.06 ETE 358.67 ZAC 88.99 ETC 256.02 CLP 169.97

PLANETOCENTRIC CONIC

C3 28.129 VHL 5.304 DLA 13.51 RAL 178.98 RAD 6568.1 VEL 12.227 PTH 2.20 VHP 9.001 DPA -1.06 RAP 185.79 ECC 1.4629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 32	2731.27	-27.86	76.82	51.27	95.30	18 50 3	2131.3	-26.83	68.31
90.00	9 37 51	4508.18	9.82	189.35	44.20	63.31	10 52 59	3908.2	6.15	182.58
100.00	19 32 57	2446.09	-29.24	55.69	51.10	96.52	20 13 43	1846.1	-28.03	47.09
100.00	10 52 6	4268.60	11.05	171.09	43.55	62.05	12 3 15	3668.6	7.22	164.39
110.00	20 57 7	2182.75	-32.89	35.07	50.49	99.87	21 33 30	1582.8	-31.18	26.27
110.00	11 44 26	4104.70	14.26	156.78	41.68	58.60	12 52 51	3504.7	10.00	150.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9377 TRA-2.4383 TC3 1.1243 BAU .4242 SGT 3128.5 SGR 400.8 SG3 302.3 ST 1299.2 SR 376.4 SS 677.8
RDE -.3472 RRA -.0917 RC3 -.0920 FAU .07946 RRT -.1756 RRF .1566 RTF -.8978 CRT -.7265 CRS -.5451 CST .9707
FDE -.4924 FRA 2.0579 FC3-2.4456 BSP 10640 SGB 3154.1 R23 .0037 R13 .8978 LSA 1482.1 MSA 302.8 SSA 29.7
BDE .9999 BRA 2.4400 BC3 1.1280 FSP 868 SG1 3129.3 SG2 394.4 THA 178.69 EL1 1328.8 EL2 252.9 ALF 167.66

LAUNCH DATE NOV 12 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 457.893 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.490 GAL -5.30 AZL 88.17 HCA 147.02 SMA 220.02 ECC .33854 INC 1.8321 V1 30.094
RP 243.00 LAP 1.00 LOP 196.68 VP 22.116 GAP 18.89 AZP 91.54 TAL 338.85 TAP 125.86 RCA 145.53 APO 294.50 V2 22.585
RC 143.499 GL 12.22 GP .05 ZAL 122.55 ZAP 169.45 ETS 178.38 ZAE 155.09 ETE 358.82 ZAC 89.08 ETC 256.01 CLP 169.45

PLANETOCENTRIC CONIC

C3 26.926 VHL 5.189 DLA 13.95 RAL 178.57 RAD 6568.1 VEL 12.178 PTH 2.19 VHP 8.802 DPA -1.23 RAP 186.15 ECC 1.4431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 1	2735.68	-27.88	77.14	50.22	95.14	18 44 37	2135.7	-26.88	68.62
90.00	9 40 5	4482.03	9.01	187.85	43.15	63.04	10 54 47	3882.0	5.32	181.11
100.00	19 27 45	2449.54	-29.26	55.94	50.07	96.38	20 8 34	1849.5	-28.07	47.34
100.00	10 54 2	4243.40	10.24	169.65	42.50	61.76	12 4 46	3643.4	6.39	162.98
110.00	20 52 33	2184.20	-32.91	35.18	49.46	99.81	21 28 57	1584.2	-31.21	26.37
110.00	11 45 44	4081.50	13.43	155.49	40.62	58.27	12 53 45	3481.5	9.14	149.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9137 TRA-2.4078 TC3 1.2045 BAU .4350 SGT 3175.7 SGR 392.1 SG3 317.2 ST 1301.8 SR 368.0 SS 684.1
RDE -.3322 RRA -.0853 RC3 -.0952 FAU .08197 RRT -.1829 RRF .1638 RTF -.9011 CRT -.7228 CRS -.5335 CST .9687
FDE -.4870 FRA 2.0992 FC3-2.6356 BSP 10827 SGB 3199.8 R23 .0036 R13 .9011 LSA 1485.2 MSA 302.4 SSA 29.7
BDE .9723 BRA 2.4093 BC3 1.2083 FSP 916 SG1 3176.5 SG2 385.4 THA 178.69 EL1 1329.7 EL2 248.9 ALF 168.03

LAUNCH DATE NOV 12 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 460.712 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.414 GAL -5.14 AZL 88.17 HCA 147.94 SMA 218.12 ECC .33226 INC 1.8315 V1 30.094
RP 242.74 LAP .97 LOP 197.60 VP 22.024 GAP 18.33 AZP 91.55 TAL 339.20 TAP 127.14 RCA 145.65 APO 290.60 V2 22.611
RC 145.763 GL 12.46 GP .05 ZAL 121.97 ZAP 168.92 ETS 178.37 ZAE 155.17 ETE 358.97 ZAC 89.17 ETC 255.99 CLP 168.92

PLANETOCENTRIC CONIC

C3 25.795 VHL 5.079 DLA 14.40 RAL 178.15 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 8.607 DPA -1.39 RAP 186.51 ECC 1.4245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 21	2740.67	-27.91	77.51	49.19	94.96	18 39 2	2140.7	-26.93	68.98
90.00	9 42 22	4455.76	8.20	186.35	42.11	62.80	10 56 38	3855.8	4.49	179.63
100.00	19 22 24	2453.52	-29.29	56.23	49.03	96.23	20 3 17	1853.5	-28.12	47.62
100.00	10 56 1	4218.14	9.42	168.22	41.46	61.50	12 6 19	3618.1	5.54	161.58
110.00	20 47 51	2186.12	-32.93	35.33	48.44	99.72	21 24 18	1586.1	-31.24	26.51
110.00	11 47 2	4058.31	12.60	154.21	39.57	57.96	12 54 41	3458.3	8.27	147.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8897 TRA-2.3756 TC3 1.2896 BAU .4460 SGT 3221.6 SGR 383.3 SG3 332.7 ST 1303.0 SR 359.4 SS 689.7
RDE -.3176 RRA -.0791 RC3 -.0985 FAU .08460 RRT -.1908 RRF .1712 RTF -.9044 CRT -.7192 CRS -.5209 CST .9663
FDE -.4802 FRA 2.1407 FC3-2.8395 BSP 11001 SGB 3244.3 R23 .0038 R13 .9044 LSA 1486.8 MSA 302.4 SSA 29.6
BDE .9447 BRA 2.3769 BC3 1.2933 FSP 967 SG1 3222.5 SG2 376.1 THA 178.68 EL1 1329.3 EL2 244.8 ALF 168.38

LAUNCH DATE NOV 12 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 463.594 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.342 GAL -4.99 AZL 88.17 HCA 148.86 SMA 216.34 ECC .32625 INC 1.8308 V1 30.094
RP 242.47 LAP .95 LOP 198.52 VP 21.937 GAP 17.78 AZP 91.57 TAL 339.56 TAP 128.42 RCA 145.76 APO 286.93 V2 22.638
RC 148.041 GL 12.70 GP .05 ZAL 121.37 ZAP 168.38 ETS 178.37 ZAE 155.29 ETE 359.12 ZAC 89.26 ETC 255.98 CLP 168.38

PLANETOCENTRIC CONIC

C3 24.730 VHL 4.973 DLA 14.85 RAL 177.71 RAD 6568.0 VEL 12.088 PTH 2.16 VHP 8.416 DPA -1.54 RAP 186.85 ECC 1.4070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 33	2746.24	-27.95	77.91	48.16	94.76	18 33 19	2146.2	-26.99	69.37
90.00	9 44 42	4429.41	7.37	184.85	41.09	62.58	10 58 32	3829.4	3.64	178.16
100.00	19 16 54	2458.06	-29.33	56.56	48.01	96.06	19 57 52	1858.1	-28.18	47.95
100.00	10 58 2	4192.82	8.60	166.80	40.43	61.26	12 7 55	3592.8	4.70	160.18
110.00	20 43 3	2188.50	-32.96	35.51	47.43	99.62	21 19 32	1588.5	-31.28	26.69
110.00	11 48 22	4035.14	11.76	152.94	38.54	57.67	12 55 37	3435.1	7.41	146.55

DIFFERENTIAL CORRECTIONS
TDE .8651 TRA-2.3440 TC3 1.3764 BAU .4563
RDE -.3035 RRA -.0732 RC3 -.1016 FAU .08735
FDE -.4722 FRA 2.1835 FC3-3.0579 BSP 11178
BDE .9168 BRA 2.3451 BC3 1.3802 FSP 1021

MID-COURSE EXECUTION ACCURACY
SGT 3267.0 SGR 374.3 SG3 349.0
RRT -.1988 RRF .1790 RTF -.9075
SGB 3288.4 R23 .0038 R13 .9075
SG1 3267.9 SG2 366.7 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 1302.9 SR 350.6 SS 695.1
CRT -.7151 CRS -.5073 CST .9637
LSA 1487.1 MSA 302.6 SSA 29.6
EL1 1327.7 EL2 240.5 ALF 168.73

LAUNCH DATE NOV 12 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 466.533 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.272 GAL -4.83 AZL 88.17 HCA 149.78 SMA 214.67 ECC .32047 INC 1.8301 V1 30.094
RP 242.20 LAP .92 LOP 199.44 VP 21.856 GAP 17.23 AZP 91.58 TAL 339.92 TAP 129.70 RCA 145.87 APO 283.46 V2 22.664
RC 150.330 GL 12.94 GP .06 ZAL 120.77 ZAP 167.83 ETS 178.36 ZAE 155.45 ETE 359.27 ZAC 89.34 ETC 255.97 CLP 167.83

PLANETOCENTRIC CONIC

C3 23.728 VHL 4.871 DLA 15.31 RAL 177.26 RAD 6568.0 VEL 12.046 PTH 2.15 VHP 8.229 DPA -1.70 RAP 187.19 ECC 1.3905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 34	2752.44	-27.98	78.36	47.14	94.54	18 27 26	2152.4	-27.06	69.82
90.00	9 47 7	4402.90	6.54	183.35	40.08	62.39	11 0 30	3802.9	2.79	176.67
100.00	19 11 16	2463.16	-29.36	56.94	46.99	95.87	19 52 19	1863.2	-28.24	48.32
100.00	11 0 6	4167.42	7.76	165.37	39.42	61.04	12 9 33	3567.4	3.84	158.78
110.00	20 38 8	2191.37	-32.99	35.73	46.42	99.50	21 14 39	1591.4	-31.33	26.90
110.00	11 49 43	4011.97	10.91	151.68	37.92	57.40	12 56 35	3412.0	6.53	145.32

DIFFERENTIAL CORRECTIONS
TDE .8547 TRA-2.2971 TC3 1.4924 BAU .4746
RDE -.2901 RRA -.0678 RC3 -.1054 FAU .09018
FDE -.4615 FRA 2.2283 FC3-3.2903 BSP 11004
BDE .9026 BRA 2.2981 BC3 1.4961 FSP 1080

MID-COURSE EXECUTION ACCURACY
SGT 3312.4 SGR 365.8 SG3 366.1
RRT -.2150 RRF .1868 RTF -.9133
SGB 3332.6 R23 .0122 R13 .9133
SG1 3313.4 SG2 357.1 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 1311.0 SR 342.1 SS 699.7
CRT -.7185 CRS -.4909 CST .9572
LSA 1493.6 MSA 306.4 SSA 28.6
EL1 1334.6 EL2 233.7 ALF 169.04

LAUNCH DATE NOV 12 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 469.524 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.205 GAL -4.69 AZL 88.17 HCA 150.70 SMA 213.09 ECC .31494 INC 1.8292 V1 30.094
RP 241.93 LAP .89 LOP 200.37 VP 21.779 GAP 16.68 AZP 91.60 TAL 340.28 TAP 130.99 RCA 145.98 APO 280.20 V2 22.692
RC 152.629 GL 13.18 GP .06 ZAL 120.15 ZAP 167.27 ETS 178.35 ZAE 155.64 ETE 359.41 ZAC 89.42 ETC 255.95 CLP 167.27

PLANETOCENTRIC CONIC

C3 22.787 VHL 4.774 DLA 15.77 RAL 176.81 RAD 6567.9 VEL 12.007 PTH 2.14 VHP 8.047 DPA -1.85 RAP 187.53 ECC 1.3750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 28	2759.17	-28.02	78.85	46.13	94.29	18 21 27	2159.2	-27.13	70.30
90.00	9 49 34	4376.43	5.70	181.85	39.09	62.22	11 2 31	3776.4	1.94	175.19
100.00	19 5 32	2468.76	-29.40	57.35	45.99	95.65	19 46 40	1868.8	-28.31	48.72
100.00	11 2 12	4142.08	6.93	163.96	38.42	60.85	12 11 14	3542.1	2.99	157.38
110.00	20 33 8	2194.66	-33.03	35.98	45.43	99.35	21 9 42	1594.7	-31.39	27.14
110.00	11 51 5	3988.94	10.06	150.44	36.52	57.16	12 57 34	3388.9	5.66	144.11

DIFFERENTIAL CORRECTIONS
TDE .8179 TRA-2.2761 TC3 1.5661 BAU .4782
RDE -.2765 RRA -.0621 RC3 -.1080 FAU .09331
FDE -.4534 FRA 2.2699 FC3-3.5452 BSP 11448
BDE .8633 BRA 2.2769 BC3 1.5698 FSP 1134

MID-COURSE EXECUTION ACCURACY
SGT 3355.2 SGR 356.0 SG3 384.1
RRT -.2177 RRF .1960 RTF -.9138
SGB 3374.0 R23 .0052 R13 .9138
SG1 3356.1 SG2 347.4 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 1300.4 SR 332.7 SS 704.8
CRT -.7076 CRS -.4778 CST .9573
LSA 1484.9 MSA 304.2 SSA 29.2
EL1 1322.2 EL2 231.2 ALF 169.41

LAUNCH DATE NOV 12 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 472.566 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 34.140 GAL -4.54 AZL 88.17 HCA 151.63 SMA 211.60 ECC .30964 INC 1.8286 V1 30.094
RP 241.65 LAP .87 LOP 201.29 VP 21.707 GAP 16.14 AZP 91.61 TAL 340.65 TAP 132.28 RCA 146.08 APO 277.11 V2 22.720
RC 154.936 GL 13.42 GP .06 ZAL 119.52 ZAP 166.70 ETS 178.34 ZAE 155.88 ETE 359.55 ZAC 89.50 ETC 255.94 CLP 166.70

PLANETOCENTRIC CONIC

C3 21.901 VHL 4.680 DLA 16.23 RAL 176.34 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 7.869 DPA -1.99 RAP 187.86 ECC 1.3604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 13	2766.52	-28.05	79.38	45.12	94.03	18 15 20	2166.5	-27.20	70.82
90.00	9 52 6	4349.85	4.86	180.36	38.12	62.07	11 4 35	3749.9	1.08	173.71
100.00	18 59 39	2474.91	-29.44	57.80	44.99	95.42	19 40 53	1874.9	-28.38	49.16
100.00	11 4 21	4116.69	6.08	162.55	37.45	60.68	12 12 58	3516.7	2.13	155.99
110.00	20 28 1	2198.42	-33.07	36.26	44.45	99.19	21 4 39	1598.4	-31.45	27.41
110.00	11 52 28	3965.95	9.21	149.20	35.53	56.93	12 58 34	3366.0	4.79	142.90

DIFFERENTIAL CORRECTIONS
TDE .7906 TRA-2.2449 TC3 1.6603 BAU .4872
RDE -.2635 RRA -.0568 RC3 -.1109 FAU .09648
FDE -.4409 FRA 2.3153 FC3-3.8137 BSP 11665
BDE .8334 BRA 2.2456 BC3 1.6640 FSP 1198

MID-COURSE EXECUTION ACCURACY
SGT 3397.9 SGR 346.5 SG3 402.9
RRT -.2261 RRF .2047 RTF -.9163
SGB 3415.5 R23 .0046 R13 .9163
SG1 3398.8 SG2 337.5 THA 178.67

ORBIT DETERMINATION ACCURACY
ST 1294.8 SR 323.3 SS 708.9
CRT -.7016 CRS -.4604 CST .9540
LSA 1479.7 MSA 305.4 SSA 29.0
EL1 1315.2 EL2 226.8 ALF 169.75

LAUNCH DATE NOV 12 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 475.654 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	34.079	GAL	-4.40	AZL	88.17	HCA	152.56	SMA	210.19	ECC	.30455	INC	1.8276
RP	241.36	LAP	.84	LOP	202.22	VP	21.640	GAP	15.60	AZP	91.62	TAL	341.02	TAP	133.58	RCA	146.18	APO	274.20
RC	157.250	GL	13.66	GP	.07	ZAL	118.89	ZAP	166.12	ETS	178.33	ZAE	156.15	ETE	359.70	ZAC	89.58	ETC	255.93

V1	30.094	V2	22.748	CLP	166.12														

PLANETOCENTRIC CONIC

C3	21.068	VHL	4.590	DLA	16.70	RAL	175.86	RAD	6567.9	VEL	11.935	PTH	2.12	VHP	7.694	DPA	-2.14	RAP	188.17

ECC	1.3467																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 49	2774.46	-28.09	79.96	44.13	93.74	18 9 3	2174.5	-27.27	71.39
90.00	9 54 41	4323.21	4.01	178.86	37.16	61.94	11 6 44	3723.2	.22	172.23
100.00	18 53 38	2481.60	-29.48	58.30	44.01	95.16	19 34 59	1881.6	-28.46	49.64
100.00	11 6 33	4091.30	5.23	161.14	36.48	60.53	12 14 45	3491.3	1.27	154.60
110.00	20 22 47	2202.63	-33.12	36.58	43.48	99.00	20 59 30	1602.6	-31.52	27.72
110.00	11 53 53	3943.04	8.36	147.98	34.57	56.73	12 59 36	3343.0	3.92	141.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7655	TRA	-2.2109	TC3	1.7615	BAU	.4972	SGT	3439.4	SGR	337.1	SG3	422.7	ST	1289.4	SR	313.9	SS	712.8
RDE	-.2509	RRA	-.0518	RC3	-.1139	FAU	.09984	RRT	-.2362	RRF	.2142	RTF	-.9191	CRT	-.6966	CRS	-.4425	CST	.9501
FDE	-.4278	FRA	2.3607	FC3	-4.1026	BSP	11803	SGB	3455.9	R23	.0050	R13	.9191	LSA	1474.5	MSA	307.1	SSA	28.7
BDE	.8056	BRA	2.2115	BC3	1.7652	FSP	1262	SG1	3440.4	SG2	327.4	THA	178.66	EL1	1308.4	EL2	222.0	ALF	170.09

LAUNCH DATE NOV 12 1964 FLIGHT TIME 194.08 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 478.787 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	34.020	GAL	-4.26	AZL	88.17	HCA	153.49	SMA	208.86	ECC	.29967	INC	1.8267
RP	241.08	LAP	.82	LOP	203.15	VP	21.577	GAP	15.07	AZP	91.63	TAL	341.39	TAP	134.88	RCA	146.27	APO	271.44
RC	159.568	GL	13.89	GP	.07	ZAL	118.24	ZAP	165.53	ETS	178.32	ZAE	156.46	ETE	359.84	ZAC	89.66	ETC	255.92

V1	30.094	V2	22.777	CLP	165.53														

PLANETOCENTRIC CONIC

C3	20.283	VHL	4.504	DLA	17.17	RAL	175.37	RAD	6567.8	VEL	11.902	PTH	2.11	VHP	7.524	DPA	-2.27	RAP	188.48

ECC	1.3338																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 15	2783.01	-28.13	80.59	43.14	93.43	18 2 38	2183.0	-27.35	72.00
90.00	9 57 20	4296.49	3.15	177.37	36.22	61.84	11 8 57	3696.5	-.64	170.74
100.00	18 47 29	2488.84	-29.53	58.83	43.03	94.88	19 28 57	1888.8	-28.54	50.17
100.00	11 8 48	4065.89	4.38	159.73	35.54	60.40	12 16 34	3465.9	.41	153.20
110.00	20 17 28	2207.28	-33.17	36.94	42.52	98.80	20 54 15	1607.3	-31.59	28.06
110.00	11 55 18	3920.21	7.50	146.76	33.61	56.55	13 0 38	3320.2	3.05	140.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7485	TRA	-2.1685	TC3	1.8810	BAU	.5110	SGT	3480.8	SGR	327.9	SG3	443.4	ST	1288.3	SR	304.6	SS	716.5
RDE	-.2390	RRA	-.0472	RC3	-.1170	FAU	.10337	RRT	-.2511	RRF	.2243	RTF	-.9230	CRT	-.6965	CRS	-.4234	CST	.9434
FDE	-.4134	FRA	2.4066	FC3	-4.4121	BSP	11756	SGB	3496.1	R23	.0097	R13	.9229	LSA	1472.5	MSA	311.5	SSA	27.8
BDE	.7857	BRA	2.1691	BC3	1.8846	FSP	1330	SG1	3481.6	SG2	317.3	THA	178.63	EL1	1306.2	EL2	215.6	ALF	170.38

LAUNCH DATE NOV 12 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 481.959 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.963	GAL	-4.13	AZL	88.17	HCA	154.43	SMA	207.60	ECC	.29499	INC	1.8258
RP	240.79	LAP	.79	LOP	204.09	VP	21.519	GAP	14.55	AZP	91.65	TAL	341.75	TAP	136.18	RCA	146.36	APO	268.84
RC	161.890	GL	14.13	GP	.08	ZAL	117.59	ZAP	164.92	ETS	178.31	ZAE	156.80	ETE	359.99	ZAC	89.74	ETC	255.91

V1	30.094	V2	22.806	CLP	164.92														

PLANETOCENTRIC CONIC

C3	19.546	VHL	4.421	DLA	17.64	RAL	174.88	RAD	6567.8	VEL	11.871	PTH	2.11	VHP	7.357	DPA	-2.41	RAP	188.78

ECC	1.3217																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 35	2792.09	-28.16	81.25	42.17	93.10	17 56 7	2192.1	-27.43	72.66
90.00	10 0 3	4269.80	2.29	175.87	35.30	61.77	11 11 13	3669.8	-1.50	169.25
100.00	18 41 14	2496.56	-29.57	59.40	42.06	94.59	19 22 50	1896.6	-28.62	50.73
100.00	11 11 6	4040.57	3.53	158.34	34.61	60.30	12 18 26	3440.6	-.45	151.81
110.00	20 12 4	2212.33	-33.22	37.32	41.57	98.58	20 48 57	1612.3	-31.68	28.43
110.00	11 56 44	3897.57	6.65	145.56	32.68	56.39	13 1 42	3297.6	2.19	139.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7137	TRA	-2.1430	TC3	1.9690	BAU	.5155	SGT	3518.4	SGR	317.7	SG3	465.1	ST	1273.8	SR	294.6	SS	719.7
RDE	-.2269	RRA	-.0424	RC3	-.1192	FAU	.10703	RRT	-.2572	RRF	.2341	RTF	-.9240	CRT	-.6849	CRS	-.4019	CST	.9408
FDE	-.3962	FRA	2.4545	FC3	-4.7405	BSP	12107	SGB	3532.7	R23	.0055	R13	.9240	LSA	1459.1	MSA	312.0	SSA	27.9
BDE	.7489	BRA	2.1434	BC3	1.9726	FSP	1402	SG1	3519.4	SG2	306.9	THA	178.66	EL1	1290.1	EL2	211.9	ALF	170.75

LAUNCH DATE NOV 12 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 485.171 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.909	GAL	-4.00	AZL	88.18	HCA	155.36	SMA	206.41	ECC	.29051	INC	1.8247
RP	240.49	LAP	.76	LOP	205.02	VP	21.465	GAP	14.03	AZP	91.66	TAL	342.12	TAP	137.49	RCA	146.45	APO	266.37
RC	164.213	GL	14.36	GP	.08	ZAL	116.94	ZAP	164.31	ETS	178.30	ZAE	157.18	ETE	.14	ZAC	89.81	ETC	255.90

V1	30.094	V2	22.836	CLP	164.31														

PLANETOCENTRIC CONIC

C3	18.853	VHL	4.342	DLA	18.11	RAL	174.37	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	7.193	DPA	-2.53	RAP	189.08

ECC	1.3103																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 46	2801.78	-28.19	81.95	41.21	92.75	17 49 27	2201.8	-27.52	73.35
90.00	10 2 51	4243.05	1.43	174.38	34.39	61.72	11 13 34	3643.0	-2.36	167.75
100.00	18 34 51	2504.81	-29.61	60.01	41.11	94.27	19 16 36	1904.8	-28.71	51.32
100.00	11 13 27	4015.26	2.67	156.95	33.70	60.22	12 20 22	3415.3	-1.31	150.42
110.00	20 6 35	2217.79	-33.27	37.74	40.63	98.34	20 43 33	1617.8	-31.76	28.84
110.00	11 58 12	3875.03	5.80	144.37	31.76	56.25	13 2 47	3275.0	1.33	138.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6878	TRA	-2.1085	TC3	2.0756	BAU	.5240	SGT	3555.5	SGR	307.8	SG3	487.8	ST	1264.1	SR	284.7	SS	722.9
RDE	-.2154	RRA	-.0380	RC3	-.1217	FAU	.11088	RRT	-.2685	RRF	.2448	RTF	-.9263	CRT	-.6787	CRS	-.3795	CST	.9353
FDE	-.3779	FRA	2.5029	FC3	-5.0918	BSP	12260	SGB	3568.8	R23	.0059	R13	.9263	LSA	1449.6	MSA	315.4	SSA	27.4
BDE	.7208	BRA	2.1088	BC3	2.0792	FSP	1479	SG1	3556.5	SG2	296.4	THA	178.66	EL1	1279.2	EL2	206.6	ALF	171.07

LAUNCH DATE NOV 12 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 488.419 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.857 GAL -3.87 AZL 88.18 HCA 156.30 SMA 205.28 ECC .28621 INC 1.8236 V1 30.094
RP 240.19 LAP .73 LOP 205.96 VP 21.415 GAP 13.51 AZP 91.67 TAL 342.49 TAP 138.80 RCA 146.53 APO 264.04 V2 22.866
RC 166.536 GL 14.59 GP .08 ZAL 116.27 ZAP 163.67 ETS 178.29 ZAE 157.60 ETE .30 ZAC 89.88 ETC 255.90 CLP 163.67

PLANETOCENTRIC CONIC

C3 18.201 VHL 4.266 DLA 18.58 RAL 173.86 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 7.034 DPA -2.66 RAP 189.36 ECC 1.2995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 48	2812.04	-28.23	82.70	40.25	92.37	17 42 40	2212.0	-27.60	74.09
90.00	10 5 43	4216.28	.56	172.89	33.50	61.69	11 15 59	3616.3	-3.22	166.26
100.00	18 28 21	2513.55	-29.66	60.66	40.16	93.93	19 10 15	1913.6	-28.80	51.96
100.00	11 15 50	3989.99	1.82	155.56	32.81	60.16	12 22 20	3390.0	-2.17	149.04
110.00	20 1 1	2223.65	-33.33	38.19	39.71	98.08	20 38 5	1623.7	-31.85	29.27
110.00	11 59 40	3852.66	4.95	143.19	30.86	56.13	13 3 53	3252.7	.47	136.97

DIFFERENTIAL CORRECTIONS
TDE .6621 TRA-2.0730 TC3 2.1868 BAU .5330
RDE -.2043 RRA -.0339 RC3 -.1239 FAU .11496
FDE -.3579 FRA 2.5519 FC3-5.4683 BSP 12369
BDE .6929 BRA 2.0733 BC3 2.1903 FSP 1557

MID-COURSE EXECUTION ACCURACY
SGT 3591.6 SGR 297.9 SG3 511.7
RRT -.2807 RRF .2560 RTF -.9287
SGB 3603.9 R23 .0065 R13 .9287
SG1 3592.5 SG2 285.8 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 1253.1 SR 274.7 SS 726.0
CRT -.6722 CRS -.3555 CST .9292
LSA 1438.8 MSA 319.4 SSA 26.8
EL1 1267.0 EL2 201.2 ALF 171.40

LAUNCH DATE NOV 12 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 491.702 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.807 GAL -3.75 AZL 88.18 HCA 157.24 SMA 204.22 ECC .28209 INC 1.8225 V1 30.094
RP 239.88 LAP .70 LOP 206.90 VP 21.369 GAP 13.00 AZP 91.68 TAL 342.86 TAP 140.11 RCA 146.61 APO 261.83 V2 22.897
RC 168.857 GL 14.82 GP .09 ZAL 115.61 ZAP 163.03 ETS 178.28 ZAE 158.05 ETE .46 ZAC 89.95 ETC 255.89 CLP 163.03

PLANETOCENTRIC CONIC

C3 17.587 VHL 4.194 DLA 19.05 RAL 173.34 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 6.877 DPA -2.78 RAP 189.63 ECC 1.2894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 42	2822.86	-28.25	83.49	39.31	91.98	17 35 45	2222.9	-27.68	74.87
90.00	10 8 39	4189.48	-.30	171.39	32.64	61.68	11 18 29	3589.5	-4.08	164.76
100.00	18 21 45	2522.79	-29.70	61.34	39.23	93.57	19 3 48	1922.8	-28.89	52.63
100.00	11 18 17	3964.78	.96	154.17	31.93	60.12	12 24 22	3364.8	-3.02	147.65
110.00	19 55 22	2229.89	-33.39	38.66	38.80	97.80	20 32 32	1629.9	-31.95	29.73
110.00	12 1 9	3830.45	4.11	142.03	29.97	56.03	13 5 0	3230.4	-.38	135.82

DIFFERENTIAL CORRECTIONS
TDE .6393 TRA-2.0345 TC3 2.3049 BAU .5427
RDE -.1935 RRA -.0300 RC3 -.1261 FAU .11921
FDE -.3360 FRA 2.6021 FC3-5.8684 BSP 12419
BDE .6679 BRA 2.0347 BC3 2.3083 FSP 1641

MID-COURSE EXECUTION ACCURACY
SGT 3625.9 SGR 288.0 SG3 536.7
RRT -.2949 RRF .2678 RTF -.9313
SGB 3637.4 R23 .0089 R13 .9313
SG1 3626.9 SG2 275.1 THA 178.65

ORBIT DETERMINATION ACCURACY
ST 1242.8 SR 264.7 SS 729.1
CRT -.6676 CRS -.3299 CST .9213
LSA 1428.1 MSA 325.4 SSA 26.0
EL1 1255.6 EL2 195.1 ALF 171.71

LAUNCH DATE NOV 12 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 495.018 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.759 GAL -3.63 AZL 88.18 HCA 158.19 SMA 203.21 ECC .27815 INC 1.8210 V1 30.094
RP 239.58 LAP .68 LOP 207.85 VP 21.326 GAP 12.50 AZP 91.69 TAL 343.23 TAP 141.42 RCA 146.68 APO 259.73 V2 22.928
RC 171.174 GL 15.05 GP .10 ZAL 114.94 ZAP 162.37 ETS 178.26 ZAE 158.54 ETE .62 ZAC 90.02 ETC 255.88 CLP 162.37

PLANETOCENTRIC CONIC

C3 17.010 VHL 4.124 DLA 19.52 RAL 172.81 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 6.724 DPA -2.89 RAP 189.89 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 27	2834.27	-28.28	84.33	38.38	91.56	17 28 42	2234.3	-27.76	75.70
90.00	10 11 41	4162.63	-1.17	169.90	31.78	61.71	11 21 3	3562.6	-4.94	163.25
100.00	18 15 2	2532.52	-29.74	62.06	38.31	93.20	18 57 14	1932.5	-28.98	53.34
100.00	11 20 47	3939.62	.11	152.79	31.07	60.11	12 26 27	3339.6	-3.87	146.27
110.00	19 49 39	2236.50	-33.45	39.17	37.90	97.51	20 26 55	1636.5	-32.05	30.22
110.00	12 2 39	3808.40	3.27	140.87	29.10	55.95	13 6 8	3208.4	-1.22	134.67

DIFFERENTIAL CORRECTIONS
TDE .6263 TRA-1.9856 TC3 2.4488 BAU .5576
RDE -.1833 RRA -.0265 RC3 -.1286 FAU .12383
FDE -.3147 FRA 2.6499 FC3-6.3026 BSP 12217
BDE .6526 BRA 1.9858 BC3 2.4522 FSP 1722

MID-COURSE EXECUTION ACCURACY
SGT 3661.0 SGR 278.6 SG3 563.1
RRT -.3152 RRF .2810 RTF -.9352
SGB 3671.5 R23 .0161 R13 .9352
SG1 3662.0 SG2 264.3 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 1237.6 SR 254.9 SS 732.2
CRT -.6702 CRS -.3053 CST .9095
LSA 1421.2 MSA 335.3 SSA 24.5
EL1 1249.6 EL2 187.3 ALF 171.96

LAUNCH DATE NOV 12 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 498.362 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.713 GAL -3.51 AZL 88.18 HCA 159.13 SMA 202.25 ECC .27437 INC 1.8195 V1 30.094
RP 239.26 LAP .65 LOP 208.79 VP 21.288 GAP 12.00 AZP 91.70 TAL 343.60 TAP 142.73 RCA 146.76 APO 257.74 V2 22.959
RC 173.485 GL 15.27 GP .10 ZAL 114.27 ZAP 161.70 ETS 178.25 ZAE 159.05 ETE .79 ZAC 90.09 ETC 255.88 CLP 161.70

PLANETOCENTRIC CONIC

C3 16.468 VHL 4.058 DLA 19.98 RAL 172.28 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 6.575 DPA -3.00 RAP 190.14 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 8	2846.13	-28.30	85.19	37.46	91.12	17 21 34	2246.1	-27.84	76.56
90.00	10 14 46	4135.93	-2.03	168.41	30.96	61.75	11 23 42	3535.9	-5.79	161.75
100.00	18 8 15	2542.62	-29.77	62.81	37.40	92.80	18 50 38	1942.6	-29.07	54.08
100.00	11 23 20	3914.67	-.74	151.43	30.24	60.12	12 28 34	3314.7	-4.71	144.89
110.00	19 43 54	2243.37	-33.51	39.70	37.02	97.20	20 21 18	1643.4	-32.15	30.73
110.00	12 4 10	3786.68	2.44	139.74	28.25	55.89	13 7 17	3186.7	-2.05	133.53

DIFFERENTIAL CORRECTIONS
TDE .5824 TRA-1.9680 TC3 2.5185 BAU .5552
RDE -.1726 RRA -.0225 RC3 -.1290 FAU .12836
FDE -.2853 FRA 2.7063 FC3-6.7477 BSP 12754
BDE .6074 BRA 1.9681 BC3 2.5218 FSP 1821

MID-COURSE EXECUTION ACCURACY
SGT 3687.2 SGR 267.3 SG3 590.3
RRT -.3190 RRF .2925 RTF -.9346
SGB 3696.9 R23 .0075 R13 .9346
SG1 3688.2 SG2 253.3 THA 178.67

ORBIT DETERMINATION ACCURACY
ST 1211.0 SR 243.9 SS 735.6
CRT -.6485 CRS -.2733 CST .9075
LSA 1398.0 MSA 334.8 SSA 24.8
EL1 1221.6 EL2 184.0 ALF 172.39

LAUNCH DATE NOV 12 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 501.737 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.669	GAL	-3.40	AZL	88.18	HCA	160.08	SMA	201.34	ECC	.27076	INC	1.8181
RP	238.95	LAP	.62	LOP	209.74	VP	21.253	GAP	11.51	AZP	91.71	TAL	343.96	TAP	144.04	RCA	146.83	APO	255.86
RC	175.790	GL	15.48	GP	.11	ZAL	113.60	ZAP	161.00	ETS	178.24	ZAE	159.61	ETE	.98	ZAC	90.15	ETC	255.87

V1	30.094	V2	22.991	CLP	161.00														

PLANETOCENTRIC CONIC

C3	15.959	VHL	3.995	DLA	20.45	RAL	171.74	RAD	6567.6	VEL	11.719	PTH	2.06	VHP	6.428	DPA	-3.10	RAP	190.38
ECC	1.2626																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 40	2858.57	-28.31	86.10	36.55	90.67	17 14 18	2258.6	-27.92	77.46
90.00	10 17 56	4109.15	-2.89	166.91	30.14	61.82	11 26 26	3509.2	-6.64	160.23
100.00	18 1 22	2553.19	-29.81	63.59	36.50	92.39	18 43 55	1953.2	-29.16	54.85
100.00	11 25 55	3889.76	-1.58	150.06	29.42	60.15	12 30 45	3289.8	-5.54	143.51
110.00	19 38 5	2250.59	-33.57	40.25	36.14	96.88	20 15 36	1650.6	-32.25	31.27
110.00	12 5 41	3765.13	1.62	138.61	27.42	55.85	13 8 26	3165.1	-2.87	132.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5569	TRA	-1.9320	TC3	2.6315	BAU	.5621	SGT	3715.4	SGR	257.0	SG3	619.1	ST	1195.5	SR	233.4	SS	739.5
RDE	-.1626	RRA	-.0191	RC3	-.1301	FAU	.13325	RRT	-.3335	RRF	.3056	RTF	-.9365	CRT	-.6405	CRS	-.2421	CST	.8982
FDE	-.2566	FRA	2.7609	FC3	-7.2288	BSP	12841	SGB	3724.3	R23	.0086	R13	.9365	LSA	1383.1	MSA	342.1	SSA	23.9
BDE	.8802	BRA	1.9321	BC3	2.6348	FSP	1918	SG1	3716.4	SG2	242.2	THA	178.67	EL1	1205.0	EL2	177.8	ALF	172.71

LAUNCH DATE NOV 12 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 505.139 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.627	GAL	-3.29	AZL	88.18	HCA	161.03	SMA	200.48	ECC	.26729	INC	1.8163
RP	238.63	LAP	.59	LOP	210.69	VP	21.221	GAP	11.02	AZP	91.72	TAL	344.32	TAP	145.35	RCA	146.89	APO	254.07
RC	178.086	GL	15.69	GP	.12	ZAL	112.93	ZAP	160.30	ETS	178.22	ZAE	160.20	ETE	1.17	ZAC	90.21	ETC	255.87

V1	30.094	V2	23.024	CLP	160.30														

PLANETOCENTRIC CONIC

C3	15.479	VHL	3.934	DLA	20.90	RAL	171.20	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	6.285	DPA	-3.19	RAP	190.60
ECC	1.2547																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 5	2871.52	-28.32	87.05	35.65	90.19	17 6 56	2271.5	-27.99	78.40
90.00	10 21 12	4082.40	-3.75	165.41	29.35	61.91	11 29 14	3482.4	-7.48	158.72
100.00	17 54 24	2564.17	-29.83	64.41	35.61	91.96	18 37 8	1964.2	-29.24	55.65
100.00	11 28 34	3864.98	-2.42	148.70	28.62	60.20	12 32 59	3265.0	-6.37	142.14
110.00	19 32 14	2258.08	-33.63	40.83	35.28	96.54	20 9 52	1658.1	-32.36	31.83
110.00	12 7 13	3743.84	.80	137.50	26.60	55.83	13 9 32	3143.8	-3.68	131.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5317	TRA	-1.8951	TC3	2.7463	BAU	.5690	SGT	3741.3	SGR	246.6	SG3	649.4	ST	1178.7	SR	222.8	SS	743.7
RDE	-.1529	RRA	-.0150	RC3	-.1309	FAU	.13843	RRT	-.3488	RRF	.3195	RTF	-.9384	CRT	-.6322	CRS	-.2101	CST	.8883
FDE	-.2262	FRA	2.8156	FC3	-7.7421	BSP	12901	SGB	3749.4	R23	.0097	R13	.9384	LSA	1367.2	MSA	349.8	SSA	22.9
BDE	.5533	BRA	1.8952	BC3	2.7494	FSP	2019	SG1	3742.3	SG2	231.0	THA	178.68	EL1	1187.2	EL2	171.4	ALF	173.04

LAUNCH DATE NOV 12 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 508.569 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.587	GAL	-3.18	AZL	88.19	HCA	161.99	SMA	199.66	ECC	.26398	INC	1.8143
RP	238.31	LAP	.56	LOP	211.64	VP	21.193	GAP	10.54	AZP	91.73	TAL	344.68	TAP	146.66	RCA	146.96	APO	252.37
RC	180.373	GL	15.90	GP	.13	ZAL	112.26	ZAP	159.57	ETS	178.21	ZAE	160.82	ETE	1.39	ZAC	90.27	ETC	255.86

V1	30.094	V2	23.056	CLP	159.57														

PLANETOCENTRIC CONIC

C3	15.028	VHL	3.877	DLA	21.36	RAL	170.65	RAD	6567.6	VEL	11.680	PTH	2.05	VHP	6.145	DPA	-3.28	RAP	190.82
ECC	1.2473																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 21	2885.04	-28.32	88.04	34.75	89.70	16 59 26	2285.0	-28.06	79.38
90.00	10 24 33	4055.59	-4.61	163.91	28.58	62.03	11 32 9	3455.6	-8.31	157.19
100.00	17 47 19	2575.59	-29.86	65.26	34.73	91.52	18 30 15	1975.6	-29.33	56.49
100.00	11 31 16	3840.27	-3.26	147.34	27.83	60.27	12 35 16	3240.3	-7.19	140.76
110.00	19 26 19	2265.85	-33.69	41.43	34.43	96.19	20 4 5	1665.9	-32.46	32.41
110.00	12 8 45	3722.77	-.00	136.40	25.80	55.82	13 10 48	3122.8	-4.49	130.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5238	TRA	-1.8414	TC3	2.9050	BAU	.5843	SGT	3769.9	SGR	237.1	SG3	681.5	ST	1171.6	SR	212.8	SS	748.0
RDE	-.1439	RRA	-.0133	RC3	-.1324	FAU	.14415	RRT	-.3738	RRF	.3357	RTF	-.9422	CRT	-.6391	CRS	-.1829	CST	.8710
FDE	-.2001	FRA	2.8650	FC3	-8.3042	BSP	12577	SGB	3777.3	R23	.0192	R13	.9422	LSA	1357.8	MSA	365.1	SSA	21.1
BDE	.5432	BRA	1.8414	BC3	2.9081	FSP	2112	SG1	3770.9	SG2	219.8	THA	178.65	EL1	1179.6	EL2	162.5	ALF	173.25

LAUNCH DATE NOV 12 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 512.021 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.548	GAL	-3.08	AZL	88.19	HCA	162.94	SMA	198.89	ECC	.26081	INC	1.8124
RP	237.98	LAP	.53	LOP	212.60	VP	21.168	GAP	10.07	AZP	91.73	TAL	345.03	TAP	147.97	RCA	147.02	APO	250.76
RC	182.651	GL	16.10	GP	.14	ZAL	111.59	ZAP	158.83	ETS	178.19	ZAE	161.47	ETE	1.61	ZAC	90.33	ETC	255.86

V1	30.094	V2	23.089	CLP	158.83														

PLANETOCENTRIC CONIC

C3	14.605	VHL	3.822	DLA	21.80	RAL	170.10	RAD	6567.6	VEL	11.661	PTH	2.05	VHP	6.008	DPA	-3.36	RAP	191.02
ECC	1.2404																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 34	2898.91	-28.31	89.06	33.88	89.19	16 51 53	2298.9	-28.12	80.39
90.00	10 27 58	4028.99	-5.46	162.42	27.83	62.17	11 35 7	3429.0	-9.14	155.67
100.00	17 40 14	2587.25	-29.88	66.12	33.87	91.06	18 23 21	1987.2	-29.41	57.35
100.00	11 34 0	3815.88	-4.08	146.00	27.07	60.36	12 37 36	3215.9	-8.00	139.40
110.00	19 20 26	2273.76	-33.74	42.04	33.60	95.83	19 58 20	1673.8	-32.57	33.00
110.00	12 10 17	3702.13	-.79	135.33	25.02	55.82	13 11 59	3102.1	-5.27	129.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4803	TRA	-1.8229	TC3	2.9648	BAU	.5795	SGT	3783.9	SGR	225.3	SG3	714.1	ST	1141.5	SR	201.3	SS	754.4
RDE	-.1342	RRA	-.0100	RC3	-.1309	FAU	.14950	RRT	-.3801	RRF	.3485	RTF	-.9415	CRT	-.6128	CRS	-.1419	CST	.8669
FDE	-.1584	FRA	2.9299	FC3	-8.8616	BSP	13080	SGB	3790.6	R23	.0113	R13	.9415	LSA	1333.3	MSA	366.6	SSA	21.0
BDE	.4987	BRA	1.8229	BC3	2.9676	FSP	2238	SG1	3784.9	SG2	208.4	THA	178.70	EL1	1148.3	EL2	158.1	ALF	173.71

LAUNCH DATE NOV 12 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 515.498 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.511 GAL -2.98 AZL 88.19 HCA 163.90 SMA 198.15 ECC .25777 INC 1.8097 V1 30.094
RP 237.65 LAP .50 LOP 213.56 VP 21.146 GAP 9.60 AZP 91.74 TAL 345.38 TAP 149.28 RCA 147.07 APO 249.23 V2 23.123
RC 184.919 GL 16.29 GP .15 ZAL 110.93 ZAP 158.07 ETS 178.17 ZAE 162.16 ETE 1.86 ZAC 90.38 ETC 255.86 CLP 158.07

PLANETOCENTRIC CONIC

C3 14.207 VHL 3.769 DLA 22.24 RAL 169.55 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 5.874 DPA -3.43 RAP 191.20 ECC 1.2338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 40	2913.30	-28.29	90.11	33.01	88.66	16 44 14	2313.3	-28.17	81.44
90.00	10 31 29	4002.35	-6.30	160.91	27.09	62.34	11 38 11	3402.4	-9.96	154.14
100.00	17 33 4	2599.28	-29.89	67.02	33.02	90.59	18 16 23	1999.3	-29.49	58.24
100.00	11 36 46	3791.61	-4.90	144.66	26.32	60.47	12 39 58	3191.6	-8.79	138.04
110.00	19 14 31	2281.88	-33.80	42.67	32.78	95.46	19 52 33	1681.9	-32.67	33.61
110.00	12 11 49	3681.77	-1.57	134.26	24.26	55.85	13 13 10	3081.8	-6.04	128.03

DIFFERENTIAL CORRECTIONS
TDE .4546 TRA-1.7870 TC3 3.0727 BAU .5841
RDE -.1252 RRA -.0073 RC3 -.1302 FAU .15550
FDE -.1208 FRA 2.9887 FC3-9.4758 BSP 13161
BDE .4715 BRA 1.7870 BC3 3.0755 FSP 2355

MID-COURSE EXECUTION ACCURACY
SGT 3802.0 SGR 214.5 SG3 749.0
RRT -.3966 RRF .3640 RTF -.9429
SGB 3808.1 R23 .0120 R13 .9429
SG1 3803.0 SG2 196.9 THA 178.71

ORBIT DETERMINATION ACCURACY
ST 1121.4 SR 190.4 SS 760.9
CRT -.6021 CRS -.1059 CST .8554
LSA 1315.7 MSA 375.7 SSA 20.0
EL1 1127.3 EL2 151.2 ALF 174.05

LAUNCH DATE NOV 12 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 518.999 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.476 GAL -2.89 AZL 88.19 HCA 164.86 SMA 197.45 ECC .25487 INC 1.8073 V1 30.094
RP 237.31 LAP .47 LOP 214.52 VP 21.127 GAP 9.14 AZP 91.74 TAL 345.73 TAP 150.59 RCA 147.13 APO 247.78 V2 23.157
RC 187.176 GL 16.47 GP .16 ZAL 110.27 ZAP 157.29 ETS 178.15 ZAE 162.88 ETE 2.14 ZAC 90.44 ETC 255.85 CLP 157.29

PLANETOCENTRIC CONIC

C3 13.833 VHL 3.719 DLA 22.67 RAL 169.00 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 5.743 DPA -3.49 RAP 191.37 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 41	2928.12	-28.26	91.19	32.15	88.12	16 36 29	2328.1	-28.22	82.53
90.00	10 35 4	3975.79	-7.14	159.41	26.38	62.52	11 41 20	3375.8	-10.76	152.61
100.00	17 25 51	2611.59	-29.89	67.93	32.18	90.11	18 9 22	2011.6	-29.56	59.14
100.00	11 39 35	3767.55	-5.70	143.32	25.60	60.61	12 42 22	3167.6	-9.57	136.68
110.00	19 8 36	2290.13	-33.85	43.31	31.97	95.09	19 46 46	1690.1	-32.77	34.23
110.00	12 13 19	3661.77	-2.33	133.22	23.51	55.89	13 14 21	3061.8	-6.79	126.97

DIFFERENTIAL CORRECTIONS
TDE .4298 TRA-1.7514 TC3 3.1766 BAU .5879
RDE -.1165 RRA -.0049 RC3 -.1289 FAU .16167
FDE -.0795 FRA 3.0519 FC-10.1183 BSP 13218
BDE .4453 BRA 1.7514 BC3 3.1792 FSP 2481

MID-COURSE EXECUTION ACCURACY
SGT 3817.2 SGR 203.6 SG3 785.3
RRT -.4138 RRF .3793 RTF -.9443
SGB 3822.6 R23 .0135 R13 .9442
SG1 3818.1 SG2 185.3 THA 178.73

ORBIT DETERMINATION ACCURACY
ST 1101.3 SR 179.5 SS 769.0
CRT -.5913 CRS -.0679 CST .8424
LSA 1298.7 MSA 386.6 SSA 18.8
EL1 1106.5 EL2 144.1 ALF 174.40

LAUNCH DATE NOV 12 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 522.520 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.442 GAL -2.79 AZL 88.20 HCA 165.83 SMA 196.79 ECC .25210 INC 1.8039 V1 30.094
RP 236.98 LAP .44 LOP 215.48 VP 21.111 GAP 8.68 AZP 91.75 TAL 346.07 TAP 151.89 RCA 147.18 APO 246.40 V2 23.191
RC 189.421 GL 16.65 GP .17 ZAL 109.62 ZAP 156.49 ETS 178.13 ZAE 163.64 ETE 2.45 ZAC 90.49 ETC 255.85 CLP 156.49

PLANETOCENTRIC CONIC

C3 13.481 VHL 3.672 DLA 23.09 RAL 168.45 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 5.614 DPA -3.55 RAP 191.53 ECC 1.2219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 36	2943.33	-28.22	92.30	31.30	87.56	16 28 40	2343.3	-28.26	83.64
90.00	10 38 44	3949.32	-7.96	157.91	25.68	62.74	11 44 33	3349.3	-11.56	151.07
100.00	17 18 36	2624.12	-29.89	68.86	31.35	89.62	18 2 21	2024.1	-29.62	60.07
100.00	11 42 25	3743.76	-6.49	142.00	24.89	60.76	12 44 49	3143.8	-10.34	135.33
110.00	19 2 42	2298.47	-33.90	43.95	31.17	94.71	19 41 0	1698.5	-32.87	34.86
110.00	12 14 49	3642.18	-3.08	132.20	22.78	55.94	13 15 31	3042.2	-7.53	125.93

DIFFERENTIAL CORRECTIONS
TDE .4060 TRA-1.7142 TC3 3.2776 BAU .5912
RDE -.1080 RRA -.0026 RC3 -.1268 FAU .16829
FDE -.0391 FRA 3.1121 FC-10.8074 BSP 13260
BDE .4201 BRA 1.7142 BC3 3.2801 FSP 2606

MID-COURSE EXECUTION ACCURACY
SGT 3827.5 SGR 192.6 SG3 823.6
RRT -.4316 RRF .3956 RTF -.9454
SGB 3832.4 R23 .0147 R13 .9454
SG1 3828.4 SG2 173.7 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 1080.6 SR 168.5 SS 777.5
CRT -.5810 CRS -.0328 CST .8300
LSA 1281.8 MSA 396.3 SSA 17.7
EL1 1085.1 EL2 136.6 ALF 174.74

LAUNCH DATE NOV 12 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 526.063 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.410 GAL -2.70 AZL 88.20 HCA 166.79 SMA 196.16 ECC .24945 INC 1.8006 V1 30.094
RP 236.64 LAP .41 LOP 216.45 VP 21.098 GAP 8.24 AZP 91.75 TAL 346.40 TAP 153.19 RCA 147.23 APO 245.09 V2 23.226
RC 191.655 GL 16.81 GP .19 ZAL 108.98 ZAP 155.67 ETS 178.10 ZAE 164.42 ETE 2.81 ZAC 90.53 ETC 255.85 CLP 155.67

PLANETOCENTRIC CONIC

C3 13.150 VHL 3.626 DLA 23.49 RAL 167.89 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 5.489 DPA -3.59 RAP 191.67 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 28	2958.89	-28.17	93.44	30.46	87.00	16 20 47	2358.9	-28.29	84.77
90.00	10 42 28	3922.97	-8.78	156.40	25.01	62.97	11 47 51	3323.0	-12.34	149.53
100.00	17 11 21	2636.82	-29.88	69.81	30.53	89.12	17 55 18	2036.8	-29.68	61.01
100.00	11 45 16	3720.27	-7.27	140.70	24.20	60.93	12 47 16	3120.3	-11.10	133.99
110.00	18 56 50	2306.83	-33.94	44.60	30.38	94.33	19 35 17	1706.8	-32.97	35.50
110.00	12 16 17	3623.03	-3.81	131.19	22.06	56.00	13 16 40	3023.0	-8.25	124.92

DIFFERENTIAL CORRECTIONS
TDE .3815 TRA-1.6788 TC3 3.3718 BAU .5932
RDE -.0997 RRA -.0005 RC3 -.1239 FAU .17507
FDE .0072 FRA 3.1786 FC-11.5258 BSP 13297
BDE .3943 BRA 1.6788 BC3 3.3741 FSP 2744

MID-COURSE EXECUTION ACCURACY
SGT 3835.2 SGR 181.3 SG3 863.4
RRT -.4491 RRF .4112 RTF -.9464
SGB 3839.5 R23 .0164 R13 .9464
SG1 3836.1 SG2 162.0 THA 178.78

ORBIT DETERMINATION ACCURACY
ST 1059.1 SR 157.5 SS 788.2
CRT -.5690 CRS .0059 CST .8164
LSA 1265.4 MSA 407.6 SSA 16.6
EL1 1062.9 EL2 129.0 ALF 175.09

LAUNCH DATE NOV 12 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 529.626 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.379	GAL	-2.62	AZL	88.20	HCA	167.76	SMA	195.56	ECC	.24692	INC	1.7962
RP	236.29	LAP	.38	LOP	217.42	VP	21.087	GAP	7.79	AZP	91.76	TAL	346.73	TAP	154.49	RCA	147.27	APO	243.85
RC	193.877	GL	16.97	GP	.21	ZAL	108.35	ZAP	154.82	ETS	178.07	ZAE	165.25	ETE	3.21	ZAC	90.58	ETC	255.85

V1	30.094	V2	23.261	CLP	154.83														

PLANETOCENTRIC CONIC

C3	12.838	VHL	3.583	DLA	23.89	RAL	167.34	RAD	6567.5	VEL	11.586	PTH	2.03	VHP	5.366	DPA	-3.62	RAP	191.79
ECC	1.2113																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 17	2974.73	-28.11	94.59	29.63	86.42	16 12 51	2374.7	-28.31	85.93
90.00	10 46 16	3896.79	-9.59	154.90	24.35	63.23	11 51 12	3296.8	-13.11	147.99
100.00	17 4 7	2649.62	-29.86	70.76	29.72	88.62	17 48 16	2049.6	-29.74	61.96
100.00	11 48 7	3697.14	-8.04	139.40	23.52	61.11	12 49 44	3097.1	-11.83	132.67
110.00	18 51 1	2315.15	-33.98	45.25	29.61	93.95	19 29 36	1715.1	-33.06	36.13
110.00	12 17 41	3604.38	-4.52	130.22	21.36	56.08	13 17 46	3004.4	-8.94	123.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3608	TRA	-1.6393	TC3	3.4721	BAU	.5963	SGT	3839.7	SGR	170.0	SG3	905.5	ST	1038.4	SR	146.5	SS	798.6
RDE	-.0916	RRA	.0013	RC3	-.1204	FAU	.18244	RRT	-.4683	RRF	.4275	RTF	-.9476	CRT	-.5607	CRS	.0397	CST	.8024
FDE	.0507	FRA	3.2402	FC	-12.3026	BSP	13283	SGB	3843.4	R23	.0193	R13	.9476	LSA	1249.7	MSA	418.9	SSA	15.4
BDE	.3723	BRA	1.6393	BC3	3.4742	FSP	2880	SG1	3840.5	SG2	150.2	THA	178.81	EL1	1041.7	EL2	120.9	ALF	175.41

LAUNCH DATE NOV 12 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 533.208 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.349	GAL	-2.53	AZL	88.21	HCA	168.73	SMA	194.99	ECC	.24450	INC	1.7919
RP	235.94	LAP	.35	LOP	218.39	VP	21.079	GAP	7.35	AZP	91.76	TAL	347.05	TAP	155.78	RCA	147.31	APO	242.66
RC	196.080	GL	17.11	GP	.23	ZAL	107.72	ZAP	153.96	ETS	178.04	ZAE	166.10	ETE	3.69	ZAC	90.63	ETC	255.85

V1	30.094	V2	23.297	CLP	153.96														

PLANETOCENTRIC CONIC

C3	12.545	VHL	3.542	DLA	24.27	RAL	166.79	RAD	6567.5	VEL	11.573	PTH	2.02	VHP	5.247	DPA	-3.65	RAP	191.90
ECC	1.2065																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 4	2990.76	-28.03	95.76	28.80	85.84	16 4 55	2390.8	-28.32	87.10
90.00	10 50 5	3870.87	-10.38	153.41	23.70	63.51	11 54 36	3270.9	-13.86	146.46
100.00	16 56 55	2662.40	-29.84	71.71	28.91	88.12	17 41 17	2062.4	-29.78	62.90
100.00	11 50 56	3674.46	-8.78	138.13	22.86	61.31	12 52 10	3074.5	-12.54	131.36
110.00	18 45 17	2323.34	-34.02	45.88	28.84	93.57	19 24 1	1723.3	-33.15	36.75
110.00	12 19 2	3586.29	-5.21	129.26	20.67	56.17	13 18 49	2986.3	-9.61	122.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3372	TRA	-1.6049	TC3	3.5547	BAU	.5965	SGT	3840.3	SGR	158.3	SG3	949.1	ST	1016.5	SR	135.4	SS	813.2
RDE	-.0837	RRA	.0030	RC3	-.1155	FAU	.18976	RRT	-.4853	RRF	.4414	RTF	-.9485	CRT	-.5478	CRS	.0800	CST	.7874
FDE	.1047	FRA	3.3139	FC	-13.0954	BSP	13314	SGB	3843.5	R23	.0224	R13	.9485	LSA	1235.4	MSA	431.8	SSA	14.1
BDE	.3475	BRA	1.6049	BC3	3.5566	FSP	3038	SG1	3841.1	SG2	138.4	THA	178.85	EL1	1019.2	EL2	113.0	ALF	175.77

LAUNCH DATE NOV 12 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 536.808 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.321	GAL	-2.45	AZL	88.21	HCA	169.71	SMA	194.45	ECC	.24219	INC	1.7866
RP	235.59	LAP	.32	LOP	219.36	VP	21.074	GAP	6.92	AZP	91.76	TAL	347.36	TAP	157.07	RCA	147.36	APO	241.54
RC	198.280	GL	17.24	GP	.26	ZAL	107.11	ZAP	153.07	ETS	178.00	ZAE	166.99	ETE	4.26	ZAC	90.67	ETC	255.85

V1	30.094	V2	23.333	CLP	153.07														

PLANETOCENTRIC CONIC

C3	12.268	VHL	3.503	DLA	24.63	RAL	166.25	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	5.130	DPA	-3.66	RAP	191.99
ECC	1.2019																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 52	3006.84	-27.95	96.93	27.99	85.26	15 56 59	2406.8	-28.31	88.28
90.00	10 53 54	3845.31	-11.15	151.93	23.08	63.80	11 58 0	3245.3	-14.59	144.93
100.00	16 49 47	2675.04	-29.81	72.65	28.12	87.63	17 34 22	2075.0	-29.82	63.84
100.00	11 53 41	3652.34	-9.50	136.88	22.21	61.52	12 54 33	3052.3	-13.23	130.08
110.00	18 39 39	2331.30	-34.05	46.50	28.08	93.21	19 18 31	1731.3	-33.23	37.36
110.00	12 20 18	3568.85	-5.87	128.35	19.99	56.26	13 19 47	2968.9	-10.26	122.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3145	TRA	-1.5687	TC3	3.6331	BAU	.5962	SGT	3835.4	SGR	146.2	SG3	994.6	ST	993.8	SR	124.3	SS	829.0
RDE	-.0760	RRA	.0044	RC3	-.1094	FAU	.19746	RRT	-.5013	RRF	.4535	RTF	-.9494	CRT	-.5350	CRS	.1192	CST	.7723
FDE	.1608	FRA	3.3872	FC	-13.9344	BSP	13340	SGB	3838.1	R23	.0265	R13	.9493	LSA	1221.7	MSA	444.6	SSA	12.8
BDE	.3235	BRA	1.5687	BC3	3.6347	FSP	3204	SG1	3836.1	SG2	126.5	THA	178.90	EL1	996.0	EL2	104.8	ALF	176.13

LAUNCH DATE NOV 12 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 540.426 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.294	GAL	-2.38	AZL	88.22	HCA	170.69	SMA	193.94	ECC	.23999	INC	1.7797
RP	235.24	LAP	.29	LOP	220.34	VP	21.071	GAP	6.50	AZP	91.76	TAL	347.67	TAP	158.36	RCA	147.39	APO	240.48
RC	200.460	GL	17.35	GP	.30	ZAL	106.51	ZAP	152.15	ETS	177.96	ZAE	167.92	ETE	4.95	ZAC	90.72	ETC	255.84

V1	30.094	V2	23.369	CLP	152.15														

PLANETOCENTRIC CONIC

C3	12.007	VHL	3.465	DLA	24.97	RAL	165.70	RAD	6567.5	VEL	11.550	PTH	2.02	VHP	5.015	DPA	-3.65	RAP	192.06
ECC	1.1976																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 45	3022.76	-27.85	98.08	27.17	84.69	15 49 8	2422.8	-28.30	89.45
90.00	10 57 40	3820.30	-11.90	150.47	22.46	64.12	12 1 20	3220.3	-15.29	143.43
100.00	16 42 48	2687.34	-29.77	73.56	27.33	87.15	17 27 35	2087.3	-29.85	64.76
100.00	11 56 18	3630.95	-10.19	135.67	21.57	61.75	12 56 49	3031.0	-13.89	128.83
110.00	18 34 10	2338.88	-34.08	47.09	27.33	92.86	19 13 9	1738.9	-33.31	37.94
110.00	12 21 25	3552.18	-6.50	127.47	19.33	56.37	13 20 37	2952.2	-10.87	121.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2941	TRA	-1.5317	TC3	3.7084	BAU	.5955	SGT	3827.0	SGR	133.8	SG3	1042.5	ST	972.0	SR	113.3	SS	845.0
RDE	-.0685	RRA	.0054	RC3	-.1018	FAU	.20572	RRT	-.5156	RRF	.4630	RTF	-.9500	CRT	-.5240	CRS	.1534	CST	.7584
FDE	.2144	FRA	3.4589	FC	-14.8328	BSP	13285	SGB	3829.4	R23	.0318	R13	.9500	LSA	1209.9	MSA	455.8	SSA	11.6
BDE	.3020	BRA	1.5317	BC3	3.7098	FSP	3363	SG1	3827.7	SG2	114.6	THA	178.97	EL1	973.9	EL2	96.3	ALF	176.47

LAUNCH DATE NOV 12 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 544.061 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.268 GAL -2.30 AZL 88.23 HCA 171.67 SMA 193.45 ECC .23789 INC 1.7716 V1 30.094
RP 234.89 LAP .26 LOP 221.32 VP 21.071 GAP 6.08 AZP 91.75 TAL 347.97 TAP 159.64 RCA 147.43 APO 239.47 V2 23.405
RC 202.623 GL 17.44 GP .34 ZAL 105.93 ZAP 151.21 ETS 177.90 ZAE 168.87 ETE 5.82 ZAC 90.77 ETC 255.84 CLP 151.21

PLANETOCENTRIC CONIC

C3 11.761 VHL 3.429 DLA 25.28 RAL 165.15 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 4.904 DPA -3.63 RAP 192.11 ECC 1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 48	3038.20	-27.75	99.20	26.36	84.14	15 41 26	2438.2	-28.28	90.57
90.00	11 1 15	3796.14	-12.61	149.06	21.84	64.44	12 4 32	3196.1	-15.95	141.97
100.00	16 36 0	2699.03	-29.73	74.43	26.54	86.70	17 20 59	2099.0	-29.87	65.62
100.00	11 58 44	3610.54	-10.85	134.51	20.93	61.97	12 58 55	3010.5	-14.51	127.64
110.00	18 28 52	2345.90	-34.10	47.64	26.58	92.53	19 7 58	1745.9	-33.37	38.48
110.00	12 22 22	3536.44	-7.09	126.63	18.66	56.47	13 21 18	2936.4	-11.45	120.25

DIFFERENTIAL CORRECTIONS
TDE .2732 TRA-1.4963 TC3 3.7705 BAU .5930
RDE -.0612 RRA .0061 RC3 -.0921 FAU .21409
FDE .2749 FRA 3.5384 FC-15.7595 BSP 13299
BDE .2800 BRA 1.4963 BC3 3.7716 FSP 3549

MID-COURSE EXECUTION ACCURACY
SGT 3813.1 SGR 120.7 SG3 1092.2
RRT -.5243 RRF .4652 RTF -.9506
SGB 3815.0 R23 .0393 R13 .9506
SG1 3813.6 SG2 102.8 THA 179.05

ORBIT DETERMINATION ACCURACY
ST 949.9 SR 102.3 SS 864.5
CRT -.5107 CRS .1901 CST .7442
LSA 1200.5 MSA 467.7 SSA 10.4
EL1 951.3 EL2 87.8 ALF 176.83

LAUNCH DATE NOV 12 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 547.713 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.243 GAL -2.23 AZL 88.24 HCA 172.65 SMA 192.99 ECC .23588 INC 1.7589 V1 30.094
RP 234.53 LAP .22 LOP 222.31 VP 21.073 GAP 5.67 AZP 91.75 TAL 348.26 TAP 160.91 RCA 147.46 APO 238.51 V2 23.442
RC 204.770 GL 17.50 GP .39 ZAL 105.36 ZAP 150.24 ETS 177.83 ZAE 169.86 ETE 6.94 ZAC 90.83 ETC 255.84 CLP 150.25

PLANETOCENTRIC CONIC

C3 11.527 VHL 3.395 DLA 25.56 RAL 164.60 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 4.795 DPA -3.59 RAP 192.15 ECC 1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 10	3052.62	-27.65	100.24	25.55	83.62	15 34 2	2452.6	-28.24	91.63
90.00	11 4 32	3773.32	-13.28	147.71	21.22	64.76	12 7 25	3173.3	-16.57	140.58
100.00	16 29 32	2709.66	-29.68	75.21	25.75	86.29	17 14 42	2109.7	-29.88	66.41
100.00	12 0 50	3591.51	-11.45	133.42	20.29	62.20	13 0 42	2991.5	-15.09	126.52
110.00	18 23 50	2352.06	-34.12	48.12	25.82	92.25	19 3 2	1752.1	-33.43	38.95
110.00	12 23 2	3521.88	-7.63	125.86	18.00	56.58	13 21 44	2921.9	-11.98	119.46

DIFFERENTIAL CORRECTIONS
TDE .2596 TRA-1.4547 TC3 3.8448 BAU .5926
RDE -.0542 RRA .0063 RC3 -.0800 FAU .22397
FDE .3110 FRA 3.5935 FC-16.8220 BSP 13127
BDE .2652 BRA 1.4547 BC3 3.8456 FSP 3685

MID-COURSE EXECUTION ACCURACY
SGT 3796.4 SGR 107.0 SG3 1146.0
RRT -.5262 RRF .4588 RTF -.9509
SGB 3797.9 R23 .0492 R13 .9509
SG1 3796.9 SG2 91.0 THA 179.15

ORBIT DETERMINATION ACCURACY
ST 929.8 SR 91.5 SS 874.9
CRT -.5059 CRS .2087 CST .7351
LSA 1189.7 MSA 472.2 SSA 9.3
EL1 931.0 EL2 78.8 ALF 177.13

LAUNCH DATE NOV 12 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 551.381 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.219 GAL -2.17 AZL 88.25 HCA 173.64 SMA 192.55 ECC .23398 INC 1.7444 V1 30.094
RP 234.17 LAP .19 LOP 223.29 VP 21.077 GAP 5.26 AZP 91.74 TAL 348.54 TAP 162.18 RCA 147.50 APO 237.60 V2 23.479
RC 206.900 GL 17.52 GP .46 ZAL 104.80 ZAP 149.25 ETS 177.74 ZAE 170.88 ETE 8.44 ZAC 90.89 ETC 255.84 CLP 149.25

PLANETOCENTRIC CONIC

C3 11.303 VHL 3.362 DLA 25.81 RAL 164.05 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.689 DPA -3.52 RAP 192.17 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 4	3065.14	-27.55	101.15	24.73	83.18	15 27 10	2465.1	-28.21	92.54
90.00	11 7 12	3752.67	-13.88	146.49	20.58	65.07	12 9 45	3152.7	-17.13	139.32
100.00	16 23 34	2718.59	-29.64	75.87	24.95	85.94	17 8 53	2118.6	-29.89	67.08
100.00	12 2 24	3574.45	-11.99	132.44	19.63	62.41	13 1 58	2974.4	-15.59	125.50
110.00	18 19 9	2356.93	-34.13	48.50	25.05	92.03	18 58 26	1756.9	-33.47	39.32
110.00	12 23 18	3508.87	-8.12	125.17	17.32	56.68	13 21 47	2908.9	-12.45	118.75

DIFFERENTIAL CORRECTIONS
TDE .2459 TRA-1.4144 TC3 3.9058 BAU .5903
RDE -.0474 RRA .0058 RC3 -.0641 FAU .23371
FDE .3584 FRA 3.6621 FC-17.9008 BSP 12967
BDE .2504 BRA 1.4144 BC3 3.9064 FSP 3854

MID-COURSE EXECUTION ACCURACY
SGT 3773.8 SGR 92.2 SG3 1201.3
RRT -.5069 RRF .4254 RTF -.9513
SGB 3774.9 R23 .0661 R13 .9513
SG1 3774.1 SG2 79.5 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 909.4 SR 80.8 SS 890.2
CRT -.4976 CRS .2366 CST .7221
LSA 1181.0 MSA 480.8 SSA 8.1
EL1 910.3 EL2 70.1 ALF 177.45

LAUNCH DATE NOV 12 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 555.065 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.197 GAL -2.10 AZL 88.27 HCA 174.63 SMA 192.13 ECC .23216 INC 1.7264 V1 30.094
RP 233.80 LAP .16 LOP 224.28 VP 21.084 GAP 4.86 AZP 91.72 TAL 348.81 TAP 163.44 RCA 147.52 APO 236.73 V2 23.517
RC 209.011 GL 17.48 GP .56 ZAL 104.27 ZAP 148.22 ETS 177.61 ZAE 171.93 ETE 10.55 ZAC 90.98 ETC 255.84 CLP 148.23

PLANETOCENTRIC CONIC

C3 11.087 VHL 3.330 DLA 25.99 RAL 163.49 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 4.585 DPA -3.42 RAP 192.18 ECC 1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 58	3074.19	-27.48	101.80	23.89	82.86	15 21 12	2474.2	-28.18	93.20
90.00	11 8 48	3735.65	-14.36	145.47	19.90	65.33	12 11 4	3135.7	-17.57	138.27
100.00	16 18 23	2724.66	-29.61	76.32	24.13	85.71	17 3 48	2124.7	-29.89	67.53
100.00	12 3 4	3560.42	-12.43	131.64	18.93	62.60	13 2 24	2960.4	-16.01	124.67
110.00	18 15 1	2359.77	-34.14	48.72	24.24	91.90	18 54 20	1759.8	-33.50	39.54
110.00	12 22 56	3498.06	-8.53	124.59	16.61	56.77	13 21 14	2898.1	-12.84	118.15

DIFFERENTIAL CORRECTIONS
TDE .2303 TRA-1.3775 TC3 3.9496 BAU .5854
RDE -.0409 RRA .0044 RC3 -.0427 FAU .24307
FDE .4216 FRA 3.7503 FC-18.9804 BSP 12883
BDE .2339 BRA 1.3776 BC3 3.9498 FSP 4072

MID-COURSE EXECUTION ACCURACY
SGT 3745.5 SGR 76.3 SG3 1257.5
RRT -.4364 RRF .3317 RTF -.9519
SGB 3746.3 R23 .0932 R13 .9518
SG1 3745.7 SG2 68.6 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 888.3 SR 70.3 SS 912.8
CRT -.4787 CRS .2793 CST .7066
LSA 1176.7 MSA 492.6 SSA 6.7
EL1 889.0 EL2 61.7 ALF 177.82

LAUNCH DATE NOV 12 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 558.763 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.175	GAL	-2.04	AZL	88.30	HCA	175.62	SMA	191.73	ECC	.23043	INC	1.6968
RP	233.44	LAP	.13	LOP	225.28	VP	21.092	GAP	4.47	AZP	91.69	TAL	349.08	TAP	164.70	RCA	147.55	APO	235.91
RC	211.104	GL	17.35	GP	.71	ZAL	103.76	ZAP	147.17	ETS	177.42	ZAE	172.98	ETE	13.71	ZAC	91.11	ETC	255.84

V1	30.094	V2	23.555	CLP	147.17														

PLANETOCENTRIC CONIC

C3	10.875	VHL	3.298	DLA	26.08	RAL	162.90	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	4.485	DPA	-3.26	RAP	192.19
ECC	1.1790																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 40	3076.80	-27.45	101.99	23.01	82.77	15 16 57	2476.8	-28.17	93.39
90.00	11 8 23	3725.11	-14.66	144.84	19.12	65.50	12 10 28	3125.1	-17.85	137.62
100.00	16 14 34	2725.70	-29.61	76.40	23.25	85.67	17 0 0	2125.7	-29.89	67.61
100.00	12 2 10	3551.44	-12.71	131.12	18.15	62.72	13 1 22	2951.4	-16.27	124.13
110.00	18 11 43	2359.18	-34.14	48.68	23.37	91.92	18 51 2	1759.2	-33.49	39.49
110.00	12 21 31	3490.73	-8.80	124.20	15.83	56.83	13 19 42	2890.7	-13.10	117.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2206	TRA	-1.3364	TC3	3.9969	BAU	.5811	SGT	3712.0	SGR	60.7	SG3	1318.4	ST	868.7	SR	60.1	SS	921.4
RDE	-.0346	RRA	.0015	RC3	-.0120	FAU	.25408	RRT	-.2273	RRF	.0856	RTF	-.9518	CRT	-.4542	CRS	.3146	CST	.7001
FDE	.4497	FRA	3.8084	FC	-20.2266	BSP	12677	SGB	3712.5	R23	.1343	R13	.9518	LSA	1168.0	MSA	492.9	SSA	5.6
BDE	.2233	BRA	1.3364	BC3	3.9969	FSP	4236	SG1	3712.0	SG2	59.1	THA	179.79	EL1	869.1	EL2	53.5	ALF	178.19

LAUNCH DATE NOV 12 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 562.477 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.155	GAL	-1.98	AZL	88.34	HCA	176.62	SMA	191.36	ECC	.22878	INC	1.6510
RP	233.07	LAP	.10	LOP	226.27	VP	21.102	GAP	4.08	AZP	91.65	TAL	349.33	TAP	165.95	RCA	147.58	APO	235.14
RC	213.179	GL	17.05	GP	.94	ZAL	103.27	ZAP	146.08	ETS	177.13	ZAE	174.02	ETE	18.86	ZAC	91.31	ETC	255.84

V1	30.094	V2	23.593	CLP	146.09														

PLANETOCENTRIC CONIC

C3	10.658	VHL	3.265	DLA	26.01	RAL	162.24	RAD	6567.4	VEL	11.491	PTH	2.00	VHP	4.386	DPA	-3.01	RAP	192.20
ECC	1.1754																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 39	3067.31	-27.53	101.30	22.03	83.10	15 15 46	2467.3	-28.20	92.70
90.00	11 4 11	3726.39	-14.63	144.92	18.15	65.48	12 6 17	3126.4	-17.81	137.70
100.00	16 13 9	2717.50	-29.65	75.79	22.26	85.98	16 58 26	2117.5	-29.89	67.00
100.00	11 58 22	3551.43	-12.72	131.12	17.19	62.72	12 57 33	2951.4	-16.27	124.13
110.00	18 9 52	2352.32	-34.12	48.14	22.34	92.24	18 49 4	1752.3	-33.43	38.97
110.00	12 18 8	3489.38	-8.85	124.13	14.90	56.85	13 16 17	2889.4	-13.15	117.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2302	TRA	-1.2792	TC3	4.0956	BAU	.5836	SGT	3681.6	SGR	56.4	SG3	1383.5	ST	855.1	SR	50.9	SS	915.4
RDE	-.0290	RRA	-.0043	RC3	.0350	FAU	.26639	RRT	.2979	RRF	-.4718	RTF	-.9533	CRT	-.4267	CRS	.3677	CST	.6819
FDE	.4392	FRA	3.8397	FC	-21.6383	BSP	12083	SGB	3682.0	R23	-.1967	R13	-.9533	LSA	1149.3	MSA	500.8	SSA	4.3
BDE	.2320	BRA	1.2792	BC3	4.0958	FSP	4363	SG1	3681.6	SG2	53.8	THA	.26	EL1	855.4	EL2	46.0	ALF	178.54

LAUNCH DATE NOV 12 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 566.203 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.135	GAL	-1.92	AZL	88.43	HCA	177.62	SMA	191.00	ECC	.22721	INC	1.5707
RP	232.70	LAP	.07	LOP	227.27	VP	21.115	GAP	3.70	AZP	91.57	TAL	349.58	TAP	167.20	RCA	147.60	APO	234.40
RC	215.236	GL	16.36	GP	1.36	ZAL	102.83	ZAP	144.95	ETS	176.59	ZAE	174.93	ETE	28.22	ZAC	91.70	ETC	255.84

V1	30.094	V2	23.631	CLP	144.97														

PLANETOCENTRIC CONIC

C3	10.417	VHL	3.228	DLA	25.57	RAL	161.44	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	4.292	DPA	-2.58	RAP	192.27
ECC	1.1714																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 26	3032.20	-27.79	98.77	20.80	84.35	15 20 58	2432.2	-28.29	90.14
90.00	10 51 59	3752.24	-13.89	146.46	16.74	65.07	11 54 32	3152.2	-17.14	139.29
100.00	16 16 50	2689.17	-29.76	73.70	20.96	87.08	17 1 39	2089.2	-29.85	64.89
100.00	11 48 17	3570.50	-12.12	132.22	15.85	62.46	12 47 47	2970.5	-15.71	125.27
110.00	18 11 9	2331.49	-34.05	46.52	20.95	93.20	18 50 1	1731.5	-33.23	37.37
110.00	12 10 27	3500.95	-8.42	124.74	13.64	56.75	13 8 48	2900.9	-12.74	118.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2149	TRA	-1.2527	TC3	4.0802	BAU	.5685	SGT	3627.6	SGR	94.1	SG3	1444.3	ST	835.9	SR	43.0	SS	928.5
RDE	-.0236	RRA	-.0160	RC3	.1211	FAU	.27571	RRT	.7841	RRF	-.9121	RTF	-.9522	CRT	-.2444	CRS	.5330	CST	.6885
FDE	.4618	FRA	3.9366	FC	-22.9133	BSP	12225	SGB	3628.8	R23	-.2663	R13	-.9522	LSA	1149.4	MSA	491.5	SSA	3.1
BDE	.2162	BRA	1.2528	BC3	4.0820	FSP	4655	SG1	3628.4	SG2	58.4	THA	1.17	EL1	835.9	EL2	41.7	ALF	179.28

LAUNCH DATE NOV 12 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 569.947 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.117	GAL	-1.87	AZL	88.63	HCA	178.62	SMA	190.66	ECC	.22573	INC	1.3155
RP	232.32	LAP	.03	LOP	228.27	VP	21.129	GAP	3.33	AZP	91.37	TAL	349.81	TAP	168.43	RCA	147.62	APO	233.70
RC	217.275	GL	14.45	GP	2.40	ZAL	102.46	ZAP	143.75	ETS	175.24	ZAE	175.24	ETE	46.97	ZAC	92.69	ETC	255.83

V1	30.094	V2	23.670	CLP	143.82														

PLANETOCENTRIC CONIC

C3	10.091	VHL	3.177	DLA	23.99	RAL	160.12	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.201	DPA	-1.57	RAP	192.56
ECC	1.1661																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 47	2930.64	-28.25	91.37	18.58	88.03	15 41 37	2330.6	-28.23	82.71
90.00	10 19 6	3841.02	-11.28	151.68	14.08	63.86	11 23 7	3241.0	-14.71	144.68
100.00	16 33 53	2604.64	-29.89	67.42	18.61	90.38	17 17 18	2004.6	-29.52	58.63
100.00	11 20 41	3642.25	-9.83	136.31	13.32	61.63	12 21 23	3042.2	-13.54	129.49
110.00	18 21 12	2268.90	-33.71	41.66	18.35	96.05	18 59 1	1668.9	-32.50	32.64
110.00	11 49 51	3550.75	-6.55	127.39	11.33	56.38	12 49 2	2950.8	-10.92	121.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3640	TRA	-1.0784	TC3	4.6728	BAU	.6323	SGT	3711.8	SGR	243.1	SG3	1591.8	ST	920.3	SR	28.9	SS	764.2
RDE	-.0095	RRA	-.0375	RC3	.3635	FAU	.31638	RRT	.9220	RRF	-.9933	RTF	-.9557	CRT	.1332	CRS	.5827	CST	.8812
FDE	-.3592	FRA	3.2677	FC	-27.1433	BSP	8907	SGB	3719.7	R23	-.2881	R13	-.9562	LSA	1161.6	MSA	287.5	SSA	3.3
BDE	.3642	BRA	1.0790	BC3	4.6869	FSP	3486	SG1	3718.6	SG2	94.0	THA	3.46	EL1	920.3	EL2	28.7	ALF	.24

LAUNCH DATE NOV 12 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 573.703 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.099 GAL -1.82 AZL 89.93 HCA 179.63 SMA 190.34 ECC .22432 INC .9597 V1 30.094
RP 231.95 LAP .00 LOP 229.28 VP 21.145 GAP 2.96 AZP 90.07 TAL 350.04 TAP 169.66 RCA 147.65 APO 233.04 V2 23.709
RC 219.295 GL .79 GP 9.04 ZAL 102.38 ZAP 141.57 ETS 166.94 ZAE 169.65 ETE 78.86 ZAC 99.09 ETC 255.67 CLP 142.49

PLANETOCENTRIC CONIC

C3 9.349 VHL 3.058 DLA 11.49 RAL 154.31 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 4.167 DPA 4.61 RAP 195.01 ECC 1.1539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 22	2413.59	-23.85	54.50	7.27	105.74	17 23 36	1813.6	-21.46	46.64
90.00	7 42 13	4327.93	4.16	179.13	4.24	61.96	8 54 21	3727.9	.37	172.49
100.00	18 10 31	2132.52	-24.76	33.52	6.97	107.30	18 46 4	1532.5	-22.16	25.69
100.00	8 57 45	4084.23	5.00	160.75	3.77	60.49	10 5 49	3484.2	1.03	154.21
110.00	19 31 54	1877.86	-27.18	13.24	6.02	111.57	20 3 12	1277.9	-24.01	5.51
110.00	9 52 51	3911.66	7.18	146.31	2.43	56.49	10 58 3	3311.7	2.73	140.05

DIFFERENTIAL CORRECTIONS
TDE -.2238 TRA-1.7882 TC3 1.4406 BAU .1968
RDE -.1771 RRA -.4810 RC3 .6345 FAU .10696
FDE 2.7531 FRA 7.5296 FC3-9.9040 BSP 29550
BDE .2855 BRA 1.8518 BC3 1.5741 FSP 13485

MID-COURSE EXECUTION ACCURACY
SGT 3555.9 SGR 1052.0 SG3 1421.3
RRT .9693 RRF-1.0000 RTF -.9699
SGB 3708.2 R23 -.2248 R13 -.9744
SG1 3699.9 SG2 248.4 THA 16.08

ORBIT DETERMINATION ACCURACY
ST 1108.6 SR 431.8 SS 2423.0
CRT .8828 CRS 1.0000 CST .8845
LSA 2656.5 MSA 479.3 SSA .3
EL1 1174.2 EL2 191.5 ALF 19.52

LAUNCH DATE NOV 12 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 577.459 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.082 GAL -1.78 AZL 87.12 HCA 180.64 SMA 190.04 ECC .22298 INC 2.7324 V1 30.094
RP 231.57 LAP -.03 LOP 230.29 VP 21.162 GAP 2.60 AZP 92.88 TAL 350.24 TAP 170.88 RCA 147.66 APO 232.41 V2 23.748
RC 221.297 GL 28.95 GP -5.40 ZAL 100.55 ZAP 141.10 ETS 185.26 ZAE 175.74 ETE 275.85 ZAC 84.99 ETC 255.80 CLP 141.41

PLANETOCENTRIC CONIC

C3 11.783 VHL 3.433 DLA 37.51 RAL 166.31 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 4.038 DPA -8.51 RAP 188.96 ECC 1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.29	9 59 32	3987.78	-29.18	171.54	29.65	65.30	11 6 0	3387.8	-32.25	163.36
115.71	16 1 46	2847.36	-29.17	85.49	29.65	65.29	16 49 14	2247.4	-32.24	77.31
64.29	9 59 32	3987.78	-29.18	171.54	29.65	65.30	11 6 0	3387.8	-32.25	163.36
115.71	16 1 46	2847.36	-29.17	85.49	29.65	65.29	16 49 14	2247.4	-32.24	77.31
64.29	9 59 32	3987.78	-29.18	171.54	29.65	65.30	11 6 0	3387.8	-32.25	163.36
115.71	16 1 46	2847.36	-29.17	85.49	29.65	65.29	16 49 14	2247.4	-32.24	77.31

DIFFERENTIAL CORRECTIONS
TDE .6064 TRA -.6118 TC3 5.3778 BAU .8804
RDE -.0824 RRA .0591 RC3-1.5203 FAU .47942
FDE-1.6478 FRA .8928 FC-35.2238 BSP 2411
BDE .6120 BRA .6147 BC3 5.5885 FSP -2553

MID-COURSE EXECUTION ACCURACY
SGT 4038.9 SGR 1060.1 SG3 2109.1
RRT -.9699 RRF .9990 RTF -.9583
SGB 4175.7 R23 -.2709 R13 .9626
SG1 4168.3 SG2 250.0 THA 165.66

ORBIT DETERMINATION ACCURACY
ST 1089.0 SR 145.9 SS 1011.7
CRT -.9886 CRS -.9975 CST .9759
LSA 1484.7 MSA 162.7 SSA 2.1
EL1 1098.5 EL2 21.7 ALF 172.45

LAUNCH DATE NOV 12 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 581.242 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.066 GAL -1.73 AZL 87.75 HCA 181.65 SMA 189.75 ECC .22171 INC 2.2245 V1 30.094
RP 231.20 LAP -.06 LOP 231.30 VP 21.182 GAP 2.24 AZP 92.25 TAL 350.44 TAP 172.09 RCA 147.68 APO 231.82 V2 23.788
RC 223.281 GL 23.40 GP -2.14 ZAL 100.63 ZAP 140.12 ETS 181.10 ZAE 178.73 ETE 227.97 ZAC 88.12 ETC 255.85 CLP 140.16

PLANETOCENTRIC CONIC

C3 10.657 VHL 3.265 DLA 32.69 RAL 162.93 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 3.938 DPA -5.45 RAP 190.11 ECC 1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.95	10 36 4	3816.01	-26.12	156.56	23.11	69.62	11 39 40	3216.0	-28.65	148.43
107.05	14 58 17	2977.65	-26.11	94.33	23.11	69.60	15 47 54	2377.7	-28.64	86.20
72.95	10 36 4	3816.01	-26.12	156.56	23.11	69.62	11 39 40	3216.0	-28.65	148.43
107.05	14 58 17	2977.65	-26.11	94.33	23.11	69.60	15 47 54	2377.7	-28.64	86.20
110.00	16 33 6	2685.56	-32.00	73.78	25.11	77.30	17 17 52	2085.6	-33.42	64.84
110.00	14 0 25	3156.10	-20.51	105.35	20.37	62.03	14 53 1	2556.1	-24.08	98.03

DIFFERENTIAL CORRECTIONS
TDE .1410 TRA-1.0680 TC3 3.8480 BAU .5531
RDE .0226 RRA .0972 RC3 -.5131 FAU .34515
FDE 1.1616 FRA 4.1720 FC-28.0390 BSP 10059
BDE .1428 BRA 1.0724 BC3 3.8821 FSP 4692

MID-COURSE EXECUTION ACCURACY
SGT 3366.5 SGR 393.6 SG3 1760.1
RRT -.9686 RRF .9950 RTF -.9458
SGB 3389.5 R23 -.3141 R13 .9469
SG1 3388.1 SG2 97.3 THA 173.53

ORBIT DETERMINATION ACCURACY
ST 716.5 SR 73.3 SS 1142.2
CRT -.6013 CRS -.9961 CST .5325
LSA 1225.9 MSA 566.1 SSA 2.1
EL1 717.8 EL2 58.4 ALF 176.46

LAUNCH DATE NOV 12 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 585.034 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.051 GAL -1.69 AZL 87.90 HCA 182.67 SMA 189.48 ECC .22051 INC 2.0880 V1 30.094
RP 230.82 LAP -.10 LOP 232.32 VP 21.203 GAP 1.89 AZP 92.09 TAL 350.63 TAP 173.30 RCA 147.70 APO 231.26 V2 23.827
RC 225.247 GL 22.08 GP -1.36 ZAL 100.35 ZAP 138.86 ETS 180.10 ZAE 177.76 ETE 182.94 ZAC 88.82 ETC 255.86 CLP 138.87

PLANETOCENTRIC CONIC

C3 10.340 VHL 3.216 DLA 31.63 RAL 161.88 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 3.854 DPA -4.62 RAP 190.18 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.27	10 47 23	3761.48	-25.46	152.14	21.30	70.55	11 50 5	3161.5	-27.87	144.02
104.73	14 38 32	3019.97	-25.44	97.29	21.29	70.54	15 28 51	2420.0	-27.86	89.17
75.27	10 47 23	3761.48	-25.46	152.14	21.30	70.55	11 50 5	3161.5	-27.87	144.02
104.73	14 38 32	3019.97	-25.44	97.29	21.29	70.54	15 28 51	2420.0	-27.86	89.17
110.00	16 51 52	2606.15	-33.04	67.82	23.53	80.68	17 35 19	2006.1	-33.97	58.70
110.00	13 33 13	3223.30	-18.31	109.32	17.81	60.62	14 26 56	2623.3	-22.09	102.22

DIFFERENTIAL CORRECTIONS
TDE .0991 TRA-1.0769 TC3 3.6397 BAU .5054
RDE .0265 RRA .0785 RC3 -.3460 FAU .34259
FDE 1.4535 FRA 4.5882 FC-28.6831 BSP 10982
BDE .1025 BRA 1.0797 BC3 3.6562 FSP 5703

MID-COURSE EXECUTION ACCURACY
SGT 3254.1 SGR 280.6 SG3 1810.7
RRT -.9669 RRF .9871 RTF -.9438
SGB 3266.2 R23 -.2905 R13 .9443
SG1 3265.4 SG2 71.4 THA 175.23

ORBIT DETERMINATION ACCURACY
ST 702.3 SR 68.5 SS 1302.9
CRT -.5292 CRS -.9985 CST .5565
LSA 1374.2 MSA 554.0 SSA 3.0
EL1 703.2 EL2 58.1 ALF 177.02

LAUNCH DATE NOV 12 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 588.841 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.037	GAL	-1.65	AZL	87.97	HCA	183.69	SMA	189.22	ECC	.21937	INC	2.0246
RP	230.43	LAP	-.13	LOP	233.33	VP	21.225	GAP	1.54	AZP	92.02	TAL	350.81	TAP	174.50	RCA	147.71	APO	230.73
RC	227.193	GL	21.52	GP	-1.00	ZAL	100.03	ZAP	137.53	ETS	179.65	ZAE	176.30	ETE	175.70	ZAC	89.10	ETC	255.87

V1 30.094 V2 23.867 CLP 137.54

PLANETOCENTRIC CONIC

C3	10.147	VHL	3.185	DLA	31.28	RAL	161.22	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	3.774	DPA	-4.17	RAP	190.05

ECC 1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.13	10 50 44	3739.03	-25.26	150.36	20.27	70.92	11 53 3	3139.0	-27.63	142.24
103.87	14 29 59	3034.85	-25.25	98.34	20.27	70.90	15 20 34	2434.8	-27.62	90.22
76.13	10 50 44	3739.03	-25.26	150.36	20.27	70.92	11 53 3	3139.0	-27.63	142.24
103.87	14 29 59	3034.85	-25.25	98.34	20.27	70.90	15 20 34	2434.8	-27.62	90.22
110.00	16 55 55	2580.87	-33.30	65.89	22.51	81.79	17 38 56	1980.9	-34.08	56.74
110.00	13 23 59	3241.00	-17.72	110.35	16.60	60.28	14 18 0	2641.0	-21.54	103.31

DIFFERENTIAL CORRECTIONS

TDE	.1066	TRA	-1.0318	TC3	3.5920	BAU	.4887
RDE	.0293	RRA	.0682	RC3	-.2744	FAU	.35345
FDE	1.5427	FRA	4.7405	FC	-30.1564	BSP	10541
BDE	.1105	BRA	1.0340	BC3	3.6025	FSP	6108

MID-COURSE EXECUTION ACCURACY

SGT	3160.5	SGR	232.2	SG3	1885.7		
RRT	-.9559	RRF	.9740	RTF	-.9437		
SGB	3169.0	R23	-.2434	R13	.9441		
SG1	3168.3	SG2	68.0	THA	175.98		

ORBIT DETERMINATION ACCURACY

ST	682.5	SR	68.2	SS	1343.9
CRT	-.3933	CRS	-.9886	CST	.5181
LSA	1400.6	MSA	561.0	SSA	3.9
EL1	683.0	EL2	62.7	ALF	177.73

LAUNCH DATE NOV 12 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 592.656 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.023	GAL	-1.61	AZL	88.01	HCA	184.71	SMA	188.98	ECC	.21829	INC	1.9878
RP	230.05	LAP	-.16	LOP	234.36	VP	21.249	GAP	1.20	AZP	91.98	TAL	350.97	TAP	175.68	RCA	147.73	APO	230.23
RC	229.120	GL	21.25	GP	-.80	ZAL	99.72	ZAP	136.17	ETS	179.40	ZAE	174.78	ETE	174.31	ZAC	89.22	ETC	255.88

V1 30.094 V2 23.907 CLP 136.18

PLANETOCENTRIC CONIC

C3	10.000	VHL	3.162	DLA	31.16	RAL	160.74	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	3.697	DPA	-3.84	RAP	189.82

ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.43	10 50 53	3729.49	-25.23	149.63	19.54	71.09	11 53 2	3129.5	-27.58	141.51
103.57	14 25 56	3038.54	-25.22	98.61	19.54	71.07	15 16 35	2438.5	-27.57	90.48
76.43	10 50 53	3729.49	-25.23	149.63	19.54	71.09	11 53 2	3129.5	-27.58	141.51
103.57	14 25 56	3038.54	-25.22	98.61	19.54	71.07	15 16 35	2438.5	-27.57	90.48
110.00	16 56 6	2570.99	-33.39	65.14	21.76	82.23	17 38 57	1971.0	-34.11	55.97
110.00	13 19 54	3245.04	-17.58	110.59	15.82	60.20	14 13 59	2645.0	-21.41	103.55

DIFFERENTIAL CORRECTIONS

TDE	.0942	TRA	-1.0057	TC3	3.4378	BAU	.4606
RDE	.0341	RRA	.0633	RC3	-.2270	FAU	.36424
FDE	1.6751	FRA	4.9203	FC	-31.5339	BSP	10489
BDE	.1001	BRA	1.0077	BC3	3.4453	FSP	6536

MID-COURSE EXECUTION ACCURACY

SGT	3048.1	SGR	205.9	SG3	1961.7		
RRT	-.9355	RRF	.9513	RTF	-.9396		
SGB	3055.1	R23	-.2030	R13	.9399		
SG1	3054.2	SG2	72.6	THA	176.38		

ORBIT DETERMINATION ACCURACY

ST	664.4	SR	73.8	SS	1404.5
CRT	-.3152	CRS	-.9726	CST	.5195
LSA	1455.4	MSA	549.1	SSA	5.0
EL1	664.9	EL2	70.0	ALF	177.97

LAUNCH DATE NOV 12 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 596.482 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.010	GAL	-1.58	AZL	88.04	HCA	185.74	SMA	188.75	ECC	.21728	INC	1.9639
RP	229.67	LAP	-.20	LOP	235.38	VP	21.274	GAP	.87	AZP	91.95	TAL	351.13	TAP	176.86	RCA	147.74	APO	229.76
RC	231.027	GL	21.09	GP	-.67	ZAL	99.42	ZAP	134.76	ETS	179.23	ZAE	173.23	ETE	174.18	ZAC	89.26	ETC	255.88

V1 30.094 V2 23.948 CLP 134.77

PLANETOCENTRIC CONIC

C3	9.877	VHL	3.143	DLA	31.14	RAL	160.33	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	3.623	DPA	-3.57	RAP	189.52

ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.46	10 49 32	3726.22	-25.28	149.40	18.96	71.17	11 51 38	3126.2	-27.61	141.27
103.54	14 24 5	3036.88	-25.27	98.50	18.95	71.16	15 14 41	2436.9	-27.60	90.37
76.46	10 49 32	3726.22	-25.28	149.40	18.96	71.17	11 51 38	3126.2	-27.61	141.27
103.54	14 24 5	3036.88	-25.27	98.50	18.95	71.16	15 14 41	2436.9	-27.60	90.37
110.00	16 54 45	2567.70	-33.42	64.88	21.15	82.38	17 37 32	1967.7	-34.12	55.71
110.00	13 18 2	3243.40	-17.64	110.49	15.25	60.23	14 12 5	2643.4	-21.46	103.45

DIFFERENTIAL CORRECTIONS

TDE	.0876	TRA	-.9729	TC3	3.2870	BAU	.4348
RDE	.0391	RRA	.0604	RC3	-.1931	FAU	.37658
FDE	1.8028	FRA	5.0840	FC	-33.0090	BSP	10281
BDE	.0959	BRA	.9748	BC3	3.2926	FSP	6930

MID-COURSE EXECUTION ACCURACY

SGT	2930.7	SGR	190.7	SG3	2041.9		
RRT	-.9054	RRF	.9198	RTF	-.9353		
SGB	2936.9	R23	-.1702	R13	.9356		
SG1	2935.8	SG2	80.8	THA	176.63		

ORBIT DETERMINATION ACCURACY

ST	644.9	SR	81.2	SS	1459.6
CRT	-.2456	CRS	-.9566	CST	.5100
LSA	1503.8	MSA	539.9	SSA	6.0
EL1	645.2	EL2	78.6	ALF	178.20

LAUNCH DATE NOV 12 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 600.320 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.998	GAL	-1.55	AZL	88.05	HCA	186.77	SMA	188.53	ECC	.21632	INC	1.9469
RP	229.28	LAP	-.23	LOP	236.41	VP	21.301	GAP	.54	AZP	91.93	TAL	351.27	TAP	178.03	RCA	147.75	APO	229.32
RC	232.913	GL	21.01	GP	-.58	ZAL	99.14	ZAP	133.32	ETS	179.13	ZAE	171.63	ETE	174.40	ZAC	89.26	ETC	255.89

V1 30.094 V2 23.988 CLP 133.32

PLANETOCENTRIC CONIC

C3	9.769	VHL	3.126	DLA	31.18	RAL	159.99	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.552	DPA	-3.31	RAP	189.18

ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.37	10 47 30	3726.10	-25.35	149.42	18.47	71.22	11 49 36	3126.1	-27.68	141.28
103.63	14 23 21	3032.67	-25.34	98.21	18.46	71.20	15 13 53	2432.7	-27.67	90.07
76.37	10 47 30	3726.10	-25.35	149.42	18.47	71.22	11 49 36	3126.1	-27.68	141.28
103.63	14 23 21	3032.67	-25.34	98.21	18.46	71.20	15 13 53	2432.7	-27.67	90.07
110.00	16 52 43	2567.64	-33.42	64.88	20.64	82.38	17 35 31	1967.6	-34.12	55.71
110.00	13 17 18	3239.13	-17.78	110.24	14.81	60.31	14 11 17	2639.1	-21.60	103.19

DIFFERENTIAL CORRECTIONS

TDE	.0792	TRA	-.9432	TC3	3.0921	BAU	.4044
RDE	.0445	RRA	.0589	RC3	-.1649	FAU	.38875
FDE	1.9454	FRA	5.2628	FC	-34.4507	BSP	10071
BDE	.0908	BRA	.9451	BC3	3.0965	FSP	7331

MID-COURSE EXECUTION ACCURACY

SGT	2800.3	SGR	182.2	SG3	2122.8		
RRT	-.8671	RRF	.8788	RTF	-.9287		
SGB	2806.2	R23	-.1458	R13	.9290		
SG1	2804.8	SG2	90.6	THA	176.77		

ORBIT DETERMINATION ACCURACY

ST	626.1	SR	89.9	SS	1521.4
CRT	-.2003	CRS	-.9436	CST	.5060
LSA	1560.6	MSA	528.4	SSA	7.1
EL1	626.4	EL2	88.1	ALF	178.32

LAUNCH DATE NOV 12 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 604.172 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.986 GAL -1.52 AZL 88.07 HCA 187.80 SMA 188.33 ECC .21542 INC 1.9328 V1 30.094
RP 228.89 LAP -.26 LOP 237.44 VP 21.329 GAP .22 AZP 91.92 TAL 351.40 TAP 179.20 RCA 147.76 APO 228.90 V2 24.029
RC 234.778 GL 20.96 GP -.52 ZAL 98.87 ZAP 131.83 ETS 179.05 ZAE 169.99 ETE 174.72 ZAC 89.22 ETC 255.90 CLP 131.83

PLANETOCENTRIC CONIC

C3 9.673 VHL 3.110 DLA 31.24 RAL 159.68 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.483 DPA -3.06 RAP 188.79 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.21	10 45 9	3727.72	-25.45	149.58	18.04	71.23	11 47 16	3127.7	-27.77	141.43
103.79	14 23 15	3027.16	-25.44	97.83	18.04	71.22	15 13 42	2427.2	-27.76	89.68
76.21	10 45 9	3727.72	-25.45	149.58	18.04	71.23	11 47 16	3127.7	-27.77	141.43
103.79	14 23 15	3027.16	-25.44	97.83	18.04	71.22	15 13 42	2427.2	-27.76	89.68
110.00	16 50 21	2569.44	-33.41	65.02	20.19	82.30	17 33 10	1969.4	-34.11	55.85
110.00	13 17 13	3233.44	-17.97	109.92	14.43	60.42	14 11 7	2633.4	-21.77	102.84

DIFFERENTIAL CORRECTIONS
TDE .0997 TRA -.8861 TC3 2.9914 BAU .3873
RDE .0488 RRA .0569 RC3 -.1450 FAU .40653
FDE 1.9723 FRA 5.3241 FC-36.3831 BSP 9217
BDE .1110 BRA .8879 BC3 2.9949 FSP 7500

MID-COURSE EXECUTION ACCURACY
SGT 2672.4 SGR 176.8 SG3 2214.6
RRT -.8159 RRF .8331 RTF -.9248
SGB 2678.2 R23 -.1339 R13 .9251
SG1 2676.2 SG2 102.1 THA 176.91

ORBIT DETERMINATION ACCURACY
ST 604.1 SR 97.2 SS 1520.0
CRT -.0802 CRS -.9273 CST .4397
LSA 1548.7 MSA 535.0 SSA 8.1
EL1 604.2 EL2 96.8 ALF 179.24

LAUNCH DATE NOV 12 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 608.033 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.975 GAL -1.50 AZL 88.08 HCA 188.84 SMA 188.14 ECC .21457 INC 1.9231 V1 30.094
RP 228.51 LAP -.30 LOP 238.48 VP 21.358 GAP -.10 AZP 91.90 TAL 351.51 TAP 180.35 RCA 147.77 APO 228.51 V2 24.070
RC 236.623 GL 20.94 GP -.47 ZAL 98.64 ZAP 130.30 ETS 178.99 ZAE 168.30 ETE 175.04 ZAC 89.16 ETC 255.92 CLP 130.30

PLANETOCENTRIC CONIC

C3 9.587 VHL 3.096 DLA 31.32 RAL 159.41 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.418 DPA -2.81 RAP 188.37 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.03	10 42 47	3730.04	-25.54	149.79	17.67	71.23	11 44 57	3130.0	-27.87	141.64
103.97	14 23 29	3021.30	-25.53	97.42	17.67	71.22	15 13 51	2421.3	-27.86	89.27
76.03	10 42 47	3730.04	-25.54	149.79	17.67	71.23	11 44 57	3130.0	-27.87	141.64
103.97	14 23 29	3021.30	-25.53	97.42	17.67	71.22	15 13 51	2421.3	-27.86	89.27
110.00	16 47 56	2572.07	-33.38	65.22	19.79	82.18	17 30 48	1972.1	-34.10	56.05
110.00	13 17 31	3227.27	-18.18	109.56	14.12	60.54	14 11 18	2627.3	-21.96	102.47

DIFFERENTIAL CORRECTIONS
TDE .1034 TRA -.8455 TC3 2.7933 BAU .3584
RDE .0540 RRA .0562 RC3 -.1242 FAU .42088
FDE 2.0879 FRA 5.4734 FC-38.0070 BSP 8698
BDE .1166 BRA .8474 BC3 2.7961 FSP 7833

MID-COURSE EXECUTION ACCURACY
SGT 2526.4 SGR 175.2 SG3 2301.3
RRT -.7609 RRF .7797 RTF -.9167
SGB 2532.5 R23 -.1246 R13 .9170
SG1 2530.0 SG2 113.5 THA 176.97

ORBIT DETERMINATION ACCURACY
ST 584.1 SR 106.4 SS 1564.8
CRT -.0172 CRS -.9180 CST .4044
LSA 1587.6 MSA 529.5 SSA 9.2
EL1 584.1 EL2 106.3 ALF 179.81

LAUNCH DATE NOV 12 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 611.906 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.965 GAL -1.47 AZL 88.08 HCA 189.88 SMA 187.96 ECC .21378 INC 1.9161 V1 30.094
RP 228.12 LAP -.33 LOP 239.52 VP 21.389 GAP -.41 AZP 91.89 TAL 351.62 TAP 181.49 RCA 147.78 APO 228.14 V2 24.111
RC 238.446 GL 20.93 GP -.43 ZAL 98.42 ZAP 128.73 ETS 178.95 ZAE 166.57 ETE 175.34 ZAC 89.09 ETC 255.93 CLP 128.73

PLANETOCENTRIC CONIC

C3 9.508 VHL 3.084 DLA 31.40 RAL 159.18 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.356 DPA -2.55 RAP 187.90 ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.83	10 40 30	3732.66	-25.64	150.03	17.34	71.23	11 42 43	3132.7	-27.96	141.86
104.17	14 23 54	3015.45	-25.63	97.02	17.34	71.21	15 14 10	2415.4	-27.96	88.86
75.83	10 40 30	3732.66	-25.64	150.03	17.34	71.23	11 42 43	3132.7	-27.96	141.86
104.17	14 23 54	3015.45	-25.63	97.02	17.34	71.21	15 14 10	2415.4	-27.96	88.86
110.00	16 45 33	2575.15	-33.36	65.45	19.45	82.05	17 28 28	1975.2	-34.09	56.29
110.00	13 18 2	3220.95	-18.39	109.19	13.86	60.67	14 11 43	2621.0	-22.16	102.08

DIFFERENTIAL CORRECTIONS
TDE .1105 TRA -.8028 TC3 2.5791 BAU .3281
RDE .0591 RRA .0558 RC3 -.1047 FAU .43496
FDE 2.2145 FRA 5.6381 FC-39.6036 BSP 8145
BDE .1253 BRA .8047 BC3 2.5812 FSP .8202

MID-COURSE EXECUTION ACCURACY
SGT 2371.9 SGR 176.0 SG3 2388.3
RRT -.7002 RRF .7234 RTF -.9068
SGB 2378.4 R23 -.1215 R13 .9071
SG1 2375.1 SG2 125.5 THA 177.02

ORBIT DETERMINATION ACCURACY
ST 565.0 SR 115.8 SS 1614.9
CRT .0516 CRS -.9112 CST .3561
LSA 1632.1 MSA 526.0 SSA 10.1
EL1 565.1 EL2 115.6 ALF .63

LAUNCH DATE NOV 12 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 615.789 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.955 GAL -1.45 AZL 88.09 HCA 190.92 SMA 187.79 ECC .21303 INC 1.9091 V1 30.094
RP 227.73 LAP -.36 LOP 240.56 VP 21.420 GAP -.71 AZP 91.87 TAL 351.71 TAP 182.63 RCA 147.78 APO 227.79 V2 24.152
RC 240.248 GL 20.94 GP -.39 ZAL 98.23 ZAP 127.12 ETS 178.91 ZAE 164.79 ETE 175.62 ZAC 88.99 ETC 255.95 CLP 127.12

PLANETOCENTRIC CONIC

C3 9.436 VHL 3.072 DLA 31.48 RAL 158.98 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.296 DPA -2.29 RAP 187.40 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.65	10 38 24	3735.27	-25.74	150.26	17.06	71.22	11 40 39	3135.3	-28.06	142.09
104.35	14 24 24	3009.87	-25.73	96.63	17.06	71.21	15 14 34	2409.9	-28.05	88.46
75.65	10 38 24	3735.27	-25.74	150.26	17.06	71.22	11 40 39	3135.3	-28.06	142.09
104.35	14 24 24	3009.87	-25.73	96.63	17.06	71.21	15 14 34	2409.9	-28.05	88.46
110.00	16 43 18	2578.34	-33.32	65.70	19.14	81.91	17 26 17	1978.3	-34.08	56.54
110.00	13 18 40	3214.80	-18.60	108.83	13.63	60.79	14 12 15	2614.8	-22.34	101.70

DIFFERENTIAL CORRECTIONS
TDE .1210 TRA -.7568 TC3 2.3558 BAU .2974
RDE .0641 RRA .0554 RC3 -.0868 FAU .45079
FDE 2.3071 FRA 5.7692 FC-41.3570 BSP 7491
BDE .1369 BRA .7589 BC3 2.3573 FSP 8499

MID-COURSE EXECUTION ACCURACY
SGT 2210.3 SGR 178.4 SG3 2479.1
RRT -.6358 RRF .6638 RTF -.8938
SGB 2217.5 R23 -.1208 R13 .8942
SG1 2213.2 SG2 137.5 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 547.1 SR 125.0 SS 1646.5
CRT .1296 CRS -.9041 CST .2977
LSA 1659.1 MSA 522.5 SSA 11.1
EL1 547.4 EL2 123.9 ALF 1.79

LAUNCH DATE NOV 12 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 619.682 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.946 GAL -1.44 AZL 88.10 HCA 191.97 SMA 187.63 ECC .21233 INC 1.9039 V1 30.094
RP 227.34 LAP -.39 LOP 241.61 VP 21.453 GAP -1.01 AZP 91.86 TAL 351.78 TAP 183.75 RCA 147.79 APO 227.47 V2 24.193
RC 242.030 GL 20.95 GP -.37 ZAL 98.07 ZAP 125.47 ETS 178.89 ZAE 162.97 ETE 175.87 ZAC 88.89 ETC 255.97 CLP 125.47

PLANETOCENTRIC CONIC

C3 9.371 VHL 3.061 DLA 31.55 RAL 158.81 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.240 DPA -2.01 RAP 186.86 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.47	10 36 30	3737.70	-25.82	150.48	16.81	71.21	11 38 48	3137.7	-28.15	142.30
104.53	14 24 56	3004.71	-25.81	96.27	16.81	71.20	15 15 0	2404.7	-28.14	88.10
75.47	10 36 30	3737.70	-25.82	150.48	16.81	71.21	11 38 48	3137.7	-28.15	142.30
104.53	14 24 56	3004.71	-25.81	96.27	16.81	71.20	15 15 0	2404.7	-28.14	88.10
110.00	16 41 15	2581.44	-33.29	65.94	18.87	81.77	17 24 16	1981.4	-34.07	56.78
110.00	13 19 22	3208.97	-18.79	108.49	13.44	60.91	14 12 51	2609.0	-22.52	101.34

DIFFERENTIAL CORRECTIONS
TDE .1331 TRA -.7107 TC3 2.1027 BAU .2636
RDE .0691 RRA .0553 RC3 -.0689 FAU .46583
FDE 2.4123 FRA 5.9201 FC-43.0366 BSP 6774
BDE .1499 BRA .7129 BC3 2.1039 FSP 8816

MID-COURSE EXECUTION ACCURACY
SGT 2038.6 SGR 182.3 SG3 2568.4
RRT -.5691 RRF .6040 RTF -.8761
SGB 2046.8 R23 -.1249 R13 .8766
SG1 2041.3 SG2 149.7 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 531.8 SR 134.4 SS 1684.7
CRT .2116 CRS -.8989 CST .2289
LSA 1693.8 MSA 519.7 SSA 12.1
EL1 532.6 EL2 131.2 ALF 3.26

LAUNCH DATE NOV 12 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 623.585 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.938 GAL -1.42 AZL 88.10 HCA 193.02 SMA 187.48 ECC .21169 INC 1.8993 V1 30.094
RP 226.95 LAP -.43 LOP 242.66 VP 21.487 GAP -1.30 AZP 91.85 TAL 351.85 TAP 184.86 RCA 147.79 APO 227.17 V2 24.235
RC 243.792 GL 20.96 GP -.34 ZAL 97.93 ZAP 123.78 ETS 178.87 ZAE 161.10 ETE 176.10 ZAC 88.77 ETC 255.99 CLP 123.78

PLANETOCENTRIC CONIC

C3 9.311 VHL 3.051 DLA 31.62 RAL 158.66 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.186 DPA -1.72 RAP 186.29 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.31	10 34 51	3739.84	-25.90	150.67	16.60	71.21	11 37 11	3139.8	-28.23	142.49
104.69	14 25 27	3000.07	-25.89	95.95	16.60	71.19	15 15 27	2400.1	-28.22	87.77
75.31	10 34 51	3739.84	-25.90	150.67	16.60	71.21	11 37 11	3139.8	-28.23	142.49
104.69	14 25 27	3000.07	-25.89	95.95	16.60	71.19	15 15 27	2400.1	-28.22	87.77
110.00	16 39 25	2584.27	-33.27	66.15	18.64	81.64	17 22 29	1984.3	-34.06	57.00
110.00	13 20 4	3203.64	-18.97	108.17	13.28	61.01	14 13 27	2603.6	-22.68	101.01

DIFFERENTIAL CORRECTIONS
TDE .1467 TRA -.6639 TC3 1.8303 BAU .2279
RDE .0741 RRA .0552 RC3 -.0514 FAU .48122
FDE 2.5102 FRA 6.0694 FC-44.7439 BSP 6057
BDE .1643 BRA .6662 BC3 1.8310 FSP 9134

MID-COURSE EXECUTION ACCURACY
SGT 1861.8 SGR 187.5 SG3 2658.7
RRT -.5013 RRF .5446 RTF -.8516
SGB 1871.2 R23 -.1322 R13 .8522
SG1 1864.2 SG2 162.0 THA 177.09

ORBIT DETERMINATION ACCURACY
ST 519.4 SR 143.8 SS 1719.3
CRT .2976 CRS -.8941 CST .1518
LSA 1726.0 MSA 516.9 SSA 13.1
EL1 521.3 EL2 136.8 ALF 5.06

LAUNCH DATE NOV 12 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 627.499 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.930 GAL -1.41 AZL 88.10 HCA 194.07 SMA 187.34 ECC .21108 INC 1.8956 V1 30.094
RP 226.56 LAP -.46 LOP 243.71 VP 21.521 GAP -1.59 AZP 91.84 TAL 351.90 TAP 185.97 RCA 147.80 APO 226.89 V2 24.277
RC 245.534 GL 20.97 GP -.32 ZAL 97.82 ZAP 122.05 ETS 178.86 ZAE 159.19 ETE 176.30 ZAC 88.64 ETC 256.02 CLP 122.05

PLANETOCENTRIC CONIC

C3 9.256 VHL 3.042 DLA 31.67 RAL 158.55 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.136 DPA -1.42 RAP 185.68 ECC 1.1523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.18	10 33 28	3741.61	-25.97	150.83	16.42	71.20	11 35 50	3141.6	-28.30	142.64
104.82	14 25 55	2996.00	-25.96	95.67	16.42	71.19	15 15 51	2396.0	-28.29	87.48
75.18	10 33 28	3741.61	-25.97	150.83	16.42	71.20	11 35 50	3141.6	-28.30	142.64
104.82	14 25 55	2996.00	-25.96	95.67	16.42	71.19	15 15 51	2396.0	-28.29	87.48
110.00	16 37 51	2586.73	-33.24	66.34	18.45	81.53	17 20 57	1986.7	-34.05	57.19
110.00	13 20 44	3198.89	-19.12	107.89	13.15	61.11	14 14 3	2598.9	-22.83	100.71

DIFFERENTIAL CORRECTIONS
TDE .1618 TRA -.6158 TC3 1.5306 BAU .1894
RDE .0790 RRA .0553 RC3 -.0338 FAU .49584
FDE 2.6149 FRA 6.2296 FC-46.3762 BSP 5283
BDE .1801 BRA .6183 BC3 1.5309 FSP 9464

MID-COURSE EXECUTION ACCURACY
SGT 1678.4 SGR 193.7 SG3 2746.6
RRT -.4324 RRF .4872 RTF -.8165
SGB 1689.6 R23 -.1445 R13 .8172
SG1 1680.6 SG2 174.5 THA 177.11

ORBIT DETERMINATION ACCURACY
ST 510.7 SR 153.2 SS 1757.4
CRT .3873 CRS -.8904 CST .0645
LSA 1763.0 MSA 514.1 SSA 14.0
EL1 514.4 EL2 140.3 ALF 7.17

LAUNCH DATE NOV 12 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 631.422 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.922 GAL -1.40 AZL 88.11 HCA 195.13 SMA 187.21 ECC .21052 INC 1.8922 V1 30.094
RP 226.17 LAP -.49 LOP 244.77 VP 21.557 GAP -1.87 AZP 91.83 TAL 351.93 TAP 187.06 RCA 147.80 APO 226.62 V2 24.318
RC 247.256 GL 20.99 GP -.31 ZAL 97.74 ZAP 120.29 ETS 178.85 ZAE 157.23 ETE 176.49 ZAC 88.50 ETC 256.05 CLP 120.29

PLANETOCENTRIC CONIC

C3 9.206 VHL 3.034 DLA 31.72 RAL 158.47 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.089 DPA -1.11 RAP 185.05 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.07	10 32 21	3743.01	-26.03	150.96	16.28	71.20	11 34 44	3143.0	-28.36	142.77
104.93	14 26 22	2992.51	-26.03	95.43	16.27	71.19	15 16 15	2392.5	-28.35	87.24
75.07	10 32 21	3743.01	-26.03	150.96	16.28	71.20	11 34 44	3143.0	-28.36	142.77
104.93	14 26 22	2992.51	-26.03	95.43	16.27	71.19	15 16 15	2392.5	-28.35	87.24
110.00	16 36 34	2588.70	-33.22	66.49	18.29	81.45	17 19 43	1988.7	-34.05	57.35
110.00	13 21 20	3194.81	-19.26	107.65	13.04	61.20	14 14 35	2594.8	-22.95	100.46

DIFFERENTIAL CORRECTIONS
TDE .1777 TRA -.5672 TC3 1.2068 BAU .1485
RDE .0839 RRA .0555 RC3 -.0163 FAU .51040
FDE 2.7127 FRA 6.3884 FC-47.9971 BSP 4489
BDE .1965 BRA .5699 BC3 1.2069 FSP 9787

MID-COURSE EXECUTION ACCURACY
SGT 1494.8 SGR 200.9 SG3 2833.8
RRT -.3634 RRF .4319 RTF -.7542
SGB 1508.3 R23 -.1607 R13 .7653
SG1 1496.7 SG2 186.9 THA 177.16

ORBIT DETERMINATION ACCURACY
ST 505.8 SR 162.7 SS 1792.3
CRT .4764 CRS -.8869 CST -.0272
LSA 1798.2 MSA 510.8 SSA 15.0
EL1 512.2 EL2 141.2 ALF 9.44

LAUNCH DATE NOV 12 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 635.356 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.915 GAL -1.39 AZL 88.11 HCA 196.19 SMA 187.09 ECC .21000 INC 1.8890 V1 30.094
RP 225.78 LAP -.53 LOP 245.83 VP 21.594 GAP -2.15 AZP 91.81 TAL 351.96 TAP 188.15 RCA 147.80 APO 226.38 V2 24.360
RC 248.959 GL 21.01 GP -.29 ZAL 97.68 ZAP 118.48 ETS 178.85 ZAE 155.24 ETE 176.65 ZAC 88.36 ETC 256.08 CLP 118.48

PLANETOCENTRIC CONIC

C3 9.161 VHL 3.027 DLA 31.76 RAL 158.41 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.045 DPA -.79 RAP 184.38 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.98	10 31 33	3743.88	-26.09	151.04	16.16	71.21	11 33 57	3143.9	-28.41	142.85
105.02	14 26 44	2989.72	-26.08	95.24	16.16	71.19	15 16 33	2389.7	-28.40	87.04
74.98	10 31 33	3743.88	-26.09	151.04	16.16	71.21	11 33 57	3143.9	-28.41	142.85
105.02	14 26 44	2989.72	-26.08	95.24	16.16	71.19	15 16 33	2389.7	-28.40	87.04
110.00	16 35 36	2590.14	-33.21	66.60	18.16	81.38	17 18 46	1990.1	-34.04	57.46
110.00	13 21 51	3191.46	-19.37	107.46	12.96	61.27	14 15 2	2591.5	-23.05	100.25

DIFFERENTIAL CORRECTIONS
TDE .1964 TRA -.5165 TC3 .8657 BAU .1060
RDE .0887 RRA .0556 RC3 .0012 FAU .52503
FDE 2.7947 FRA 6.5414 FC-49.6177 BSP 3596
BDE .2154 BRA .5195 BC3 .8657 FSP 10067

MID-COURSE EXECUTION ACCURACY
SGT 1317.3 SGR 208.6 SG3 2920.0
RRT -.2900 RRF .3788 RTF -.6856
SGB 1333.7 R23 -.1832 R13 .6869
SG1 1318.7 SG2 199.4 THA 177.31

ORBIT DETERMINATION ACCURACY
ST 507.4 SR 171.9 SS 1820.5
CRT .5683 CRS -.8829 CST -.1267
LSA 1828.1 MSA 508.8 SSA 15.9
EL1 517.4 EL2 138.7 ALF 11.76

LAUNCH DATE NOV 12 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 639.299 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.909 GAL -1.39 AZL 88.11 HCA 197.26 SMA 186.98 ECC .20952 INC 1.8866 V1 30.094
RP 225.38 LAP -.56 LOP 246.90 VP 21.631 GAP -2.42 AZP 91.80 TAL 351.97 TAP 189.22 RCA 147.80 APO 226.16 V2 24.402
RC 250.643 GL 21.02 GP -.28 ZAL 97.64 ZAP 116.64 ETS 178.85 ZAE 153.21 ETE 176.81 ZAC 88.20 ETC 256.12 CLP 116.64

PLANETOCENTRIC CONIC

C3 9.120 VHL 3.020 DLA 31.79 RAL 158.38 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.004 DPA -.45 RAP 183.68 ECC 1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.92	10 31 1	3744.31	-26.13	151.09	16.08	71.22	11 33 26	3144.3	-28.44	142.89
105.08	14 27 2	2987.55	-26.12	95.09	16.08	71.20	15 16 50	2387.6	-28.44	86.89
74.92	10 31 1	3744.31	-26.13	151.09	16.08	71.22	11 33 26	3144.3	-28.44	142.89
105.08	14 27 2	2987.55	-26.12	95.09	16.08	71.20	15 16 50	2387.6	-28.44	86.89
110.00	16 34 58	2590.96	-33.20	66.66	18.07	81.35	17 18 9	1991.0	-34.04	57.52
110.00	13 22 16	3188.91	-19.45	107.30	12.90	61.32	14 15 25	2588.9	-23.12	100.09

DIFFERENTIAL CORRECTIONS
TDE .2171 TRA -.4637 TC3 .5012 BAU .0611
RDE .0934 RRA .0558 RC3 .0188 FAU .53853
FDE 2.8792 FRA 6.7011 FC-51.1231 BSP 2711
BDE .2363 BRA .4670 BC3 .5015 FSP 10387

MID-COURSE EXECUTION ACCURACY
SGT 1154.3 SGR 217.0 SG3 3001.6
RRT -.2100 RRF .3293 RTF -.5630
SGB 1174.5 R23 -.2117 R13 .5646
SG1 1155.2 SG2 211.9 THA 177.66

ORBIT DETERMINATION ACCURACY
ST 515.9 SR 181.1 SS 1850.6
CRT .6570 CRS -.8794 CST -.2307
LSA 1861.6 MSA 507.4 SSA 16.8
EL1 530.4 EL2 132.8 ALF 13.87

LAUNCH DATE NOV 12 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 643.252 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.903 GAL -1.39 AZL 88.12 HCA 198.33 SMA 186.88 ECC .20909 INC 1.8845 V1 30.094
RP 224.99 LAP -.59 LOP 247.97 VP 21.669 GAP -2.69 AZP 91.79 TAL 351.96 TAP 190.29 RCA 147.80 APO 225.95 V2 24.444
RC 252.307 GL 21.03 GP -.27 ZAL 97.64 ZAP 114.77 ETS 178.85 ZAE 151.14 ETE 176.95 ZAC 88.04 ETC 256.16 CLP 114.77

PLANETOCENTRIC CONIC

C3 9.083 VHL 3.014 DLA 31.80 RAL 158.39 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.967 DPA -.11 RAP 182.96 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.88	10 30 48	3744.25	-26.16	151.10	16.03	71.23	11 33 12	3144.3	-28.47	142.90
105.12	14 27 16	2986.04	-26.14	94.98	16.03	71.22	15 17 2	2386.0	-28.46	86.78
74.88	10 30 48	3744.25	-26.16	151.10	16.03	71.23	11 33 12	3144.3	-28.47	142.90
105.12	14 27 16	2986.04	-26.14	94.98	16.03	71.22	15 17 2	2386.0	-28.46	86.78
110.00	16 34 41	2591.12	-33.20	66.67	18.01	81.34	17 17 52	1991.1	-34.04	57.53
110.00	13 22 34	3187.17	-19.51	107.20	12.87	61.36	14 15 41	2587.2	-23.18	99.99

DIFFERENTIAL CORRECTIONS
TDE .2379 TRA -.4098 TC3 .1164 BAU .0148
RDE .0981 RRA .0561 RC3 .0364 FAU .55152
FDE 2.9640 FRA 6.8636 FC-52.5692 BSP 1743
BDE .2573 BRA .4136 BC3 .1220 FSP 10676

MID-COURSE EXECUTION ACCURACY
SGT 1024.6 SGR 225.9 SG3 3080.9
RRT -.1260 RRF .2833 RTF -.3763
SGB 1049.2 R23 -.2354 R13 .3778
SG1 1025.0 SG2 224.0 THA 178.33

ORBIT DETERMINATION ACCURACY
ST 529.3 SR 199.3 SS 1881.3
CRT .7347 CRS -.8763 CST -.3294
LSA 1897.6 MSA 504.7 SSA 17.7
EL1 548.6 EL2 124.6 ALF 15.62

LAUNCH DATE NOV 12 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 647.214 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.898 GAL -1.39 AZL 88.12 HCA 199.40 SMA 186.78 ECC .20869 INC 1.8824 V1 30.094
RP 224.60 LAP -.63 LOP 249.04 VP 21.708 GAP -2.95 AZP 91.78 TAL 351.94 TAP 191.34 RCA 147.80 APO 225.76 V2 24.486
RC 253.951 GL 21.05 GP -.26 ZAL 97.66 ZAP 112.87 ETS 178.85 ZAE 149.03 ETE 177.08 ZAC 87.87 ETC 256.20 CLP 112.87

PLANETOCENTRIC CONIC

C3 9.050 VHL 3.008 DLA 31.80 RAL 158.41 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.932 DPA .25 RAP 182.21 ECC 1.1489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.88	10 30 52	3743.68	-26.17	151.06	16.01	71.25	11 33 16	3143.7	-28.49	142.86
105.12	14 27 26	2985.20	-26.16	94.93	16.01	71.24	15 17 11	2385.2	-28.48	86.72
74.88	10 30 52	3743.68	-26.17	151.06	16.01	71.25	11 33 16	3143.7	-28.49	142.86
105.12	14 27 26	2985.20	-26.16	94.93	16.01	71.24	15 17 11	2385.2	-28.48	86.72
110.00	16 34 44	2590.59	-33.20	66.63	17.98	81.36	17 17 55	1990.6	-34.04	57.49
110.00	13 22 44	3186.29	-19.54	107.15	12.85	61.38	14 15 50	2586.3	-23.20	99.93

DIFFERENTIAL CORRECTIONS
TDE .2609 TRA -.3537 TC3 -.2917 BAU .0359
RDE .1028 RRA .0564 RC3 .0542 FAU .56379
FDE 3.0291 FRA 7.0169 FC-53.9354 BSP 754
BDE .2804 BRA .3582 BC3 .2966 FSP 10947

MID-COURSE EXECUTION ACCURACY
SGT 952.0 SGR 235.2 SG3 3155.2
RRT -.0386 RRF .2396 RTF -.1123
SGB 980.6 R23 -.2352 R13 .1129
SG1 952.0 SG2 235.0 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 551.0 SR 199.3 SS 1904.3
CRT .8034 CRS -.8723 CST -.4227
LSA 1927.6 MSA 503.4 SSA 18.5
EL1 574.8 EL2 113.8 ALF 16.89

LAUNCH DATE NOV 12 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG. 27 1965

HELIOCENTRIC CONIC DISTANCE 651.185 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.892	GAL	-1.39	AZL	88.12	HCA	200.48	SMA	186.69	ECC	.20833	INC	1.8808
RP	224.21	LAP	-.66	LOP	250.12	VP	21.748	GAP	-3.21	AZP	91.76	TAL	351.91	TAP	192.39	RCA	147.80	APO	225.59
RC	255.576	GL	21.06	GP	-.25	ZAL	97.71	ZAP	110.94	ETS	178.86	ZAE	146.89	ETE	177.20	ZAC	87.69	ETC	256.25

V1	30.094	V2	24.527	CLP	110.94														

PLANETOCENTRIC CONIC

C3	9.020	VHL	3.003	DLA	31.79	RAL	158.47	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.902	DPA	.61	RAP	181.44
ECC	1.1485																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.90	10 31 15	3742.58	-26.18	150.98	16.02	71.28	11 33 38	3142.6	-28.49	142.77
105.10	14 27 31	2985.05	-26.17	94.92	16.02	71.26	15 17 16	2385.1	-28.48	86.71
74.90	10 31 15	3742.58	-26.18	150.98	16.02	71.28	11 33 38	3142.6	-28.49	142.77
105.10	14 27 31	2985.05	-26.17	94.92	16.02	71.26	15 17 16	2385.1	-28.48	86.71
110.00	16 35 10	2589.34	-33.22	66.54	17.99	81.42	17 18 19	1989.3	-34.04	57.40
110.00	13 22 46	3186.29	-19.54	107.15	12.86	61.38	14 15 53	2586.3	-23.20	99.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2848	TRA	-.2963	TC3	-.7170	BAU	.0869	SGT	960.8	SGR	245.0	SG3	3225.3	ST	578.9	SR	208.3	SS	1927.9
RDE	.1074	RRA	.0567	RC3	.0719	FAU	.57512	RRT	.0339	RRF	.1996	RTF	.1888	CRT	.8592	CRS	-.8685	CST	-.5062
FDE	3.0922	FRA	7.1757	FC-	55.1976	BSP	342	SGB	991.5	R23	.1929	R13	.1893	LSA	1960.3	MSA	502.0	SSA	19.4
BDE	.3044	BRA	.3017	BC3	.7206	FSP	11210	SG1	960.8	SG2	244.8	THA	.53	EL1	606.8	EL2	101.7	ALF	17.70

LAUNCH DATE NOV 12 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 655.166 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.888	GAL	-1.40	AZL	88.12	HCA	201.56	SMA	186.61	ECC	.20800	INC	1.8788
RP	223.82	LAP	-.69	LOP	251.19	VP	21.788	GAP	-3.46	AZP	91.75	TAL	351.87	TAP	193.42	RCA	147.80	APO	225.43
RC	257.180	GL	21.07	GP	-.24	ZAL	97.78	ZAP	108.98	ETS	178.87	ZAE	144.73	ETE	177.31	ZAC	87.51	ETC	256.31

V1	30.094	V2	24.569	CLP	108.98														

PLANETOCENTRIC CONIC

C3	8.995	VHL	2.999	DLA	31.77	RAL	158.56	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	2.874	DPA	.99	RAP	180.64
ECC	1.1480																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.95	10 31 56	3740.97	-26.17	150.86	16.06	71.31	11 34 17	3141.0	-28.48	142.65
105.05	14 27 31	2985.57	-26.16	94.95	16.06	71.30	15 17 16	2385.6	-28.47	86.75
74.95	10 31 56	3740.97	-26.17	150.86	16.06	71.31	11 34 17	3141.0	-28.48	142.65
105.05	14 27 31	2985.57	-26.16	94.95	16.06	71.30	15 17 16	2385.6	-28.47	86.75
110.00	16 35 57	2587.36	-33.24	66.39	18.03	81.51	17 19 5	1987.4	-34.05	57.24
110.00	13 22 40	3187.18	-19.51	107.20	12.89	61.36	14 15 47	2587.2	-23.18	99.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3099	TRA	-.2372	TC3	-1.1594	BAU	.1398	SGT	1057.4	SGR	255.0	SG3	3291.1	ST	613.6	SR	217.2	SS	1940.9
RDE	.1119	RRA	.0571	RC3	.0896	FAU	.58604	RRT	.0773	RRF	.1615	RTF	.4544	CRT	.9032	CRS	-.8633	CST	-.5776
FDE	3.1279	FRA	7.3193	FC-	56.4053	BSP	1368	SGB	1087.7	R23	.1247	R13	.4550	LSA	1984.5	MSA	501.8	SSA	20.3
BDE	.3295	BRA	.2439	BC3	1.1629	FSP	11444	SG1	1057.6	SG2	254.2	THA	1.13	EL1	644.8	EL2	88.7	ALF	18.08

LAUNCH DATE NOV 12 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 659.156 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.884	GAL	-1.41	AZL	88.12	HCA	202.64	SMA	186.54	ECC	.20771	INC	1.8772
RP	223.44	LAP	-.72	LOP	252.28	VP	21.829	GAP	-3.71	AZP	91.73	TAL	351.81	TAP	194.45	RCA	147.80	APO	225.29
RC	258.763	GL	21.07	GP	-.23	ZAL	97.89	ZAP	107.01	ETS	178.88	ZAE	142.54	ETE	177.42	ZAC	87.33	ETC	256.36

V1	30.094	V2	24.611	CLP	107.01														

PLANETOCENTRIC CONIC

C3	8.973	VHL	2.995	DLA	31.74	RAL	158.67	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.850	DPA	1.37	RAP	179.84
ECC	1.1477																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.03	10 32 58	3738.71	-26.16	150.68	16.13	71.35	11 35 17	3138.7	-28.45	142.47
104.97	14 27 24	2986.88	-26.14	95.05	16.13	71.34	15 17 11	2386.9	-28.45	86.84
75.03	10 32 58	3738.71	-26.16	150.68	16.13	71.35	11 35 17	3138.7	-28.45	142.47
104.97	14 27 24	2986.88	-26.14	95.05	16.13	71.34	15 17 11	2386.9	-28.45	86.84
110.00	16 37 6	2584.64	-33.26	66.18	18.10	81.63	17 20 11	1984.6	-34.06	57.03
110.00	13 22 26	3188.95	-19.45	107.31	12.94	61.32	14 15 35	2589.0	-23.12	100.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3359	TRA	-.1755	TC3	-1.6166	BAU	.1943	SGT	1227.4	SGR	265.2	SG3	3351.3	ST	654.0	SR	226.0	SS	1949.2
RDE	.1164	RRA	.0574	RC3	.1070	FAU	.59615	RRT	.0920	RRF	.1260	RTF	.6434	CRT	.9365	CRS	-.8578	CST	-.6388
FDE	3.1505	FRA	7.4508	FC-	57.5196	BSP	2506	SGB	1255.7	R23	.0642	R13	.6437	LSA	2006.4	MSA	501.8	SSA	21.1
BDE	.3555	BRA	.1846	BC3	1.6202	FSP	11617	SG1	1227.7	SG2	264.0	THA	1.19	EL1	687.8	EL2	75.4	ALF	18.16

LAUNCH DATE NOV 12 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 663.155 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.880	GAL	-1.42	AZL	88.12	HCA	203.73	SMA	186.48	ECC	.20745	INC	1.8759
RP	223.05	LAP	-.75	LOP	253.37	VP	21.870	GAP	-3.95	AZP	91.72	TAL	351.73	TAP	195.46	RCA	147.79	APO	225.16
RC	260.326	GL	21.08	GP	-.22	ZAL	98.01	ZAP	105.01	ETS	178.89	ZAE	140.33	ETE	177.52	ZAC	87.14	ETC	256.42

V1	30.094	V2	24.653	CLP	105.01														

PLANETOCENTRIC CONIC

C3	8.954	VHL	2.992	DLA	31.69	RAL	158.81	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.829	DPA	1.75	RAP	179.02
ECC	1.1474																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.15	10 34 18	3735.91	-26.13	150.45	16.23	71.40	11 36 34	3135.9	-28.42	142.25
104.85	14 27 12	2988.89	-26.12	95.19	16.23	71.38	15 17 1	2388.9	-28.41	86.98
75.15	10 34 18	3735.91	-26.13	150.45	16.23	71.40	11 36 34	3135.9	-28.42	142.25
104.85	14 27 12	2988.89	-26.12	95.19	16.23	71.38	15 17 1	2388.9	-28.41	86.98
110.00	16 38 37	2581.20	-33.30	65.92	18.20	81.78	17 21 38	1981.2	-34.07	56.76
110.00	13 22 3	3191.60	-19.36	107.46	13.02	61.26	14 15 15	2591.6	-23.04	100.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3627	TRA	-.1115	TC3	-2.0858	BAU	.2501	SGT	1450.4	SGR	275.6	SG3	3406.0	ST	699.6	SR	234.6	SS	1954.1
RDE	.1208	RRA	.0578	RC3	.1243	FAU	.60528	RRT	.0880	RRF	.0932	RTF	.7634	CRT	.9605	CRS	-.8517	CST	-.6898
FDE	3.1607	FRA	7.5776	FC-	58.5219	BSP	3668	SGB	1476.3	R23	.0236	R13	.7635	LSA	2027.3	MSA	502.4	SSA	21.9
BDE	.3823	BRA	.1256	BC3	2.0895	FSP	11781	SG1	1450.6	SG2	274.5	THA	.99	EL1	735.3	EL2	62.1	ALF	17.99

LAUNCH DATE NOV 12 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 667.161 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.876 GAL -1.43 AZL 88.13 HCA 204.82 SMA 186.42 ECC .20723 INC 1.8744 V1 30.094
RP 222.66 LAP -.79 LOP 254.46 VP 21.912 GAP -4.19 AZP 91.70 TAL 351.65 TAP 196.47 RCA 147.79 APO 225.05 V2 24.695
RC 261.869 GL 21.08 GP -.21 ZAL 98.17 ZAP 103.00 ETS 178.91 ZAE 138.10 ETE 177.61 ZAC 86.95 ETC 256.49 CLP 103.00

PLANETOCENTRIC CONIC

C3 8.939 VHL 2.990 DLA 31.63 RAL 158.99 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.812 DPA 2.14 RAP 178.19 ECC 1.1471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.29	10 35 59	3732.45	-26.08	150.18	16.36	71.45	11 38 12	3132.4	-28.37	141.97
104.71	14 26 53	2991.71	-26.07	95.39	16.36	71.43	15 16 45	2391.7	-28.36	87.18
75.29	10 35 59	3732.45	-26.08	150.18	16.36	71.45	11 38 12	3132.4	-28.37	141.97
104.71	14 26 53	2991.71	-26.07	95.39	16.36	71.43	15 16 45	2391.7	-28.36	87.18
110.00	16 40 31	2576.99	-33.34	65.59	18.33	81.97	17 23 28	1977.0	-34.09	56.43
110.00	13 21 32	3195.16	-19.25	107.67	13.11	61.19	14 14 47	2595.2	-22.94	100.48

DIFFERENTIAL CORRECTIONS
TDE .3876 TRA -.0476 TC3-2.5831 BAU .3092
RDE .1254 RRA .0583 RC3 .1419 FAU .61113
FDE 3.1961 FRA 7.7371 FC-59.1868 BSP 4796
BDE .4074 BRA .0753 BC3 2.5870 FSP 12009

MID-COURSE EXECUTION ACCURACY
SGT 1717.2 SGR 286.6 SG3 3448.8
RRT .0676 RRF .0659 RTF .8367
SGB 1741.0 R23 .0077 R13 .8367
SG1 1717.4 SG2 285.9 THA .67

ORBIT DETERMINATION ACCURACY
ST 744.9 SR 243.5 SS 1972.8
CRT .9763 CRS -.8470 CST -.7325
LSA 2062.9 MSA 500.3 SSA 22.7
EL1 782.1 EL2 50.2 ALF 17.77

LAUNCH DATE NOV 12 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 671.179 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.873 GAL -1.45 AZL 88.13 HCA 205.92 SMA 186.36 ECC .20704 INC 1.8733 V1 30.094
RP 222.28 LAP -.82 LOP 255.55 VP 21.955 GAP -4.43 AZP 91.69 TAL 351.54 TAP 197.46 RCA 147.78 APO 224.95 V2 24.737
RC 263.392 GL 21.07 GP -.21 ZAL 98.36 ZAP 100.98 ETS 178.92 ZAE 135.86 ETE 177.70 ZAC 86.76 ETC 256.56 CLP 100.98

PLANETOCENTRIC CONIC

C3 8.927 VHL 2.988 DLA 31.55 RAL 159.18 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.798 DPA 2.53 RAP 177.35 ECC 1.1469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.47	10 38 0	3728.34	-26.03	149.85	16.52	71.51	11 40 8	3128.3	-28.31	141.64
104.53	14 26 26	2995.31	-26.02	95.64	16.51	71.49	15 16 22	2395.3	-28.30	87.44
75.47	10 38 0	3728.34	-26.03	149.85	16.52	71.51	11 40 8	3128.3	-28.31	141.64
104.53	14 26 26	2995.31	-26.02	95.64	16.51	71.49	15 16 22	2395.3	-28.30	87.44
110.00	16 42 43	2572.12	-33.38	65.22	18.49	82.18	17 25 36	1972.1	-34.10	56.06
110.00	13 20 53	3199.52	-19.10	107.93	13.23	61.10	14 14 13	2599.5	-22.81	100.75

DIFFERENTIAL CORRECTIONS
TDE .4160 TRA .0215 TC3-3.0733 BAU .3673
RDE .1297 RRA .0587 RC3 .1586 FAU .61881
FDE 3.1449 FRA 7.8166 FC-60.0100 BSP 6046
BDE .4357 BRA .0625 BC3 3.0773 FSP 12040

MID-COURSE EXECUTION ACCURACY
SGT 2002.8 SGR 297.1 SG3 3490.1
RRT .0517 RRF .0355 RTF .8840
SGB 2024.8 R23 -.0112 R13 .8840
SG1 2002.9 SG2 296.7 THA .45

ORBIT DETERMINATION ACCURACY
ST 799.7 SR 251.9 SS 1954.7
CRT .9870 CRS -.8378 CST -.7650
LSA 2066.2 MSA 504.0 SSA 23.4
EL1 837.6 EL2 38.6 ALF 17.31

LAUNCH DATE NOV 12 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 675.205 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.871 GAL -1.47 AZL 88.13 HCA 207.01 SMA 186.32 ECC .20689 INC 1.8722 V1 30.094
RP 221.89 LAP -.85 LOP 256.65 VP 21.998 GAP -4.66 AZP 91.67 TAL 351.43 TAP 198.44 RCA 147.77 APO 224.87 V2 24.779
RC 264.895 GL 21.07 GP -.20 ZAL 98.57 ZAP 95.96 ETS 178.94 ZAE 133.60 ETE 177.78 ZAC 86.57 ETC 256.63 CLP 98.96

PLANETOCENTRIC CONIC

C3 8.919 VHL 2.986 DLA 31.46 RAL 159.41 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.788 DPA 2.92 RAP 176.51 ECC 1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.68	10 40 22	3723.58	-25.96	149.46	16.70	71.57	11 42 25	3123.6	-28.23	141.26
104.32	14 25 53	2999.71	-25.95	95.95	16.70	71.56	15 15 53	2399.7	-28.23	87.75
75.68	10 40 22	3723.58	-25.96	149.46	16.70	71.57	11 42 25	3123.6	-28.23	141.26
104.32	14 25 53	2999.71	-25.95	95.95	16.70	71.56	15 15 53	2399.7	-28.23	87.75
110.00	16 45 18	2566.54	-33.43	64.79	18.69	82.43	17 28 4	1966.5	-34.12	55.62
110.00	13 20 7	3204.75	-18.93	108.24	13.36	60.99	14 13 32	2604.8	-22.65	101.08

DIFFERENTIAL CORRECTIONS
TDE .4422 TRA .0914 TC3-3.5841 BAU .4279
RDE .1341 RRA .0592 RC3 .1753 FAU .62359
FDE 3.1205 FRA 7.9170 FC-60.5296 BSP 7265
BDE .4621 BRA .1089 BC3 3.5884 FSP 12130

MID-COURSE EXECUTION ACCURACY
SGT 2311.9 SGR 308.1 SG3 3520.2
RRT .0303 RRF .0102 RTF .9145
SGB 2332.3 R23 -.0180 R13 .9144
SG1 2311.9 SG2 307.9 THA .24

ORBIT DETERMINATION ACCURACY
ST 853.1 SR 260.4 SS 1950.1
CRT .9929 CRS -.8303 CST -.7932
LSA 2084.1 MSA 504.3 SSA 24.2
EL1 891.4 EL2 29.7 ALF 16.88

LAUNCH DATE NOV 12 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 679.238 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.868 GAL -1.49 AZL 88.13 HCA 208.12 SMA 186.28 ECC .20676 INC 1.8713 V1 30.094
RP 221.51 LAP -.88 LOP 257.75 VP 22.041 GAP -4.88 AZP 91.65 TAL 351.30 TAP 199.42 RCA 147.76 APO 224.79 V2 24.820
RC 266.379 GL 21.06 GP -.19 ZAL 98.81 ZAP 96.93 ETS 178.95 ZAE 131.35 ETE 177.86 ZAC 86.38 ETC 256.71 CLP 96.93

PLANETOCENTRIC CONIC

C3 8.914 VHL 2.986 DLA 31.36 RAL 159.66 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.780 DPA 3.31 RAP 175.67 ECC 1.1467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.93	10 43 6	3718.03	-25.88	149.01	16.92	71.65	11 45 4	3118.0	-28.15	140.81
104.07	14 25 10	3005.05	-25.87	96.32	16.92	71.63	15 15 15	2405.1	-28.14	88.12
75.93	10 43 6	3718.03	-25.88	149.01	16.92	71.65	11 45 4	3118.0	-28.15	140.81
104.07	14 25 10	3005.05	-25.87	96.32	16.92	71.63	15 15 15	2405.1	-28.14	88.12
110.00	16 48 12	2560.28	-33.49	64.31	18.91	82.71	17 30 53	1960.3	-34.13	55.13
110.00	13 19 14	3210.80	-18.73	108.59	13.52	60.87	14 12 45	2610.8	-22.47	101.45

DIFFERENTIAL CORRECTIONS
TDE .4687 TRA .1631 TC3-4.1001 BAU .4892
RDE .1385 RRA .0598 RC3 .1916 FAU .62651
FDE 3.0808 FRA 8.0250 FC-60.8462 BSP 8509
BDE .4887 BRA .1737 BC3 4.1046 FSP 12206

MID-COURSE EXECUTION ACCURACY
SGT 2633.9 SGR 319.1 SG3 3541.7
RRT .0097 RRF -.0124 RTF .9344
SGB 2653.2 R23 -.0216 R13 .9344
SG1 2633.9 SG2 319.1 THA .07

ORBIT DETERMINATION ACCURACY
ST 909.1 SR 268.9 SS 1943.0
CRT .9952 CRS -.8213 CST -.8150
LSA 2101.6 MSA 506.8 SSA 24.9
EL1 947.7 EL2 25.2 ALF 16.41

LAUNCH DATE NOV 12 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 683.281 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.866	GAL	-1.51	AZL	88.13	HCA	209.22	SMA	186.24	ECC	.20667	INC	1.8702
RP	221.13	LAP	-.91	LOP	258.86	VP	22.085	GAP	-5.10	AZP	91.63	TAL	351.15	TAP	200.38	RCA	147.75	APO	224.73
RC	267.844	GL	21.05	GP	-.19	ZAL	99.08	ZAP	94.90	ETS	178.97	ZAE	129.09	ETE	177.94	ZAC	86.19	ETC	256.79

V1	30.094	V2	24.862	CLP	94.90														

PLANETOCENTRIC CONIC

C3	8.913	VHL	2.985	DLA	31.24	RAL	159.94	RAD	6567.3	VEL	11.415	PTH	1.98	VHP	2.777	DPA	3.70	RAP	174.83
ECC	1.1467																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.22	10 46 13	3711.71	-25.79	148.50	17.16	71.72	11 48 5	3111.7	-28.04	140.31
103.78	14 24 17	3011.30	-25.78	96.76	17.16	71.71	15 14 28	2411.3	-28.04	88.57
76.22	10 46 13	3711.71	-25.79	148.50	17.16	71.72	11 48 5	3111.7	-28.04	140.31
103.78	14 24 17	3011.30	-25.78	96.76	17.16	71.71	15 14 28	2411.3	-28.04	88.57
110.00	16 51 27	2553.38	-33.55	63.78	19.16	83.02	17 34 0	1953.4	-34.15	54.59
110.00	13 18 15	3217.63	-18.50	108.99	13.70	60.73	14 11 52	2617.6	-22.26	101.87

DIFFERENTIAL CORRECTIONS

TDE	.4936	TRA	.2368	TC3	-4.6240	BAU	.5515
RDE	.1429	RRA	.0604	RC3	.2076	FAU	.62831
FDE	3.0261	FRA	8.1088	FC	-61.0319	BSP	9758
BDE	.5139	BRA	.2444	BC3	4.6286	FSP	12233

MID-COURSE EXECUTION ACCURACY

SGT	2966.9	SGR	330.1	SG3	3555.0		
RRT	-.0105	RRF	-.0335	RTF	.9485		
SGB	2985.2	RZ3	.0234	R13	-.9485		
SG1	2966.9	SG2	330.1	THA	179.93		

ORBIT DETERMINATION ACCURACY

ST	964.2	SR	277.3	SS	1930.3
CRT	.9949	CRS	-.8117	CST	-.8330
LSA	2115.1	MSA	508.2	SSA	25.6
EL1	1002.9	EL2	27.0	ALF	15.98

LAUNCH DATE NOV 12 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 687.331 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.865	GAL	-1.54	AZL	88.13	HCA	210.34	SMA	186.22	ECC	.20660	INC	1.8693
RP	220.75	LAP	-.94	LOP	259.97	VP	22.129	GAP	-5.32	AZP	91.61	TAL	350.99	TAP	201.33	RCA	147.74	APO	224.69
RC	269.292	GL	21.04	GP	-.18	ZAL	99.37	ZAP	92.89	ETS	178.99	ZAE	126.84	ETE	178.01	ZAC	86.01	ETC	256.87

V1	30.094	V2	24.903	CLP	92.89														

PLANETOCENTRIC CONIC

C3	8.915	VHL	2.986	DLA	31.11	RAL	160.25	RAD	6567.3	VEL	11.415	PTH	1.98	VHP	2.776	DPA	4.08	RAP	174.00
ECC	1.1467																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.54	10 49 46	3704.47	-25.68	147.91	17.44	71.81	11 51 31	3104.5	-27.93	139.73
103.46	14 23 12	3018.63	-25.68	97.27	17.43	71.80	15 13 31	2418.6	-27.92	89.09
76.54	10 49 46	3704.47	-25.68	147.91	17.44	71.81	11 51 31	3104.5	-27.93	139.73
103.46	14 23 12	3018.63	-25.68	97.27	17.43	71.80	15 13 31	2418.6	-27.92	89.09
110.00	16 54 59	2545.87	-33.61	63.21	19.44	83.36	17 37 25	1945.9	-34.16	54.01
110.00	13 17 9	3225.23	-18.25	109.44	13.90	60.58	14 10 54	2625.2	-22.03	102.34

DIFFERENTIAL CORRECTIONS

TDE	.5183	TRA	.3129	TC3	-5.1499	BAU	.6143
RDE	.1473	RRA	.0611	RC3	.2231	FAU	.62839
FDE	2.9538	FRA	8.1880	FC	-61.0254	BSP	11022
BDE	.5388	BRA	.3188	BC3	5.1548	FSP	12235

MID-COURSE EXECUTION ACCURACY

SGT	3307.3	SGR	341.2	SG3	3559.1		
RRT	-.0288	RRF	-.0325	RTF	.9584		
SGB	3324.9	RZ3	.0247	R13	-.9584		
SG1	3307.3	SG2	341.0	THA	179.83		

ORBIT DETERMINATION ACCURACY

ST	1020.7	SR	285.6	SS	1913.4
CRT	.9925	CRS	-.8005	CST	-.8470
LSA	2126.6	MSA	511.5	SSA	26.2
EL1	1059.4	EL2	33.6	ALF	15.54

LAUNCH DATE NOV 12 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 691.388 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.863	GAL	-1.57	AZL	88.13	HCA	211.45	SMA	186.19	ECC	.20657	INC	1.8686
RP	220.37	LAP	-.97	LOP	261.09	VP	22.174	GAP	-5.53	AZP	91.59	TAL	350.82	TAP	202.27	RCA	147.73	APO	224.65
RC	270.721	GL	21.02	GP	-.17	ZAL	99.69	ZAP	90.88	ETS	179.00	ZAE	124.59	ETE	178.08	ZAC	85.83	ETC	256.96

V1	30.094	V2	24.944	CLP	90.88														

PLANETOCENTRIC CONIC

C3	8.920	VHL	2.987	DLA	30.96	RAL	160.59	RAD	6567.3	VEL	11.415	PTH	1.98	VHP	2.779	DPA	4.45	RAP	173.19
ECC	1.1468																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.92	10 53 47	3696.16	-25.57	147.25	17.74	71.91	11 55 23	3096.2	-27.80	139.06
103.08	14 21 53	3027.17	-25.56	97.87	17.74	71.89	15 12 20	2427.2	-27.79	89.69
76.92	10 53 47	3696.16	-25.57	147.25	17.74	71.91	11 55 23	3096.2	-27.80	139.06
103.08	14 21 53	3027.17	-25.56	97.87	17.74	71.89	15 12 20	2427.2	-27.79	89.69
110.00	16 58 51	2537.74	-33.67	62.58	19.75	83.72	17 41 9	1937.7	-34.17	53.37
110.00	13 15 58	3233.59	-17.97	109.92	14.13	60.42	14 9 52	2633.6	-21.77	102.85

DIFFERENTIAL CORRECTIONS

TDE	.5429	TRA	.3932	TC3	-5.6737	BAU	.6772
RDE	.1517	RRA	.0619	RC3	.2382	FAU	.62417
FDE	2.9358	FRA	8.3215	FC	-60.5791	BSP	12338
BDE	.5637	BRA	.3980	BC3	5.6787	FSP	12336

MID-COURSE EXECUTION ACCURACY

SGT	3652.9	SGR	352.3	SG3	3549.5		
RRT	-.0445	RRF	-.0644	RTF	.9654		
SGB	3669.9	RZ3	.0210	R13	-.9654		
SG1	3653.0	SG2	352.0	THA	179.75		

ORBIT DETERMINATION ACCURACY

ST	1079.2	SR	294.1	SS	1922.2
CRT	.9884	CRS	-.7929	CST	-.8623
LSA	2164.3	MSA	510.6	SSA	26.9
EL1	1117.7	EL2	43.0	ALF	15.10

LAUNCH DATE NOV 12 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 695.456 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.862	GAL	-1.60	AZL	88.13	HCA	212.57	SMA	186.17	ECC	.20656	INC	1.8678
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.218	GAP	-5.74	AZP	91.57	TAL	350.63	TAP	203.20	RCA	147.72	APO	224.63
RC	272.134	GL	21.00	GP	-.17	ZAL	100.04	ZAP	88.88	ETS	179.02	ZAE	122.36	ETE	178.15	ZAC	85.65	ETC	257.04

V1	30.094	V2	24.986	CLP	88.88														

PLANETOCENTRIC CONIC

C3	8.929	VHL	2.988	DLA	30.81	RAL	160.95	RAD	6567.3	VEL	11.416	PTH	1.98	VHP	2.785	DPA	4.81	RAP	172.39
ECC	1.1470																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.33	10 58 13	3686.87	-25.43	146.50	18.07	72.01	11 59 40	3086.9	-27.65	138.32
102.67	14 20 19	3036.85	-25.42	98.55	18.06	71.99	15 10 56	2436.9	-27.64	90.38
77.33	10 58 13	3686.87	-25.43	146.50	18.07	72.01	11 59 40	3086.9	-27.65	138.32
102.67	14 20 19	3036.85	-25.42	98.55	18.06	71.99	15 10 56	2436.9	-27.64	90.38
110.00	17 2 59	2529.12	-33.73	61.91	20.08	84.11	17 45 8	1929.1	-34.18	52.70
110.00	13 14 44	3242.60	-17.67	110.45	14.38	60.25	14 8 46	2642.6	-21.49	103.40

DIFFERENTIAL CORRECTIONS

TDE	.5641	TRA	.4733	TC3	-6.1985	BAU	.7406
RDE	.1561	RRA	.0626	RC3	.2524	FAU	.62286
FDE	2.8144	FRA	8.3444	FC	-60.3898	BSP	13601
BDE	.5853	BRA	.4775	BC3	6.2036	FSP	12202

MID-COURSE EXECUTION ACCURACY

SGT	4001.2	SGR	363.2	SG3	3540.0		
RRT	-.0601	RRF	-.0823	RTF	.9712		
SGB	4017.6	RZ3	.0235	R13	-.9712		
SG1	4001.2	SG2	362.5	THA	179.68		

ORBIT DETERMINATION ACCURACY

ST	1132.6	SR	302.3	SS	1887.3
CRT	.9830	CRS	-.7781	CST	-.8700
LSA	2161.0	MSA	515.2	SSA	27.4
EL1	1171.0	EL2	53.6	ALF	14.73

LAUNCH DATE NOV 12 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 699.532 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.861 GAL -1.63 AZL 88.13 HCA 213.69 SMA 186.16 ECC .20659 INC 1.8669 V1 30.094
RP 219.62 LAP -1.04 LOP 263.33 VP 22.263 GAP -5.94 AZP 91.55 TAL 350.43 TAP 204.12 RCA 147.70 APO 224.62 V2 25.027
RC 273.529 GL 20.97 GP -.16 ZAL 100.42 ZAP 86.90 ETS 179.04 ZAE 120.14 ETE 178.21 ZAC 85.48 ETC 257.13 CLP 86.90

PLANETOCENTRIC CONIC

C3 8.942 VHL 2.990 DLA 30.63 RAL 161.34 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.794 DPA 5.17 RAP 171.61 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.80	11 3 11	3676.34	-25.29	145.66	18.43	72.11	12 4 27	3076.3	-27.50	137.49
102.20	14 18 27	3047.93	-25.28	99.33	18.42	72.10	15 9 15	2447.9	-27.49	91.16
77.80	11 3 11	3676.34	-25.29	145.66	18.43	72.11	12 4 27	3076.3	-27.50	137.49
102.20	14 18 27	3047.93	-25.28	99.33	18.42	72.10	15 9 15	2447.9	-27.49	91.16
110.00	17 7 24	2519.98	-33.79	61.21	20.44	84.52	17 49 24	1920.0	-34.18	51.98
110.00	13 13 24	3252.30	-17.34	111.01	14.65	60.07	14 7 37	2652.3	-21.18	103.99

DIFFERENTIAL CORRECTIONS
TDE .5830 TRA .5551 TC3-6.7256 BAU .8046
RDE .1605 RRA .0635 RC3 .2663 FAU .61939
FDE 2.6887 FRA 8.3678 FC-59.9675 BSP 14838
BDE .6047 BRA .5587 BC3 6.7308 FSP 12081

MID-COURSE EXECUTION ACCURACY
SGT 4353.6 SGR 374.1 SG3 3520.2
RRT -.0751 RRF -.0980 RTF .9755
SGB 4369.7 R23 .0243 R13 -.9756
SG1 4353.7 SG2 373.0 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 1183.1 SR 310.5 SS 1853.4
CRT .9764 CRS -.7619 CST -.8760
LSA 2158.7 MSA 520.0 SSA 28.0
EL1 1221.4 EL2 65.0 ALF 14.42

LAUNCH DATE NOV 12 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 703.615 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.861 GAL -1.67 AZL 88.13 HCA 214.82 SMA 186.15 ECC .20664 INC 1.8663 V1 30.094
RP 219.25 LAP -1.07 LOP 264.45 VP 22.309 GAP -6.14 AZP 91.53 TAL 350.22 TAP 205.03 RCA 147.69 APO 224.62 V2 25.067
RC 274.906 GL 20.94 GP -.16 ZAL 100.82 ZAP 84.95 ETS 179.06 ZAE 117.94 ETE 178.27 ZAC 85.31 ETC 257.21 CLP 84.95

PLANETOCENTRIC CONIC

C3 8.959 VHL 2.993 DLA 30.44 RAL 161.75 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.806 DPA 5.51 RAP 170.85 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.33	11 8 42	3664.40	-25.13	144.71	18.81	72.23	12 9 47	3064.4	-27.32	136.55
101.67	14 16 13	3060.59	-25.12	100.22	18.81	72.22	15 7 14	2460.6	-27.31	92.06
78.33	11 8 42	3664.40	-25.13	144.71	18.81	72.23	12 9 47	3064.4	-27.32	136.55
101.67	14 16 13	3060.59	-25.12	100.22	18.81	72.22	15 7 14	2460.6	-27.31	92.06
110.00	17 12 4	2510.34	-33.85	60.46	20.83	84.96	17 53 54	1910.3	-34.18	51.23
110.00	13 12 2	3262.65	-16.98	111.60	14.94	59.88	14 6 24	2662.6	-20.86	104.62

DIFFERENTIAL CORRECTIONS
TDE .6012 TRA .6403 TC3-7.2400 BAU .8678
RDE .1650 RRA .0644 RC3 .2794 FAU .61379
FDE 2.5678 FRA 8.3977 FC-59.3154 BSP 16103
BDE .6234 BRA .6435 BC3 7.2454 FSP 11957

MID-COURSE EXECUTION ACCURACY
SGT 4704.1 SGR 384.8 SG3 3491.0
RRT -.0874 RRF -.1107 RTF .9789
SGB 4719.8 R23 .0247 R13 -.9789
SG1 4704.2 SG2 383.4 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 1234.2 SR 318.7 SS 1823.9
CRT .9687 CRS -.7452 CST -.8812
LSA 2162.2 MSA 524.9 SSA 28.4
EL1 1272.3 EL2 76.7 ALF 14.10

LAUNCH DATE NOV 12 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 707.705 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.861 GAL -1.71 AZL 88.13 HCA 215.95 SMA 186.15 ECC .20672 INC 1.8656 V1 30.094
RP 218.89 LAP -1.10 LOP 265.58 VP 22.354 GAP -6.34 AZP 91.51 TAL 349.99 TAP 205.93 RCA 147.67 APO 224.63 V2 25.108
RC 276.266 GL 20.91 GP -.15 ZAL 101.25 ZAP 83.02 ETS 179.08 ZAE 115.76 ETE 178.33 ZAC 85.15 ETC 257.30 CLP 83.02

PLANETOCENTRIC CONIC

C3 8.979 VHL 2.996 DLA 30.24 RAL 162.19 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.822 DPA 5.84 RAP 170.12 ECC 1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.93	11 14 51	3650.86	-24.96	143.64	19.22	72.35	12 15 42	3050.9	-27.14	135.48
101.07	14 13 34	3075.01	-24.95	101.24	19.22	72.34	15 4 49	2475.0	-27.13	93.09
78.93	11 14 51	3650.86	-24.96	143.64	19.22	72.35	12 15 42	3050.9	-27.14	135.48
101.07	14 13 34	3075.01	-24.95	101.24	19.22	72.34	15 4 49	2475.0	-27.13	93.09
110.00	17 17 0	2500.24	-33.91	59.68	21.24	85.42	17 58 40	1900.2	-34.17	50.44
110.00	13 10 36	3273.62	-16.61	112.23	15.26	59.68	14 5 10	2673.6	-20.51	105.28

DIFFERENTIAL CORRECTIONS
TDE .6164 TRA .7275 TC3-7.7498 BAU .9310
RDE .1694 RRA .0653 RC3 .2919 FAU .60712
FDE 2.4389 FRA 8.4167 FC-58.5369 BSP 17345
BDE .6393 BRA .7305 BC3 7.7553 FSP 11802

MID-COURSE EXECUTION ACCURACY
SGT 5055.0 SGR 395.5 SG3 3455.4
RRT -.0990 RRF -.1223 RTF .9815
SGB 5070.4 R23 .0246 R13 -.9815
SG1 5055.1 SG2 393.6 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 1281.4 SR 326.9 SS 1792.9
CRT .9598 CRS -.7269 CST -.8853
LSA 2163.7 MSA 529.6 SSA 28.9
EL1 1319.4 EL2 89.1 ALF 13.82

LAUNCH DATE NOV 12 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 711.804 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.861 GAL -1.75 AZL 88.13 HCA 217.08 SMA 186.15 ECC .20683 INC 1.8649 V1 30.094
RP 218.52 LAP -1.12 LOP 266.71 VP 22.399 GAP -6.53 AZP 91.49 TAL 349.74 TAP 206.82 RCA 147.65 APO 224.65 V2 25.148
RC 277.609 GL 20.87 GP -.15 ZAL 101.71 ZAP 81.11 ETS 179.09 ZAE 113.61 ETE 178.39 ZAC 85.00 ETC 257.38 CLP 81.11

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA 30.02 RAL 162.65 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.840 DPA 6.16 RAP 169.41 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.60	11 21 47	3635.23	-24.77	142.41	19.66	72.48	12 22 22	3035.2	-26.93	134.26
100.40	14 10 21	3091.69	-24.76	102.42	19.66	72.47	15 1 52	2491.7	-26.93	94.27
79.60	11 21 47	3635.23	-24.77	142.41	19.66	72.48	12 22 22	3035.2	-26.93	134.26
100.40	14 10 21	3091.69	-24.76	102.42	19.66	72.47	15 1 52	2491.7	-26.93	94.27
110.00	17 22 10	2489.72	-33.97	58.86	21.67	85.90	18 3 39	1889.7	-34.16	49.62
110.00	13 9 8	3285.19	-16.21	112.89	15.60	59.48	14 3 53	2685.2	-20.14	105.97

DIFFERENTIAL CORRECTIONS
TDE .6298 TRA .8173 TC3-8.2497 BAU .9937
RDE .1739 RRA .0663 RC3 .3038 FAU .59897
FDE 2.3022 FRA 8.4195 FC-57.5937 BSP 18579
BDE .6534 BRA .8200 BC3 8.2553 FSP 11631

MID-COURSE EXECUTION ACCURACY
SGT 5404.2 SGR 406.0 SG3 3411.1
RRT -.1093 RRF -.1327 RTF .9836
SGB 5419.4 R23 .0247 R13 -.9837
SG1 5404.4 SG2 405.6 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 1326.9 SR 334.9 SS 1759.6
CRT .9499 CRS -.7070 CST -.8883
LSA 2163.8 MSA 534.7 SSA 29.3
EL1 1364.7 EL2 101.7 ALF 13.56

LAUNCH DATE NOV 12 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 715.910 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.861	GAL	-1.80	AZL	88.14	HCA	218.22	SMA	186.16	ECC	.20696	INC	1.8643
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.445	GAP	-6.72	AZP	91.46	TAL	349.48	TAP	207.70	RCA	147.63	APO	224.68
RC	278.933	GL	20.83	GP	-.14	ZAL	102.19	ZAP	79.24	ETS	179.11	ZAE	111.49	ETE	178.44	ZAC	84.85	ETC	257.47

V1	30.094	V2	25.188	CLP	79.24														

PLANETOCENTRIC CONIC

C3	9.032	VHL	3.005	DLA	29.78	RAL	163.14	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.861	DPA	6.46	RAP	168.74
ECC	1.1486																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.36	11 29 31	3617.35	-24.57	141.01	20.13	72.62	12 29 48	3017.3	-26.72	132.87
99.64	14 6 30	3110.80	-24.56	103.77	20.13	72.61	14 58 21	2510.8	-26.71	95.64
100.00	14 30 53	3032.87	-25.98	98.44	20.59	74.67	15 21 26	2432.9	-27.83	90.13
100.00	13 47 49	3170.51	-23.17	107.70	19.62	70.57	14 40 39	2570.5	-25.61	99.75
110.00	17 27 33	2478.80	-34.02	58.01	22.13	86.40	18 8 52	1878.8	-34.14	48.77
110.00	13 7 38	3297.34	-15.79	113.58	15.96	59.28	14 2 35	2697.3	-19.75	106.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6405	TRA	.9094	TC3	-8.7362	BAU	1.0556	SGT	5749.4	SGR	416.4	SG3	3360.8	ST	1369.2	SR	343.0	SS	1725.3
RDE	.1784	RRA	.0674	RC3	.3150	FAU	.58978	RRT	-.1184	RRF	-.1420	RTF	.9854	CRT	.9389	CRS	-.6849	CST	-.8902
FDE	2.1583	FRA	8.4141	FC	-56.5298	BSP	19796	SGB	5764.5	R23	.0249	R13	-.9854	LSA	2162.4	MSA	540.4	SSA	29.7
BDE	.6648	BRA	.9119	BC3	8.7419	FSP	11442	SG1	5749.6	SG2	413.5	THA	179.51	EL1	1406.8	EL2	114.9	ALF	13.32

LAUNCH DATE NOV 12 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 720.023 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.862	GAL	-1.85	AZL	88.14	HCA	219.36	SMA	186.17	ECC	.20713	INC	1.8638
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.490	GAP	-6.90	AZP	91.44	TAL	349.21	TAP	208.57	RCA	147.61	APO	224.73
RC	280.240	GL	20.78	GP	-.14	ZAL	102.70	ZAP	77.40	ETS	179.13	ZAE	109.39	ETE	178.49	ZAC	84.72	ETC	257.55

V1	30.094	V2	25.228	CLP	77.40														

PLANETOCENTRIC CONIC

C3	9.066	VHL	3.011	DLA	29.53	RAL	163.65	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	2.885	DPA	6.75	RAP	168.09
ECC	1.1492																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.24	11 38 22	3596.25	-24.36	139.37	20.62	72.76	12 38 18	2996.3	-26.49	131.25
98.76	14 1 44	3133.31	-24.35	105.36	20.62	72.75	14 53 57	2533.3	-26.48	97.24
100.00	14 50 21	2977.72	-26.91	94.61	21.40	76.48	15 39 59	2377.7	-28.51	86.17
100.00	13 32 26	3227.07	-21.84	111.37	19.68	69.07	14 26 13	2627.1	-24.49	103.58
110.00	17 33 10	2467.52	-34.06	57.13	22.61	86.92	18 14 17	1867.5	-34.11	47.89
110.00	13 6 6	3310.04	-15.35	114.30	16.35	59.07	14 1 16	2710.0	-19.33	107.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6489	TRA	1.0043	TC3	-9.2073	BAU	1.1166	SGT	6090.2	SGR	426.6	SG3	3304.2	ST	1409.4	SR	351.0	SS	1692.6
RDE	.1829	RRA	.0685	RC3	.3256	FAU	.57936	RRT	-.1263	RRF	-.1498	RTF	.9868	CRT	.9266	CRS	-.6615	CST	-.8918
FDE	2.0152	FRA	8.4037	FC	-55.3273	BSP	21006	SGB	6105.1	R23	.0247	R13	-.9868	LSA	2162.3	MSA	546.0	SSA	30.0
BDE	.6741	BRA	1.0066	BC3	9.2130	FSP	11244	SG1	6090.4	SG2	423.2	THA	179.49	EL1	1446.8	EL2	128.6	ALF	13.10

LAUNCH DATE NOV 12 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 724.144 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.863	GAL	-1.90	AZL	88.14	HCA	220.50	SMA	186.18	ECC	.20732	INC	1.8633
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.536	GAP	-7.09	AZP	91.42	TAL	348.92	TAP	209.43	RCA	147.58	APO	224.78
RC	281.529	GL	20.73	GP	-.13	ZAL	103.24	ZAP	75.60	ETS	179.14	ZAE	107.33	ETE	178.55	ZAC	84.59	ETC	257.63

V1	30.094	V2	25.268	CLP	75.60														

PLANETOCENTRIC CONIC

C3	9.103	VHL	3.017	DLA	29.27	RAL	164.19	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	2.912	DPA	7.02	RAP	167.49
ECC	1.1498																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.28	11 48 38	3570.99	-24.13	137.43	21.14	72.92	12 48 9	2971.0	-26.24	129.31
97.72	13 55 44	3160.18	-24.12	107.27	21.14	72.90	14 48 24	2560.2	-26.23	99.16
100.00	15 4 51	2938.66	-27.51	91.86	22.12	77.81	15 53 50	2338.7	-28.91	83.33
100.00	13 22 12	3267.74	-20.83	113.97	19.88	68.06	14 16 40	2667.7	-23.62	106.29
110.00	17 38 59	2455.89	-34.10	56.23	23.12	87.46	18 19 55	1855.9	-34.08	46.98
110.00	13 4 34	3323.28	-14.88	115.04	16.76	58.87	13 59 57	2723.3	-18.90	108.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6540	TRA	1.1012	TC3	-9.6646	BAU	1.1769	SGT	6426.6	SGR	436.6	SG3	3243.8	ST	1445.7	SR	358.9	SS	1657.7
RDE	.1874	RRA	.0697	RC3	.3354	FAU	.56841	RRT	-.1336	RRF	-.1573	RTF	.9879	CRT	.9130	CRS	-.6346	CST	-.8919
FDE	1.8603	FRA	8.3835	FC	-54.0566	BSP	22187	SGB	6441.4	R23	.0249	R13	-.9880	LSA	2158.6	MSA	553.2	SSA	30.2
BDE	.6803	BRA	1.1034	BC3	9.6705	FSP	11017	SG1	6426.8	SG2	432.7	THA	179.48	EL1	1482.7	EL2	142.8	ALF	12.89

LAUNCH DATE NOV 12 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 728.272 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.864	GAL	-1.95	AZL	88.14	HCA	221.65	SMA	186.20	ECC	.20754	INC	1.8627
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.581	GAP	-7.26	AZP	91.39	TAL	348.62	TAP	210.27	RCA	147.55	APO	224.84
RC	282.801	GL	20.67	GP	-.13	ZAL	103.80	ZAP	73.83	ETS	179.16	ZAE	105.31	ETE	178.59	ZAC	84.47	ETC	257.70

V1	30.094	V2	25.307	CLP	73.83														

PLANETOCENTRIC CONIC

C3	9.146	VHL	3.024	DLA	28.99	RAL	164.75	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	2.941	DPA	7.27	RAP	166.92
ECC	1.1505																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.54	12 0 54	3539.59	-23.89	135.03	21.69	73.07	12 59 53	2939.6	-25.98	126.93
96.46	13 47 55	3193.38	-23.88	109.64	21.69	73.06	14 41 8	2593.4	-25.97	101.54
100.00	15 17 31	2905.73	-27.96	89.51	22.82	78.96	16 5 57	2305.7	-29.19	80.93
100.00	13 13 59	3302.47	-19.93	116.16	20.15	67.25	14 9 1	2702.5	-22.84	108.57
110.00	17 44 59	2443.94	-34.13	55.30	23.64	88.01	18 25 43	1843.9	-34.03	46.05
110.00	13 3 0	3337.03	-14.40	115.81	17.20	58.66	13 58 37	2737.0	-18.44	109.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6560	TRA	1.2010	TC	-10.1057	BAU	1.2364	SGT	6758.1	SGR	446.5	SG3	3176.3	ST	1478.9	SR	366.7	SS	1622.4
RDE	.1920	RRA	.0709	RC3	.3447	FAU	.55619	RRT	-.1402	RRF	-.1639	RTF	.9889	CRT	.8977	CRS	-.6056	CST	-.8917
FDE	1.7035	FRA	8.3494	FC	-52.6484	BSP	23345	SGB	6772.8	R23	.0249	R13	-.9889	LSA	2153.9	MSA	560.2	SSA	30.4
BDE	.6835	BRA	1.2031	BC3	10.1116	FSP	10785	SG1	6758.4	SG2	442.0	THA	179.47	EL1	1515.5	EL2	157.7	ALF	12.69

LAUNCH DATE NOV 12 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 732.407 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.865 GAL -2.00 AZL 88.14 HCA 222.80 SMA 186.22 ECC .20779 INC 1.8622 V1 30.094
RP 216.74 LAP -1.27 LOP 272.44 VP 22.627 GAP -7.44 AZP 91.37 TAL 348.30 TAP 211.11 RCA 147.53 APO 224.91 V2 25.346
RC 284.057 GL 20.61 GP -.13 ZAL 104.39 ZAP 72.10 ETS 179.17 ZAE 103.32 ETE 178.64 ZAC 84.36 ETC 257.77 CLP 72.10

PLANETOCENTRIC CONIC

C3 9.194 VHL 3.032 DLA 28.69 RAL 165.33 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.973 DPA 7.51 RAP 166.38 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.19	12 16 41	3497.11	-23.63	131.82	22.26	73.24	13 14 58	2897.1	-25.70	123.73
94.81	13 36 45	3237.87	-23.62	112.83	22.26	73.22	14 30 43	2637.9	-25.69	104.74
100.00	15 29 11	2876.23	-28.32	87.40	23.50	80.02	16 17 8	2276.2	-29.41	78.76
100.00	13 6 56	3333.98	-19.09	118.12	20.48	66.55	14 2 30	2734.0	-22.10	110.62
110.00	17 51 11	2431.69	-34.16	54.34	24.19	88.57	18 31 42	1831.7	-33.98	45.10
110.00	13 1 26	3351.29	-13.89	116.61	17.66	58.45	13 57 17	2751.3	-17.96	109.86

DIFFERENTIAL CORRECTIONS
TDE .6552 TRA 1.3035 TC-10.5262 BAU 1.2945
RDE .1966 RRA .0721 RC3 .3533 FAU .54336
FDE 1.5489 FRA 8.3097 FC-51.1668 BSP 24487
BDE .6841 BRA 1.3055 BC310.5322 FSP 10532

MID-COURSE EXECUTION ACCURACY
SGT 7082.6 SGR 456.1 SG3 3105.3
RRT -.1459 RRF -.1696 RTF .9898
SGB 7097.3 R23 .0248 R13 -.9898
SG1 7082.9 SG2 451.2 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 1509.7 SR 374.5 SS 1589.2
CRT .8809 CRS -.5748 CST -.8914
LSA 2150.0 MSA 567.0 SSA 30.6
EL1 1545.8 EL2 173.1 ALF 12.49

LAUNCH DATE NOV 12 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 736.549 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.866 GAL -2.06 AZL 88.14 HCA 223.96 SMA 186.25 ECC .20806 INC 1.8617 V1 30.094
RP 216.39 LAP -1.29 LOP 273.59 VP 22.672 GAP -7.61 AZP 91.34 TAL 347.97 TAP 211.93 RCA 147.50 APO 225.00 V2 25.385
RC 285.296 GL 20.54 GP -.12 ZAL 105.00 ZAP 70.41 ETS 179.18 ZAE 101.36 ETE 178.69 ZAC 84.26 ETC 257.84 CLP 70.41

PLANETOCENTRIC CONIC

C3 9.247 VHL 3.041 DLA 28.38 RAL 165.93 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.008 DPA 7.72 RAP 165.89 ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.08	12 43 3	3420.66	-23.36	126.13	22.86	73.41	13 40 4	2820.7	-25.41	118.05
91.92	13 15 11	3316.55	-23.35	118.51	22.86	73.40	14 10 27	2716.6	-25.40	110.43
100.00	15 40 15	2848.95	-28.63	85.43	24.19	81.01	16 27 44	2249.0	-29.58	76.75
100.00	13 0 40	3363.50	-18.28	119.94	20.85	65.93	13 56 44	2763.5	-21.38	112.51
110.00	17 57 35	2419.18	-34.17	53.36	24.75	89.15	18 37 52	1819.2	-33.91	44.13
110.00	12 59 52	3366.03	-13.36	117.42	18.14	58.24	13 55 58	2766.0	-17.47	110.71

DIFFERENTIAL CORRECTIONS
TDE .6503 TRA 1.4076 TC-10.9313 BAU 1.3520
RDE .2013 RRA .0734 RC3 .3613 FAU .53009
FDE 1.3847 FRA 8.2587 FC-49.6311 BSP 25577
BDE .6807 BRA 1.4095 BC310.9373 FSP 10267

MID-COURSE EXECUTION ACCURACY
SGT 7401.6 SGR 465.6 SG3 3031.0
RRT -.1516 RRF -.1753 RTF .9904
SGB 7416.3 R23 .0249 R13 -.9905
SG1 7402.0 SG2 460.2 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 1535.9 SR 382.2 SS 1554.5
CRT .8620 CRS -.5396 CST -.8899
LSA 2142.3 MSA 575.5 SSA 30.7
EL1 1571.4 EL2 189.4 ALF 12.29

LAUNCH DATE NOV 12 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 740.697 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.868 GAL -2.12 AZL 88.14 HCA 225.12 SMA 186.27 ECC .20836 INC 1.8612 V1 30.094
RP 216.05 LAP -1.32 LOP 274.75 VP 22.718 GAP -7.78 AZP 91.31 TAL 347.62 TAP 212.74 RCA 147.46 APO 225.09 V2 25.423
RC 286.520 GL 20.47 GP -.12 ZAL 105.64 ZAP 68.76 ETS 179.19 ZAE 99.45 ETE 178.73 ZAC 84.16 ETC 257.90 CLP 68.76

PLANETOCENTRIC CONIC

C3 9.305 VHL 3.050 DLA 28.05 RAL 166.55 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.045 DPA 7.92 RAP 165.44 ECC 1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 48	3258.75	-25.24	114.83	24.12	76.71	14 30 7	2658.7	-26.82	106.52
90.00	12 27 23	3480.92	-20.93	129.68	22.74	70.49	13 25 24	2880.9	-23.41	121.88
100.00	15 50 54	2823.23	-28.89	83.56	24.89	81.96	16 37 57	2223.2	-29.70	74.85
100.00	12 54 59	3391.67	-17.49	121.66	21.26	65.36	13 51 30	2791.7	-20.67	114.30
110.00	18 4 4	2406.42	-34.18	52.37	25.34	89.74	18 44 11	1806.4	-33.84	43.14
110.00	12 58 18	3381.25	-12.82	118.26	18.65	58.04	13 54 39	2781.2	-16.95	111.59

DIFFERENTIAL CORRECTIONS
TDE .6431 TRA 1.5159 TC-11.3117 BAU 1.4079
RDE .2060 RRA .0747 RC3 .3687 FAU .51629
FDE 1.2248 FRA 8.2047 FC-48.0355 BSP 26668
BDE .6752 BRA 1.5177 BC311.3177 FSP 9997

MID-COURSE EXECUTION ACCURACY
SGT 7713.1 SGR 474.9 SG3 2954.1
RRT -.1562 RRF -.1802 RTF .9910
SGB 7727.7 R23 .0251 R13 -.9910
SG1 7713.5 SG2 469.0 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 1561.6 SR 389.8 SS 1522.8
CRT .8411 CRS -.5025 CST -.8884
LSA 2137.1 MSA 584.2 SSA 30.8
EL1 1596.2 EL2 206.3 ALF 12.06

LAUNCH DATE NOV 12 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 744.849 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.870 GAL -2.19 AZL 88.14 HCA 226.28 SMA 186.31 ECC .20869 INC 1.8608 V1 30.094
RP 215.71 LAP -1.34 LOP 275.92 VP 22.763 GAP -7.95 AZP 91.29 TAL 347.26 TAP 213.55 RCA 147.43 APO 225.19 V2 25.461
RC 287.729 GL 20.39 GP -.11 ZAL 106.31 ZAP 67.15 ETS 179.21 ZAE 97.58 ETE 178.77 ZAC 84.08 ETC 257.96 CLP 67.15

PLANETOCENTRIC CONIC

C3 9.370 VHL 3.061 DLA 27.70 RAL 167.19 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.084 DPA 8.10 RAP 165.03 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 52	3202.93	-26.05	110.95	25.03	78.49	14 49 15	2602.9	-27.38	102.53
90.00	12 12 28	3539.44	-19.56	133.42	22.98	69.11	13 11 27	2939.4	-22.23	125.76
100.00	16 1 18	2798.59	-29.11	81.76	25.59	82.89	16 47 57	2198.6	-29.79	73.02
100.00	12 49 43	3419.01	-16.71	123.31	21.71	64.85	13 46 42	2819.0	-19.96	116.02
110.00	18 10 47	2393.39	-34.18	51.35	25.95	90.34	18 50 40	1793.4	-33.76	42.13
110.00	12 56 44	3396.97	-12.25	119.13	19.19	57.83	13 53 21	2797.0	-16.41	112.49

DIFFERENTIAL CORRECTIONS
TDE .6467 TRA 1.6419 TC-11.6141 BAU 1.4556
RDE .2106 RRA .0759 RC3 .3749 FAU .49750
FDE 1.1574 FRA 8.2322 FC-45.9688 BSP 28091
BDE .6801 BRA 1.6437 BC311.6202 FSP 9908

MID-COURSE EXECUTION ACCURACY
SGT 8004.3 SGR 483.5 SG3 2865.0
RRT -.1544 RRF -.1753 RTF .9914
SGB 8018.9 R23 .0220 R13 -.9914
SG1 8004.7 SG2 477.7 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 1611.0 SR 397.2 SS 1523.0
CRT .8218 CRS -.4844 CST -.8949
LSA 2175.3 MSA 582.7 SSA 31.0
EL1 1644.3 EL2 221.7 ALF 11.67

LAUNCH DATE NOV 12 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 749.012 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.872 GAL -2.26 AZL 88.14 HCA 227.45 SMA 186.34 ECC .20905 INC 1.8603 V1 30.094
RP 215.38 LAP -1.37 LOP 277.08 VP 22.808 GAP -8.11 AZP 91.26 TAL 346.89 TAP 214.34 RCA 147.39 APO 225.30 V2 25.498
RC 288.924 GL 20.31 GP -.11 ZAL 106.99 ZAP 65.58 ETS 179.21 ZAE 95.74 ETE 178.81 ZAC 84.01 ETC 258.01 CLP 65.58

PLANETOCENTRIC CONIC

C3 9.440 VHL 3.072 DLA 27.34 RAL 167.85 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.126 DPA 8.26 RAP 164.65 ECC 1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 53	3160.39	-26.59	107.95	25.87	79.90	15 4 33	2560.4	-27.72	99.47
90.00	12 1 43	3584.90	-18.43	136.28	23.34	68.11	13 1 28	2984.9	-21.24	128.73
100.00	16 11 27	2774.97	-29.30	80.03	26.31	83.78	16 57 42	2175.0	-29.85	71.27
100.00	12 44 50	3445.56	-15.93	124.90	22.19	64.37	13 42 16	2845.6	-19.25	117.68
110.00	18 17 35	2380.21	-34.17	50.32	26.57	90.95	18 57 16	1780.2	-33.66	41.11
110.00	12 55 11	3413.08	-11.66	120.01	19.75	57.64	13 52 4	2813.1	-15.85	113.41

DIFFERENTIAL CORRECTIONS
TDE .6263 TRA 1.7489 TC-11.9764 BAU 1.5123
RDE .2154 RRA .0773 RC3 .3813 FAU .48511
FDE .9597 FRA 8.1225 FC-44.4885 BSP 28968
BDE .6623 BRA 1.7506 BC311.9824 FSP 9540

MID-COURSE EXECUTION ACCURACY
SGT 8307.0 SGR 492.6 SG3 2788.1
RRT -.1612 RRF -.1837 RTF .9919
SGB 8321.6 R23 .0236 R13 -.9919
SG1 8307.4 SG2 486.1 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 1620.5 SR 404.7 SS 1480.2
CRT .7948 CRS -.4338 CST -.8901
LSA 2150.6 MSA 595.5 SSA 30.9
EL1 1652.8 EL2 240.8 ALF 11.47

LAUNCH DATE NOV 12 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 753.181 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.874 GAL -2.33 AZL 88.14 HCA 228.62 SMA 186.38 ECC .20944 INC 1.8599 V1 30.094
RP 215.05 LAP -1.40 LOP 278.25 VP 22.852 GAP -8.27 AZP 91.23 TAL 346.50 TAP 215.12 RCA 147.35 APO 225.42 V2 25.535
RC 290.105 GL 20.22 GP -.11 ZAL 107.71 ZAP 64.05 ETS 179.22 ZAE 93.94 ETE 178.85 ZAC 83.94 ETC 258.06 CLP 64.05

PLANETOCENTRIC CONIC

C3 9.517 VHL 3.085 DLA 26.97 RAL 168.53 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.169 DPA 8.41 RAP 164.32 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 5	3123.91	-27.00	105.36	26.68	81.14	15 18 9	2523.9	-27.95	96.82
90.00	11 52 55	3624.57	-17.40	138.74	23.76	67.31	12 53 20	3024.6	-20.33	131.29
100.00	16 21 26	2752.06	-29.45	78.34	27.03	84.65	17 7 18	2152.1	-29.88	69.57
100.00	12 40 16	3471.66	-15.16	126.45	22.70	63.92	13 38 7	2871.7	-18.54	119.29
110.00	18 24 33	2366.85	-34.15	49.28	27.21	91.57	19 3 59	1766.8	-33.56	40.08
110.00	12 53 39	3429.63	-11.06	120.91	20.33	57.45	13 50 48	2829.6	-15.27	114.34

DIFFERENTIAL CORRECTIONS
TDE .6035 TRA 1.8607 TC-12.3089 BAU 1.5669
RDE .2203 RRA .0787 RC3 .3872 FAU .47177
FDE .7738 FRA 8.0221 FC-42.9145 BSP 29853
BDE .6424 BRA 1.8623 BC312.3150 FSP 9201

MID-COURSE EXECUTION ACCURACY
SGT 8600.5 SGR 501.3 SG3 2708.4
RRT -.1670 RRF -.1906 RTF .9923
SGB 8615.1 R23 .0248 R13 -.9923
SG1 8600.9 SG2 494.3 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 1631.3 SR 412.1 SS 1445.0
CRT .7647 CRS -.3812 CST -.8858
LSA 2132.6 MSA 608.3 SSA 30.7
EL1 1662.2 EL2 260.6 ALF 11.21

LAUNCH DATE NOV 12 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 757.355 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.877 GAL -2.40 AZL 88.14 HCA 229.79 SMA 186.43 ECC .20986 INC 1.8595 V1 30.094
RP 214.72 LAP -1.42 LOP 279.43 VP 22.897 GAP -8.43 AZP 91.20 TAL 346.09 TAP 215.89 RCA 147.30 APO 225.55 V2 25.572
RC 291.272 GL 20.12 GP -.10 ZAL 108.44 ZAP 62.56 ETS 179.23 ZAE 92.19 ETE 178.89 ZAC 83.88 ETC 258.10 CLP 62.56

PLANETOCENTRIC CONIC

C3 9.601 VHL 3.099 DLA 26.58 RAL 169.23 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.215 DPA 8.54 RAP 164.03 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 14	3091.08	-27.33	103.01	27.49	82.27	15 30 45	2491.1	-28.11	94.43
90.00	11 45 20	3660.86	-16.44	140.96	24.23	66.61	12 46 21	3060.9	-19.46	133.60
100.00	16 31 19	2729.74	-29.58	76.70	27.77	85.51	17 16 49	2129.7	-29.89	67.91
100.00	12 35 56	3497.43	-14.38	127.97	23.24	63.51	13 34 13	2897.4	-17.82	120.87
110.00	18 31 37	2353.31	-34.12	48.22	27.88	92.19	19 10 51	1753.3	-33.44	39.04
110.00	12 52 7	3446.62	-10.43	121.83	20.94	57.26	13 49 34	2846.6	-14.68	115.30

DIFFERENTIAL CORRECTIONS
TDE .5797 TRA 1.9779 TC-12.6086 BAU 1.6193
RDE .2252 RRA .0801 RC3 .3924 FAU .45757
FDE .6098 FRA 7.9302 FC-41.2575 BSP 30779
BDE .6219 BRA 1.9795 BC312.6147 FSP 8891

MID-COURSE EXECUTION ACCURACY
SGT 8884.2 SGR 509.9 SG3 2626.1
RRT -.1715 RRF -.1957 RTF .9926
SGB 8898.8 R23 .0254 R13 -.9927
SG1 8884.6 SG2 502.3 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 1645.9 SR 419.4 SS 1418.0
CRT .7324 CRS -.3308 CST -.8835
LSA 2124.2 MSA 618.5 SSA 30.5
EL1 1675.2 EL2 280.6 ALF 10.88

LAUNCH DATE NOV 12 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 761.535 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.880 GAL -2.48 AZL 88.14 HCA 230.97 SMA 186.47 ECC .21031 INC 1.8591 V1 30.094
RP 214.40 LAP -1.44 LOP 280.61 VP 22.941 GAP -8.59 AZP 91.17 TAL 345.68 TAP 216.65 RCA 147.26 APO 225.69 V2 25.608
RC 292.426 GL 20.02 GP -.10 ZAL 109.20 ZAP 61.12 ETS 179.24 ZAE 90.47 ETE 178.93 ZAC 83.83 ETC 258.14 CLP 61.12

PLANETOCENTRIC CONIC

C3 9.693 VHL 3.113 DLA 26.17 RAL 169.94 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.263 DPA 8.64 RAP 163.79 ECC 1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 40	3060.74	-27.59	100.83	28.30	83.34	15 42 41	2460.7	-28.22	92.22
90.00	11 38 35	3694.93	-15.51	143.03	24.75	66.01	12 40 10	3094.9	-18.62	135.74
100.00	16 41 7	2707.91	-29.69	75.08	28.52	86.35	17 26 15	2107.9	-29.88	66.28
100.00	12 31 50	3522.99	-13.60	129.46	23.81	63.12	13 30 33	2923.0	-17.10	122.42
110.00	18 38 49	2339.63	-34.08	47.15	28.56	92.82	19 17 49	1739.6	-33.31	38.00
110.00	12 50 37	3464.04	-9.79	122.77	21.58	57.08	13 48 21	2864.0	-14.06	116.27

DIFFERENTIAL CORRECTIONS
TDE .5527 TRA 2.0991 TC-12.8812 BAU 1.6700
RDE .2302 RRA .0815 RC3 .3971 FAU .44295
FDE .4522 FRA 7.8390 FC-39.5628 BSP 31688
BDE .5987 BRA 2.1007 BC312.8873 FSP 8592

MID-COURSE EXECUTION ACCURACY
SGT 9159.4 SGR 518.2 SG3 2542.5
RRT -.1756 RRF -.2003 RTF .9929
SGB 9174.0 R23 .0258 R13 -.9929
SG1 9159.8 SG2 510.1 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 1661.3 SR 426.6 SS 1395.4
CRT .6967 CRS -.2788 CST -.8820
LSA 2119.7 MSA 628.5 SSA 30.3
EL1 1688.6 EL2 301.1 ALF 10.48

LAUNCH DATE NOV 12 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 765.721 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.882 GAL -2.55 AZL 88.14 HCA 232.15 SMA 186.52 ECC .21078 INC 1.8587 V1 30.094
RP 214.08 LAP -1.47 LOP 281.79 VP 22.985 GAP -8.74 AZP 91.14 TAL 345.24 TAP 217.40 RCA 147.20 APO 225.84 V2 25.644
RC 293.566 GL 19.91 GP -.10 ZAL 109.98 ZAP 59.71 ETS 179.24 ZAE 88.79 ETE 178.96 ZAC 83.79 ETC 258.17 CLP 59.71

PLANETOCENTRIC CONIC

C3 9.792 VHL 3.129 DLA 25.75 RAL 170.67 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.313 DPA 8.74 RAP 163.58 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 37	3032.22	-27.79	98.77	29.12	84.35	15 54 9	2432.2	-28.29	90.14
90.00	11 32 28	3727.48	-14.59	144.99	25.31	65.46	12 34 36	3127.5	-17.79	137.76
100.00	16 50 51	2686.53	-29.77	73.50	29.28	87.18	17 35 37	2086.5	-29.84	64.70
100.00	12 27 56	3548.40	-12.81	130.94	24.42	62.76	13 27 4	2948.4	-16.36	123.95
110.00	18 46 8	2325.82	-34.03	46.08	29.26	93.46	19 24 54	1725.8	-33.18	36.94
110.00	12 49 8	3481.87	-9.13	123.72	22.24	56.91	13 47 10	2881.9	-13.42	117.26

DIFFERENTIAL CORRECTIONS
TDE .5232 TRA 2.2252 TC-13.1260 BAU 1.7191
RDE .2352 RRA .0828 RC3 .4013 FAU .42826
FDE .3044 FRA 7.7507 FC-37.8639 BSP 32599
BDE .5736 BRA 2.2267 BC313.1322 FSP 8305

MID-COURSE EXECUTION ACCURACY
SGT 9426.7 SGR 526.2 SG3 2459.2
RRT -.1792 RRF -.2042 RTF .9932
SGB 9441.4 R23 .0261 R13 -.9932
SG1 9427.2 SG2 517.7 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 1679.3 SR 433.7 SS 1377.7
CRT .6580 CRS -.2268 CST -.8815
LSA 2121.0 MSA 637.5 SSA 30.1
EL1 1704.3 EL2 321.8 ALF 10.01

LAUNCH DATE NOV 12 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 769.912 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.885 GAL -2.64 AZL 88.14 HCA 233.34 SMA 186.57 ECC .21129 INC 1.8583 V1 30.094
RP 213.77 LAP -1.49 LOP 282.97 VP 23.029 GAP -8.89 AZP 91.11 TAL 344.79 TAP 218.13 RCA 147.15 APO 225.99 V2 25.679
RC 294.693 GL 19.79 GP -.10 ZAL 110.78 ZAP 58.34 ETS 179.25 ZAE 87.15 ETE 179.00 ZAC 83.76 ETC 258.19 CLP 58.34

PLANETOCENTRIC CONIC

C3 9.899 VHL 3.146 DLA 25.31 RAL 171.42 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.365 DPA 8.81 RAP 163.41 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 11	3005.10	-27.96	96.80	29.94	85.32	16 5 16	2405.1	-28.31	88.15
90.00	11 26 51	3758.91	-13.70	146.86	25.90	64.97	12 29 30	3158.9	-16.96	139.70
100.00	17 0 31	2665.52	-29.83	71.94	30.06	88.00	17 44 56	2065.5	-29.79	63.14
100.00	12 24 12	3573.72	-12.02	132.40	25.05	62.42	13 23 46	2973.7	-15.62	125.46
110.00	18 53 32	2311.90	-33.97	45.00	29.97	94.10	19 32 4	1711.9	-33.03	35.88
110.00	12 47 40	3500.11	-8.45	124.70	22.92	56.75	13 46 0	2900.1	-12.77	118.26

DIFFERENTIAL CORRECTIONS
TDE .4900 TRA 2.3545 TC-13.3445 BAU 1.7669
RDE .2404 RRA .0841 RC3 .4049 FAU .41348
FDE .1603 FRA 7.6576 FC-36.1605 BSP 33484
BDE .5458 BRA 2.3560 BC313.3507 FSP 8020

MID-COURSE EXECUTION ACCURACY
SGT 9685.4 SGR 534.1 SG3 2375.3
RRT -.1827 RRF -.2081 RTF .9934
SGB 9700.1 R23 .0265 R13 -.9934
SG1 9685.9 SG2 525.1 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 1698.3 SR 440.7 SS 1362.8
CRT .6159 CRS -.1732 CST -.8816
LSA 2125.4 MSA 646.3 SSA 29.8
EL1 1720.8 EL2 342.7 ALF 9.46

LAUNCH DATE NOV 12 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 774.109 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.889 GAL -2.72 AZL 88.14 HCA 234.53 SMA 186.63 ECC .21183 INC 1.8580 V1 30.094
RP 213.46 LAP -1.51 LOP 284.16 VP 23.072 GAP -9.04 AZP 91.08 TAL 344.33 TAP 218.86 RCA 147.09 APO 226.16 V2 25.714
RC 295.805 GL 19.67 GP -.09 ZAL 111.60 ZAP 57.02 ETS 179.25 ZAE 85.55 ETE 179.03 ZAC 83.74 ETC 258.21 CLP 57.02

PLANETOCENTRIC CONIC

C3 10.015 VHL 3.165 DLA 24.86 RAL 172.17 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.419 DPA 8.87 RAP 163.28 ECC 1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 28	2979.12	-28.09	94.91	30.76	86.26	16 16 7	2379.1	-28.31	86.25
90.00	11 21 37	3789.53	-12.81	148.67	26.53	64.53	12 24 47	3189.5	-16.13	141.57
100.00	17 10 8	2644.87	-29.87	70.41	30.85	88.81	17 54 13	2044.9	-29.72	61.60
100.00	12 20 38	3599.02	-11.21	133.85	25.71	62.11	13 20 37	2999.0	-14.86	126.96
110.00	19 1 2	2297.90	-33.89	43.91	30.71	94.73	19 39 20	1697.9	-32.87	34.82
110.00	12 46 13	3518.75	-7.75	125.69	23.63	56.60	13 44 52	2918.7	-12.09	119.29

DIFFERENTIAL CORRECTIONS
TDE .4530 TRA 2.4876 TC-13.5397 BAU 1.8137
RDE .2456 RRA .0854 RC3 .4081 FAU .39879
FDE .0213 FRA 7.5630 FC-34.4724 BSP 34340
BDE .5153 BRA 2.4891 BC313.5458 FSP 7737

MID-COURSE EXECUTION ACCURACY
SGT 9937.4 SGR 541.7 SG3 2292.1
RRT -.1863 RRF -.2120 RTF .9935
SGB 9952.2 R23 .0268 R13 -.9935
SG1 9937.9 SG2 532.2 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 1719.3 SR 447.6 SS 1351.4
CRT .5701 CRS -.1190 CST -.8826
LSA 2134.0 MSA 654.3 SSA 29.5
EL1 1739.0 EL2 363.6 ALF 8.83

LAUNCH DATE NOV 12 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 778.310 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.892 GAL -2.81 AZL 88.14 HCA 235.72 SMA 186.68 ECC .21240 INC 1.8576 V1 30.094
RP 213.16 LAP -1.53 LOP 285.35 VP 23.115 GAP -9.19 AZP 91.05 TAL 343.85 TAP 219.57 RCA 147.03 APO 226.34 V2 25.748
RC 296.904 GL 19.54 GP -.09 ZAL 112.44 ZAP 55.73 ETS 179.25 ZAE 83.98 ETE 179.06 ZAC 83.72 ETC 258.22 CLP 55.73

PLANETOCENTRIC CONIC

C3 10.140 VHL 3.184 DLA 24.39 RAL 172.95 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 3.475 DPA 8.91 RAP 163.19 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 30	2954.07	-28.19	93.09	31.60	87.17	16 26 44	2354.1	-28.28	84.42
90.00	11 16 44	3819.54	-11.92	150.43	27.19	64.12	12 20 24	3219.5	-15.31	143.39
100.00	17 19 43	2624.53	-29.89	68.89	31.66	89.60	18 3 28	2024.5	-29.63	60.10
100.00	12 17 13	3624.31	-10.41	135.29	26.40	61.82	13 17 37	3024.3	-14.09	128.45
110.00	19 8 37	2283.83	-33.81	42.82	31.46	95.37	19 46 41	1683.8	-32.70	33.76
110.00	12 44 48	3537.78	-7.04	126.70	24.37	56.46	13 43 46	2937.8	-11.40	120.33

DIFFERENTIAL CORRECTIONS
TDE .4128 TRA 2.6245 TC-13.7088 BAU 1.8593
RDE .2509 RRA .0867 RC3 .4109 FAU .38440
FDE -.1095 FRA 7.4650 FC-32.8179 BSP 35178
BDE .4831 BRA 2.6259 BC313.7149 FSP 7461

MID-COURSE EXECUTION ACCURACY
SGT10181.6 SGR 549.2 SG3 2210.2
RRT -.1898 RRF -.2158 RTF .9937
SGB10196.4 R23 .0272 R13 -.9937
SG110182.1 SG2 539.2 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 1743.6 SR 454.4 SS 1342.9
CRT .5215 CRS -.0657 CST -.8848
LSA 2147.7 MSA 660.9 SSA 29.1
EL1 1760.4 EL2 384.0 ALF 8.13

LAUNCH DATE NOV 12 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 782.515 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.895	GAL	-2.90	AZL	88.14	HCA	236.91	SMA	186.74	ECC	.21301	INC	1.8573
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.157	GAP	-9.34	AZP	91.01	TAL	343.36	TAP	220.27	RCA	146.97	APO	226.52
RC	297.989	GL	19.40	GP	-.09	ZAL	113.31	ZAP	54.48	ETS	179.25	ZAE	82.45	ETE	179.09	ZAC	83.71	ETC	258.23

V1	30.094	V2	25.782	CLP	54.48														

PLANETOCENTRIC CONIC

C3	10.275	VHL	3.206	DLA	23.91	RAL	173.73	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	3.532	DPA	8.93	RAP	163.14
ECC	1.1691																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 22	2929.79	-28.26	91.31	32.45	88.06	16 37 12	2329.8	-28.23	82.65
90.00	11 12 8	3849.12	-11.04	152.15	27.88	63.76	12 16 17	3249.1	-14.48	145.16
100.00	17 29 16	2604.48	-29.89	67.40	32.48	90.39	18 12 41	2004.5	-29.52	58.62
100.00	12 13 56	3649.67	-9.59	136.73	27.12	61.55	13 14 45	3049.7	-13.31	129.92
110.00	19 16 16	2269.71	-33.71	41.73	32.23	96.01	19 54 6	1669.7	-32.51	32.70
110.00	12 43 25	3557.20	-6.31	127.73	25.13	56.33	13 42 42	2957.2	-10.69	121.38

DIFFERENTIAL CORRECTIONS

TDE	.3751	TRA	2.7726	TC-13.8285	BAU	1.9005	
RDE	.2563	RRA	.0878	RC3 .4129	FAU	.36894	
FDE	-.2156	FRA	7.3886	FC-31.0845	BSP	36151	
BDE	.4543	BRA	2.7740	BC313.8346	FSP	7235	

MID-COURSE EXECUTION ACCURACY

SGT10413.2	SGR	556.2	SG3	2126.9			
RRT -.1914	RRF	-.2169	RTF	.9937			
SGB10428.1	R23	.0267	R13	-.9937			
SG110413.8	SG2	545.9	THA	179.41			

ORBIT DETERMINATION ACCURACY

ST	1779.1	SR	461.1	SS	1340.4		
CRT	.4740	CRS	-.0207	CST	-.8894		
LSA	2175.4	MSA	664.2	SSA	28.9		
EL1	1793.2	EL2	402.8	ALF	7.38		

LAUNCH DATE NOV 12 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 786.727 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.899	GAL	-2.99	AZL	88.14	HCA	238.11	SMA	186.81	ECC	.21364	INC	1.8569
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.199	GAP	-9.48	AZP	90.98	TAL	342.85	TAP	220.96	RCA	146.90	APO	226.72
RC	299.061	GL	19.26	GP	-.08	ZAL	114.19	ZAP	53.26	ETS	179.25	ZAE	80.96	ETE	179.12	ZAC	83.71	ETC	258.23

V1	30.094	V2	25.815	CLP	53.26		

PLANETOCENTRIC CONIC

C3	10.420	VHL	3.228	DLA	23.42	RAL	174.53	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	3.592	DPA	8.94	RAP	163.13
ECC	1.1715																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 4	2906.24	-28.30	89.59	33.31	88.92	16 47 30	2306.2	-28.15	80.93
90.00	11 7 48	3878.32	-10.15	153.84	28.61	63.42	12 12 26	3278.3	-13.64	146.90
100.00	17 38 47	2584.74	-29.87	65.94	33.31	91.16	18 21 51	1984.7	-29.39	57.16
100.00	12 10 46	3675.06	-8.76	138.16	27.87	61.31	13 12 1	3075.1	-12.52	131.40
110.00	19 23 59	2255.58	-33.61	40.64	33.01	96.65	20 1 35	1655.6	-32.32	31.64
110.00	12 42 3	3576.98	-5.56	128.77	25.91	56.22	13 41 40	2977.0	-9.96	122.45

DIFFERENTIAL CORRECTIONS

TDE	.3210	TRA	2.9106	TC-13.9726	BAU	1.9474	
RDE	.2619	RRA	.0890	RC3 .4150	FAU	.35592	
FDE	-.3583	FRA	7.2657	FC-29.5704	BSP	36782	
BDE	.4143	BRA	2.9119	BC313.9787	FSP	6926	

MID-COURSE EXECUTION ACCURACY

SGT10648.7	SGR	563.5	SG3	2048.9			
RRT -.1970	RRF	-.2237	RTF	.9938			
SGB10663.6	R23	.0279	R13	-.9939			
SG110649.3	SG2	552.4	THA	179.40			

ORBIT DETERMINATION ACCURACY

ST	1802.9	SR	467.8	SS	1335.0		
CRT	.4149	CRS	.0409	CST	-.8913		
LSA	2190.8	MSA	671.5	SSA	28.4		
EL1	1813.9	EL2	423.0	ALF	6.50		

LAUNCH DATE NOV 12 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 790.942 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.903	GAL	-3.09	AZL	88.14	HCA	239.31	SMA	186.87	ECC	.21431	INC	1.8566
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.241	GAP	-9.62	AZP	90.95	TAL	342.33	TAP	221.64	RCA	146.82	APO	226.92
RC	300.120	GL	19.11	GP	-.08	ZAL	115.09	ZAP	52.09	ETS	179.25	ZAE	79.50	ETE	179.15	ZAC	83.72	ETC	258.23

V1	30.094	V2	25.847	CLP	52.09		

PLANETOCENTRIC CONIC

C3	10.576	VHL	3.252	DLA	22.91	RAL	175.34	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	3.653	DPA	8.93	RAP	163.15
ECC	1.1741																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 37	2883.29	-28.32	87.91	34.19	89.76	16 57 41	2283.3	-28.05	79.26
90.00	11 3 40	3907.28	-9.27	155.50	29.36	63.12	12 8 48	3307.3	-12.80	148.61
100.00	17 48 16	2565.26	-29.84	64.49	34.16	91.92	18 31 1	1965.3	-29.25	55.73
100.00	12 7 43	3700.55	-7.92	139.59	28.64	61.08	13 9 24	3100.5	-11.72	132.86
110.00	19 31 46	2241.43	-33.49	39.55	33.81	97.28	20 9 7	1641.4	-32.12	30.59
110.00	12 40 42	3597.14	-4.79	129.83	26.72	56.11	13 40 39	2997.1	-9.21	123.53

DIFFERENTIAL CORRECTIONS

TDE	.2697	TRA	3.0598	TC-14.0656	BAU	1.9897	
RDE	.2676	RRA	.0901	RC3 .4163	FAU	.34203	
FDE	-.4741	FRA	7.1628	FC-27.9975	BSP	37556	
BDE	.3799	BRA	3.0611	BC314.0717	FSP	6667	

MID-COURSE EXECUTION ACCURACY

SGT10870.7	SGR	570.3	SG3	1970.2			
RRT -.2007	RRF	-.2278	RTF	.9939			
SGB10885.7	R23	.0284	R13	-.9939			
SG110871.3	SG2	558.7	THA	179.40			

ORBIT DETERMINATION ACCURACY

ST	1839.4	SR	474.3	SS	1334.8		
CRT	.3582	CRS	.0926	CST	-.8958		
LSA	2221.2	MSA	675.0	SSA	27.9		
EL1	1847.8	EL2	440.9	ALF	5.60		

LAUNCH DATE NOV 12 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 795.162 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.907	GAL	-3.19	AZL	88.14	HCA	240.52	SMA	186.94	ECC	.21502	INC	1.8563
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.282	GAP	-9.76	AZP	90.91	TAL	341.79	TAP	222.31	RCA	146.74	APO	227.13
RC	301.167	GL	18.95	GP	-.08	ZAL	116.01	ZAP	50.94	ETS	179.25	ZAE	78.07	ETE	179.18	ZAC	83.73	ETC	258.22

V1	30.094	V2	25.879	CLP	50.94		

PLANETOCENTRIC CONIC

C3	10.744	VHL	3.278	DLA	22.38	RAL	176.15	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	3.715	DPA	8.91	RAP	163.21
ECC	1.1768																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 4	2860.90	-28.31	86.27	35.07	90.58	17 7 45	2260.9	-27.93	77.63
90.00	10 59 45	3936.07	-8.38	157.15	30.14	62.85	12 5 21	3336.1	-11.95	150.30
100.00	17 57 43	2546.05	-29.78	63.06	35.02	92.67	18 40 9	1946.0	-29.10	54.33
100.00	12 4 47	3726.15	-7.08	141.02	29.44	60.88	13 6 53	3126.1	-10.91	134.33
110.00	19 39 36	2227.30	-33.36	38.47	34.63	97.91	20 16 43	1627.3	-31.91	29.54
110.00	12 39 24	3617.66	-4.01	130.91	27.55	56.02	13 39 41	3017.7	-8.45	124.63

DIFFERENTIAL CORRECTIONS

TDE	.2144	TRA	3.2131	TC-14.1368	BAU	2.0314	
RDE	.2734	RRA	.0911	RC3 .4173	FAU	.32851	
FDE	-.5839	FRA	7.0584	FC-26.4713	BSP	38303	
BDE	.3474	BRA	3.2144	BC314.1430	FSP	6413	

MID-COURSE EXECUTION ACCURACY

SGT11087.1	SGR	577.0	SG3	1893.4			
RRT -.2047	RRF	-.2322	RTF	.9939			
SGB11102.1	R23	.0288	R13	-.9940			
SG111087.7	SG2	564.8	THA	179.39			

ORBIT DETERMINATION ACCURACY

ST	1881.1	SR	480.8	SS	1336.6		
CRT	.2996	CRS	.1425	CST	-.9010		
LSA	2257.8	MSA	676.8	SSA	27.5		
EL1	1886.9	EL2	457.3	ALF	4.65		

LAUNCH DATE NOV 12 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 799.385 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.911 GAL -3.30 AZL 88.14 HCA 241.73 SMA 187.01 ECC .21576 INC 1.8560 V1 30.094
RP 211.73 LAP -1.63 LOP 291.36 VP 23.322 GAP -9.90 AZP 90.88 TAL 341.24 TAP 222.96 RCA 146.66 APO 227.36 V2 25.911
RC 302.203 GL 18.78 GP -.08 ZAL 116.94 ZAP 49.83 ETS 179.24 ZAE 76.68 ETE 179.21 ZAC 83.75 ETC 258.21 CLP 49.83

PLANETOCENTRIC CONIC

C3 10.923 VHL 3.305 DLA 21.85 RAL 176.98 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 3.780 DPA 8.88 RAP 163.30 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 24	2839.01	-28.29	84.67	35.97	91.39	17 17 43	2239.0	-27.79	76.04
90.00	10 56 0	3964.73	-7.48	158.78	30.95	62.61	12 2 5	3364.7	-11.10	151.97
100.00	18 7 8	2527.10	-29.72	61.66	35.90	93.41	18 49 15	1927.1	-28.93	52.94
100.00	12 1 57	3751.87	-6.22	142.45	30.27	60.70	13 4 29	3151.9	-10.08	135.79
110.00	19 47 28	2213.21	-33.23	37.39	35.47	98.54	20 24 21	1613.2	-31.69	28.50
110.00	12 38 7	3638.53	-3.22	132.00	28.41	55.95	13 38 45	3038.5	-7.67	125.74

DIFFERENTIAL CORRECTIONS
TDE .1564 TRA 3.3718 TC-14.1806 BAU 2.0718
RDE .2794 RRA .0920 RC3 .4178 FAU .31520
FDE -.6862 FRA 6.9538 FC-24.9815 BSP 39038
BDE .3202 BRA 3.3730 BC314.1867 FSP 6167

MID-COURSE EXECUTION ACCURACY
SGT11295.9 SGR 583.4 SG3 1818.1
RRT -.2086 RRF -.2365 RTF .9940
SGB11310.9 R23 .0293 R13 -.9940
SG111296.5 SG2 570.6 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 1929.2 SR 487.2 SS 1340.3
CRT .2409 CRS .1897 CST -.9066
LSA 2301.3 MSA 677.2 SSA 27.0
EL1 1933.0 EL2 471.9 ALF 3.70

LAUNCH DATE NOV 12 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 803.611 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.915 GAL -3.41 AZL 88.14 HCA 242.94 SMA 187.08 ECC .21654 INC 1.8557 V1 30.094
RP 211.47 LAP -1.65 LOP 292.57 VP 23.362 GAP -10.04 AZP 90.84 TAL 340.67 TAP 223.60 RCA 146.57 APO 227.59 V2 25.941
RC 303.228 GL 18.61 GP -.08 ZAL 117.89 ZAP 48.75 ETS 179.24 ZAE 75.31 ETE 179.24 ZAC 83.78 ETC 258.19 CLP 48.75

PLANETOCENTRIC CONIC

C3 11.116 VHL 3.334 DLA 21.30 RAL 177.81 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.846 DPA 8.83 RAP 163.42 ECC 1.1829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 38	2817.60	-28.24	83.11	36.88	92.17	17 27 36	2217.6	-27.64	74.50
90.00	10 52 25	3993.32	-6.58	160.40	31.79	62.40	11 58 58	3393.3	-10.23	153.62
100.00	18 16 31	2508.43	-29.63	60.28	36.80	94.13	18 58 20	1908.4	-28.74	51.59
100.00	11 59 13	3777.72	-5.36	143.89	31.13	60.55	13 2 11	3177.7	-9.24	137.25
110.00	19 55 22	2199.17	-33.08	36.32	36.33	99.15	20 32 1	1599.2	-31.46	27.47
110.00	12 36 51	3659.75	-2.41	133.11	29.29	55.89	13 37 51	3059.8	-6.87	126.87

DIFFERENTIAL CORRECTIONS
TDE .0938 TRA 3.5344 TC-14.2047 BAU 2.1119
RDE .2855 RRA .0929 RC3 .4179 FAU .30229
FDE -.7842 FRA 6.8456 FC-23.5427 BSP 39740
BDE .3005 BRA 3.5356 BC314.2109 FSP 5926

MID-COURSE EXECUTION ACCURACY
SGT11499.7 SGR 589.7 SG3 1744.9
RRT -.2129 RRF -.2413 RTF .9940
SGB11514.8 R23 .0298 R13 -.9940
SG111500.4 SG2 576.2 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 1982.9 SR 493.4 SS 1345.1
CRT .1811 CRS .2356 CST -.9126
LSA 2350.9 MSA 676.2 SSA 26.5
EL1 1985.0 EL2 484.8 ALF 2.74

LAUNCH DATE NOV 12 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 807.841 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.919 GAL -3.52 AZL 88.14 HCA 244.15 SMA 187.15 ECC .21736 INC 1.8554 V1 30.094
RP 211.20 LAP -1.67 LOP 293.79 VP 23.401 GAP -10.18 AZP 90.81 TAL 340.08 TAP 224.23 RCA 146.47 APO 227.83 V2 25.971
RC 304.242 GL 18.43 GP -.07 ZAL 118.85 ZAP 47.71 ETS 179.23 ZAE 73.98 ETE 179.26 ZAC 83.81 ETC 258.17 CLP 47.71

PLANETOCENTRIC CONIC

C3 11.322 VHL 3.365 DLA 20.74 RAL 178.65 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 3.914 DPA 8.76 RAP 163.58 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 47	2796.65	-28.18	81.58	37.81	92.93	17 37 23	2196.7	-27.47	72.99
90.00	10 48 59	4021.86	-5.68	162.01	32.66	62.21	11 56 1	3421.9	-9.36	155.26
100.00	18 25 52	2490.03	-29.53	58.92	37.70	94.84	19 7 22	1890.0	-28.55	50.25
100.00	11 56 34	3803.72	-4.49	145.33	32.01	60.42	12 59 58	3203.7	-8.39	138.72
110.00	20 3 18	2185.20	-32.92	35.26	37.20	99.76	20 39 43	1585.2	-31.23	26.45
110.00	12 35 38	3681.31	-1.59	134.24	30.20	55.85	13 36 59	3081.3	-6.06	128.01

DIFFERENTIAL CORRECTIONS
TDE .0281 TRA 3.7022 TC-14.2034 BAU 2.1509
RDE .2918 RRA .0936 RC3 .4175 FAU .28963
FDE -.8761 FRA 6.7387 FC-22.1459 BSP 40437
BDE .2932 BRA 3.7034 BC314.2096 FSP 5693

MID-COURSE EXECUTION ACCURACY
SGT11696.4 SGR 595.8 SG3 1672.9
RRT -.2172 RRF -.2461 RTF .9939
SGB11711.6 R23 .0304 R13 -.9940
SG111697.1 SG2 581.5 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 2043.0 SR 499.6 SS 1351.4
CRT .1222 CRS .2789 CST -.9186
LSA 2407.2 MSA 674.2 SSA 26.1
EL1 2044.0 EL2 495.7 ALF 1.82

LAUNCH DATE NOV 12 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 812.073 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.923 GAL -3.63 AZL 88.14 HCA 245.37 SMA 187.23 ECC .21822 INC 1.8551 V1 30.094
RP 210.95 LAP -1.69 LOP 295.00 VP 23.440 GAP -10.32 AZP 90.77 TAL 339.49 TAP 224.85 RCA 146.37 APO 228.09 V2 26.001
RC 305.247 GL 18.24 GP -.07 ZAL 119.83 ZAP 46.70 ETS 179.23 ZAE 72.68 ETE 179.29 ZAC 83.86 ETC 258.14 CLP 46.70

PLANETOCENTRIC CONIC

C3 11.543 VHL 3.398 DLA 20.17 RAL 179.50 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 3.983 DPA 8.68 RAP 163.77 ECC 1.1900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 50	2776.14	-28.10	80.09	38.75	93.68	17 47 6	2176.1	-27.29	71.51
90.00	10 45 41	4050.40	-4.77	163.62	33.56	62.06	11 53 11	3450.4	-8.48	156.90
100.00	18 35 11	2471.90	-29.42	57.58	38.63	95.53	19 16 23	1871.9	-28.34	48.94
100.00	11 54 1	3829.87	-3.61	146.77	32.92	60.31	12 57 51	3229.9	-7.53	140.18
110.00	20 11 15	2171.34	-32.76	34.21	38.08	100.36	20 47 27	1571.3	-30.98	25.44
110.00	12 34 26	3703.20	-.75	135.38	31.14	55.82	13 36 9	3103.2	-5.23	129.16

DIFFERENTIAL CORRECTIONS
TDE -.0410 TRA 3.8751 TC-14.1801 BAU 2.1892
RDE .2983 RRA .0942 RC3 .4168 FAU .27732
FDE -.9616 FRA 6.6305 FC-20.7990 BSP 41109
BDE .3012 BRA 3.8762 BC314.1862 FSP 5464

MID-COURSE EXECUTION ACCURACY
SGT11887.5 SGR 601.6 SG3 1603.1
RRT -.2217 RRF -.2511 RTF .9939
SGB11902.7 R23 .0310 R13 -.9939
SG111888.3 SG2 586.6 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 2109.6 SR 505.8 SS 1358.3
CRT .0644 CRS .3197 CST -.9245
LSA 2469.9 MSA 670.9 SSA 25.6
EL1 2109.9 EL2 504.6 ALF .94

LAUNCH DATE NOV 12 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 816.308 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.928	GAL	-3.75	AZL	88.15	HCA	246.59	SMA	187.31	ECC	.21912	INC	1.8548	V1	30.094
RP	210.70	LAP	-1.70	LOP	296.22	VP	23.478	GAP	-10.46	AZP	90.74	TAL	338.87	TAP	225.46	RCA	146.27	APO	228.35	V2	26.029
RC	306.243	GL	18.05	GP	-.07	ZAL	120.82	ZAP	45.71	ETS	179.22	ZAE	71.41	ETE	179.32	ZAC	83.90	ETC	258.11	CLP	45.71

PLANETOCENTRIC CONIC

C3	11.779	VHL	3.432	DLA	19.59	RAL	180.35	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	4.054	DPA	8.59	RAP	163.99	ECC	1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2756.06	-28.00	78.62	39.70	94.41	17 56 45	2156.1	-27.10	70.07
90.00	10 42 30	4078.95	-3.86	165.22	34.49	61.93	11 50 29	3478.9	-7.59	158.52
100.00	18 44 28	2454.06	-29.30	56.27	39.57	96.21	19 25 22	1854.1	-28.13	47.66
100.00	11 51 32	3856.17	-2.72	148.21	33.85	60.22	12 55 48	3256.2	-6.66	141.65
110.00	20 19 13	2157.59	-32.58	33.18	38.99	100.95	20 55 11	1557.6	-30.73	24.45
110.00	12 33 16	3725.41	.10	136.54	32.09	55.82	13 35 21	3125.4	-4.39	130.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1137	TRA	4.0533	TC-14.1320	BAU	2.2264	SGT12071.4	SGR	607.3	SG3	1535.0	ST	2182.5	SR	511.8	SS	1365.4
RDE	.3050	RRA	.0946	RC3 .4155	FAU	.26525	RRT -.2264	RRF	-.2562	RTF	.9938	CRT	.0083	CRS	.3577	CST	-.9304
FDE	-1.0406	FRA	6.5219	FC-19.4950	BSP	41771	SGB12086.7	R23	.0315	R13	-.9938	LSA	2538.7	MSA	666.4	SSA	25.2
BDE	.3255	BRA	4.0544	BC314.1381	FSP	5246	SG112072.2	SG2	591.5	THA	179.35	EL1	2182.5	EL2	511.8	ALF	.12

LAUNCH DATE NOV 12 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 820.545 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.933	GAL	-3.87	AZL	88.15	HCA	247.81	SMA	187.39	ECC	.22006	INC	1.8545	V1	30.094
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.516	GAP	-10.59	AZP	90.70	TAL	338.24	TAP	226.05	RCA	146.15	APO	228.63	V2	26.057
RC	307.229	GL	17.85	GP	-.07	ZAL	121.82	ZAP	44.76	ETS	179.21	ZAE	70.16	ETE	179.34	ZAC	83.96	ETC	258.07	CLP	44.76

PLANETOCENTRIC CONIC

C3	12.032	VHL	3.469	DLA	18.99	RAL	181.21	RAD	6567.5	VEL	11.551	PTH	2.02	VHP	4.126	DPA	8.49	RAP	164.24	ECC	1.1980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 42	2736.39	-27.89	77.20	40.67	95.11	18 6 19	2136.4	-26.89	68.67
90.00	10 39 27	4107.53	-2.94	166.82	35.44	61.82	11 47 54	3507.5	-6.69	160.14
100.00	18 53 42	2436.51	-29.16	54.98	40.52	96.88	19 34 18	1836.5	-27.90	46.41
100.00	11 49 8	3882.64	-1.82	149.67	34.82	60.16	12 53 51	3282.6	-5.78	143.12
110.00	20 27 12	2143.98	-32.40	32.16	39.91	101.53	21 2 56	1544.0	-30.48	23.47
110.00	12 32 8	3747.94	.96	137.71	33.08	55.83	13 34 36	3147.9	-3.53	131.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1894	TRA	4.2369	TC-14.0644	BAU	2.2633	SGT12250.7	SGR	612.7	SG3	1468.9	ST	2261.4	SR	517.7	SS	1372.2
RDE	.3119	RRA	.0949	RC3 .4139	FAU	.25355	RRT -.2312	RRF	-.2615	RTF	.9937	CRT	-.0455	CRS	.3930	CST	-.9361
FDE	-1.1127	FRA	6.4122	FC-18.2440	BSP	42423	SGB12266.1	R23	.0320	R13	-.9938	LSA	2613.0	MSA	660.8	SSA	24.6
BDE	.3650	BRA	4.2380	BC314.0705	FSP	5035	SG112251.6	SG2	596.1	THA	179.34	EL1	2261.6	EL2	517.2	ALF	179.37

LAUNCH DATE NOV 12 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 824.784 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.937	GAL	-4.00	AZL	88.15	HCA	249.04	SMA	187.47	ECC	.22104	INC	1.8542	V1	30.094
RP	210.22	LAP	-1.73	LOP	298.67	VP	23.552	GAP	-10.73	AZP	90.66	TAL	337.60	TAP	226.63	RCA	146.03	APO	228.91	V2	26.085
RC	308.206	GL	17.64	GP	-.07	ZAL	122.84	ZAP	43.83	ETS	179.20	ZAE	68.95	ETE	179.36	ZAC	84.02	ETC	258.03	CLP	43.83

PLANETOCENTRIC CONIC

C3	12.302	VHL	3.507	DLA	18.39	RAL	182.07	RAD	6567.5	VEL	11.562	PTH	2.02	VHP	4.200	DPA	8.37	RAP	164.52	ECC	1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 31	2717.14	-27.76	75.80	41.66	95.80	18 15 48	2117.1	-26.67	67.30
90.00	10 36 30	4136.16	-2.02	168.42	36.42	61.75	11 45 26	3536.2	-5.78	161.76
100.00	19 2 53	2419.27	-29.01	53.72	41.49	97.53	19 43 12	1819.3	-27.67	45.18
100.00	11 46 49	3909.26	-.92	151.13	35.81	60.12	12 51 58	3309.3	-4.89	144.59
110.00	20 35 10	2150.53	-32.22	31.15	40.85	102.10	21 10 41	1530.5	-30.22	22.51
110.00	12 31 1	3770.77	1.83	138.91	34.09	55.86	13 33 52	3170.8	-2.66	132.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2679	TRA	4.4268	TC-13.9738	BAU	2.2991	SGT12423.9	SGR	618.0	SG3	1404.8	ST	2346.3	SR	523.6	SS	1378.9
RDE	.3190	RRA	.0951	RC3 .4119	FAU	.24215	RRT -.2361	RRF	-.2669	RTF	.9936	CRT	-.0964	CRS	.4260	CST	-.9412
FDE	-1.1795	FRA	6.3028	FC-17.0414	BSP	43078	SGB12439.3	R23	.0327	R13	-.9937	LSA	2692.7	MSA	655.1	SSA	24.2
BDE	.4166	BRA	4.4279	BC313.9799	FSP	4831	SG112424.8	SG2	600.5	THA	179.33	EL1	2346.9	EL2	521.0	ALF	178.70

LAUNCH DATE NOV 12 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 829.024 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	32.942	GAL	-4.13	AZL	88.15	HCA	250.26	SMA	187.56	ECC	.22207	INC	1.8539	V1	30.094
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.589	GAP	-10.86	AZP	90.63	TAL	336.94	TAP	227.20	RCA	145.91	APO	229.21	V2	26.111
RC	309.174	GL	17.43	GP	-.06	ZAL	123.86	ZAP	42.93	ETS	179.19	ZAE	67.75	ETE	179.39	ZAC	84.08	ETC	257.99	CLP	42.93

PLANETOCENTRIC CONIC

C3	12.590	VHL	3.548	DLA	17.78	RAL	182.93	RAD	6567.5	VEL	11.575	PTH	2.02	VHP	4.276	DPA	8.24	RAP	164.82	ECC	1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 15	2698.30	-27.63	74.44	42.66	96.47	18 25 13	2098.3	-26.44	65.97
90.00	10 33 40	4164.85	-1.10	170.02	37.43	61.70	11 43 4	3564.9	-4.87	163.37
100.00	19 12 2	2402.34	-28.86	52.49	42.48	98.16	19 52 4	1802.3	-27.43	43.98
100.00	11 44 34	3936.05	-.01	152.60	36.82	60.11	12 50 10	3336.1	-3.99	146.07
110.00	20 43 9	2117.26	-32.02	30.16	41.80	102.65	21 18 26	1517.3	-29.95	21.57
110.00	12 29 56	3793.90	2.72	140.11	35.12	55.91	13 33 10	3193.9	-1.77	133.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.3505	TRA	4.6220	TC-13.8654	BAU	2.3347	SGT12592.4	SGR	623.1	SG3	1342.6	ST	2436.5	SR	529.3	SS	1385.2
RDE	.3264	RRA	.0951	RC3 .4095	FAU	.23109	RRT -.2414	RRF	-.2728	RTF	.9935	CRT	-.1451	CRS	.4572	CST	-.9460
FDE	-1.2417	FRA	6.1922	FC-15.8912	BSP	43691	SGB12607.8	R23	.0334	R13	-.9935	LSA	2777.4	MSA	648.7	SSA	23.7
BDE	.4790	BRA	4.6230	BC313.8714	FSP	4631	SG112593.3	SG2	604.6	THA	179.31	EL1	2437.8	EL2	523.5	ALF	178.11

LAUNCH DATE NOV 12 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 833.265 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.947 GAL -4.27 AZL 88.15 HCA 251.49 SMA 187.64 ECC .22315 INC 1.8536 V1 30.094
RP 209.77 LAP -1.76 LOP 301.13 VP 23.624 GAP -11.00 AZP 90.59 TAL 336.26 TAP 227.76 RCA 145.77 APO 229.51 V2 26.137
RC 310.132 GL 17.21 GP -.06 ZAL 124.89 ZAP 42.05 ETS 179.18 ZAE 66.59 ETE 179.41 ZAC 84.15 ETC 257.95 CLP 42.05

PLANETOCENTRIC CONIC

C3 12.897 VHL 3.591 DLA 17.16 RAL 183.80 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 4.353 DPA 8.10 RAP 165.15 ECC 1.2123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 54	2679.88	-27.48	73.11	43.67	97.12	18 34 34	2079.9	-26.21	64.68
90.00	10 30 55	4193.61	-.17	171.62	38.46	61.68	11 40 48	3593.6	-3.95	164.99
100.00	19 21 7	2385.73	-28.69	51.28	43.48	98.77	20 0 53	1785.7	-27.18	42.81
100.00	11 42 23	3963.00	.90	154.08	37.87	60.12	12 48 26	3363.0	-3.08	147.55
110.00	20 51 6	2104.19	-31.82	29.20	42.78	103.19	21 26 10	1504.2	-29.68	20.64
110.00	12 28 53	3817.31	3.61	141.34	36.18	55.98	13 32 30	3217.3	-.88	135.13

DIFFERENTIAL CORRECTIONS
TDE -.4351 TRA 4.8235 TC-13.7368 BAU 2.3696
RDE .3340 RRA .0949 RC3 .4066 FAU .22035
FDE-1.2966 FRA 6.0805 FC-14.7915 BSP 44329
BDE .5485 BRA 4.8245 BC313.7428 FSP 4440

MID-COURSE EXECUTION ACCURACY
SGT12755.4 SGR 627.9 SG3 1282.2
RRT -.2467 RRF -.2787 RTF .9933
SGB12770.9 R23 .0341 R13 -.9934
SG112756.4 SG2 608.5 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 2531.4 SR 535.0 SS 1390.0
CRT -.1903 CRS .4857 CST -.9503
LSA 2865.9 MSA 642.1 SSA 23.3
EL1 2533.6 EL2 524.8 ALF 177.59

LAUNCH DATE NOV 12 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 837.506 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.952 GAL -4.40 AZL 88.15 HCA 252.73 SMA 187.73 ECC .22427 INC 1.8534 V1 30.094
RP 209.55 LAP -1.77 LOP 302.37 VP 23.659 GAP -11.13 AZP 90.55 TAL 335.57 TAP 228.30 RCA 145.63 APO 229.83 V2 26.162
RC 311.080 GL 16.99 GP -.06 ZAL 125.93 ZAP 41.20 ETS 179.17 ZAE 65.44 ETE 179.43 ZAC 84.23 ETC 257.90 CLP 41.20

PLANETOCENTRIC CONIC

C3 13.225 VHL 3.637 DLA 16.54 RAL 184.66 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 4.432 DPA 7.95 RAP 165.51 ECC 1.2177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 28	2661.88	-27.32	71.82	44.70	97.75	18 43 50	2061.9	-25.97	63.41
90.00	10 28 16	4222.45	.76	173.23	39.53	61.69	11 38 38	3622.5	-3.03	166.60
100.00	19 30 9	2369.46	-28.52	50.10	44.50	99.37	20 9 38	1769.5	-26.93	41.66
100.00	11 40 16	3990.11	1.82	155.56	38.94	60.16	12 46 46	3390.1	-2.16	149.04
110.00	20 59 2	2091.33	-31.62	28.25	43.77	103.72	21 33 54	1491.3	-29.41	19.74
110.00	12 27 52	3841.00	4.51	142.58	37.26	56.08	13 31 53	3241.0	.03	136.37

DIFFERENTIAL CORRECTIONS
TDE -.5243 TRA 5.0309 TC-13.5899 BAU 2.4038
RDE .3418 RRA .0945 RC3 .4033 FAU .20995
FDE-1.3471 FRA 5.9677 FC-13.7435 BSP 44931
BDE .6258 BRA 5.0318 BC313.5958 FSP 4254

MID-COURSE EXECUTION ACCURACY
SGT12915.0 SGR 632.6 SG3 1223.8
RRT -.2523 RRF -.2849 RTF .9932
SGB12928.5 R23 .0349 R13 -.9932
SG112914.0 SG2 612.1 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 2631.2 SR 540.6 SS 1393.9
CRT -.2333 CRS .5125 CST -.9543
LSA 2958.9 MSA 634.9 SSA 22.8
EL1 2634.3 EL2 525.1 ALF 177.14

LAUNCH DATE NOV 12 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 841.748 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.957 GAL -4.55 AZL 88.15 HCA 253.96 SMA 187.82 ECC .22545 INC 1.8531 V1 30.094
RP 209.34 LAP -1.78 LOP 303.60 VP 23.692 GAP -11.27 AZP 90.51 TAL 334.87 TAP 228.83 RCA 145.48 APO 230.16 V2 26.186
RC 312.019 GL 16.76 GP -.06 ZAL 126.98 ZAP 40.38 ETS 179.16 ZAE 64.33 ETE 179.45 ZAC 84.31 ETC 257.84 CLP 40.38

PLANETOCENTRIC CONIC

C3 13.575 VHL 3.684 DLA 15.91 RAL 185.53 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.512 DPA 7.79 RAP 165.89 ECC 1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 58	2644.31	-27.15	70.56	45.75	98.36	18 53 2	2044.3	-25.72	62.19
90.00	10 25 42	4251.37	1.70	174.85	40.62	61.73	11 36 33	3651.4	-2.10	168.22
100.00	19 39 8	2353.53	-28.33	48.96	45.54	99.95	20 18 21	1753.5	-26.87	40.55
100.00	11 38 13	4017.38	2.74	157.06	40.04	60.22	12 45 10	3417.4	-1.24	150.54
110.00	21 6 58	2078.72	-31.41	27.33	44.78	104.23	21 41 36	1478.7	-29.14	18.86
110.00	12 26 52	3864.96	5.42	143.84	38.37	56.20	13 31 17	3265.0	.94	137.62

DIFFERENTIAL CORRECTIONS
TDE -.6156 TRA 5.2450 TC-13.4276 BAU 2.4380
RDE .3499 RRA .0939 RC3 .3997 FAU .19985
FDE-1.3919 FRA 5.8547 FC-12.7456 BSP 45536
BDE .7081 BRA 5.2459 BC313.4335 FSP 4074

MID-COURSE EXECUTION ACCURACY
SGT13067.2 SGR 637.1 SG3 1167.3
RRT -.2581 RRF -.2913 RTF .9930
SGB13082.7 R23 .0357 R13 -.9930
SG113068.2 SG2 615.4 THA 179.28

ORBIT DETERMINATION ACCURACY
ST 2734.7 SR 546.1 SS 1396.5
CRT -.2730 CRS .5372 CST -.9578
LSA 3054.9 MSA 627.8 SSA 22.4
EL1 2738.9 EL2 524.5 ALF 176.76

LAUNCH DATE NOV 12 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 845.988 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.962 GAL -4.69 AZL 88.15 HCA 255.20 SMA 187.91 ECC .22667 INC 1.8528 V1 30.094
RP 209.14 LAP -1.79 LOP 304.84 VP 23.725 GAP -11.41 AZP 90.47 TAL 334.15 TAP 229.35 RCA 145.32 APO 230.51 V2 26.209
RC 312.950 GL 16.52 GP -.06 ZAL 128.03 ZAP 39.58 ETS 179.14 ZAE 63.23 ETE 179.47 ZAC 84.40 ETC 257.79 CLP 39.58

PLANETOCENTRIC CONIC

C3 13.948 VHL 3.735 DLA 15.27 RAL 186.40 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 4.594 DPA 7.62 RAP 166.30 ECC 1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 22	2627.16	-26.98	69.33	46.81	98.95	19 2 10	2027.2	-25.46	60.99
90.00	10 23 12	4280.39	2.63	176.47	41.74	61.80	11 34 33	3680.4	-1.16	169.84
100.00	19 48 3	2337.97	-28.15	47.84	46.59	100.51	20 27 1	1738.0	-26.41	39.47
100.00	11 36 13	4044.81	3.67	158.57	41.16	60.31	12 43 38	3444.8	-.31	152.05
110.00	21 14 51	2066.37	-31.20	26.42	45.80	104.73	21 49 17	1466.4	-28.87	18.00
110.00	12 25 54	3889.17	6.34	145.12	39.51	56.34	13 30 44	3289.2	1.87	138.88

DIFFERENTIAL CORRECTIONS
TDE -.7110 TRA 5.4644 TC-13.2491 BAU 2.4717
RDE .3583 RRA .0931 RC3 .3958 FAU .19010
FDE-1.4327 FRA 5.7397 FC-11.7990 BSP 46111
BDE .7962 BRA 5.4652 BC313.2550 FSP 3898

MID-COURSE EXECUTION ACCURACY
SGT13215.2 SGR 641.4 SG3 1112.6
RRT -.2641 RRF -.2982 RTF .9927
SGB13230.8 R23 .0367 R13 -.9927
SG113216.3 SG2 618.6 THA 179.26

ORBIT DETERMINATION ACCURACY
ST 2841.6 SR 551.5 SS 1397.8
CRT -.3104 CRS .5607 CST -.9609
LSA 3153.9 MSA 620.6 SSA 22.0
EL1 2846.9 EL2 523.3 ALF 176.43

LAUNCH DATE NOV 12 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 850.228 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.968 GAL -4.84 AZL 88.15 HCA 256.44 SMA 188.00 ECC .22795 INC 1.8525 V1 30.094
RP 208.94 LAP -1.80 LOP 306.08 VP 23.758 GAP -11.54 AZP 90.43 TAL 333.41 TAP 229.85 RCA 145.15 APO 230.86 V2 26.232
RC 313.871 GL 16.28 GP -.06 ZAL 129.08 ZAP 38.80 ETS 179.13 ZAE 62.15 ETE 179.49 ZAC 84.49 ETC 257.73 CLP 38.80

PLANETOCENTRIC CONIC

C3 14.345 VHL 3.788 DLA 14.63 RAL 187.27 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 4.678 DPA 7.43 RAP 166.72 ECC 1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 42	2610.44	-26.79	68.15	47.89	99.52	19 11 12	2010.4	-25.21	59.84
90.00	10 20 48	4309.49	3.57	178.09	42.88	61.89	11 32 38	3709.5	-.22	171.46
100.00	19 56 54	2322.78	-27.95	46.75	47.66	101.05	20 35 37	1722.8	-26.14	38.41
100.00	11 34 17	4072.39	4.60	180.09	42.31	60.43	12 42 10	3472.4	.63	153.56
110.00	21 22 42	2054.30	-30.99	25.55	46.84	105.20	21 56 57	1454.3	-28.59	17.17
110.00	12 24 58	3913.64	7.26	146.41	40.67	56.50	13 30 12	3313.6	2.80	140.16

DIFFERENTIAL CORRECTIONS
TDE -.8091 TRA 5.6912 TC-13.0569 BAU 2.5052
RDE .3669 RRA .0920 RC3 .3914 FAU .18064
FDE-1.4676 FRA 5.6236 FC-10.9012 BSP 46082
BDE .8884 BRA 5.6919 BC313.0627 FSP 3730

MID-COURSE EXECUTION ACCURACY
SGT13360.1 SGR 645.5 SG3 1059.7
RRT -.2704 RRF -.3052 RTF .9925
SGB13375.7 R23 .0376 R13 -.9925
SG113361.3 SG2 621.4 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 2951.5 SR 556.8 SS 1397.1
CRT -.3449 CRS .5823 CST -.9637
LSA 3255.2 MSA 613.3 SSA 21.6
EL1 2957.9 EL2 521.5 ALF 176.16

LAUNCH DATE NOV 12 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 854.467 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.973 GAL -5.00 AZL 88.15 HCA 257.69 SMA 188.10 ECC .22929 INC 1.8523 V1 30.094
RP 208.76 LAP -1.81 LOP 307.33 VP 23.789 GAP -11.68 AZP 90.40 TAL 332.66 TAP 230.34 RCA 144.97 APO 231.23 V2 26.254
RC 314.784 GL 16.04 GP -.06 ZAL 130.14 ZAP 38.04 ETS 179.11 ZAE 61.10 ETE 179.52 ZAC 84.59 ETC 257.67 CLP 38.04

PLANETOCENTRIC CONIC

C3 14.769 VHL 3.843 DLA 13.98 RAL 188.13 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 4.764 DPA 7.24 RAP 167.18 ECC 1.2431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 57	2594.17	-26.61	66.99	48.99	100.07	19 20 11	1994.2	-24.94	58.72
90.00	10 18 28	4338.69	4.50	179.73	44.06	62.01	11 30 47	3738.7	.72	173.09
100.00	20 5 41	2307.97	-27.76	45.69	48.74	101.57	20 44 9	1708.0	-25.88	37.40
100.00	11 32 25	4100.12	5.53	161.63	43.49	60.58	12 40 45	3500.1	1.57	155.08
110.00	21 30 32	2042.52	-30.78	24.70	47.90	105.67	22 4 34	1442.5	-28.32	16.36
110.00	12 24 4	3938.34	8.18	147.73	41.86	56.69	13 29 42	3338.3	3.74	141.45

DIFFERENTIAL CORRECTIONS
TDE -.9093 TRA 5.9256 TC-12.8476 BAU 2.5379
RDE .3758 RRA .0907 RC3 .3867 FAU .17141
FDE-1.4967 FRA 5.5078 FC-10.0477 BSP 47260
BDE .9839 BRA 5.9263 BC312.8535 FSP 3567

MID-COURSE EXECUTION ACCURACY
SGT13499.4 SGR 649.4 SG3 1008.4
RRT -.2767 RRF -.3122 RTF .9922
SGB13515.0 R23 .0386 R13 -.9922
SG113500.6 SG2 624.0 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 3063.5 SR 562.0 SS 1394.4
CRT -.3764 CRS .6021 CST -.9661
LSA 3358.1 MSA 606.3 SSA 21.2
EL1 3071.0 EL2 519.3 ALF 175.93

LAUNCH DATE NOV 12 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 858.703 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.979 GAL -5.16 AZL 88.15 HCA 258.93 SMA 188.20 ECC .23068 INC 1.8520 V1 30.094
RP 208.58 LAP -1.82 LOP 308.57 VP 23.820 GAP -11.82 AZP 90.36 TAL 331.89 TAP 230.82 RCA 144.78 APO 231.61 V2 26.274
RC 315.690 GL 15.79 GP -.06 ZAL 131.21 ZAP 37.31 ETS 179.10 ZAE 60.07 ETE 179.53 ZAC 84.70 ETC 257.61 CLP 37.31

PLANETOCENTRIC CONIC

C3 15.220 VHL 3.901 DLA 13.33 RAL 189.00 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 4.851 DPA 7.04 RAP 167.65 ECC 1.2505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 6	2578.35	-26.41	65.87	50.10	100.60	19 29 5	1978.4	-24.68	57.63
90.00	10 16 12	4367.97	5.43	181.38	45.26	62.17	11 29 0	3768.0	1.67	174.72
100.00	20 14 24	2293.57	-27.55	44.67	49.84	102.07	20 52 38	1693.6	-25.61	36.41
100.00	11 30 35	4127.99	6.46	163.17	44.70	60.75	12 39 23	3528.0	2.51	156.61
110.00	21 38 18	2031.05	-30.56	23.87	48.98	106.11	22 12 9	1431.0	-28.05	15.57
110.00	12 23 11	3963.27	9.11	149.06	43.08	56.91	13 29 14	3363.3	4.69	142.76

DIFFERENTIAL CORRECTIONS
TDE-1.0139 TRA 6.1661 TC-12.6299 BAU 2.5711
RDE .3851 RRA .0891 RC3 .3817 FAU .16257
FDE-1.5228 FRA 5.3894 FC3-9.2471 BSP 47808
BDE 1.0846 BRA 6.1668 BC312.6357 FSP 3408

MID-COURSE EXECUTION ACCURACY
SGT13636.1 SGR 653.2 SG3 959.1
RRT -.2835 RRF -.3199 RTF .9918
SGB13651.7 R23 .0397 R13 -.9919
SG113637.4 SG2 626.3 THA 179.22

ORBIT DETERMINATION ACCURACY
ST 3178.0 SR 567.0 SS 1390.2
CRT -.4062 CRS .6211 CST -.9683
LSA 3463.3 MSA 599.2 SSA 20.8
EL1 3186.6 EL2 516.7 ALF 175.74

LAUNCH DATE NOV 12 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 862.937 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.984 GAL -5.33 AZL 88.15 HCA 260.18 SMA 188.29 ECC .23214 INC 1.8518 V1 30.094
RP 208.40 LAP -1.82 LOP 309.82 VP 23.850 GAP -11.96 AZP 90.32 TAL 331.11 TAP 231.29 RCA 144.58 APO 232.00 V2 26.294
RC 316.588 GL 15.54 GP -.05 ZAL 132.27 ZAP 36.59 ETS 179.08 ZAE 59.06 ETE 179.55 ZAC 84.80 ETC 257.55 CLP 36.59

PLANETOCENTRIC CONIC

C3 15.700 VHL 3.962 DLA 12.68 RAL 189.86 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 4.940 DPA 6.82 RAP 168.14 ECC 1.2584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 11	2562.99	-26.22	64.79	51.23	101.11	19 37 54	1963.0	-24.42	56.58
90.00	10 14 1	4397.34	6.37	183.03	46.49	62.35	11 27 18	3797.3	2.61	176.36
100.00	20 23 3	2279.57	-27.35	43.68	50.96	102.56	21 1 3	1679.6	-25.35	35.45
100.00	11 28 49	4156.00	7.39	164.73	45.93	60.95	12 38 5	3556.0	3.46	158.15
110.00	21 46 2	2019.91	-30.35	23.07	50.07	106.54	22 19 42	1419.9	-27.79	14.82
110.00	12 22 20	3988.42	10.04	150.41	44.32	57.15	13 28 48	3388.4	5.64	144.08

DIFFERENTIAL CORRECTIONS
TDE-1.1204 TRA 6.4141 TC-12.3979 BAU 2.6035
RDE .3946 RRA .0873 RC3 .3763 FAU .15396
FDE-1.5433 FRA 5.2707 FC3-8.4894 BSP 48363
BDE 1.1879 BRA 6.4147 BC312.4036 FSP 3255

MID-COURSE EXECUTION ACCURACY
SGT13767.0 SGR 656.7 SG3 911.4
RRT -.2903 RRF -.3276 RTF .9915
SGB13782.7 R23 .0409 R13 -.9915
SG113768.3 SG2 628.4 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 3293.2 SR 572.0 SS 1383.8
CRT -.4334 CRS .6385 CST -.9701
LSA 3568.8 MSA 592.5 SSA 20.5
EL1 3302.8 EL2 514.0 ALF 175.59

LAUNCH DATE NOV 12 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 867.167 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.990 GAL -5.50 AZL 88.15 HCA 261.43 SMA 188.39 ECC .23366 INC 1.8515 V1 30.094
RP 208.24 LAP -1.83 LOP 311.07 VP 23.878 GAP -12.11 AZP 90.28 TAL 330.31 TAP 231.74 RCA 144.37 APO 232.41 V2 26.314
RC 317.480 GL 15.28 GP -.05 ZAL 133.34 ZAP 35.90 ETS 179.07 ZAE 58.06 ETE 179.57 ZAC 84.92 ETC 257.48 CLP 35.90

PLANETOCENTRIC CONIC

C3 16.212 VHL 4.026 DLA 12.02 RAL 190.72 RAD 6567.6 VEL 11.730 PTH 2.07 VHP 5.030 DPA 6.60 RAP 168.65 ECC 1.2668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 10	2548.09	-26.02	63.75	52.37	101.59	19 46 38	1948.1	-24.16	55.57
90.00	10 11 53	4426.80	7.29	184.70	47.74	62.56	11 25 40	3826.8	3.56	178.01
100.00	20 31 38	2265.98	-27.15	42.72	52.10	103.02	21 9 24	1666.0	-25.08	34.53
100.00	11 27 6	4184.14	8.31	166.31	47.19	61.18	12 36 50	3584.1	4.40	159.70
110.00	21 53 43	2009.12	-30.14	22.30	51.19	106.95	22 27 13	1409.1	-27.52	14.09
110.00	12 21 30	4013.77	10.98	151.78	45.59	57.42	13 28 24	3413.8	6.60	145.42

DIFFERENTIAL CORRECTIONS
TDE-1.2322 TRA 6.6684 TC-12.1605 BAU 2.6369
RDE .4045 RRA .0852 RC3 .3708 FAU .14571
FDE-1.5612 FRA 5.1494 FC3-7.7812 BSP 48870
BDE 1.2969 BRA 6.6689 BC312.1662 FSP 3104

MID-COURSE EXECUTION ACCURACY
SGT13896.0 SGR 660.2 SG3 865.4
RRT -.2977 RRF -.3359 RTF .9911
SGB13911.6 R23 .0422 R13 -.9911
SG113897.4 SG2 630.2 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 3410.6 SR 576.9 SS 1375.9
CRT -.4593 CRS .6554 CST -.9718
LSA 3676.3 MSA 585.6 SSA 20.1
EL1 3421.1 EL2 510.8 ALF 175.46

LAUNCH DATE NOV 12 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 871.393 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 32.995 GAL -5.67 AZL 88.15 HCA 262.68 SMA 188.49 ECC .23524 INC 1.8513 V1 30.094
RP 208.08 LAP -1.84 LOP 312.32 VP 23.906 GAP -12.25 AZP 90.24 TAL 329.49 TAP 232.17 RCA 144.15 APO 232.84 V2 26.332
RC 318.367 GL 15.02 GP -.05 ZAL 134.40 ZAP 35.23 ETS 179.05 ZAE 57.08 ETE 179.59 ZAC 85.03 ETC 257.42 CLP 35.23

PLANETOCENTRIC CONIC

C3 16.758 VHL 4.093 DLA 11.37 RAL 191.58 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 5.123 DPA 6.37 RAP 169.18 ECC 1.2758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 4	2533.66	-25.82	62.74	53.54	102.06	19 55 17	1933.7	-23.89	54.59
90.00	10 9 49	4456.35	8.22	186.38	49.03	62.81	11 24 6	3856.3	4.51	179.67
100.00	20 40 8	2252.83	-26.94	41.80	53.25	103.47	21 17 41	1652.8	-24.82	33.64
100.00	11 25 26	4212.40	9.24	167.90	48.48	61.44	12 35 38	3612.4	5.35	161.26
110.00	22 1 21	1998.68	-29.93	21.56	52.31	107.34	22 34 40	1398.7	-27.27	13.39
110.00	12 20 42	4030.32	11.91	153.17	46.89	57.72	13 28 2	3439.3	7.56	146.77

DIFFERENTIAL CORRECTIONS
TDE-1.3462 TRA 6.9303 TC-11.9136 BAU 2.6701
RDE .4147 RRA .0828 RC3 .3649 FAU .13768
FDE-1.5744 FRA 5.0269 FC3-7.1134 BSP 49369
BDE 1.4086 BRA 6.9308 BC311.9191 FSP 2958

MID-COURSE EXECUTION ACCURACY
SGT14020.7 SGR 663.4 SG3 820.9
RRT -.3051 RRF -.3444 RTF .9906
SGB14036.4 R23 .0436 R13 -.9906
SG114022.2 SG2 631.7 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 3528.0 SR 581.6 SS 1365.8
CRT -.4830 CRS .6711 CST -.9731
LSA 3783.5 MSA 579.1 SSA 19.8
EL1 3539.4 EL2 507.6 ALF 175.35

LAUNCH DATE NOV 12 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 875.615 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.001 GAL -5.85 AZL 88.15 HCA 263.93 SMA 188.60 ECC .23690 INC 1.8510 V1 30.094
RP 207.93 LAP -1.84 LOP 313.58 VP 23.933 GAP -12.40 AZP 90.20 TAL 328.66 TAP 232.59 RCA 143.92 APO 233.27 V2 26.349
RC 319.247 GL 14.75 GP -.05 ZAL 135.46 ZAP 34.57 ETS 179.03 ZAE 56.14 ETE 179.61 ZAC 85.16 ETC 257.35 CLP 34.57

PLANETOCENTRIC CONIC

C3 17.336 VHL 4.164 DLA 10.71 RAL 192.43 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 5.217 DPA 6.13 RAP 169.73 ECC 1.2853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 52	2519.71	-25.61	61.77	54.71	102.51	20 3 52	1919.7	-23.63	53.65
90.00	10 7 49	4485.97	9.13	188.07	50.34	63.08	11 22 35	3886.0	5.45	181.33
100.00	20 48 34	2240.12	-26.74	40.91	54.42	103.89	21 25 54	1640.1	-24.56	32.78
100.00	11 23 49	4240.79	10.16	169.50	49.80	61.73	12 34 30	3640.8	6.30	162.84
110.00	22 8 56	1988.61	-29.72	20.85	53.46	107.72	22 42 5	1388.6	-27.01	12.71
110.00	12 19 56	4065.06	12.84	154.58	48.21	58.04	13 27 41	3465.1	8.53	148.14

DIFFERENTIAL CORRECTIONS
TDE-1.4634 TRA 7.1997 TC-11.6595 BAU 2.7036
RDE .4252 RRA .0800 RC3 .3588 FAU .12995
FDE-1.5833 FRA 4.9025 FC3-6.4896 BSP 49853
BDE 1.5239 BRA 7.2002 BC311.6651 FSP 2816

MID-COURSE EXECUTION ACCURACY
SGT14142.0 SGR 666.5 SG3 778.0
RRT -.3129 RRF -.3532 RTF .9901
SGB14157.7 R23 .0451 R13 -.9901
SG114143.5 SG2 633.0 THA 179.15

ORBIT DETERMINATION ACCURACY
ST 3645.6 SR 586.2 SS 1353.5
CRT -.5050 CRS .6858 CST -.9743
LSA 3890.7 MSA 572.6 SSA 19.5
EL1 3657.8 EL2 504.3 ALF 175.27

LAUNCH DATE NOV 12 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 879.831 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.007 GAL -6.04 AZL 88.15 HCA 265.19 SMA 188.70 ECC .23862 INC 1.8507 V1 30.094
RP 207.79 LAP -1.84 LOP 314.83 VP 23.960 GAP -12.55 AZP 90.16 TAL 327.82 TAP 233.00 RCA 143.67 APO 233.73 V2 26.366
RC 320.122 GL 14.49 GP -.05 ZAL 136.52 ZAP 33.93 ETS 179.02 ZAE 55.20 ETE 179.63 ZAC 85.28 ETC 257.29 CLP 33.93

PLANETOCENTRIC CONIC

C3 17.953 VHL 4.237 DLA 10.06 RAL 193.28 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 5.313 DPA 5.88 RAP 170.30 ECC 1.2955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 36	2506.24	-25.41	60.83	55.91	102.93	20 12 22	1906.2	-23.38	52.75
90.00	10 5 52	4515.67	10.04	189.78	51.69	63.39	11 21 8	3915.7	6.39	183.01
100.00	20 56 55	2227.85	-26.53	40.05	55.61	104.30	21 34 2	1627.9	-24.31	31.96
100.00	11 22 14	4269.30	11.07	171.13	51.15	62.06	12 33 24	3669.3	7.25	164.43
110.00	22 16 27	1978.93	-29.52	20.17	54.62	108.07	22 49 26	1378.9	-26.77	12.07
110.00	12 19 11	4090.98	13.77	156.02	49.57	58.40	13 27 22	3491.0	9.49	149.53

DIFFERENTIAL CORRECTIONS
TDE-1.5838 TRA 7.4770 TC-11.3998 BAU 2.7374
RDE .4361 RRA .0770 RC3 .3525 FAU .12252
FDE-1.5889 FRA 4.7762 FC3-5.9082 BSP 50326
BDE 1.6427 BRA 7.4774 BC311.4052 FSP 2679

MID-COURSE EXECUTION ACCURACY
SGT14260.2 SGR 669.5 SG3 736.7
RRT -.3209 RRF -.3625 RTF .9895
SGB14275.9 R23 .0468 R13 -.9896
SG114261.8 SG2 634.0 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 3763.1 SR 590.7 SS 1339.3
CRT -.5255 CRS .6999 CST -.9753
LSA 3997.7 MSA 566.5 SSA 19.2
EL1 3776.1 EL2 500.8 ALF 175.20

LAUNCH DATE NOV 12 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 884.041 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.013	GAL	-6.23	AZL	88.15	HCA	266.44	SMA	188.81	ECC	.24042	INC	1.8505	V1	30.094
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.985	GAP	-12.70	AZP	90.11	TAL	326.95	TAP	233.40	RCA	143.41	APO	234.20	V2	26.381
RC	320.992	GL	14.22	GP	-.05	ZAL	137.58	ZAP	33.31	ETS	179.00	ZAE	54.28	ETE	179.64	ZAC	85.42	ETC	257.22	CLP	33.31

PLANETOCENTRIC CONIC

C3	18.609	VHL	4.314	DLA	9.40	RAL	194.13	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	5.411	DPA	5.62	RAP	170.88	ECC	1.3063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 14	2493.26	-25.21	59.93	57.12	103.34	20 20 47	1893.3	-23.13	51.88
90.00	10 3 59	4545.45	10.95	191.50	53.06	63.72	11 19 44	3945.5	7.33	184.69
100.00	21 5 11	2216.04	-26.33	39.23	56.81	104.68	21 42 7	1616.0	-24.06	31.17
100.00	11 20 43	4297.90	11.98	172.77	52.52	62.41	12 32 21	3697.9	8.19	166.03
110.00	22 23 55	1969.85	-29.32	19.52	55.81	108.41	22 56 45	1369.6	-26.53	11.45
110.00	12 18 28	4117.06	14.69	157.47	50.95	58.78	13 27 5	3517.1	10.45	150.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7077	TRA	7.7623	TC	-11.1348	BAU	2.7715	SGT	14375.0	SGR	672.3	SG3	696.8	ST	3880.3	SR	595.0	SS	1322.9
RDE	.4474	RRA	.0735	RC3	.3459	FAU	.11527	RRT	-.3291	RRF	-.3719	RTF	.9889	CRT	-.5445	CRS	.7131	CST	-.9762
FDE	-1.5901	FRA	4.6487	FC3	-5.3625	BSP	50771	SGB	14390.7	R23	.0485	R13	-.9889	LSA	4104.4	MSA	560.4	SSA	18.9
BDE	1.7654	BRA	7.7626	BC3	11.1402	FSP	2545	SG1	14376.7	SG2	634.7	THA	179.12	EL1	3894.0	EL2	497.3	ALF	175.15

LAUNCH DATE NOV 12 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 888.244 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.019	GAL	-6.42	AZL	88.15	HCA	267.70	SMA	188.91	ECC	.24229	INC	1.8502	V1	30.094
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.009	GAP	-12.85	AZP	90.07	TAL	326.08	TAP	233.78	RCA	143.14	APO	234.68	V2	26.396
RC	321.856	GL	15.95	GP	-.05	ZAL	138.64	ZAP	32.71	ETS	178.98	ZAE	53.37	ETE	179.66	ZAC	85.55	ETC	257.15	CLP	32.71

PLANETOCENTRIC CONIC

C3	19.307	VHL	4.394	DLA	8.75	RAL	194.97	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	5.512	DPA	5.35	RAP	171.49	ECC	1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 46	2480.77	-25.01	59.07	58.35	103.73	20 29 7	1880.8	-22.88	51.05
90.00	10 2 9	4575.30	11.84	193.24	54.46	64.09	11 18 24	3975.3	8.26	186.39
100.00	21 13 22	2204.69	-26.13	38.45	58.03	105.05	21 50 7	1604.7	-23.81	30.42
100.00	11 19 14	4326.61	12.88	174.42	53.93	62.79	12 31 20	3726.6	9.13	167.64
110.00	22 31 19	1960.77	-29.13	18.90	57.00	108.73	23 4 0	1360.8	-26.30	10.87
110.00	12 17 46	4143.30	15.62	158.95	52.36	59.20	13 26 50	3543.3	11.42	152.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8354	TRA	8.0543	TC	-10.8675	BAU	2.8064	SGT	14486.2	SGR	674.9	SG3	658.3	ST	3996.6	SR	599.2	SS	1304.9
RDE	.4590	RRA	.0608	RC3	.3392	FAU	.10632	RRT	-.3377	RRF	-.3819	RTF	.9882	CRT	-.5625	CRS	.7259	CST	-.9768
FDE	-1.5891	FRA	4.5184	FC3	-4.8571	BSP	51184	SGB	14502.0	R23	.0506	R13	-.9882	LSA	4210.3	MSA	554.5	SSA	18.6
BDE	1.8920	BRA	8.0546	BC3	10.8727	FSP	2413	SG1	14488.0	SG2	635.2	THA	179.10	EL1	4011.0	EL2	493.7	ALF	175.11

LAUNCH DATE NOV 12 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 892.439 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.025	GAL	-6.63	AZL	88.15	HCA	268.96	SMA	189.02	ECC	.24425	INC	1.8500	V1	30.094
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.032	GAP	-13.01	AZP	90.03	TAL	325.18	TAP	234.14	RCA	142.85	APO	235.19	V2	26.409
RC	322.714	GL	13.68	GP	-.05	ZAL	139.69	ZAP	32.13	ETS	178.96	ZAE	52.48	ETE	179.68	ZAC	85.69	ETC	257.08	CLP	32.13

PLANETOCENTRIC CONIC

C3	20.050	VHL	4.478	DLA	8.10	RAL	195.80	RAD	6567.8	VEL	11.892	PTH	2.11	VHP	5.614	DPA	5.08	RAP	172.10	ECC	1.3300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 13	2468.78	-24.81	58.25	59.60	104.10	20 37 22	1868.8	-22.63	50.26
90.00	10 0 22	4605.21	12.72	194.99	55.89	64.49	11 17 7	4005.2	9.19	188.10
100.00	21 21 29	2193.80	-25.94	37.70	59.27	105.40	21 58 2	1593.8	-23.57	29.70
100.00	11 17 47	4355.42	13.77	176.10	55.36	63.20	12 30 23	3755.4	10.06	169.27
110.00	22 38 39	1952.30	-28.94	18.31	58.22	109.04	23 11 11	1352.3	-26.07	10.31
110.00	12 17 6	4169.69	16.53	160.45	53.81	59.64	13 26 36	3569.7	12.37	153.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.9660	TRA	8.3558	TC	-10.5952	BAU	2.8414	SGT	14594.2	SGR	677.5	SG3	621.1	ST	4111.7	SR	603.2	SS	1284.5
RDE	.4710	RRA	.0656	RC3	.3323	FAU	.10157	RRT	-.3464	RRF	-.3921	RTF	.9874	CRT	-.5790	CRS	.7380	CST	-.9773
FDE	-1.5836	FRA	4.3868	FC3	-4.3856	BSP	51589	SGB	14609.9	R23	.0527	R13	-.9875	LSA	4314.9	MSA	548.8	SSA	18.3
BDE	2.0216	BRA	8.3560	BC3	10.6004	FSP	2286	SG1	14596.1	SG2	635.4	THA	179.08	EL1	4126.7	EL2	490.0	ALF	175.07

LAUNCH DATE NOV 12 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 896.625 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.031	GAL	-6.83	AZL	88.15	HCA	270.22	SMA	189.13	ECC	.24629	INC	1.8497	V1	30.094
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.055	GAP	-13.17	AZP	89.99	TAL	324.27	TAP	234.49	RCA	142.55	APO	235.71	V2	26.422
RC	323.566	GL	13.41	GP	-.05	ZAL	140.74	ZAP	31.56	ETS	178.94	ZAE	51.61	ETE	179.69	ZAC	85.84	ETC	257.01	CLP	31.56

PLANETOCENTRIC CONIC

C3	20.840	VHL	4.565	DLA	7.45	RAL	196.63	RAD	6567.8	VEL	11.926	PTH	2.12	VHP	5.718	DPA	4.79	RAP	172.74	ECC	1.3430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 35	2457.28	-24.62	57.46	60.86	104.45	20 45 32	1857.3	-22.40	49.50
90.00	9 58 38	4635.18	13.60	196.76	57.35	64.92	11 15 53	4035.2	10.10	189.82
100.00	21 29 30	2183.39	-25.75	36.98	60.52	105.73	22 5 54	1583.4	-23.34	29.01
100.00	11 16 24	4384.30	14.65	177.79	56.83	63.65	12 29 28	3784.3	10.99	170.91
110.00	22 45 55	1944.25	-28.76	17.76	59.45	109.32	23 18 19	1344.3	-25.86	9.78
110.00	12 16 28	4196.21	17.44	161.97	55.28	60.12	13 26 24	3596.2	13.33	155.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.1007	TRA	8.6644	TC	-10.3252	BAU	2.8782	SGT	14700.3	SGR	679.9	SG3	585.3	ST	4225.7	SR	607.1	SS	1262.5
RDE	.4833	RRA	.0611	RC3	.3254	FAU	.09510	RRT	-.3555	RRF	-.4028	RTF	.9866	CRT	-.5947	CRS	.7497	CST	-.9777
FDE	-1.5756	FRA	4.2522	FC3	-3.9507	BSP	51939	SGB	14716.0	R23	.0551	R13	-.9866	LSA	4418.5	MSA	543.2	SSA	18.0
BDE	2.1556	BRA	8.6646	BC3	10.3304	FSP	2160	SG1	14702.3	SG2	635.4	THA	179.06	EL1	4241.3	EL2	486.3	ALF	175.05

LAUNCH DATE NOV 12 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 900.802 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.038 GAL -7.05 AZL 88.15 HCA 271.48 SMA 189.24 ECC .24842 INC 1.8495 V1 30.094
RP 207.21 LAP -1.85 LOP 321.13 VP 24.076 GAP -13.33 AZP 89.95 TAL 323.35 TAP 234.83 RCA 142.23 APO 236.25 V2 26.434
RC 324.413 GL 13.14 GP -.05 ZAL 141.78 ZAP 31.00 ETS 178.92 ZAE 50.75 ETE 179.71 ZAC 85.98 ETC 256.94 CLP 31.00

PLANETOCENTRIC CONIC

C3 21.601 VHL 4.656 DLA 6.81 RAL 197.46 RAD 6567.9 VEL 11.961 PTH 2.13 VHP 5.825 DPA 4.50 RAP 173.39 ECC 1.3568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 52	2448.29	-24.43	56.71	62.13	104.78	20 53 38	1846.3	-22.17	48.77
90.00	9 56 56	4665.20	14.46	198.55	58.84	65.38	11 14 42	4065.2	11.01	191.56
100.00	21 37 27	2173.45	-25.56	36.30	61.79	106.05	22 13 40	1573.5	-23.12	28.36
100.00	11 15 2	4413.27	15.52	179.50	58.32	64.13	12 28 35	3813.3	11.91	172.57
110.00	22 53 7	1936.63	-28.59	17.23	60.70	109.59	23 25 24	1336.6	-25.65	9.28
110.00	12 15 51	4222.86	18.33	163.51	56.78	60.63	13 26 14	3622.9	14.28	156.74

DIFFERENTIAL CORRECTIONS
TDE-2.2390 TRA 8.9824 TC-10.0523 BAU 2.9152
RDE .4961 RRA .0561 RC3 .3183 FAU .08881
FDE-1.5640 FRA 4.1161 FC3-3.5461 BSP 52288
BDE 2.2933 BRA 8.9826 BC310.0573 FSP 2040

MID-COURSE EXECUTION ACCURACY
SGT14803.1 SGR 682.1 SG3 550.7
RRT -.3647 RRF -.4138 RTF .9856
SGB14818.8 R23 .0576 R13 -.9856
SG114805.2 SG2 635.1 THA 179.04

ORBIT DETERMINATION ACCURACY
ST 4338.4 SR 610.9 SS 1238.4
CRT -.6093 CRS .7609 CST -.9780
LSA 4520.9 MSA 537.7 SSA 17.7
EL1 4354.5 EL2 482.6 ALF 175.04

LAUNCH DATE NOV 12 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 904.967 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.044 GAL -7.27 AZL 88.15 HCA 272.75 SMA 189.35 ECC .25063 INC 1.8492 V1 30.094
RP 207.12 LAP -1.85 LOP 322.40 VP 24.097 GAP -13.50 AZP 89.91 TAL 322.41 TAP 235.15 RCA 141.89 APO 236.81 V2 26.444
RC 325.253 GL 12.86 GP -.04 ZAL 142.82 ZAP 30.47 ETS 178.90 ZAE 49.91 ETE 179.72 ZAC 86.14 ETC 256.88 CLP 30.47

PLANETOCENTRIC CONIC

C3 22.575 VHL 4.751 DLA 6.17 RAL 198.28 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 5.934 DPA 4.20 RAP 174.05 ECC 1.3715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 3	2435.79	-24.25	56.00	63.43	105.09	21 1 38	1835.8	-21.94	48.09
90.00	9 55 18	4695.27	15.30	200.35	60.36	65.88	11 13 33	4095.3	11.91	193.31
100.00	21 45 19	2163.99	-25.38	35.66	63.08	106.34	22 21 23	1564.0	-22.90	27.74
100.00	11 13 43	4442.31	16.37	181.24	59.85	64.63	12 27 45	3842.3	12.82	174.25
110.00	23 0 16	1929.44	-28.42	16.74	61.96	109.84	23 32 25	1329.4	-25.46	8.82
110.00	12 15 16	4249.62	19.22	165.08	58.32	61.17	13 26 5	3649.6	15.22	158.24

DIFFERENTIAL CORRECTIONS
TDE-2.3812 TRA 9.3087 TC3-9.7795 BAU 2.9531
RDE .5092 RRA .0507 RC3 .3111 FAU .08274
FDE-1.5495 FRA 3.9773 FC3-3.1729 BSP 52594
BDE 2.4351 BRA 9.3088 BC3 9.7844 FSP 1921

MID-COURSE EXECUTION ACCURACY
SGT14902.5 SGR 684.3 SG3 517.3
RRT -.3742 RRF -.4252 RTF .9845
SGB14918.2 R23 .0604 R13 -.9846
SG114904.7 SG2 634.5 THA 179.01

ORBIT DETERMINATION ACCURACY
ST 4449.2 SR 614.4 SS 1212.6
CRT -.6231 CRS .7718 CST -.9781
LSA 4621.7 MSA 532.3 SSA 17.4
EL1 4465.9 EL2 478.8 ALF 175.02

LAUNCH DATE NOV 12 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 909.121 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.050 GAL -7.50 AZL 88.15 HCA 274.01 SMA 189.46 ECC .25295 INC 1.8489 V1 30.094
RP 207.04 LAP -1.84 LOP 323.66 VP 24.116 GAP -13.67 AZP 89.87 TAL 321.45 TAP 235.46 RCA 141.54 APO 237.39 V2 26.454
RC 326.088 GL 12.59 GP -.04 ZAL 143.84 ZAP 29.94 ETS 178.88 ZAE 49.08 ETE 179.74 ZAC 86.29 ETC 256.81 CLP 29.94

PLANETOCENTRIC CONIC

C3 23.527 VHL 4.850 DLA 5.53 RAL 199.09 RAD 6568.0 VEL 12.038 PTH 2.15 VHP 6.045 DPA 3.90 RAP 174.73 ECC 1.3872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 8	2425.80	-24.07	55.32	64.74	105.38	21 9 34	1825.8	-21.73	47.43
90.00	9 53 43	4725.39	16.13	202.17	61.91	66.41	11 12 28	4125.4	12.80	195.08
100.00	21 53 6	2155.00	-25.21	35.05	64.38	106.62	22 29 1	1555.0	-22.69	27.15
100.00	11 12 26	4471.42	17.21	182.99	61.40	65.18	12 26 58	3871.4	13.72	175.94
110.00	23 7 20	1922.69	-28.27	16.27	63.24	110.07	23 39 22	1322.7	-25.27	8.38
110.00	12 14 42	4276.50	20.09	166.68	59.88	61.75	13 25 58	3676.5	16.16	159.76

DIFFERENTIAL CORRECTIONS
TDE-2.5268 TRA 9.6436 TC3-9.5093 BAU 2.9925
RDE .5228 RRA .0449 RC3 .3039 FAU .07687
FDE-1.5320 FRA 3.8363 FC3-2.8286 BSP 52874
BDE 2.5803 BRA 9.6437 BC3 9.5142 FSP 1806

MID-COURSE EXECUTION ACCURACY
SGT14999.7 SGR 686.4 SG3 485.2
RRT -.3840 RRF -.4369 RTF .9833
SGB15015.4 R23 .0635 R13 -.9833
SG115002.0 SG2 633.6 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 4557.8 SR 617.8 SS 1184.9
CRT -.6360 CRS .7822 CST -.9781
LSA 4720.3 MSA 527.0 SSA 17.2
EL1 4574.9 EL2 475.0 ALF 175.02

LAUNCH DATE NOV 12 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 913.261 EARTH TO MARS

RL 148.06 LAL .00 LOL 49.65 VL 33.057 GAL -7.73 AZL 88.15 HCA 275.28 SMA 189.58 ECC .25536 INC 1.8487 V1 30.094
RP 206.96 LAP -1.84 LOP 324.93 VP 24.134 GAP -13.85 AZP 89.83 TAL 320.47 TAP 235.75 RCA 141.17 APO 237.99 V2 26.463
RC 326.917 GL 12.32 GP -.04 ZAL 144.87 ZAP 29.44 ETS 178.86 ZAE 48.27 ETE 179.75 ZAC 86.45 ETC 256.74 CLP 29.44

PLANETOCENTRIC CONIC

C3 24.540 VHL 4.954 DLA 4.90 RAL 199.90 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 6.159 DPA 3.59 RAP 175.42 ECC 1.4039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 9	2416.30	-23.90	54.68	66.07	105.66	21 17 25	1816.3	-21.52	46.81
90.00	9 52 10	4755.54	16.94	204.01	63.48	66.97	11 11 25	4155.5	13.68	196.86
100.00	22 0 48	2146.49	-25.04	34.47	65.70	106.88	22 36 34	1546.5	-22.49	26.60
100.00	11 11 12	4500.58	18.04	184.76	62.98	65.75	12 26 12	3900.6	14.61	177.65
110.00	23 14 20	1916.36	-28.12	15.84	64.54	110.29	23 46 16	1316.4	-25.10	7.97
110.00	12 14 9	4303.47	20.95	168.30	61.48	62.35	13 25 53	3703.5	17.09	161.31

DIFFERENTIAL CORRECTIONS
TDE-2.6757 TRA 9.9887 TC3-9.2392 BAU 3.0327
RDE .5367 RRA .0386 RC3 .2966 FAU .07117
FDE-1.5109 FRA 3.6930 FC3-2.5109 BSP 53130
BDE 2.7290 BRA 9.9888 BC3 9.2439 FSP 1694

MID-COURSE EXECUTION ACCURACY
SGT15093.8 SGR 688.3 SG3 454.1
RRT -.3939 RRF -.4489 RTF .9819
SGB15109.5 R23 .0669 R13 -.9819
SG115096.2 SG2 632.5 THA 178.97

ORBIT DETERMINATION ACCURACY
ST 4664.1 SR 621.0 SS 1155.3
CRT -.6480 CRS .7923 CST -.9779
LSA 4816.8 MSA 521.9 SSA 16.9
EL1 4681.6 EL2 471.2 ALF 175.02

LAUNCH DATE NOV 12 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 917.386 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.063	GAL	-7.97	AZL	88.15	HCA	276.54	SMA	189.69	ECC	.25788	INC	1.8484	V1	30.094
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.152	GAP	-14.03	AZP	89.79	TAL	319.48	TAP	236.03	RCA	140.78	APO	238.61	V2	26.471
RC	327.742	GL	12.04	GP	-.04	ZAL	145.88	ZAP	28.94	ETS	178.84	ZAE	47.47	ETE	179.76	ZAC	86.62	ETC	256.68	CLP	28.94

PLANETOCENTRIC CONIC

C3	25.617	VHL	5.061	DLA	4.27	RAL	200.71	RAD	6568.0	VEL	12.124	PTH	2.17	VHP	6.275	DPA	3.27	RAP	176.13	ECC	1.4216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 4	2407.29	-23.73	54.07	67.41	105.92	21 25 12	1807.3	-21.32	46.23
90.00	9 50 39	4785.72	17.74	205.87	65.09	67.56	11 10 25	4185.7	14.54	198.65
100.00	22 8 25	2138.46	-24.88	33.92	67.03	107.12	22 44 4	1538.5	-22.30	26.08
100.00	11 10 0	4529.78	18.84	186.56	64.60	66.36	12 25 29	3929.8	15.49	179.37
110.00	23 21 16	1910.48	-27.98	15.44	65.85	110.49	23 53 6	1310.5	-24.93	7.59
110.00	12 13 38	4330.53	21.80	169.94	63.10	62.99	13 25 49	3730.5	18.00	162.87

DIFFERENTIAL CORRECTIONS

TDE-2.8287	TRA10.3424	TC3-8.9719	BAU 3.0743	SGT15184.8 SGR 690.1 SG3 424.1	ST 4768.0 SR 624.0 SS 1124.0
RDE .5511	RRA .0318	RC3 .2893	FAU .06565	RRT -.4040 RRF -.4613 RTF .9803	CRT -.6594 CRS .8022 CST -.9777
FDE-1.4872	FRA 3.5470	FC3-2.2186	BSP 53346	SGB15200.4 R23 .0706 R13 -.9803	LSA 4911.2 MSA 516.8 SSA 16.7
BDE 2.8819	BRA10.3424	BC3 8.9766	FSP 1585	SG115187.3 SG2 631.2 THA 178.95	EL1 4785.9 EL2 467.3 ALF 175.02

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 12 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 921.496 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.069	GAL	-8.22	AZL	88.15	HCA	277.81	SMA	189.81	ECC	.26050	INC	1.8482	V1	30.094
RP	206.84	LAP	-1.83	LOP	327.46	VP	24.168	GAP	-14.22	AZP	89.75	TAL	318.48	TAP	236.29	RCA	140.37	APO	239.26	V2	26.477
RC	328.562	GL	11.77	GP	-.04	ZAL	146.89	ZAP	28.47	ETS	178.82	ZAE	46.68	ETE	179.78	ZAC	86.79	ETC	256.61	CLP	28.47

PLANETOCENTRIC CONIC

C3	26.763	VHL	5.173	DLA	3.65	RAL	201.51	RAD	6568.1	VEL	12.171	PTH	2.18	VHP	6.394	DPA	2.94	RAP	176.85	ECC	1.4405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 55	2390.78	-23.57	53.50	68.76	106.16	21 32 53	1798.8	-21.13	45.68
90.00	9 49 11	4815.92	18.51	207.73	66.73	68.18	11 9 27	4215.9	15.39	200.47
100.00	22 15 58	2130.89	-24.73	33.41	68.38	107.35	22 51 29	1530.9	-22.12	25.59
100.00	11 8 49	4559.03	19.63	188.37	66.24	66.99	12 24 49	3959.0	16.35	181.12
110.00	23 28 8	1905.03	-27.85	15.07	67.18	110.67	23 59 53	1305.0	-24.78	7.24
110.00	12 13 9	4357.67	22.63	171.61	64.76	63.67	13 25 47	3757.7	18.91	164.45

DIFFERENTIAL CORRECTIONS

TDE-2.9858	TRA10.7060	TC3-8.7076	BAU 3.1172	SGT15273.3 SGR 691.8 SG3 395.1	ST 4869.6 SR 626.8 SS 1090.9
RDE .5658	RRA .0246	RC3 .2820	FAU .06030	RRT -.4143 RRF -.4740 RTF .9785	CRT -.6702 CRS .8118 CST -.9773
FDE-1.4603	FRA 3.3986	FC3-1.9506	BSP 53535	SGB15288.9 R23 .0746 R13 -.9785	LSA 5003.4 MSA 511.6 SSA 16.4
BDE 3.0390	BRA10.7061	BC3 8.7122	FSP 1478	SG115275.9 SG2 629.6 THA 178.92	EL1 4887.9 EL2 463.5 ALF 175.02

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 12 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 925.589 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.076	GAL	-8.48	AZL	88.15	HCA	279.08	SMA	189.93	ECC	.26324	INC	1.8479	V1	30.094
RP	206.79	LAP	-1.82	LOP	328.73	VP	24.183	GAP	-14.41	AZP	89.71	TAL	317.46	TAP	236.53	RCA	139.93	APO	239.93	V2	26.483
RC	329.378	GL	11.50	GP	-.04	ZAL	147.89	ZAP	28.00	ETS	178.80	ZAE	45.91	ETE	179.79	ZAC	86.96	ETC	256.55	CLP	28.00

PLANETOCENTRIC CONIC

C3	27.984	VHL	5.290	DLA	3.04	RAL	202.30	RAD	6568.1	VEL	12.221	PTH	2.20	VHP	6.515	DPA	2.61	RAP	177.58	ECC	1.4605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 40	2390.74	-23.42	52.96	70.13	106.39	21 40 31	1790.7	-20.95	45.16
90.00	9 47 46	4846.14	19.26	209.65	68.40	68.84	11 8 32	4246.1	16.22	202.30
100.00	22 23 26	2123.79	-24.59	32.94	69.74	107.56	22 58 49	1523.8	-21.95	25.13
100.00	11 7 42	4588.32	20.40	190.21	67.91	67.66	12 24 10	3988.3	17.19	182.88
110.00	23 34 56	1900.00	-27.73	14.73	68.52	110.84	24 6 36	1300.0	-24.64	6.92
110.00	12 12 41	4384.87	23.44	173.31	66.46	64.38	13 25 46	3784.9	19.80	166.06

DIFFERENTIAL CORRECTIONS

TDE-3.1471	TRA11.0791	TC3-8.4484	BAU 3.1824	SGT15359.6 SGR 693.5 SG3 367.2	ST 4968.6 SR 629.4 SS 1056.3
RDE .5810	RRA .0168	RC3 .2748	FAU .05512	RRT -.4248 RRF -.4871 RTF .9764	CRT -.6804 CRS .8213 CST -.9767
FDE-1.4309	FRA 3.2472	FC3-1.7054	BSP 53657	SGB15375.2 R23 .0792 R13 -.9764	LSA 5093.3 MSA 506.6 SSA 16.2
BDE 3.2003	BRA11.0791	BC3 8.4529	FSP 1374	SG115362.4 SG2 627.7 THA 178.90	EL1 4987.2 EL2 459.5 ALF 175.03

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 12 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 929.663 EARTH TO MARS

RL	148.06	LAL	.00	LOL	49.65	VL	33.083	GAL	-8.74	AZL	88.15	HCA	280.35	SMA	190.05	ECC	.26609	INC	1.8477	V1	30.094
RP	206.75	LAP	-1.82	LOP	330.00	VP	24.198	GAP	-14.60	AZP	89.67	TAL	316.42	TAP	236.76	RCA	139.48	APO	240.62	V2	26.488
RC	330.190	GL	11.23	GP	-.04	ZAL	148.89	ZAP	27.55	ETS	178.78	ZAE	45.16	ETE	179.80	ZAC	87.13	ETC	256.49	CLP	27.55

PLANETOCENTRIC CONIC

C3	29.282	VHL	5.411	DLA	2.43	RAL	203.09	RAD	6568.2	VEL	12.274	PTH	2.21	VHP	6.640	DPA	2.27	RAP	178.32	ECC	1.4819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 20	2383.18	-23.27	52.45	71.52	106.61	21 48 3	1783.2	-20.77	44.67
90.00	9 46 23	4876.36	20.00	211.56	70.09	69.52	11 7 40	4276.4	17.03	204.14
100.00	22 30 49	2117.15	-24.45	32.49	71.12	107.76	23 6 6	1517.2	-21.79	24.70
100.00	11 6 36	4617.62	21.15	192.06	69.62	68.37	12 23 33	4017.6	18.02	184.66
110.00	23 41 39	1895.41	-27.62	14.42	69.88	110.99	24 13 15	1295.4	-24.51	6.63
110.00	12 12 14	4412.13	24.23	175.03	68.18	65.12	13 25 47	3812.1	20.67	167.69

DIFFERENTIAL CORRECTIONS

TDE-3.3109	TRA11.4638	TC3-8.1907	BAU 3.2082	SGT15442.3 SGR 694.9 SG3 340.2	ST 5063.9 SR 631.8 SS 1020.0
RDE .5966	RRA .0085	RC3 .2675	FAU .05007	RRT -.4353 RRF -.5005 RTF .9739	CRT -.6898 CRS .8306 CST -.9760
FDE-1.3981	FRA 3.0934	FC3-1.4804	BSP 53788	SGB15458.0 R23 .0842 R13 -.9740	LSA 5179.9 MSA 501.7 SSA 15.9
BDE 3.3642	BRA11.4638	BC3 8.1951	FSP 1274	SG115445.3 SG2 625.5 THA 178.88	EL1 5082.8 EL2 455.7 ALF 175.04

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 13 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 434.749 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 35.313 GAL -6.66 AZL 88.20 HCA 138.27 SMA 242.99 ECC .40516 INC 1.8000 V1 30.101
RP 245.01 LAP 1.20 LOP 188.94 VP 23.177 GAP 23.90 AZP 91.34 TAL 336.70 TAP 114.97 RCA 144.54 APO 341.44 V2 22.385
RC 125.213 GL 10.09 GP .13 ZAL 126.11 ZAP 173.77 ETS 177.53 ZAE 156.10 ETE 357.54 ZAC 88.41 ETC 256.16 CLP 173.78

PLANETOCENTRIC CONIC

C3 39.539 VHL 6.288 DLA 10.28 RAL 181.69 RAD 6568.5 VEL 12.685 PTH 2.30 VHP 10.701 DPA .27 RAP 183.08 ECC 1.6507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 40	2707.91	-27.70	75.13	59.02	96.13	19 23 48	2107.9	-26.56	66.65
90.00	9 17 29	4703.00	15.51	200.82	52.36	66.01	10 35 52	4103.0	12.14	193.76
100.00	20 5 7	2429.12	-29.10	54.44	58.84	97.16	20 45 36	1829.1	-27.80	45.88
100.00	10 33 44	4457.02	16.80	182.12	51.75	64.90	11 48 1	3857.0	13.28	175.10
110.00	21 24 56	2179.35	-32.85	34.82	58.18	100.02	22 1 15	1579.3	-31.12	26.02
110.00	11 30 24	4279.56	20.19	166.86	49.96	61.81	12 41 44	3679.6	16.27	159.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0706 TRA-2.6055 TC3 .6307 BAU .3552 SGT 2720.8 SGR 468.1 SG3 207.6 ST 1215.0 SR 439.4 SS 603.5
RDE -.4798 RRA -.1569 RC3 -.0659 FAU .06348 RRT -.1113 RRF .0956 RTF -.8644 CRT -.7400 CRS -.6030 CST .9813
FDE -.4859 FRA 1.7159 FC3-1.3899 BSP 9155 SGB 2760.7 RZS .0034 R13 .8644 LSA 1390.5 MSA 315.0 SSA 29.1
BDE 1.1732 BRA 2.6102 BC3 .6342 FSP 565 SG1 2721.3 SG2 465.1 THA 178.87 EL1 1260.2 EL2 285.0 ALF 164.19

LAUNCH DATE NOV 13 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 436.772 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 35.204 GAL -6.47 AZL 88.20 HCA 139.18 SMA 239.60 ECC .39613 INC 1.7985 V1 30.101
RP 244.80 LAP 1.18 LOP 189.85 VP 23.030 GAP 23.30 AZP 91.36 TAL 337.01 TAP 116.19 RCA 144.69 APO 334.50 V2 22.407
RC 127.239 GL 10.31 GP .14 ZAL 125.03 ZAP 173.31 ETS 177.56 ZAE 155.79 ETE 357.75 ZAC 88.51 ETC 256.14 CLP 173.31

PLANETOCENTRIC CONIC

C3 37.638 VHL 6.135 DLA 10.66 RAL 181.36 RAD 6568.5 VEL 12.610 PTH 2.29 VHP 10.461 DPA .09 RAP 183.48 ECC 1.6194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 16	2707.98	-27.70	75.14	57.92	96.13	19 19 24	2108.0	-26.56	66.66
90.00	9 19 16	4678.03	14.82	199.31	51.20	65.59	10 37 14	4078.0	11.40	192.30
100.00	20 0 55	2428.50	-29.10	54.40	57.74	97.18	20 41 24	1828.5	-27.80	45.83
100.00	10 35 18	4432.74	16.09	180.66	50.59	64.46	11 49 11	3832.7	12.52	173.69
110.00	21 21 13	2177.22	-32.83	34.66	57.08	100.11	21 57 30	1577.2	-31.09	25.87
110.00	11 31 30	4256.79	19.45	165.51	48.78	61.32	12 42 26	3656.8	15.47	158.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0508 TRA-2.5782 TC3 .6871 BAU .3474 SGT 2770.7 SGR 460.9 SG3 218.0 ST 1226.3 SR 432.6 SS 612.1
RDE -.4610 RRA -.1486 RC3 -.0687 FAU .06522 RRT -.1156 RRF .0996 RTF -.8691 CRT -.7378 CRS -.5957 CST .9803
FDE -.4863 FRA 1.7513 FC3-1.5002 BSP 9340 SGB 2808.7 RZS .0037 R13 .8691 LSA 1402.3 MSA 313.9 SSA 29.2
BDE 1.1474 BRA 2.5825 BC3 .6905 FSP 598 SG1 2771.2 SG2 457.7 THA 178.87 EL1 1269.4 EL2 282.1 ALF 164.63

LAUNCH DATE NOV 13 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 438.919 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 35.098 GAL -6.28 AZL 88.20 HCA 140.08 SMA 236.44 ECC .38746 INC 1.7968 V1 30.101
RP 244.57 LAP 1.15 LOP 190.75 VP 22.890 GAP 22.72 AZP 91.38 TAL 337.33 TAP 117.41 RCA 144.83 APO 328.05 V2 22.429
RC 129.306 GL 10.53 GP .14 ZAL 125.14 ZAP 172.83 ETS 177.58 ZAE 155.52 ETE 357.96 ZAC 88.61 ETC 256.12 CLP 172.83

PLANETOCENTRIC CONIC

C3 35.851 VHL 5.988 DLA 11.04 RAL 181.02 RAD 6568.4 VEL 12.539 PTH 2.27 VHP 10.227 DPA -.08 RAP 183.88 ECC 1.5900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 42	2708.56	-27.70	75.18	56.82	96.11	19 14 51	2108.6	-26.57	66.70
90.00	9 21 6	4652.87	14.10	197.81	50.05	65.19	10 38 38	4052.9	10.64	190.84
100.00	19 56 35	2428.35	-29.09	54.39	56.64	97.18	20 37 4	1828.3	-27.79	45.82
100.00	10 36 54	4408.31	15.37	179.21	49.43	64.04	11 50 22	3808.3	11.75	172.29
110.00	21 17 23	2175.52	-32.81	34.53	55.98	100.18	21 53 39	1575.5	-31.06	25.74
110.00	11 32 35	4233.91	18.70	164.16	47.61	60.85	12 43 9	3633.9	14.67	157.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0302 TRA-2.5505 TC3 .7463 BAU .3594 SGT 2820.3 SGR 453.4 SG3 228.8 ST 1236.6 SR 425.6 SS 620.6
RDE -.4427 RRA -.1406 RC3 -.0716 FAU .06706 RRT -.1200 RRF .1038 RTF -.8736 CRT -.7353 CRS -.5883 CST .9792
FDE -.4864 FRA 1.7869 FC3-1.6194 BSP 9535 SGB 2856.5 RZS .0038 R13 .8736 LSA 1413.0 MSA 312.8 SSA 29.4
BDE 1.1213 BRA 2.5544 BC3 .7498 FSP 632 SG1 2820.9 SG2 450.0 THA 178.87 EL1 1277.6 EL2 279.2 ALF 165.07

LAUNCH DATE NOV 13 1964 FLIGHT TIME 168.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 441.180 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.997 GAL -6.09 AZL 88.20 HCA 140.99 SMA 233.50 ECC .37915 INC 1.7951 V1 30.101
RP 244.34 LAP 1.13 LOP 191.66 VP 22.758 GAP 22.13 AZP 91.40 TAL 337.66 TAP 118.65 RCA 144.97 APO 322.03 V2 22.451
RC 131.411 GL 10.75 GP .15 ZAL 124.64 ZAP 172.35 ETS 177.60 ZAE 155.31 ETE 358.15 ZAC 88.71 ETC 256.10 CLP 172.35

PLANETOCENTRIC CONIC

C3 34.171 VHL 5.846 DLA 11.44 RAL 180.66 RAD 6568.3 VEL 12.472 PTH 2.26 VHP 9.999 DPA -.26 RAP 184.27 ECC 1.5624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 0	2709.65	-27.71	75.26	55.73	96.07	19 10 9	2109.7	-26.58	66.77
90.00	9 22 57	4627.53	13.37	196.31	48.91	64.81	10 40 5	4027.5	9.87	189.38
100.00	19 52 7	2428.69	-29.10	54.41	55.54	97.17	20 32 35	1828.7	-27.80	45.85
100.00	10 38 31	4383.73	14.63	177.76	48.28	63.64	11 51 35	3783.7	10.97	170.88
110.00	21 13 26	2174.24	-32.79	34.43	54.89	100.24	21 49 40	1574.2	-31.03	25.65
110.00	11 33 42	4210.94	17.93	162.82	46.46	60.40	12 43 53	3610.9	13.86	156.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0098 TRA-2.5218 TC3 .8098 BAU .3715 SGT 2869.8 SGR 445.7 SG3 240.1 ST 1246.1 SR 418.4 SS 628.6
RDE -.4249 RRA -.1328 RC3 -.0745 FAU .06899 RRT -.1248 RRF .1082 RTF -.8780 CRT -.7330 CRS -.5801 CST .9779
FDE -.4856 FRA 1.8231 FC3-1.7478 BSP 9712 SGB 2904.2 RZS .0041 R13 .8780 LSA 1423.0 MSA 311.7 SSA 29.6
BDE 1.0955 BRA 2.5253 BC3 .8132 FSP 669 SG1 2870.3 SG2 442.2 THA 178.86 EL1 1285.2 EL2 276.0 ALF 165.49

LAUNCH DATE NOV 13 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 443.546 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	34.901	GAL	-5.91	AZL	88.21	HCA	141.90	SMA	230.75	ECC	.37118	INC	1.7933	V1	30.101
RP	244.11	LAP	1.11	LOP	192.57	VP	22.632	GAP	21.55	AZP	91.41	TAL	337.99	TAP	119.89	RCA	145.10	APO	316.40	V2	22.475
RC	133.550	GL	10.97	GP	.15	ZAL	124.12	ZAP	171.87	ETS	177.62	ZAE	155.14	ETE	358.34	ZAC	88.81	ETC	256.08	CLP	171.87

PLANETOCENTRIC CONIC

C3	32.591	VHL	5.709	DLA	11.84	RAL	180.29	RAD	6568.3	VEL	12.408	PTH	2.24	VHP	9.776	DPA	-.43	RAP	184.65	ECC	1.5364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 8	2711.28	-27.72	75.58	54.63	96.01	19 5 19	2111.3	-26.60	66.89
90.00	9 24 51	4602.04	12.63	194.81	47.77	64.44	10 41 33	4002.0	9.09	187.92
100.00	19 47 30	2429.53	-29.10	54.47	54.45	97.14	20 27 59	1829.5	-27.81	45.91
100.00	10 40 10	4359.03	13.88	176.31	47.14	63.26	11 52 49	3759.0	10.18	169.47
110.00	21 9 21	2173.41	-32.78	34.37	53.80	100.27	21 45 34	1573.4	-31.02	25.59
110.00	11 34 49	4187.91	17.15	161.49	45.31	59.97	12 44 36	3587.9	13.03	154.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9884	TRA	-2.4929	TC3	.8765	BAU	.3834	SGT	2919.0	SGR	437.9	SG3	252.1	ST	1254.2	SR	411.0	SS	636.2
RDE	-.4077	RRA	-.1254	RC3	-.0774	FAU	.07100	RRT	-.1296	RRF	.1125	RTF	-.8822	CRT	-.7302	CRS	-.5712	CST	.9764
FDE	-.4839	FRA	1.8599	FC3	-1.8860	BSP	9902	SGB	2951.7	RZ3	.0044	R13	.8822	LSA	1431.5	MSA	310.7	SSA	29.8
BDE	1.0691	BRA	2.4961	BC3	.8799	FSP	707	SG1	2919.6	SG2	434.1	THA	178.86	EL1	1291.3	EL2	272.7	ALF	165.90

LAUNCH DATE NOV 13 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 446.008 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	34.808	GAL	-5.73	AZL	88.21	HCA	142.81	SMA	228.18	ECC	.36354	INC	1.7915	V1	30.101
RP	243.87	LAP	1.08	LOP	193.48	VP	22.512	GAP	20.97	AZP	91.43	TAL	338.33	TAP	121.14	RCA	145.23	APO	311.14	V2	22.498
RC	135.719	GL	11.19	GP	.16	ZAL	123.58	ZAP	171.37	ETS	177.63	ZAE	155.02	ETE	358.52	ZAC	88.91	ETC	256.06	CLP	171.37

PLANETOCENTRIC CONIC

C3	31.104	VHL	5.577	DLA	12.26	RAL	179.90	RAD	6568.2	VEL	12.348	PTH	2.23	VHP	9.558	DPA	-.59	RAP	185.03	ECC	1.5119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 6	2713.45	-27.74	75.53	53.54	95.93	19 0 20	2113.5	-26.63	67.04
90.00	9 26 47	4576.37	11.87	193.30	46.65	64.10	10 43 3	3976.4	8.29	186.45
100.00	19 42 43	2430.88	-29.12	54.57	53.36	97.09	20 23 14	1830.9	-27.83	46.00
100.00	10 41 51	4334.17	13.41	174.86	46.02	62.89	11 54 5	3734.2	9.37	168.07
110.00	21 5 8	2173.03	-32.78	34.34	52.71	100.29	21 41 21	1573.0	-31.01	25.56
110.00	11 35 56	4164.79	16.36	160.17	44.17	59.56	12 45 21	3564.8	12.20	153.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9783	TRA	-2.4513	TC3	.9618	BAU	.4014	SGT	2966.9	SGR	430.2	SG3	264.4	ST	1268.4	SR	403.6	SS	642.5
RDE	-.3912	RRA	-.1184	RC3	-.0806	FAU	.07299	RRT	-.1406	RRF	.1159	RTF	-.8890	CRT	-.7327	CRS	-.5586	CST	.9723
FDE	-.4786	FRA	1.8995	FC3	-2.0315	BSP	9797	SGB	2997.9	RZ3	.0118	R13	.8890	LSA	1444.6	MSA	311.1	SSA	29.3
BDE	1.0537	BRA	2.4542	BC3	.9652	FSP	753	SG1	2967.5	SG2	425.9	THA	178.81	EL1	1304.0	EL2	267.2	ALF	166.29

LAUNCH DATE NOV 13 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 448.558 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	34.719	GAL	-5.56	AZL	88.21	HCA	143.72	SMA	225.78	ECC	.35621	INC	1.7895	V1	30.101
RP	243.63	LAP	1.06	LOP	194.39	VP	22.399	GAP	20.39	AZP	91.44	TAL	338.67	TAP	122.39	RCA	145.36	APO	306.21	V2	22.522
RC	137.915	GL	11.42	GP	.17	ZAL	123.03	ZAP	170.87	ETS	177.63	ZAE	154.95	ETE	358.69	ZAC	89.01	ETC	256.04	CLP	170.87

PLANETOCENTRIC CONIC

C3	29.709	VHL	5.451	DLA	12.68	RAL	179.51	RAD	6568.2	VEL	12.292	PTH	2.21	VHP	9.345	DPA	-.76	RAP	185.41	ECC	1.4889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 57	2716.15	-27.76	75.73	52.45	95.84	18 55 13	2116.1	-26.66	67.23
90.00	9 28 45	4550.63	11.10	191.80	45.54	63.78	10 44 36	3950.6	7.49	184.99
100.00	19 37 50	2432.73	-29.13	54.71	52.28	97.02	20 18 23	1832.7	-27.85	46.14
100.00	10 43 34	4309.28	12.34	173.42	44.90	62.55	11 55 23	3709.3	8.56	166.66
110.00	21 0 49	2173.08	-32.78	34.34	51.63	100.29	21 37 2	1573.1	-31.01	25.57
110.00	11 37 4	4141.69	15.56	158.86	43.05	59.17	12 46 6	3541.7	11.36	152.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9499	TRA	-2.4275	TC3	1.0282	BAU	.4097	SGT	3015.7	SGR	421.8	SG3	277.5	ST	1270.4	SR	395.7	SS	649.9
RDE	-.3748	RRA	-.1114	RC3	-.0833	FAU	.07528	RRT	-.1425	RRF	.1213	RTF	-.8914	CRT	-.7267	CRS	-.5501	CST	.9720
FDE	-.4770	FRA	1.9355	FC3	-2.1938	BSP	10128	SGB	3045.1	RZ3	.0083	R13	.8914	LSA	1447.8	MSA	309.7	SSA	29.7
BDE	1.0212	BRA	2.4301	BC3	1.0316	FSP	791	SG1	3016.3	SG2	417.4	THA	178.84	EL1	1304.0	EL2	264.8	ALF	166.69

LAUNCH DATE NOV 13 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 451.189 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	34.634	GAL	-5.39	AZL	88.21	HCA	144.63	SMA	223.54	ECC	.34918	INC	1.7875	V1	30.101
RP	243.38	LAP	1.03	LOP	195.30	VP	22.291	GAP	19.82	AZP	91.46	TAL	339.02	TAP	123.66	RCA	145.48	APO	301.59	V2	22.547
RC	140.134	GL	11.64	GP	.17	ZAL	122.46	ZAP	170.36	ETS	177.64	ZAE	154.92	ETE	358.86	ZAC	89.10	ETC	256.03	CLP	170.36

PLANETOCENTRIC CONIC

C3	28.396	VHL	5.329	DLA	13.10	RAL	179.09	RAD	6568.1	VEL	12.238	PTH	2.20	VHP	9.137	DPA	-.92	RAP	185.78	ECC	1.4673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 39	2719.40	-27.78	75.96	51.37	95.72	18 49 58	2119.4	-26.70	67.46
90.00	9 30 46	4524.77	10.32	190.31	44.44	63.48	10 46 11	3924.8	6.68	183.52
100.00	19 32 48	2435.09	-29.15	54.88	51.20	96.93	20 13 23	1835.1	-27.88	46.31
100.00	10 45 18	4284.31	11.55	171.99	43.80	62.24	11 58 42	3684.3	7.74	165.26
110.00	20 56 22	2173.59	-32.79	34.38	50.56	100.27	21 32 36	1573.6	-31.02	25.60
110.00	11 38 13	4118.57	14.75	157.56	41.94	58.81	12 46 52	3518.6	10.51	151.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9236	TRA	-2.4007	TC3	1.1011	BAU	.4193	SGT	3063.8	SGR	413.2	SG3	291.3	ST	1272.6	SR	387.6	SS	656.5
RDE	-.3590	RRA	-.1047	RC3	-.0860	FAU	.07763	RRT	-.1458	RRF	.1262	RTF	-.8943	CRT	-.7215	CRS	-.5396	CST	.9708
FDE	-.4731	FRA	1.9730	FC3	-2.3668	BSP	10396	SGB	3091.6	RZ3	.0066	R13	.8943	LSA	1450.7	MSA	308.8	SSA	30.0
BDE	.9909	BRA	2.4029	BC3	1.1045	FSP	835	SG1	3064.4	SG2	408.7	THA	178.85	EL1	1304.3	EL2	261.8	ALF	167.08

LAUNCH DATE NOV 13 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 453.896 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.552 GAL -5.22 AZL 88.21 HCA 145.55 SMA 221.43 ECC .34244 INC 1.7852 V1 30.101
RP 243.12 LAP 1.01 LOP 196.22 VP 22.190 GAP 19.25 AZP 91.47 TAL 339.37 TAP 124.93 RCA 145.60 APO 297.25 V2 22.572
RC 142.373 GL 11.87 GP .18 ZAL 121.88 ZAP 169.84 ETS 177.64 ZAE 154.94 ETE 359.03 ZAC 89.20 ETC 256.01 CLP 169.85

PLANETOCENTRIC CONIC

C3 27.161 VHL 5.212 DLA 13.53 RAL 178.67 RAD 6568.1 VEL 12.188 PTH 2.19 VHP 8.934 DPA -1.08 RAP 186.15 ECC 1.4470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 11	2723.20	-27.81	76.24	50.29	95.59	18 44 34	2123.2	-26.74	67.73
90.00	9 32 50	4498.81	9.53	188.81	43.35	63.21	10 47 48	3898.8	5.86	182.05
100.00	19 27 37	2437.98	-29.17	55.09	50.13	96.82	20 8 15	1838.0	-27.92	46.51
100.00	10 47 4	4259.27	10.75	170.56	42.70	61.94	11 58 4	3659.3	6.91	163.87
110.00	20 51 49	2174.56	-32.80	34.45	49.49	100.22	21 28 3	1574.6	-31.04	25.67
110.00	11 39 22	4095.45	13.93	156.26	40.84	58.46	12 47 38	3495.5	9.66	149.77

DIFFERENTIAL CORRECTIONS
TDE .8999 TRA-2.3697 TC3 1.1817 BAU .4303
RDE -.3457 RRA -.0983 RC3 -.0888 FAU .08011
FDE -.4683 FRA 2.0105 FC3-2.5533 BSP 10582
BDE .9633 BRA 2.3717 BC3 1.1850 FSP 880

MID-COURSE EXECUTION ACCURACY
SGT 3110.6 SGR 404.6 SG3 305.7
RRT -.1509 RRF .1314 RTF -.8977
SGB 3136.8 R23 .0064 R13 .8977
SG1 3111.2 SG2 399.9 THA 178.86

ORBIT DETERMINATION ACCURACY
ST 1275.3 SR 379.3 SS 662.5
CRT -.7175 CRS -.5284 CST .9690
LSA 1453.7 MSA 308.1 SSA 30.1
EL1 1305.2 EL2 258.2 ALF 167.45

LAUNCH DATE NOV 13 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 456.672 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.474 GAL -5.06 AZL 88.22 HCA 146.47 SMA 219.44 ECC .33598 INC 1.7830 V1 30.101
RP 242.87 LAP .98 LOP 197.14 VP 22.094 GAP 18.69 AZP 91.49 TAL 339.73 TAP 126.20 RCA 145.72 APO 293.17 V2 22.598
RC 144.629 GL 12.10 GP .19 ZAL 121.29 ZAP 169.32 ETS 177.63 ZAE 154.99 ETE 359.19 ZAC 89.29 ETC 255.99 CLP 169.32

PLANETOCENTRIC CONIC

C3 25.999 VHL 5.099 DLA 13.97 RAL 178.23 RAD 6568.1 VEL 12.140 PTH 2.18 VHP 8.736 DPA -1.24 RAP 186.51 ECC 1.4279

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 35	2727.56	-27.83	76.56	49.22	95.43	18 39 2	2127.6	-26.79	68.04
90.00	9 34 55	4472.78	8.73	187.32	42.27	62.95	10 49 28	3872.8	5.03	180.59
100.00	19 22 19	2441.38	-29.20	55.34	49.06	96.69	20 3 0	1841.4	-27.97	46.75
100.00	10 48 52	4234.18	9.94	169.13	41.63	61.66	11 59 27	3634.2	6.08	162.47
110.00	20 47 8	2175.97	-32.81	34.56	48.43	100.16	21 23 24	1576.0	-31.06	25.78
110.00	11 40 32	4072.36	13.10	154.99	39.76	58.14	12 48 25	3472.4	8.80	148.53

DIFFERENTIAL CORRECTIONS
TDE .8757 TRA-2.3393 TC3 1.2651 BAU .4409
RDE -.3288 RRA -.0922 RC3 -.0915 FAU .08266
FDE -.4619 FRA 2.0499 FC3-2.7524 BSP 10776
BDE .9354 BRA 2.3411 BC3 1.2684 FSP 929

MID-COURSE EXECUTION ACCURACY
SGT 3157.6 SGR 395.8 SG3 320.7
RRT -.1559 RRF .1363 RTF -.9010
SGB 3182.3 R23 .0064 R13 .9010
SG1 3158.2 SG2 390.9 THA 178.86

ORBIT DETERMINATION ACCURACY
ST 1276.8 SR 370.9 SS 668.1
CRT -.7131 CRS -.5154 CST .9668
LSA 1455.5 MSA 307.9 SSA 30.1
EL1 1305.0 EL2 254.4 ALF 167.83

LAUNCH DATE NOV 13 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 459.513 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.398 GAL -4.90 AZL 88.22 HCA 147.39 SMA 217.58 ECC .32978 INC 1.7806 V1 30.101
RP 242.60 LAP .96 LOP 198.06 VP 22.003 GAP 18.13 AZP 91.50 TAL 340.09 TAP 127.48 RCA 145.83 APO 289.34 V2 22.624
RC 146.900 GL 12.32 GP .20 ZAL 120.68 ZAP 168.78 ETS 177.63 ZAE 155.09 ETE 359.36 ZAC 89.38 ETC 255.98 CLP 168.78

PLANETOCENTRIC CONIC

C3 24.907 VHL 4.991 DLA 14.41 RAL 177.77 RAD 6568.0 VEL 12.095 PTH 2.16 VHP 8.542 DPA -1.39 RAP 186.86 ECC 1.4099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 50	2732.47	-27.87	76.91	48.16	95.25	18 33 22	2132.5	-26.85	68.39
90.00	9 37 4	4446.67	7.91	185.83	41.21	62.72	10 51 10	3846.7	4.20	179.12
100.00	19 16 52	2445.30	-29.23	55.63	48.00	96.54	19 57 38	1845.3	-28.02	47.03
100.00	10 50 42	4209.08	9.13	167.71	40.56	61.41	12 0 51	3609.1	5.24	161.08
110.00	20 42 21	2177.84	-32.84	34.70	47.38	100.08	21 18 39	1577.8	-31.10	25.91
110.00	11 41 43	4049.31	12.27	153.72	38.69	57.84	12 49 12	3449.3	7.94	147.30

DIFFERENTIAL CORRECTIONS
TDE .8518 TRA-2.3072 TC3 1.3532 BAU .4517
RDE -.3145 RRA -.0863 RC3 -.0941 FAU .08535
FDE -.4546 FRA 2.0890 FC3-2.9665 BSP 10946
BDE .9079 BRA 2.3088 BC3 1.3565 FSP 980

MID-COURSE EXECUTION ACCURACY
SGT 3203.2 SGR 386.8 SG3 336.5
RRT -.1614 RRF .1415 RTF -.9043
SGB 3226.4 R23 .0067 R13 .9042
SG1 3203.8 SG2 381.7 THA 178.87

ORBIT DETERMINATION ACCURACY
ST 1277.1 SR 362.3 SS 673.2
CRT -.7087 CRS -.5018 CST .9643
LSA 1456.0 MSA 307.8 SSA 30.1
EL1 1303.7 EL2 250.4 ALF 168.19

LAUNCH DATE NOV 13 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 462.414 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.326 GAL -4.74 AZL 88.22 HCA 148.31 SMA 215.83 ECC .32384 INC 1.7781 V1 30.101
RP 242.34 LAP .93 LOP 198.98 VP 21.918 GAP 17.57 AZP 91.51 TAL 340.46 TAP 128.77 RCA 145.93 APO 285.72 V2 22.651
RC 149.184 GL 12.55 GP .21 ZAL 120.07 ZAP 168.24 ETS 177.62 ZAE 155.23 ETE 359.52 ZAC 89.48 ETC 255.97 CLP 168.24

PLANETOCENTRIC CONIC

C3 23.880 VHL 4.887 DLA 14.86 RAL 177.31 RAD 6568.0 VEL 12.052 PTH 2.15 VHP 8.352 DPA -1.54 RAP 187.21 ECC 1.3930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 56	2737.94	-27.90	77.31	47.10	95.06	18 27 34	2137.9	-26.90	68.78
90.00	9 39 15	4420.53	7.10	184.34	40.16	62.51	10 52 55	3820.5	3.36	177.66
100.00	19 11 18	2449.74	-29.27	55.95	46.94	96.38	19 52 8	1849.7	-28.07	47.35
100.00	10 52 34	4183.96	8.31	166.30	39.51	61.18	12 2 18	3584.0	4.40	159.69
110.00	20 37 28	2180.14	-32.86	34.88	46.34	99.98	21 13 48	1580.1	-31.14	26.08
110.00	11 42 53	4026.32	11.44	152.46	37.63	57.56	12 50 0	3426.3	7.07	146.08

DIFFERENTIAL CORRECTIONS
TDE .8272 TRA-2.2749 TC3 1.4445 BAU .4622
RDE -.3005 RRA -.0807 RC3 -.0966 FAU .08817
FDE -.4457 FRA 2.1290 FC3-3.1964 BSP 11118
BDE .8801 BRA 2.2763 BC3 1.4477 FSP 1034

MID-COURSE EXECUTION ACCURACY
SGT 3247.9 SGR 377.7 SG3 353.1
RRT -.1669 RRF .1465 RTF -.9074
SGB 3269.8 R23 .0070 R13 .9074
SG1 3248.5 SG2 372.3 THA 178.87

ORBIT DETERMINATION ACCURACY
ST 1275.9 SR 353.6 SS 677.7
CRT -.7039 CRS -.4867 CST .9615
LSA 1454.8 MSA 308.1 SSA 30.1
EL1 1300.8 EL2 246.3 ALF 168.55

LAUNCH DATE NOV 13 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 465.372 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.257 GAL -4.59 AZL 88.22 HCA 149.24 SMA 214.17 ECC .31813 INC 1.7755 V1 30.101
RP 242.06 LAP .91 LOP 199.90 VP 21.837 GAP 17.02 AZP 91.53 TAL 340.83 TAP 130.06 RCA 146.04 APO 282.31 V2 22.678
RC 151.478 GL 12.77 GP .22 ZAL 119.44 ZAP 167.68 ETS 177.61 ZAE 155.41 ETE 359.68 ZAC 89.57 ETC 255.95 CLP 167.68

PLANETOCENTRIC CONIC

C3 22.913 VHL 4.787 DLA 15.31 RAL 176.83 RAD 6567.9 VEL 12.012 PTH 2.14 VHP 8.166 DPA -1.68 RAP 187.55 ECC 1.3771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 53	2743.98	-27.93	77.75	46.05	94.84	18 21 37	2144.0	-26.97	69.21
90.00	9 41 28	4394.30	6.27	182.86	39.13	62.33	10 54 43	3794.3	2.52	176.19
100.00	19 5 35	2454.70	-29.30	56.32	45.90	96.19	19 46 30	1854.7	-28.14	47.71
100.00	10 54 27	4158.82	7.48	164.89	38.47	60.97	12 3 46	3558.8	3.55	158.31
110.00	20 32 28	2182.90	-32.90	35.08	45.31	99.86	21 8 50	1582.9	-31.19	26.28
110.00	11 44 5	4003.39	10.59	151.22	36.59	57.31	12 50 48	3403.4	6.21	144.87

DIFFERENTIAL CORRECTIONS
TDE .8140 TRA-2.2305 TC3 1.5597 BAU .4787
RDE -.2872 RRA -.0757 RC3 -.0995 FAU .09107
FDE -.4346 FRA 2.1704 FC3-3.4411 BSP 11011
BDE .8632 BRA 2.2318 BC3 1.5628 FSP 1093

MID-COURSE EXECUTION ACCURACY
SGT 3292.5 SGR 368.9 SG3 370.4
RRT -.1789 RRF .1516 RTF -.9126
SGB 3313.1 R23 .0139 R13 .9126
SG1 3293.2 SG2 362.8 THA 178.84

ORBIT DETERMINATION ACCURACY
ST 1281.0 SR 344.9 SS 681.6
CRT -.7054 CRS -.4692 CST .9554
LSA 1458.4 MSA 311.1 SSA 29.3
EL1 1304.7 EL2 240.1 ALF 168.86

LAUNCH DATE NOV 13 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 468.381 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.191 GAL -4.45 AZL 88.23 HCA 150.16 SMA 212.62 ECC .31267 INC 1.7728 V1 30.101
RP 241.79 LAP .88 LOP 200.83 VP 21.762 GAP 16.48 AZP 91.54 TAL 341.20 TAP 131.36 RCA 146.14 APO 279.10 V2 22.706
RC 153.781 GL 12.99 GP .23 ZAL 118.80 ZAP 167.12 ETS 177.60 ZAE 155.62 ETE 359.85 ZAC 89.66 ETC 255.94 CLP 167.12

PLANETOCENTRIC CONIC

C3 22.005 VHL 4.691 DLA 15.76 RAL 176.34 RAD 6567.9 VEL 11.974 PTH 2.13 VHP 7.985 DPA -1.82 RAP 187.88 ECC 1.3622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 44	2750.52	-27.97	78.22	45.01	94.60	18 15 34	2150.5	-27.04	69.68
90.00	9 43 44	4368.15	5.44	181.39	38.11	62.17	10 56 32	3768.2	1.67	174.73
100.00	18 59 47	2460.12	-29.34	56.72	44.86	95.98	19 40 47	1860.1	-28.20	48.10
100.00	10 56 22	4133.79	6.65	163.50	37.45	60.70	12 5 16	3533.8	2.71	156.93
110.00	20 27 23	2186.05	-32.93	35.32	44.28	99.73	21 3 49	1586.0	-31.24	26.51
110.00	11 45 16	3980.62	9.75	149.99	35.56	57.07	12 51 36	3380.6	5.35	143.67

DIFFERENTIAL CORRECTIONS
TDE .7791 TRA-2.2078 TC3 1.6401 BAU .4834
RDE -.2738 RRA -.0703 RC3 -.1013 FAU .09421
FDE -.4239 FRA 2.2110 FC3-3.7062 BSP 11414
BDE .8258 BRA 2.2089 BC3 1.6432 FSP 1151

MID-COURSE EXECUTION ACCURACY
SGT 3335.3 SGR 359.0 SG3 388.6
RRT -.1791 RRF .1568 RTF -.9136
SGB 3354.5 R23 .0088 R13 .9135
SG1 3335.9 SG2 353.1 THA 178.88

ORBIT DETERMINATION ACCURACY
ST 1270.5 SR 335.6 SS 685.6
CRT -.6941 CRS -.4526 CST .9545
LSA 1449.1 MSA 310.1 SSA 29.8
EL1 1292.4 EL2 237.5 ALF 169.24

LAUNCH DATE NOV 13 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 471.440 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.127 GAL -4.30 AZL 88.23 HCA 151.09 SMA 211.15 ECC .30743 INC 1.7697 V1 30.101
RP 241.51 LAP .86 LOP 201.76 VP 21.692 GAP 15.94 AZP 91.55 TAL 341.57 TAP 132.66 RCA 146.23 APO 276.06 V2 22.734
RC 156.092 GL 13.21 GP .24 ZAL 118.15 ZAP 166.54 ETS 177.59 ZAE 155.88 ETE .01 ZAC 89.75 ETC 255.93 CLP 166.54

PLANETOCENTRIC CONIC

C3 21.151 VHL 4.599 DLA 16.22 RAL 175.84 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 7.808 DPA -1.96 RAP 188.20 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 26	2757.62	-28.01	78.74	43.97	94.35	18 9 23	2157.6	-27.11	70.19
90.00	9 46 3	4341.96	4.61	179.91	37.11	62.03	10 58 24	3742.0	.83	173.27
100.00	18 53 50	2466.04	-29.38	57.15	43.83	95.76	19 34 56	1866.0	-28.28	48.52
100.00	10 58 19	4108.76	5.82	162.11	36.44	60.63	12 6 48	3508.8	1.86	155.55
110.00	20 22 11	2189.63	-32.97	35.59	43.27	99.57	20 58 41	1589.6	-31.30	26.77
110.00	11 46 27	3957.95	8.91	148.77	34.55	56.86	12 52 25	3357.9	4.49	142.48

DIFFERENTIAL CORRECTIONS
TDE .7558 TRA-2.1720 TC3 1.7453 BAU .4944
RDE -.2611 RRA -.0655 RC3 -.1034 FAU .09746
FDE -.4109 FRA 2.2528 FC3-3.9891 BSP 11518
BDE .7996 BRA 2.1730 BC3 1.7483 FSP 1214

MID-COURSE EXECUTION ACCURACY
SGT 3377.2 SGR 349.4 SG3 407.7
RRT -.1860 RRF .1619 RTF -.9167
SGB 3395.2 R23 .0105 R13 .9167
SG1 3377.8 SG2 343.3 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 1266.3 SR 326.3 SS 688.9
CRT -.6894 CRS -.4336 CST .9500
LSA 1444.5 MSA 311.9 SSA 29.5
EL1 1286.8 EL2 232.6 ALF 169.58

LAUNCH DATE NOV 13 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 474.544 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.066 GAL -4.16 AZL 88.23 HCA 152.02 SMA 209.76 ECC .30241 INC 1.7667 V1 30.101
RP 241.22 LAP .83 LOP 202.69 VP 21.626 GAP 15.40 AZP 91.56 TAL 341.94 TAP 133.97 RCA 146.33 APO 273.20 V2 22.762
RC 158.408 GL 13.43 GP .26 ZAL 117.50 ZAP 165.95 ETS 177.57 ZAE 156.17 ETE .18 ZAC 89.83 ETC 255.92 CLP 165.95

PLANETOCENTRIC CONIC

C3 20.348 VHL 4.511 DLA 16.67 RAL 175.33 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 7.634 DPA -2.09 RAP 188.52 ECC 1.3349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 0	2765.23	-28.05	79.29	42.95	94.07	18 3 5	2165.2	-27.19	70.73
90.00	9 48 23	4315.80	3.77	178.45	36.12	61.91	11 0 19	3715.8	-.02	171.81
100.00	18 47 47	2472.44	-29.43	57.62	42.81	95.51	19 29 0	1872.4	-28.35	48.98
100.00	11 0 17	4083.82	4.98	160.73	35.45	60.49	12 8 21	3483.8	1.01	154.19
110.00	20 16 55	2193.59	-33.02	35.90	42.26	99.40	20 53 28	1593.6	-31.37	27.06
110.00	11 47 39	3935.43	8.07	147.57	33.55	56.67	12 53 14	3335.4	3.63	141.30

DIFFERENTIAL CORRECTIONS
TDE .7279 TRA-2.1411 TC3 1.8440 BAU .5024
RDE -.2487 RRA -.0608 RC3 -.1050 FAU .10085
FDE -.3965 FRA 2.2958 FC3-4.2907 BSP 11745
BDE .7692 BRA 2.1420 BC3 1.8470 FSP 1281

MID-COURSE EXECUTION ACCURACY
SGT 3417.9 SGR 339.5 SG3 427.7
RRT -.1903 RRF .1669 RTF -.9189
SGB 3434.7 R23 .0099 R13 .9189
SG1 3418.5 SG2 333.3 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 1258.0 SR 316.9 SS 692.1
CRT -.6814 CRS -.4131 CST .9463
LSA 1436.3 MSA 313.2 SSA 29.3
EL1 1277.0 EL2 228.5 ALF 169.94

LAUNCH DATE NOV 13 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 477.691 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 34.008 GAL -4.03 AZL 88.24 HCA 152.95 SMA 208.45 ECC .29759 INC 1.7631 V1 30.101
RP 240.93 LAP .80 LOP 203.62 VP 21.564 GAP 14.87 AZP 91.57 TAL 342.32 TAP 135.27 RCA 146.42 APO 270.48 V2 22.791
RC 160.729 GL 13.64 GP .27 ZAL 116.83 ZAP 165.35 ETS 177.56 ZAE 156.49 ETE .36 ZAC 89.92 ETC 255.91 CLP 165.35

PLANETOCENTRIC CONIC

C3 19.592 VHL 4.426 DLA 17.13 RAL 174.81 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 7.464 DPA -2.21 RAP 188.83 ECC 1.3224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 26	2773.38	-28.08	79.88	41.93	93.78	17 56 39	2173.4	-27.26	71.31
90.00	9 50 47	4289.63	2.93	176.98	35.15	61.82	11 2 17	3689.6	-.86	170.35
100.00	18 41 37	2479.31	-29.47	58.13	41.80	95.25	19 22 56	1879.3	-28.43	49.48
100.00	11 2 17	4058.93	4.15	159.35	34.47	60.37	12 9 56	3458.9	.17	152.82
110.00	20 11 32	2197.96	-33.07	36.23	41.27	99.21	20 48 10	1598.0	-31.44	27.38
110.00	11 48 51	3913.05	7.23	146.38	32.57	56.50	12 54 4	3313.0	2.78	140.13

DIFFERENTIAL CORRECTIONS
TDE .7143 TRA-2.0949 TC3 1.9754 BAU .5182
RDE -.2370 RRA -.0567 RC3 -.1071 FAU .10448
FDE -.3818 FRA 2.3378 FC3-4.6169 BSP 11600
BDE .7525 BRA 2.0957 BC3 1.9783 FSP 1348

MID-COURSE EXECUTION ACCURACY
SGT 3459.1 SGR 330.1 SG3 448.8
RRT -.2027 RRF .1725 RTF -.9234
SGB 3474.8 R23 .0167 R13 .9234
SG1 3459.7 SG2 323.2 THA 178.88

ORBIT DETERMINATION ACCURACY
ST 1257.9 SR 307.6 SS 695.0
CRT -.6826 CRS -.3921 CST .9382
LSA 1434.5 MSA 318.3 SSA 28.3
EL1 1275.8 EL2 221.6 ALF 170.22

LAUNCH DATE NOV 13 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 480.878 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.952 GAL -3.90 AZL 88.24 HCA 153.89 SMA 207.21 ECC .29298 INC 1.7596 V1 30.101
RP 240.64 LAP .77 LOP 204.56 VP 21.507 GAP 14.35 AZP 91.58 TAL 342.70 TAP 136.58 RCA 146.50 APO 267.92 V2 22.821
RC 163.052 GL 13.85 GP .28 ZAL 116.16 ZAP 164.74 ETS 177.54 ZAE 156.86 ETE .54 ZAC 90.01 ETC 255.90 CLP 164.74

PLANETOCENTRIC CONIC

C3 18.883 VHL 4.345 DLA 17.59 RAL 174.28 RAD 6567.8 VEL 11.843 PTH 2.10 VHP 7.298 DPA -2.33 RAP 189.13 ECC 1.3108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 46	2781.96	-28.12	80.51	40.92	93.47	17 50 8	2182.0	-27.34	71.93
90.00	9 53 12	4263.62	2.09	175.53	34.19	61.75	11 4 16	3663.6	-1.70	168.90
100.00	18 35 22	2486.58	-29.51	58.66	40.80	94.97	19 16 49	1886.6	-28.51	50.00
100.00	11 4 18	4034.23	3.31	157.99	33.52	60.27	12 11 32	3434.2	-.67	151.47
110.00	20 6 7	2202.65	-33.12	36.58	40.28	99.00	20 42 50	1602.6	-31.52	27.72
110.00	11 50 2	3890.93	6.40	145.21	31.60	56.35	12 54 53	3290.9	1.94	138.97

DIFFERENTIAL CORRECTIONS
TDE .6772 TRA-2.0716 TC3 2.0609 BAU .5210
RDE -.2251 RRA -.0523 RC3 -.1077 FAU .10824
FDE -.3642 FRA 2.3816 FC3-4.9626 BSP 12020
BDE .7136 BRA 2.0723 BC3 2.0638 FSP 1422

MID-COURSE EXECUTION ACCURACY
SGT 3495.2 SGR 319.5 SG3 470.7
RRT -.2020 RRF .1770 RTF -.9239
SGB 3509.7 R23 .0113 R13 .9239
SG1 3495.8 SG2 312.8 THA 178.93

ORBIT DETERMINATION ACCURACY
ST 1240.6 SR 297.6 SS 697.6
CRT -.6677 CRS -.3688 CST .9364
LSA 1418.6 MSA 317.8 SSA 28.7
EL1 1256.9 EL2 218.7 ALF 170.61

LAUNCH DATE NOV 13 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 484.103 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.898 GAL -3.77 AZL 88.24 HCA 154.83 SMA 206.04 ECC .28856 INC 1.7557 V1 30.101
RP 240.34 LAP .75 LOP 205.49 VP 21.454 GAP 13.83 AZP 91.59 TAL 343.07 TAP 137.90 RCA 146.58 APO 265.49 V2 22.851
RC 165.375 GL 14.05 GP .30 ZAL 115.49 ZAP 164.11 ETS 177.52 ZAE 157.25 ETE .73 ZAC 90.09 ETC 255.90 CLP 164.12

PLANETOCENTRIC CONIC

C3 18.215 VHL 4.268 DLA 18.04 RAL 173.73 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 7.136 DPA -2.45 RAP 189.42 ECC 1.2998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 59	2791.04	-28.16	81.17	39.92	93.14	17 43 30	2191.0	-27.42	72.58
90.00	9 55 40	4237.64	1.25	174.08	33.25	61.71	11 6 18	3637.6	-2.54	167.45
100.00	18 29 1	2494.29	-29.56	59.23	39.81	94.67	19 10 35	1894.3	-28.60	50.56
100.00	11 6 20	4009.63	2.48	156.64	32.57	60.20	12 13 9	3409.6	-1.50	150.12
110.00	20 0 37	2207.68	-33.17	36.97	39.31	98.78	20 37 25	1607.7	-31.60	28.09
110.00	11 51 13	3869.00	5.57	144.05	30.65	56.22	12 55 42	3269.0	1.10	137.83

DIFFERENTIAL CORRECTIONS
TDE .6502 TRA-2.0383 TC3 2.1703 BAU .5292
RDE -.2138 RRA -.0483 RC3 -.1085 FAU .11216
FDE -.3442 FRA 2.4273 FC3-5.3307 BSP 12175
BDE .6844 BRA 2.0388 BC3 2.1730 FSP 1499

MID-COURSE EXECUTION ACCURACY
SGT 3532.1 SGR 309.2 SG3 493.8
RRT -.2067 RRF .1813 RTF -.9261
SGB 3545.6 R23 .0119 R13 .9261
SG1 3532.7 SG2 302.4 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 1229.0 SR 287.7 SS 700.0
CRT -.6589 CRS -.3427 CST .9306
LSA 1406.9 MSA 321.1 SSA 28.3
EL1 1243.9 EL2 213.8 ALF 170.96

LAUNCH DATE NOV 13 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 487.364 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.847 GAL -3.64 AZL 88.25 HCA 155.77 SMA 204.93 ECC .28433 INC 1.7517 V1 30.101
RP 240.04 LAP .72 LOP 206.43 VP 21.405 GAP 13.32 AZP 91.60 TAL 343.45 TAP 139.21 RCA 146.66 APO 263.20 V2 22.881
RC 167.697 GL 14.25 GP .32 ZAL 114.81 ZAP 163.47 ETS 177.49 ZAE 157.69 ETE .93 ZAC 90.17 ETC 255.89 CLP 163.48

PLANETOCENTRIC CONIC

C3 17.587 VHL 4.194 DLA 18.49 RAL 173.18 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 6.977 DPA -2.56 RAP 189.70 ECC 1.2894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 6	2800.58	-28.19	81.87	38.93	92.79	17 36 46	2200.6	-27.51*	73.27
90.00	9 58 10	4211.76	.42	172.64	32.33	61.69	11 8 22	3611.8	-3.37	166.00
100.00	18 22 34	2502.38	-29.60	59.83	38.83	94.36	19 4 17	1902.4	-28.68	51.15
100.00	11 8 23	3985.19	1.65	155.29	31.64	60.15	12 14 48	3385.2	-2.33	148.77
110.00	19 55 3	2213.03	-33.22	37.38	38.35	98.55	20 31 56	1613.0	-31.69	28.49
110.00	11 52 23	3847.31	4.75	142.91	29.71	56.11	12 56 31	3247.3	.27	136.69

DIFFERENTIAL CORRECTIONS
TDE .6263 TRA-2.0018 TC3 2.2859 BAU .5381
RDE -.2028 RRA -.0446 RC3 -.1090 FAU .11630
FDE -.3239 FRA 2.4723 FC3-5.7252 BSP 12280
BDE .6583 BRA 2.0023 BC3 2.2884 FSP 1580

MID-COURSE EXECUTION ACCURACY
SGT 3567.1 SGR 298.8 SG3 518.0
RRT -.2129 RRF .1856 RTF -.9285
SGB 3579.6 R23 .0137 R13 .9285
SG1 3567.7 SG2 291.9 THA 178.97

ORBIT DETERMINATION ACCURACY
ST 1218.2 SR 277.8 SS 702.6
CRT -.6518 CRS -.3163 CST .9237
LSA 1395.8 MSA 325.3 SSA 27.7
EL1 1232.0 EL2 208.3 ALF 171.28

LAUNCH DATE NOV 13 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 490.659 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.797	GAL	-3.52	AZL	88.25	HCA	156.71	SMA	203.88	ECC	.28027	INC	1.7472
RP	239.73	LAP	.69	LOP	207.37	VP	21.360	GAP	12.81	AZP	91.61	TAL	343.82	TAP	140.53	RCA	146.74	APO	261.02
RC	170.016	GL	14.45	GP	.34	ZAL	114.12	ZAP	162.82	ETS	177.47	ZAE	158.16	ETE	1.14	ZAC	90.26	ETC	255.88

V1 30.101 V2 22.912 CLP 162.82

PLANETOCENTRIC CONIC

C3	16.996	VHL	4.123	DLA	18.94	RAL	172.62	RAD	6567.7	VEL	11.763	PTH	2.08	VHP	6.821	DPA	-2.66	RAP	189.98

ECC 1.2797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 6	2810.54	-28.22	82.59	37.94	92.43	17 29 57	2210.5	-27.59	73.99
90.00	10 0 42	4186.00	-.41	171.20	31.42	61.69	11 10 28	3586.0	-4.20	164.56
100.00	18 16 3	2510.84	-29.64	60.46	37.85	94.04	18 57 54	1910.8	-28.77	51.76
100.00	11 10 27	3960.93	.83	153.96	30.73	60.12	12 16 28	3360.9	-3.15	147.44
110.00	19 49 26	2218.66	-33.28	37.80	37.39	98.30	20 26 25	1618.7	-31.78	28.90
110.00	11 53 33	3825.88	3.94	141.79	28.79	56.02	12 57 19	3225.9	-.55	135.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6040	TRA	-1.9625	TC3	2.4081	BAU	.5477	SGT	3600.3	SGR	288.4	SG3	543.3	ST	1206.9	SR	267.8	SS	705.0
RDE	-.1922	RRA	-.0413	RC3	-.1091	FAU	.12066	RRT	-.2197	RRF	.1895	RTF	-.9312	CRT	-.6457	CRS	-.2881	CST	.9152
FDE	-.3018	FRA	2.5177	FC3	-6.1462	BSP	12315	SGB	3611.9	R23	.0167	R13	.9312	LSA	1383.9	MSA	330.9	SSA	26.9
BDE	.6339	BRA	1.9629	BC3	2.4106	FSP	1663	SG1	3600.9	SG2	281.3	THA	178.99	EL1	1219.6	EL2	202.4	ALF	171.61

LAUNCH DATE NOV 13 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 493.984 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.750	GAL	-3.40	AZL	88.26	HCA	157.65	SMA	202.88	ECC	.27639	INC	1.7425
RP	239.42	LAP	.66	LOP	208.32	VP	21.319	GAP	12.31	AZP	91.61	TAL	344.19	TAP	141.85	RCA	146.81	APO	258.96
RC	172.331	GL	14.63	GP	.36	ZAL	113.44	ZAP	162.15	ETS	177.44	ZAE	158.66	ETE	1.36	ZAC	90.34	ETC	255.88

V1 30.101 V2 22.943 CLP 162.16

PLANETOCENTRIC CONIC

C3	16.441	VHL	4.055	DLA	19.38	RAL	172.06	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	6.669	DPA	-2.75	RAP	190.24

ECC 1.2706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 3	2820.86	-28.25	83.35	36.97	92.05	17 23 4	2220.9	-27.67	74.73
90.00	10 3 15	4160.44	-1.24	169.77	30.53	61.71	11 12 35	3560.4	-5.01	163.13
100.00	18 9 28	2519.60	-29.68	61.10	36.89	93.70	18 51 28	1919.6	-28.86	52.40
100.00	11 12 31	3936.92	.02	152.65	29.83	60.11	12 18 8	3336.9	-3.96	146.12
110.00	19 43 47	2224.51	-33.34	38.25	36.45	98.04	20 20 52	1624.5	-31.87	29.33
110.00	11 54 41	3804.79	3.13	140.68	27.88	55.94	12 58 6	3204.8	-1.36	134.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5735	TRA	-1.9325	TC3	2.5135	BAU	.5530	SGT	3632.0	SGR	277.3	SG3	569.9	ST	1189.4	SR	257.4	SS	707.7
RDE	-.1818	RRA	-.0379	RC3	-.1083	FAU	.12519	RRT	-.2211	RRF	.1920	RTF	-.9326	CRT	-.6320	CRS	-.2561	CST	.9089
FDE	-.2761	FRA	2.5667	FC3	-6.5922	BSP	12540	SGB	3642.6	R23	.0158	R13	.9326	LSA	1367.2	MSA	334.5	SSA	26.5
BDE	.6016	BRA	1.9329	BC3	2.5159	FSP	1755	SG1	3632.5	SG2	270.4	THA	179.03	EL1	1200.8	EL2	197.6	ALF	171.99

LAUNCH DATE NOV 13 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 497.341 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.705	GAL	-3.29	AZL	88.26	HCA	158.60	SMA	201.94	ECC	.27267	INC	1.7373
RP	239.11	LAP	.63	LOP	209.27	VP	21.281	GAP	11.81	AZP	91.62	TAL	344.56	TAP	143.17	RCA	146.88	APO	257.00
RC	174.639	GL	14.81	GP	.38	ZAL	112.75	ZAP	161.47	ETS	177.41	ZAE	159.19	ETE	1.60	ZAC	90.42	ETC	255.87

V1 30.101 V2 22.975 CLP 161.47

PLANETOCENTRIC CONIC

C3	15.919	VHL	3.990	DLA	19.82	RAL	171.49	RAD	6567.6	VEL	11.718	PTH	2.06	VHP	6.521	DPA	-2.84	RAP	190.49

ECC 1.2620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 54	2831.53	-28.27	84.13	36.00	91.66	17 16 6	2231.5	-27.74	75.50
90.00	10 5 49	4135.06	-2.06	168.36	29.65	61.75	11 14 44	3535.1	-5.82	161.70
100.00	18 2 50	2528.66	-29.72	61.77	35.93	93.35	18 44 58	1928.7	-28.94	53.06
100.00	11 14 35	3913.17	-.79	151.34	28.94	60.12	12 19 48	3313.2	-4.76	144.81
110.00	19 38 6	2230.57	-33.39	38.72	35.51	97.77	20 15 17	1630.6	-31.96	29.78
110.00	11 55 47	3784.02	2.34	139.60	26.99	55.89	12 58 51	3184.0	-2.15	133.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5471	TRA	-1.8977	TC3	2.6261	BAU	.5594	SGT	3660.5	SGR	266.3	SG3	597.7	ST	1173.2	SR	247.1	SS	710.6
RDE	-.1717	RRA	-.0349	RC3	-.1070	FAU	.12991	RRT	-.2240	RRF	.1937	RTF	-.9344	CRT	-.6209	CRS	-.2227	CST	.9003
FDE	-.2489	FRA	2.6156	FC3	-7.0652	BSP	12681	SGB	3670.2	R23	.0171	R13	.9344	LSA	1351.3	MSA	340.2	SSA	25.8
BDE	.5734	BRA	1.8980	BC3	2.6283	FSP	1851	SG1	3661.0	SG2	259.5	THA	179.06	EL1	1183.4	EL2	192.0	ALF	172.35

LAUNCH DATE NOV 13 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 500.726 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.661	GAL	-3.18	AZL	88.27	HCA	159.55	SMA	201.04	ECC	.26911	INC	1.7313
RP	238.79	LAP	.60	LOP	210.21	VP	21.247	GAP	11.32	AZP	91.62	TAL	344.93	TAP	144.48	RCA	146.94	APO	255.15
RC	176.939	GL	14.98	GP	.41	ZAL	112.06	ZAP	160.77	ETS	177.37	ZAE	159.76	ETE	1.87	ZAC	90.50	ETC	255.87

V1 30.101 V2 23.007 CLP 160.77

PLANETOCENTRIC CONIC

C3	15.428	VHL	3.928	DLA	20.25	RAL	170.91	RAD	6567.6	VEL	11.697	PTH	2.06	VHP	6.375	DPA	-2.92	RAP	190.73

ECC 1.2539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 42	2842.51	-28.29	84.93	35.04	91.26	17 9 4	2242.5	-27.82	76.30
90.00	10 8 24	4109.91	-2.87	166.95	28.78	61.82	11 16 54	3509.9	-6.61	160.28
100.00	17 56 9	2537.94	-29.76	62.46	34.98	92.99	18 38 27	1937.9	-29.03	53.73
100.00	11 16 38	3889.71	-1.58	150.06	28.07	60.15	12 21 28	3289.7	-5.55	143.51
110.00	19 32 24	2236.79	-33.45	39.19	34.58	97.49	20 9 41	1636.8	-32.05	30.24
110.00	11 56 52	3763.62	1.56	138.53	26.11	55.85	12 59 35	3163.6	-2.93	132.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5224	TRA	-1.8609	TC3	2.7440	BAU	.5664	SGT	3687.6	SGR	255.2	SG3	627.0	ST	1156.8	SR	236.7	SS	713.9
RDE	-.1620	RRA	-.0322	RC3	-.1052	FAU	.13499	RRT	-.2268	RRF	.1949	RTF	-.9362	CRT	-.6104	CRS	-.1898	CST	.8913
FDE	-.2218	FRA	2.6632	FC3	-7.5752	BSP	12752	SGB	3696.4	R23	.0189	R13	.9362	LSA	1335.5	MSA	346.1	SSA	25.0
BDE	.5469	BRA	1.8611	BC3	2.7460	FSP	1946	SG1	3688.1	SG2	248.5	THA	179.10	EL1	1166.1	EL2	186.0	ALF	172.69

LAUNCH DATE NOV 13 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 504.139 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.620 GAL -3.07 AZL 88.27 HCA 160.50 SMA 200.20 ECC .26570 INC 1.7253 V1 30.101
RP 238.47 LAP .58 LOP 211.17 VP 21.216 GAP 10.84 AZP 91.63 TAL 345.30 TAP 145.80 RCA 147.00 APO 253.39 V2 23.040
RC 179.231 GL 15.15 GP .44 ZAL 111.38 ZAP 160.05 ETS 177.33 ZAE 160.37 ETE 2.15 ZAC 90.58 ETC 255.86 CLP 160.06

PLANETOCENTRIC CONIC

C3 14.966 VHL 3.869 DLA 20.67 RAL 170.32 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 6.233 DPA -2.99 RAP 190.95 ECC 1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 27	2853.73	-28.31	85.75	34.09	90.85	17 2 0	2253.7	-27.89	77.11
90.00	10 10 59	4085.03	-3.67	165.56	27.93	61.90	11 19 4	3485.0	-7.40	158.87
100.00	17 49 26	2547.41	-29.79	63.16	34.04	92.62	18 31 54	1947.4	-29.11	54.43
100.00	11 18 40	3866.58	-2.37	148.79	27.22	60.19	12 23 7	3266.6	-6.32	142.23
110.00	19 26 42	2243.12	-33.50	39.68	33.67	97.21	20 4 5	1643.1	-32.15	30.71
110.00	11 57 54	3743.64	.80	137.49	25.24	55.83	13 0 17	3143.6	-3.69	131.28

DIFFERENTIAL CORRECTIONS
TDE .4983 TRA-1.8243 TC3 2.8618 BAU .5729
RDE -.1525 RRA -.0296 RC3 -.1026 FAU .14021
FDE -.1903 FRA 2.7148 FC3-8.1108 BSP 12836
BDE .5211 BRA 1.8246 BC3 2.8636 FSP 2053

MID-COURSE EXECUTION ACCURACY
SGT 3713.1 SGR 243.9 SG3 657.6
RRT -.2283 RRF .1938 RTF -.9382
SGB 3721.1 R23 .0218 R13 .9382
SG1 3713.5 SG2 237.5 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 1140.0 SR 226.3 SS 717.9
CRT -.5994 CRS -.1524 CST .8801
LSA 1319.1 MSA 354.2 SSA 24.1
EL1 1148.3 EL2 179.8 ALF 173.04

LAUNCH DATE NOV 13 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 507.577 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.580 GAL -2.97 AZL 88.28 HCA 161.46 SMA 199.39 ECC .26244 INC 1.7183 V1 30.101
RP 238.14 LAP .55 LOP 212.12 VP 21.189 GAP 10.36 AZP 91.63 TAL 345.66 TAP 147.12 RCA 147.06 APO 251.72 V2 23.073
RC 181.513 GL 15.30 GP .47 ZAL 110.69 ZAP 159.32 ETS 177.29 ZAE 161.00 ETE 2.47 ZAC 90.66 ETC 255.86 CLP 159.32

PLANETOCENTRIC CONIC

C3 14.531 VHL 3.812 DLA 21.08 RAL 169.73 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 6.093 DPA -3.06 RAP 191.17 ECC 1.2391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 10	2863.12	-28.31	86.58	33.15	90.43	16 54 55	2265.1	-27.95	77.94
90.00	10 13 32	4060.51	-4.45	164.19	27.10	62.01	11 21 13	3460.5	-8.16	157.47
100.00	17 42 44	2556.98	-29.82	63.87	33.11	92.24	18 25 21	1957.0	-29.19	55.13
100.00	11 20 40	3843.88	-3.13	147.54	26.37	60.26	12 24 44	3243.9	-7.07	140.96
110.00	19 21 1	2249.50	-33.56	40.17	32.76	96.92	19 58 30	1649.5	-32.24	31.19
110.00	11 58 52	3724.13	.05	136.47	24.38	55.82	13 0 56	3124.1	-4.43	130.26

DIFFERENTIAL CORRECTIONS
TDE .4717 TRA-1.7900 TC3 2.9689 BAU .5771
RDE -.1432 RRA -.0273 RC3 -.0988 FAU .14568
FDE -.1579 FRA 2.7661 FC3-8.6796 BSP 12946
BDE .4930 BRA 1.7902 BC3 2.9705 FSP 2161

MID-COURSE EXECUTION ACCURACY
SGT 3733.6 SGR 232.3 SG3 689.6
RRT -.2262 RRF .1906 RTF -.9394
SGB 3740.9 R23 .0233 R13 .9394
SG1 3734.0 SG2 226.2 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 1120.5 SR 215.7 SS 722.4
CRT -.5849 CRS -.1145 CST .8703
LSA 1301.3 MSA 360.7 SSA 23.3
EL1 1127.8 EL2 173.8 ALF 173.42

LAUNCH DATE NOV 13 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 511.040 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.542 GAL -2.87 AZL 88.29 HCA 162.41 SMA 198.63 ECC .25933 INC 1.7105 V1 30.101
RP 237.81 LAP .52 LOP 213.08 VP 21.165 GAP 9.89 AZP 91.63 TAL 346.02 TAP 148.43 RCA 147.12 APO 250.13 V2 23.106
RC 183.786 GL 15.43 GP .51 ZAL 110.01 ZAP 158.57 ETS 177.24 ZAE 161.67 ETE 2.82 ZAC 90.74 ETC 255.86 CLP 158.57

PLANETOCENTRIC CONIC

C3 14.122 VHL 3.758 DLA 21.48 RAL 169.13 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 5.957 DPA -3.11 RAP 191.37 ECC 1.2324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 53	2876.62	-28.32	87.42	32.22	90.01	16 47 50	2276.6	-28.02	78.77
90.00	10 16 4	4036.37	-5.22	162.83	26.28	62.13	11 23 21	3436.4	-8.91	156.09
100.00	17 36 2	2566.59	-29.84	64.59	32.19	91.87	18 18 49	1966.6	-29.26	55.83
100.00	11 22 36	3821.63	-3.89	146.31	25.54	60.34	12 26 18	3221.6	-7.81	139.72
110.00	19 15 21	2255.86	-33.61	40.66	31.86	96.64	19 52 57	1655.9	-32.33	31.66
110.00	11 59 47	3705.13	-.68	135.48	23.54	55.82	13 1 32	3105.1	-5.16	129.26

DIFFERENTIAL CORRECTIONS
TDE .4486 TRA-1.7523 TC3 3.0858 BAU .5828
RDE -.1343 RRA -.0254 RC3 -.0943 FAU .15155
FDE -.1255 FRA 2.8166 FC3-9.2910 BSP 13005
BDE .4683 BRA 1.7524 BC3 3.0872 FSP 2273

MID-COURSE EXECUTION ACCURACY
SGT 3753.5 SGR 220.6 SG3 723.4
RRT -.2235 RRF .1853 RTF -.9411
SGB 3760.0 R23 .0264 R13 .9411
SG1 3753.9 SG2 215.0 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 1102.1 SR 205.1 SS 727.4
CRT -.5726 CRS -.0771 CST .8590
LSA 1284.3 MSA 368.5 SSA 22.3
EL1 1108.5 EL2 167.2 ALF 173.77

LAUNCH DATE NOV 13 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 514.526 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.505 GAL -2.77 AZL 88.30 HCA 163.37 SMA 197.90 ECC .25634 INC 1.7020 V1 30.101
RP 237.48 LAP .49 LOP 214.04 VP 21.144 GAP 9.42 AZP 91.63 TAL 346.37 TAP 149.75 RCA 147.17 APO 248.63 V2 23.140
RC 186.049 GL 15.56 GP .55 ZAL 109.34 ZAP 157.80 ETS 177.18 ZAE 162.37 ETE 3.22 ZAC 90.82 ETC 255.85 CLP 157.80

PLANETOCENTRIC CONIC

C3 13.736 VHL 3.706 DLA 21.86 RAL 168.53 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 5.824 DPA -3.15 RAP 191.56 ECC 1.2261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 38	2888.11	-28.31	88.26	31.29	89.59	16 40 46	2288.1	-28.07	79.61
90.00	10 18 32	4012.74	-5.97	161.50	25.47	62.27	11 25 25	3412.7	-9.64	154.74
100.00	17 29 23	2576.14	-29.86	65.30	31.27	91.50	18 12 19	1976.1	-29.33	56.53
100.00	11 24 28	3799.94	-4.62	145.12	24.72	60.43	12 27 48	3199.9	-8.52	138.50
110.00	19 9 45	2262.14	-33.66	41.14	30.96	96.36	19 47 27	1662.1	-32.41	32.13
110.00	12 0 36	3686.70	-1.38	134.52	22.71	55.84	13 2 3	3086.7	-5.85	128.29

DIFFERENTIAL CORRECTIONS
TDE .4250 TRA-1.7157 TC3 3.1956 BAU .5871
RDE -.1256 RRA -.0236 RC3 -.0885 FAU .15760
FDE -.0899 FRA 2.8696 FC3-9.9329 BSP 13049
BDE .4431 BRA 1.7159 BC3 3.1968 FSP 2391

MID-COURSE EXECUTION ACCURACY
SGT 3769.6 SGR 208.7 SG3 758.5
RRT -.2166 RRF .1756 RTF -.9425
SGB 3775.4 R23 .0299 R13 .9425
SG1 3769.9 SG2 203.7 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 1082.5 SR 194.5 SS 733.4
CRT -.5583 CRS -.0370 CST .8471
LSA 1266.8 MSA 377.0 SSA 21.3
EL1 1088.0 EL2 160.5 ALF 174.14

LAUNCH DATE NOV 13 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 518.035 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.470	GAL	-2.67	AZL	88.31	HCA	164.34	SMA	197.21	ECC	.25350	INC	1.6923	V1	30.101
RP	237.15	LAP	.46	LOP	215.00	VP	21.126	GAP	8.96	AZP	91.63	TAL	346.72	TAP	151.06	RCA	147.22	APO	247.20	V2	23.174
RC	188.300	GL	15.67	GP	.60	ZAL	108.67	ZAP	157.00	ETS	177.12	ZAE	163.10	ETE	3.68	ZAC	90.91	ETC	255.85	CLP	157.01

PLANETOCENTRIC CONIC

C3	13.373	VHL	3.657	DLA	22.23	RAL	167.93	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	5.694	DPA	-3.18	RAP	191.74	ECC	1.2201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 27	2899.47	-28.31	89.10	30.36	89.17	16 33 46	2299.5	-28.12	80.44
90.00	10 20 55	3989.70	-6.70	160.20	24.66	62.42	11 27 25	3389.7	-10.34	153.41
100.00	17 22 49	2585.51	-29.87	65.99	30.36	91.13	18 5 54	1985.5	-29.40	57.22
100.00	11 26 14	3778.88	-5.32	143.95	23.91	60.54	12 29 13	3178.9	-9.21	137.32
110.00	19 4 14	2268.23	-33.70	41.61	30.07	96.08	19 42 2	1668.2	-32.49	32.59
110.00	12 1 19	3668.93	-2.06	133.59	21.89	55.87	13 2 28	3068.9	-6.52	127.35

DIFFERENTIAL CORRECTIONS

TDE	.4026	TRA	-1.6794	TC3	3.3053	BAU	.5911
RDE	-.1171	RRA	-.0222	RC3	-.0813	FAU	.16402
FDE	-.0537	FRA	2.9234	FC	-10.6185	BSP	13103
BDE	.4193	BRA	1.6795	BC3	3.3063	FSP	2515

MID-COURSE EXECUTION ACCURACY

SGT	3784.3	SGR	196.5	SG3	795.6		
RRT	-.2054	RRF	.1610	RTF	-.9438		
SGB	3789.4	R23	.0340	R13	.9438		
SG1	3784.5	SG2	192.3	THA	179.39		

ORBIT DETERMINATION ACCURACY

ST	1063.1	SR	183.9	SS	740.3		
CRT	-.5436	CRS	.0031	CST	.8349		
LSA	1250.2	MSA	385.6	SSA	20.2		
EL1	1067.9	EL2	153.6	ALF	174.51		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 521.565 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.437	GAL	-2.58	AZL	88.32	HCA	165.30	SMA	196.56	ECC	.25077	INC	1.6819	V1	30.101
RP	236.81	LAP	.43	LOP	215.96	VP	21.111	GAP	8.51	AZP	91.63	TAL	347.06	TAP	152.36	RCA	147.27	APO	245.85	V2	23.209
RC	190.540	GL	15.76	GP	.65	ZAL	108.01	ZAP	156.19	ETS	177.05	ZAE	163.87	ETE	4.20	ZAC	90.99	ETC	255.85	CLP	156.20

PLANETOCENTRIC CONIC

C3	13.031	VHL	3.610	DLA	22.57	RAL	167.32	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	5.566	DPA	-3.19	RAP	191.90	ECC	1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 21	2910.54	-28.29	89.91	29.44	88.76	16 26 52	2310.5	-28.16	81.24
90.00	10 23 10	3967.40	-7.40	158.93	23.87	62.59	11 29 17	3367.4	-11.02	152.12
100.00	17 16 21	2594.57	-29.88	66.67	29.45	90.78	17 59 35	1994.6	-29.46	57.89
100.00	11 27 51	3758.59	-6.00	142.83	23.11	60.66	12 30 30	3158.6	-9.86	136.17
110.00	18 58 48	2274.03	-33.74	42.06	29.18	95.82	19 36 42	1674.0	-32.57	33.02
110.00	12 1 53	3651.90	-2.71	132.70	21.07	55.91	13 2 45	3051.9	-7.17	126.45

DIFFERENTIAL CORRECTIONS

TDE	.3782	TRA	-1.6444	TC3	3.4028	BAU	.5929
RDE	-.1089	RRA	-.0211	RC3	-.0724	FAU	.17049
FDE	-.0110	FRA	2.9824	FC	-11.3274	BSP	13169
BDE	.3935	BRA	1.6445	BC3	3.4036	FSP	2654

MID-COURSE EXECUTION ACCURACY

SGT	3792.8	SGR	184.2	SG3	833.9		
RRT	-.1858	RRF	.1378	RTF	-.9449		
SGB	3797.3	R23	.0389	R13	.9449		
SG1	3793.0	SG2	180.9	THA	179.48		

ORBIT DETERMINATION ACCURACY

ST	1041.5	SR	173.2	SS	749.0		
CRT	-.5247	CRS	.0493	CST	.8216		
LSA	1232.5	MSA	395.5	SSA	19.1		
EL1	1045.6	EL2	146.8	ALF	174.91		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 525.116 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.405	GAL	-2.50	AZL	88.33	HCA	166.27	SMA	195.94	ECC	.24817	INC	1.6689	V1	30.101
RP	236.46	LAP	.40	LOP	216.93	VP	21.099	GAP	8.06	AZP	91.62	TAL	347.40	TAP	153.67	RCA	147.31	APO	244.56	V2	23.244
RC	192.768	GL	15.83	GP	.71	ZAL	107.36	ZAP	155.36	ETS	176.97	ZAE	164.67	ETE	4.82	ZAC	91.08	ETC	255.85	CLP	155.37

PLANETOCENTRIC CONIC

C3	12.707	VHL	3.565	DLA	22.90	RAL	166.71	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	5.442	DPA	-3.19	RAP	192.05	ECC	1.2091

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 25	2921.12	-28.27	90.68	28.52	88.38	16 20 7	2321.1	-28.20	82.01
90.00	10 25 13	3946.01	-8.07	157.72	23.08	62.76	11 30 59	3346.0	-11.66	150.88
100.00	17 10 3	2603.14	-29.89	67.30	28.54	90.44	17 53 26	2003.1	-29.51	58.52
100.00	11 29 17	3739.22	-6.64	141.75	22.31	60.79	12 31 36	3139.2	-10.49	135.07
110.00	18 53 31	2279.41	-33.78	42.48	28.30	95.58	19 31 31	1679.4	-32.64	33.43
110.00	12 2 18	3635.72	-3.33	131.86	20.26	55.96	13 2 54	3035.7	-7.77	125.59

DIFFERENTIAL CORRECTIONS

TDE	.3572	TRA	-1.6072	TC3	3.5049	BAU	.5955
RDE	-.1009	RRA	-.0203	RC3	-.0616	FAU	.17766
FDE	.0249	FRA	3.0349	FC	-12.1037	BSP	13190
BDE	.3712	BRA	1.6073	BC3	3.5055	FSP	2784

MID-COURSE EXECUTION ACCURACY

SGT	3799.7	SGR	171.7	SG3	874.8		
RRT	-.1586	RRF	.1064	RTF	-.9459		
SGB	3803.6	R23	.0445	R13	.9459		
SG1	3799.8	SG2	169.5	THA	179.59		

ORBIT DETERMINATION ACCURACY

ST	1021.3	SR	162.5	SS	757.0		
CRT	-.5076	CRS	.0880	CST	.8106		
LSA	1216.6	MSA	402.8	SSA	18.1		
EL1	1024.6	EL2	139.6	ALF	175.29		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 528.686 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.374	GAL	-2.41	AZL	88.34	HCA	167.24	SMA	195.35	ECC	.24569	INC	1.6550	V1	30.101
RP	236.12	LAP	.37	LOP	217.90	VP	21.089	GAP	7.62	AZP	91.61	TAL	347.73	TAP	154.97	RCA	147.35	APO	243.34	V2	23.279
RC	194.983	GL	15.87	GP	.78	ZAL	106.72	ZAP	154.50	ETS	176.88	ZAE	165.49	ETE	5.56	ZAC	91.18	ETC	255.84	CLP	154.51

PLANETOCENTRIC CONIC

C3	12.402	VHL	3.522	DLA	23.20	RAL	166.10	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	5.320	DPA	-3.18	RAP	192.18	ECC	1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 43	2930.96	-28.25	91.40	27.60	88.02	16 13 34	2331.0	-28.23	82.73
90.00	10 27 1	3925.77	-8.70	156.56	22.29	62.95	11 32 26	3325.8	-12.26	149.69
100.00	17 3 57	2611.01	-29.89	67.89	27.63	90.13	17 47 28	2011.0	-29.55	59.10
100.00	11 30 28	3720.96	-7.25	140.73	21.51	60.92	12 32 29	3121.0	-11.07	134.03
110.00	18 48 25	2284.21	-33.81	42.85	27.41	95.36	19 26 29	1684.2	-32.70	33.79
110.00	12 2 30	3620.53	-3.91	131.06	19.45	56.01	13 2 50	3020.5	-8.34	124.78

DIFFERENTIAL CORRECTIONS

TDE	.3360	TRA	-1.5709	TC3	3.5992	BAU	.5968
RDE	-.0931	RRA	-.0200	RC3	-.0486	FAU	.18486
FDE	.0686	FRA	3.0950	FC	-12.9045	BSP	13202
BDE	.3487	BRA	1.5711	BC3	3.5996	FSP	2933

MID-COURSE EXECUTION ACCURACY

SGT	3802.3	SGR	159.3	SG3	917.0		
RRT	-.1175	RRF	.0593	RTF	-.9470		
SGB	3805.6	R23	.0526	R13	.9470		
SG1	3802.4	SG2	158.2	THA	179.72		

ORBIT DETERMINATION ACCURACY

ST	1000.3	SR	151.9	SS	767.5		
CRT	-.4874	CRS	.1344	CST	.7968		
LSA	1200.8	MSA	412.8	SSA	16.9		
EL1	1003.1	EL2	132.3	ALF	175.69		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 532.276 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.345 GAL -2.33 AZL 88.36 HCA 168.22 SMA 194.79 ECC .24332 INC 1.6383 V1 30.101
RP 235.77 LAP .33 LOP 218.88 VP 21.082 GAP 7.18 AZP 91.60 TAL 348.05 TAP 156.27 RCA 147.39 APO 242.18 V2 23.315
RC 197.185 GL 15.89 GP .87 ZAL 106.10 ZAP 153.62 ETS 176.77 ZAE 166.35 ETE 6.45 ZAC 91.28 ETC 255.84 CLP 153.63

PLANETOCENTRIC CONIC

C3 12.112 VHL 3.480 DLA 23.46 RAL 165.48 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 5.201 DPA -3.14 RAP 192.31 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 21	2939.71	-28.23	92.04	26.68	87.70	16 7 20	2339.7	-28.25	83.37
90.00	10 28 26	3907.01	-9.28	155.49	21.49	63.13	11 33 33	3307.0	-12.81	148.59
100.00	16 58 10	2617.87	-29.89	68.40	26.72	89.86	17 41 48	2017.9	-29.59	59.61
100.00	11 31 18	3704.08	-7.81	139.79	20.71	61.05	12 33 2	3104.1	-11.61	133.07
110.00	18 43 32	2288.21	-33.84	43.16	26.51	95.18	19 21 40	1688.2	-32.75	34.09
110.00	12 2 25	3606.50	-4.44	130.33	18.64	56.07	13 2 32	3006.5	-8.86	124.03

DIFFERENTIAL CORRECTIONS
TDE .3149 TRA-1.5345 TC3 3.6879 BAU .5972
RDE -.0856 RRA -.0201 RC3 -.0327 FAU .19247
FDE .1118 FRA 3.1535 FC-13.7574 BSP 13219
BDE .3264 BRA 1.5346 BC3 3.6880 FSP 3086

MID-COURSE EXECUTION ACCURACY
SGT 3800.3 SGR 147.3 SG3 961.2
RRT -.0570 RRF -.0079 RTF -.9478
SGB 3803.1 R23 .0620 R13 .9478
SG1 3800.3 SG2 147.0 THA 179.87

ORBIT DETERMINATION ACCURACY
ST 978.5 SR 141.4 SS 778.3
CRT -.4640 CRS .1804 CST .7846
LSA 1185.5 MSA 421.1 SSA 15.8
EL1 ~~980.7~~ ~~EL2~~ 125.0 ALF 176.10

LAUNCH DATE NOV 13 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 535.884 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.317 GAL -2.25 AZL 88.38 HCA 169.19 SMA 194.26 ECC .24105 INC 1.6191 V1 30.101
RP 235.42 LAP .30 LOP 219.85 VP 21.078 GAP 6.75 AZP 91.59 TAL 348.37 TAP 157.56 RCA 147.43 APO 241.08 V2 23.351
RC 199.372 GL 15.87 GP .96 ZAL 105.48 ZAP 152.72 ETS 176.65 ZAE 167.24 ETE 7.55 ZAC 91.39 ETC 255.84 CLP 152.73

PLANETOCENTRIC CONIC

C3 11.836 VHL 3.440 DLA 23.69 RAL 164.85 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 5.085 DPA -3.08 RAP 192.41 ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 25	2946.91	-28.21	92.56	25.75	87.43	16 1 32	2346.9	-28.27	83.90
90.00	10 29 21	3890.12	-9.79	154.52	20.68	63.30	11 34 12	3290.1	-13.30	147.60
100.00	16 52 46	2623.35	-29.89	68.81	25.79	89.65	17 36 29	2023.4	-29.62	60.01
100.00	11 31 41	3688.91	-8.31	138.94	19.89	61.18	12 33 10	3088.9	-12.09	132.19
110.00	18 38 57	2291.15	-33.85	43.39	25.60	95.04	19 17 8	1691.1	-32.79	34.31
110.00	12 2 0	3593.88	-4.92	129.66	17.82	56.13	13 1 54	2993.9	-9.33	123.36

DIFFERENTIAL CORRECTIONS
TDE .2964 TRA-1.4985 TC3 3.7700 BAU .5966
RDE -.0784 RRA -.0209 RC3 -.0132 FAU .20028
FDE .1557 FRA 3.2167 FC-14.6493 BSP 13204
BDE .3066 BRA 1.4986 BC3 3.7700 FSP 3251

MID-COURSE EXECUTION ACCURACY
SGT 3794.7 SGR 136.2 SG3 1007.2
RRT .0299 RRF -.1034 RTF -.9486
SGB 3797.1 R23 -.0751 R13 -.9486
SG1 3794.7 SG2 136.2 THA .06

ORBIT DETERMINATION ACCURACY
ST 958.2 SR 131.0 SS 790.7
CRT -.4392 CRS .2279 CST .7715
LSA 1172.6 MSA 430.6 SSA 14.5
EL1 959.9 EL2 117.5 ALF 176.51

LAUNCH DATE NOV 13 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 539.509 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.290 GAL -2.18 AZL 88.40 HCA 170.17 SMA 193.75 ECC .23889 INC 1.5956 V1 30.101
RP 235.06 LAP .27 LOP 220.83 VP 21.076 GAP 6.33 AZP 91.57 TAL 348.67 TAP 158.85 RCA 147.46 APO 240.04 V2 23.387
RC 201.544 GL 15.80 GP 1.08 ZAL 104.88 ZAP 151.78 ETS 176.49 ZAE 168.16 ETE 8.93 ZAC 91.52 ETC 255.84 CLP 151.80

PLANETOCENTRIC CONIC

C3 11.573 VHL 3.402 DLA 23.87 RAL 164.21 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.972 DPA -2.99 RAP 192.51 ECC 1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 6	2951.91	-28.19	92.93	24.80	87.25	15 56 18	2351.9	-28.28	84.26
90.00	10 29 35	3875.72	-10.23	153.69	19.85	63.45	11 34 11	3275.7	-13.72	146.74
100.00	16 47 54	2626.93	-29.89	69.07	24.86	89.51	17 31 41	2026.9	-29.64	60.28
100.00	11 31 29	3675.94	-8.73	138.21	19.06	61.30	12 32 44	3075.9	-12.50	131.45
110.00	18 34 45	2292.64	-33.86	43.50	24.67	94.97	19 12 57	1692.6	-32.80	34.42
110.00	12 1 7	3582.99	-5.33	129.09	16.98	56.19	13 0 50	2983.0	-9.74	122.77

DIFFERENTIAL CORRECTIONS
TDE .2782 TRA-1.4627 TC3 3.8452 BAU .5950
RDE -.0713 RRA -.0223 RC3 .0108 FAU .20857
FDE .1971 FRA 3.2784 FC-15.6017 BSP 13218
BDE .2872 BRA 1.4629 BC3 3.8452 FSP 3424

MID-COURSE EXECUTION ACCURACY
SGT 3784.4 SGR 127.2 SG3 1055.5
RRT .1530 RRF -.2356 RTF -.9492
SGB 3786.5 R23 -.0913 R13 -.9492
SG1 3784.5 SG2 125.7 THA .29

ORBIT DETERMINATION ACCURACY
ST 937.5 SR 120.8 SS 802.8
CRT -.4090 CRS .2759 CST .7611
LSA 1160.4 MSA 437.2 SSA 13.3
EL1 938.8 EL2 110.0 ALF 176.94

LAUNCH DATE NOV 13 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 543.151 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.264 GAL -2.10 AZL 88.43 HCA 171.16 SMA 193.27 ECC .23684 INC 1.5662 V1 30.101
RP 234.71 LAP .24 LOP 221.81 VP 21.077 GAP 5.91 AZP 91.55 TAL 348.97 TAP 160.13 RCA 147.50 APO 239.04 V2 23.424
RC 203.699 GL 15.67 GP 1.23 ZAL 104.30 ZAP 150.83 ETS 176.31 ZAE 169.10 ETE 10.73 ZAC 91.67 ETC 255.84 CLP 150.85

PLANETOCENTRIC CONIC

C3 11.321 VHL 3.365 DLA 23.99 RAL 163.56 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 4.862 DPA -2.87 RAP 192.60 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 38	2953.87	-28.19	93.07	23.83	87.18	15 51 52	2353.9	-28.28	84.41
90.00	10 28 51	3864.61	-10.57	153.05	18.98	63.58	11 33 16	3264.6	-14.04	146.08
100.00	16 43 44	2627.90	-29.89	69.15	23.89	89.47	17 27 32	2027.9	-29.64	60.35
100.00	11 30 26	3665.81	-9.06	137.64	18.18	61.39	12 31 32	3065.8	-12.81	130.86
110.00	18 31 2	2292.20	-33.86	43.47	23.70	94.99	19 9 14	1692.2	-32.80	34.39
110.00	11 59 38	3574.27	-5.66	128.63	16.11	56.23	12 59 12	2974.3	-10.06	122.30

DIFFERENTIAL CORRECTIONS
TDE .2652 TRA-1.4231 TC3 3.9263 BAU .5943
RDE -.0645 RRA -.0246 RC3 .0409 FAU .21762
FDE .2262 FRA 3.3301 FC-16.6416 BSP 13110
BDE .2730 BRA 1.4233 BC3 3.9265 FSP 3583

MID-COURSE EXECUTION ACCURACY
SGT 3771.0 SGR 122.2 SG3 1106.8
RRT .3142 RRF -.4058 RTF -.9498
SGB 3773.0 R23 -.1128 R13 -.9498
SG1 3771.2 SG2 116.0 THA .58

ORBIT DETERMINATION ACCURACY
ST 918.4 SR 110.7 SS 811.1
CRT -.3796 CRS .3191 CST .7525
LSA 1148.4 MSA 441.1 SSA 12.2
EL1 919.4 EL2 102.3 ALF 177.35

LAUNCH DATE NOV 13 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 546.809 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.240	GAL	-2.04	AZL	88.47	HCA	172.14	SMA	192.81	ECC	.23488	INC	1.5308
RP	234.35	LAP	.21	LOP	222.80	VP	21.079	GAP	5.50	AZP	91.52	TAL	349.26	TAP	161.41	RCA	147.53	APO	238.10
RC	205.837	GL	15.47	GP	1.42	ZAL	103.73	ZAP	149.84	ETS	176.07	ZAE	170.05	ETE	13.12	ZAC	91.85	ETC	255.84

V1	30.101	V2	23.461	CLP	149.87														

PLANETOCENTRIC CONIC

C3	11.077	VHL	3.328	DLA	24.03	RAL	162.88	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	4.754	DPA	-2.70	RAP	192.68

ECC	1.1823	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	14 59 19	2951.53	-28.20	92.90	22.82	87.26	15 48 31	2351.5	-28.28	84.24
		90.00	10 26 47	3857.93	-10.77	152.66	18.05	63.65	11 31 5	3257.9	-14.23	145.69
		100.00	16 40 31	2625.23	-29.89	68.95	22.87	89.58	17 24 16	2025.2	-29.63	60.15
		100.00	11 28 16	3659.46	-9.27	137.28	17.25	61.45	12 29 15	3059.5	-13.01	130.49
		110.00	18 27 58	2289.06	-33.84	43.22	22.68	95.14	19 6 7	1689.1	-32.76	34.15
		110.00	11 57 18	3568.40	-5.88	128.32	15.19	56.27	12 56 47	2968.4	-10.28	121.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2505	TRA	-1.3874	TC3	3.9839	BAU	.5901	SGT	3749.3	SGR	124.8	SG3	1158.7	ST	898.8	SR	101.1
RDE	-.0580	RRA	-.0282	RC3	.0790	FAU	.22634	RRT	.5032	RRF	-.6005	RTF	-.9501	CRT	-.3348	CRS	.3772
FDE	.2635	FRA	3.3960	FC	-17.6905	BSP	13092	SGB	3751.4	R23	-.1412	R13	-.9502	LSA	1138.7	MSA	446.3
BDE	.2571	BRA	1.3877	BC3	3.9847	FSP	3780	SG1	3749.8	SG2	107.8	THA	.96	EL1	899.4	EL2	95.2

SS	823.3	CST	.7432	LSA	11.0	ALF	177.82

LAUNCH DATE NOV 13 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 550.484 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.217	GAL	-1.97	AZL	88.52	HCA	173.13	SMA	192.38	ECC	.23301	INC	1.4829
RP	233.98	LAP	.18	LOP	223.79	VP	21.084	GAP	5.10	AZP	91.47	TAL	349.55	TAP	162.68	RCA	147.56	APO	237.21
RC	207.958	GL	15.14	GP	1.66	ZAL	103.19	ZAP	148.82	ETS	175.77	ZAE	171.01	ETE	16.42	ZAC	92.08	ETC	255.83

V1	30.101	V2	23.498	CLP	148.86												

PLANETOCENTRIC CONIC

C3	10.837	VHL	3.292	DLA	23.96	RAL	162.17	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.649	DPA	-2.47	RAP	192.76

ECC	1.1784	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	14 57 37	2943.11	-28.22	92.29	21.74	87.57	15 46 40	2343.1	-28.26	83.62
		90.00	10 22 49	3857.39	-10.79	152.63	17.02	63.66	11 27 7	3257.4	-14.24	145.65
		100.00	16 38 38	2617.41	-29.89	68.37	21.79	89.88	17 22 15	2017.4	-29.59	59.57
		100.00	11 24 29	3658.32	-9.31	137.22	16.24	61.46	12 25 28	3058.3	-13.05	130.43
		110.00	18 25 49	2282.09	-33.80	42.68	21.57	95.45	19 3 51	1682.1	-32.67	33.63
		110.00	11 53 48	3566.41	-5.96	128.22	14.20	56.28	12 53 15	2966.4	-10.35	121.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2456	TRA	-1.3443	TC3	4.0651	BAU	.5893	SGT	3728.4	SGR	139.0	SG3	1215.4	ST	882.7	SR	91.8
RDE	-.0516	RRA	-.0333	RC3	.1292	FAU	.23661	RRT	.6786	RRF	-.7750	RTF	-.9506	CRT	-.2908	CRS	.4244
FDE	.2664	FRA	3.4344	FC	-18.9017	BSP	12855	SGB	3731.0	R23	-.1762	R13	-.9507	LSA	1126.5	MSA	443.8
BDE	.2510	BRA	1.3447	BC3	4.0672	FSP	3930	SG1	3729.6	SG2	102.1	THA	1.45	EL1	883.1	EL2	87.8

SS	823.7	CST	.7397	LSA	9.9	ALF	178.25

LAUNCH DATE NOV 13 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 554.173 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.195	GAL	-1.91	AZL	88.58	HCA	174.12	SMA	191.97	ECC	.23123	INC	1.4202
RP	233.62	LAP	.15	LOP	224.78	VP	21.091	GAP	4.70	AZP	91.42	TAL	349.82	TAP	163.94	RCA	147.58	APO	236.36
RC	210.060	GL	14.65	GP	1.98	ZAL	102.66	ZAP	147.76	ETS	175.37	ZAE	171.93	ETE	21.12	ZAC	92.39	ETC	255.83

V1	30.101	V2	23.536	CLP	147.82												

PLANETOCENTRIC CONIC

C3	10.598	VHL	3.255	DLA	23.72	RAL	161.41	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	4.547	DPA	-2.16	RAP	192.85

ECC	1.1744	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	14 58 12	2925.82	-28.26	91.02	20.55	88.20	15 46 58	2325.8	-28.21	82.36
		90.00	10 16 8	3865.59	-10.54	153.10	15.85	63.57	11 20 33	3265.6	-14.01	146.14
		100.00	16 38 38	2602.01	-29.89	67.22	20.58	90.49	17 22 0	2002.0	-29.50	58.44
		100.00	11 18 23	3664.63	-9.10	137.58	15.09	61.40	12 19 28	3064.6	-12.85	130.79
		110.00	18 24 56	2269.44	-33.71	41.71	20.32	96.03	19 2 45	1669.4	-32.51	32.68
		110.00	11 48 34	3569.96	-5.82	128.40	13.09	56.26	12 48 4	2970.0	-10.22	122.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2379	TRA	-1.3058	TC3	4.1191	BAU	.5843	SGT	3697.3	SGR	170.2	SG3	1272.7	ST	865.4	SR	83.2
RDE	-.0453	RRA	-.0408	RC3	.1970	FAU	.24656	RRT	.8067	RRF	-.8955	RTF	-.9507	CRT	-.2132	CRS	.4942
FDE	.2679	FRA	3.4820	FC	-20.1407	BSP	12752	SGB	3701.2	R23	-.2166	R13	-.9509	LSA	1115.8	MSA	437.5
BDE	.2422	BRA	1.3064	BC3	4.1238	FSP	4120	SG1	3699.8	SG2	100.5	THA	2.13	EL1	865.6	EL2	81.3

SS	825.1	CST	.7409	LSA	8.8	ALF	178.82

LAUNCH DATE NOV 13 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 557.878 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.173	GAL	-1.85	AZL	88.67	HCA	175.12	SMA	191.58	ECC	.22954	INC	1.3332
RP	233.25	LAP	.11	LOP	225.77	VP	21.100	GAP	4.31	AZP	91.33	TAL	350.08	TAP	165.20	RCA	147.61	APO	235.56
RC	212.144	GL	13.89	GP	2.44	ZAL	102.17	ZAP	146.67	ETS	174.80	ZAE	172.75	ETE	28.05	ZAC	92.82	ETC	255.83

V1	30.101	V2	23.574	CLP	146.75		

PLANETOCENTRIC CONIC

C3	10.352	VHL	3.217	DLA	23.23	RAL	160.55	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	4.449	DPA	-1.71	RAP	192.97

ECC	1.1704	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	15 2 6	2895.20	-28.31	88.78	19.17	89.32	15 50 22	2295.2	-28.10	80.12
		90.00	10 5 20	3886.71	-9.90	154.32	14.45	63.33	11 10 7	3286.7	-13.40	147.39
		100.00	16 41 25	2575.02	-29.86	65.21	19.15	91.54	17 24 20	1975.0	-29.32	56.45
		100.00	11 8 43	3682.12	-8.53	138.56	15.72	61.24	12 10 5	3082.1	-12.30	131.80
		110.00	18 25 59	2247.88	-33.55	40.05	18.83	97.00	19 3 26	1647.9	-32.21	31.07
		110.00	11 40 38	3582.03	-5.37	129.04	11.79	56.19	12 40 20	2982.0	-9.77	122.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2337	TRA	-1.2709	TC3	4.1547	BAU	.5764	SGT	3658.8	SGR	224.9	SG3	1330.6	ST	851.8	SR	76.0
RDE	-.0390	RRA	-.0523	RC3	.2927	FAU	.25614	RRT	.8801	RRF	-.9591	RTF	-.9503	CRT	-.0928	CRS	.5872
FDE	.2500	FRA	3.5365	FC	-21.4204	BSP	12716	SGB	3665.7	R23	-.2570	R13	-.9507	LSA	1108.4	MSA	428.3
BDE	.2369	BRA	1.2720	BC3	4.1650	FSP	4347	SG1	3664.2	SG2	106.6	THA	3.10	EL1	851.8	EL2	75.7

SS	824.1	CST	.7486	LSA	7.6	ALF	179.52

LAUNCH DATE NOV 13 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 561.599 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.153 GAL -1.79 AZL 88.80 HCA 176.11 SMA 191.21 ECC .22793 INC 1.1967 V1 30.101
RP 232.88 LAP .08 LOP 226.77 VP 21.111 GAP 3.92 AZP 91.20 TAL 350.34 TAP 166.45 RCA 147.63 APO 234.80 V2 23.612
RC 214.210 GL 12.64 GP 3.14 ZAL 101.70 ZAP 145.51 ETS 173.94 ZAE 173.33 ETE 38.43 ZAC 93.47 ETC 255.82 CLP 145.64

PLANETOCENTRIC CONIC

C3 10.088 VHL 3.176 DLA 22.28 RAL 159.50 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.354 DPA -1.03 RAP 193.15 ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 5	2843.21	-28.29	84.98	17.40	91.23	15 58 28	2243.2	-27.82	76.35
90.00	9 47 59	3928.34	-8.62	156.71	12.66	62.92	10 53 27	3328.3	-12.18	149.84
100.00	16 48 33	2528.95	-29.72	61.80	17.33	93.33	17 30 42	1929.0	-28.94	53.08
100.00	10 53 13	3717.83	-7.35	140.56	11.98	60.94	11 55 10	3117.8	-11.17	133.85
110.00	18 30 7	2211.18	-33.21	37.23	16.91	98.63	19 6 58	1611.2	-31.66	28.35
110.00	11 28 8	3608.37	-4.37	130.42	10.15	56.06	12 28 16	3008.4	-8.79	124.13

DIFFERENTIAL CORRECTIONS
TDE .2688 TRA-1.2024 TC3 4.3206 BAU .5858
RDE -.0306 RRA -.0689 RC3 .4440 FAU .26953
FDE .0974 FRA 3.4887 FC-23.1298 BSP 11921
BDE .2706 BRA 1.2044 BC3 4.3433 FSP 4413

MID-COURSE EXECUTION ACCURACY
SGT 3641.8 SGR 317.2 SG3 1399.0
RRT .9193 RRF -.9865 RTF -.9528
SGB 3655.5 R23 -.2784 R13 -.9536
SG1 3653.4 SG2 124.4 THA 4.58

ORBIT DETERMINATION ACCURACY
ST 858.2 SR 68.9 SS 788.0
CRT .0380 CRS .6628 CST .7709
LSA 1097.2 MSA 397.9 SSA 6.6
EL1 858.2 EL2 68.8 ALF .18

LAUNCH DATE NOV 13 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 565.331 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.134 GAL -1.74 AZL 89.02 HCA 177.12 SMA 190.86 ECC .22640 INC .9850 V1 30.101
RP 232.51 LAP .05 LOP 227.77 VP 21.124 GAP 3.55 AZP 90.98 TAL 350.58 TAP 167.69 RCA 147.65 APO 234.08 V2 23.650
RC 216.258 GL 10.40 GP 4.32 ZAL 101.29 ZAP 144.27 ETS 172.49 ZAE 173.29 ETE 53.15 ZAC 94.60 ETC 255.80 CLP 144.49

PLANETOCENTRIC CONIC

C3 9.788 VHL 3.129 DLA 20.40 RAL 158.08 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.266 DPA .11 RAP 193.51 ECC 1.1611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 51	2752.25	-27.98	78.35	14.84	94.54	16 14 43	2152.3	-27.06	69.80
90.00	9 18 55	4007.27	-6.14	161.19	10.19	62.30	10 25 42	3407.3	-9.81	154.42
100.00	17 3 29	2447.09	-29.25	55.76	14.70	96.48	17 44 16	1847.1	-28.04	47.16
100.00	10 26 58	3787.66	-5.03	144.44	9.58	60.49	11 30 5	3187.7	-8.92	137.81
110.00	18 40 5	2144.87	-32.42	32.22	14.11	101.49	19 15 50	1544.9	-30.49	23.53
110.00	11 6 51	3662.64	-2.30	133.27	7.88	55.88	12 7 54	3062.6	-6.76	127.02

DIFFERENTIAL CORRECTIONS
TDE .2649 TRA-1.1878 TC3 4.2603 BAU .5646
RDE -.0218 RRA -.1020 RC3 .6850 FAU .27375
FDE .0169 FRA 3.5996 FC-24.2138 BSP 12512
BDE .2658 BRA 1.1922 BC3 4.3150 FSP 4895

MID-COURSE EXECUTION ACCURACY
SGT 3567.6 SGR 474.3 SG3 1443.2
RRT .9369 RRF -.9966 RTF -.9514
SGB 3598.9 R23 -.2956 R13 -.9531
SG1 3595.2 SG2 164.5 THA 7.12

ORBIT DETERMINATION ACCURACY
ST 852.3 SR 73.0 SS 795.6
CRT .3737 CRS .8448 CST .8101
LSA 1110.4 MSA 362.8 SSA 5.3
EL1 852.8 EL2 67.7 ALF 1.85

LAUNCH DATE NOV 13 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 569.076 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.116 GAL -1.68 AZL 89.49 HCA 178.12 SMA 190.53 ECC .22495 INC .4781 V1 30.101
RP 232.14 LAP .02 LOP 228.78 VP 21.139 GAP 3.17 AZP 90.51 TAL 350.81 TAP 168.93 RCA 147.67 APO 233.39 V2 23.689
RC 218.287 GL 5.51 GP 6.76 ZAL 100.93 ZAP 142.76 ETS 169.54 ZAE 171.67 ETE 70.42 ZAC 96.93 ETC 255.74 CLP 143.29

PLANETOCENTRIC CONIC

C3 9.437 VHL 3.072 DLA 16.03 RAL 155.69 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 4.193 DPA 2.41 RAP 194.34 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 47	2573.66	-26.35	65.54	10.30	100.75	16 47 41	1973.7	-24.60	57.31
90.00	8 23 54	4171.52	-.88	170.39	6.28	61.70	9 33 25	3571.5	-4.66	163.75
100.00	17 35 3	2282.56	-27.40	43.89	10.06	102.45	18 13 6	1682.6	-25.40	35.66
100.00	9 36 19	3937.85	.05	152.70	5.77	60.11	10 41 57	3337.9	-3.93	146.17
110.00	19 3 5	2007.10	-30.10	22.16	9.24	107.03	19 36 33	1407.1	-27.47	13.95
110.00	10 24 46	3786.08	2.42	139.70	4.29	55.89	11 27 52	3186.1	-2.07	133.50

DIFFERENTIAL CORRECTIONS
TDE .3645 TRA-1.1085 TC3 4.4494 BAU .5829
RDE .0196 RRA -.1525 RC3 1.2447 FAU .29046
FDE -.7131 FRA 3.2616 FC-26.6452 BSP 11868
BDE .3650 BRA 1.1189 BC3 4.6203 FSP 4692

MID-COURSE EXECUTION ACCURACY
SGT 3544.4 SGR 820.8 SG3 1520.8
RRT .9460 RRF -.9995 RTF -.9501
SGB 3638.2 R23 -.2958 R13 -.9548
SG1 3628.9 SG2 260.0 THA 12.42

ORBIT DETERMINATION ACCURACY
ST 940.9 SR 98.7 SS 858.5
CRT .9049 CRS .9768 CST .9731
LSA 1268.6 MSA 150.4 SSA 7.8
EL1 945.2 EL2 41.8 ALF 5.44

LAUNCH DATE NOV 13 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 572.835 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.098 GAL -1.64 AZL 91.04 HCA 179.13 SMA 190.22 ECC .22357 INC .7116 V1 30.101
RP 231.76 LAP -.02 LOP 229.78 VP 21.156 GAP 2.81 AZP 88.96 TAL 351.03 TAP 170.16 RCA 147.69 APO 232.74 V2 23.728
RC 220.299 GL -11.15 GP 14.59 ZAL 100.31 ZAP 139.58 ETS 160.68 ZAE 164.20 ETE 84.58 ZAC 104.48 ETC 255.38 CLP 141.88

PLANETOCENTRIC CONIC

C3 9.569 VHL 3.093 DLA .62 RAL 149.26 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 4.223 DPA 9.70 RAP 197.25 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 11	2072.35	-15.88	32.67	360.00	113.75	18 17 43	1472.4	-12.54	25.59
90.00	5 54 16	4678.24	14.82	199.33	359.82	65.59	7 12 14	4078.2	11.41	192.32
100.00	19 4 48	1809.05	-16.68	12.93	359.62	115.17	19 34 57	1209.0	-13.16	5.92
100.00	7 15 19	4416.77	15.62	179.71	359.44	64.19	8 28 56	3816.8	12.02	172.77
110.00	20 13 42	1593.38	-18.82	355.41	358.47	119.08	20 40 16	993.4	-14.79	348.60
110.00	8 22 54	4205.21	17.74	162.49	358.27	60.29	9 33 0	3605.2	13.65	155.76

DIFFERENTIAL CORRECTIONS
TDE 1.0834 TRA -.6206 TC3 6.0001 BAU .9112
RDE .5385 RRA -.0330 RC3 3.8392 FAU .38679
FDE-4.9679 FRA .2044 FC-34.9958 BSP 1855
BDE 1.2098 BRA .6214 BC3 7.1232 FSP -144

MID-COURSE EXECUTION ACCURACY
SGT 4373.5 SGR 2576.8 SG3 2032.8
RRT .9662 RRF-1.0000 RTF -.9647
SGB 5076.2 R23 -.1989 R13 -.9800
SG1 5043.3 SG2 576.3 THA 30.08

ORBIT DETERMINATION ACCURACY
ST 2039.1 SR 1000.2 SS 3365.7
CRT .9884 CRS 1.0000 CST .9875
LSA 4050.9 MSA 277.9 SSA 1.4
EL1 2267.1 EL2 136.6 ALF 25.97

LAUNCH DATE NOV 13 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 580.393 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.066 GAL -1.55 AZL 85.97 HCA 181.15 SMA 189.64 ECC .22103 INC 4.0216 V1 30.101
RP 231.01 LAP -.08 LOP 231.81 VP 21.194 GAP 2.09 AZP 94.03 TAL 351.43 TAP 172.59 RCA 147.72 APO 231.55 V2 23.807
RC 224.266 GL 38.53 GP -11.65 ZAL 97.74 ZAP 138.12 ETS 191.81 ZAE 169.41 ETE 259.95 ZAC 78.80 ETC 255.59 CLP 139.48

PLANETOCENTRIC CONIC

C3 13.913 VHL 3.730 DLA 46.43 RAL 171.25 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 3.993 DPA -14.01 RAP 185.89 ECC 1.2290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.88	12 24 39	3758.45	-67.38	163.23	57.75	87.75	13 27 17	3158.4	-66.38	143.34
25.88	3 53 35	4883.74	-11.48	241.24	12.35	23.09	5 14 59	4283.7	-18.82	238.35
35.88	11 55 18	3807.65	-58.24	167.99	55.35	78.57	12 58 45	3207.7	-58.92	153.08
35.88	5 10 38	4754.99	-15.78	230.85	20.73	32.42	6 29 53	4155.0	-22.48	226.64
45.88	11 5 4	3915.39	-47.32	174.86	50.08	68.79	12 10 20	3315.4	-49.65	163.71
45.88	6 57 43	4526.34	-22.77	214.46	30.23	43.27	8 13 10	3926.3	-28.47	208.65

DIFFERENTIAL CORRECTIONS
TDE -.0225 TRA-1.0709 TC3 2.8268 BAU .6249
RDE .2655 RRA .4388 RC3-1.8150 FAU .33302
FDE 3.1861 FRA 4.6789 FC-20.7218 BSP 11438
BDE .2664 BRA 1.1573 BC3 3.3593 FSP 4849

MID-COURSE EXECUTION ACCURACY
SGT 3184.9 SGR 1719.3 SG3 1665.6
RRT -.9502 RRF .9994 RTF -.9390
SGB 3619.3 R23 -.2779 R13 .9606
SG1 3587.9 SG2 475.5 THA 152.32

ORBIT DETERMINATION ACCURACY
ST 719.6 SR 504.0 SS 2010.1
CRT -.6252 CRS -.9985 CST .5815
LSA 2117.8 MSA 572.1 SSA .9
EL1 805.1 EL2 351.5 ALF 150.10

LAUNCH DATE NOV 13 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 584.191 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.051 GAL -1.51 AZL 86.99 HCA 182.17 SMA 189.37 ECC .21986 INC 3.0077 V1 30.101
RP 230.62 LAP -.11 LOP 232.82 VP 21.216 GAP 1.74 AZP 93.01 TAL 351.62 TAP 173.79 RCA 147.74 APO 231.01 V2 23.847
RC 226.222 GL 30.57 GP -6.41 ZAL 98.07 ZAP 137.89 ETS 185.68 ZAE 174.04 ETE 239.56 ZAC 83.88 ETC 255.79 CLP 138.29

PLANETOCENTRIC CONIC

C3 11.622 VHL 3.409 DLA 39.62 RAL 165.56 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 3.846 DPA -9.18 RAP 188.00 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.04	9 36 43	4030.61	-30.79	175.98	29.54	63.72	10 43 54	3430.6	-34.05	167.73
118.96	16 10 42	2798.77	-30.78	82.35	29.53	63.71	16 57 21	2198.8	-34.04	74.11
61.04	9 36 43	4030.61	-30.79	175.98	29.54	63.72	10 43 54	3430.6	-34.05	167.73
118.96	16 10 42	2798.77	-30.78	82.35	29.53	63.71	16 57 21	2198.8	-34.04	74.11
61.04	9 36 43	4030.61	-30.79	175.98	29.54	63.72	10 43 54	3430.6	-34.05	167.73
118.96	16 10 42	2798.77	-30.78	82.35	29.53	63.71	16 57 21	2198.8	-34.04	74.11

DIFFERENTIAL CORRECTIONS
TDE -.0286 TRA-1.0601 TC3 3.1235 BAU .5185
RDE .1370 RRA .2542 RC3-1.1737 FAU .33890
FDE 2.9014 FRA 4.8912 FC-25.2452 BSP 11577
BDE .1399 BRA 1.0901 BC3 3.3368 FSP 6025

MID-COURSE EXECUTION ACCURACY
SGT 3144.5 SGR 1000.5 SG3 1799.9
RRT -.9530 RRF .9988 RTF -.9400
SGB 3299.9 R23 -.3142 R13 .9489
SG1 3287.1 SG2 290.1 THA 163.00

ORBIT DETERMINATION ACCURACY
ST 698.5 SR 285.1 SS 1946.2
CRT -.6430 CRS -.9990 CST .6084
LSA 2016.1 MSA 540.6 SSA 1.7
EL1 724.5 EL2 210.5 ALF 163.90

LAUNCH DATE NOV 13 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 588.004 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.037 GAL -1.47 AZL 87.36 HCA 183.19 SMA 189.12 ECC .21875 INC 2.6387 V1 30.101
RP 230.24 LAP -.15 LOP 233.84 VP 21.239 GAP 1.40 AZP 92.63 TAL 351.80 TAP 174.99 RCA 147.75 APO 230.49 V2 23.887
RC 228.159 GL 27.43 GP -4.47 ZAL 97.95 ZAP 136.78 ETS 183.32 ZAE 174.56 ETE 215.53 ZAC 85.70 ETC 255.83 CLP 136.96

PLANETOCENTRIC CONIC

C3 10.886 VHL 3.299 DLA 36.95 RAL 163.38 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 3.754 DPA -7.29 RAP 188.54 ECC 1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.20	9 48 34	3957.72	-29.23	169.12	25.34	66.31	10 54 32	3357.7	-32.16	160.88
114.80	15 41 29	2844.62	-29.22	85.29	25.34	66.29	16 28 53	2244.6	-32.15	77.05
65.20	9 48 34	3957.72	-29.23	169.12	25.34	66.31	10 54 32	3357.7	-32.16	160.88
114.80	15 41 29	2844.62	-29.22	85.29	25.34	66.29	16 28 53	2244.6	-32.15	77.05
65.20	9 48 34	3957.72	-29.23	169.12	25.34	66.31	10 54 32	3357.7	-32.16	160.88
114.80	15 41 29	2844.62	-29.22	85.29	25.34	66.29	16 28 53	2244.6	-32.15	77.05

DIFFERENTIAL CORRECTIONS
TDE .0130 TRA-1.0010 TC3 3.2547 BAU .4913
RDE .0952 RRA .1828 RC3 -.8970 FAU .35364
FDE 2.6650 FRA 4.8924 FC-28.1242 BSP 10747
BDE .0961 BRA 1.0176 BC3 3.3761 FSP 6377

MID-COURSE EXECUTION ACCURACY
SGT 3057.0 SGR 731.7 SG3 1890.7
RRT -.9529 RRF .9975 RTF -.9400
SGB 3143.3 R23 -.3208 R13 .9452
SG1 3135.9 SG2 216.4 THA 167.09

ORBIT DETERMINATION ACCURACY
ST 656.1 SR 204.6 SS 1831.8
CRT -.5598 CRS -.9997 CST .5430
LSA 1880.5 MSA 540.0 SSA 2.6
EL1 666.7 EL2 166.8 ALF 169.43

LAUNCH DATE NOV 13 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 591.822 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.024 GAL -1.44 AZL 87.55 HCA 184.22 SMA 188.88 ECC .21771 INC 2.4466 V1 30.101
RP 229.86 LAP -.18 LOP 234.87 VP 21.263 GAP 1.06 AZP 92.44 TAL 351.96 TAP 176.18 RCA 147.76 APO 230.00 V2 23.927
RC 230.076 GL 25.77 GP -3.46 ZAL 97.74 ZAP 135.48 ETS 182.08 ZAE 173.72 ETE 199.66 ZAC 86.61 ETC 255.85 CLP 135.59

PLANETOCENTRIC CONIC

C3 10.497 VHL 3.240 DLA 35.59 RAL 162.14 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.673 DPA -6.23 RAP 188.64 ECC 1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.47	9 55 56	3913.76	-28.41	165.19	23.08	67.59	11 1 10	3313.8	-31.18	156.96
112.53	15 24 14	2873.76	-28.40	87.23	23.07	67.57	16 12 8	2273.8	-31.17	79.00
67.47	9 55 56	3913.76	-28.41	165.19	23.08	67.59	11 1 10	3313.8	-31.18	156.96
112.53	15 24 14	2873.76	-28.40	87.23	23.07	67.57	16 12 8	2273.8	-31.17	79.00
67.47	9 55 56	3913.76	-28.41	165.19	23.08	67.59	11 1 10	3313.8	-31.18	156.96
112.53	15 24 14	2873.76	-28.40	87.23	23.07	67.57	16 12 8	2273.8	-31.17	79.00

DIFFERENTIAL CORRECTIONS
TDE .0121 TRA -.9774 TC3 3.1582 BAU .4548
RDE .0819 RRA .1498 RC3 -.7285 FAU .36595
FDE 2.6323 FRA 4.9948 FC-30.1815 BSP 10729
BDE .0828 BRA .9888 BC3 3.2411 FSP 6794

MID-COURSE EXECUTION ACCURACY
SGT 2950.7 SGR 591.5 SG3 1974.3
RRT -.9483 RRF .9946 RTF -.9346
SGB 3009.4 R23 -.3306 R13 .9385
SG1 3003.8 SG2 184.4 THA 169.19

ORBIT DETERMINATION ACCURACY
ST 641.0 SR 175.4 SS 1812.9
CRT -.5345 CRS -.9996 CST .5501
LSA 1858.2 MSA 524.8 SSA 3.7
EL1 648.2 EL2 146.6 ALF 171.23

LAUNCH DATE NOV 13 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 595.656 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.011 GAL -1.40 AZL 87.67 HCA 185.24 SMA 188.66 ECC .21672 INC 2.3269 V1 30.101
RP 229.47 LAP -.21 LOP 235.90 VP 21.289 GAP .73 AZP 92.32 TAL 352.11 TAP 177.35 RCA 147.77 APO 229.54 V2 23.968
RC 231.973 GL 24.77 GP -2.85 ZAL 97.50 ZAP 134.10 ETS 181.33 ZAE 172.40 ETE 191.03 ZAC 87.12 ETC 255.87 CLP 134.17

PLANETOCENTRIC CONIC

C3 10.240 VHL 3.200 DLA 34.81 RAL 161.29 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.598 DPA -5.51 RAP 188.54 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.85	10 0 24	3885.11	-27.94	162.71	21.60	68.34	11 5 9	3285.1	-30.62	154.48
111.15	15 12 58	2892.43	-27.93	88.50	21.59	68.32	16 1 10	2292.4	-30.61	80.27
68.85	10 0 24	3885.11	-27.94	162.71	21.60	68.34	11 5 9	3285.1	-30.62	154.48
111.15	15 12 58	2892.43	-27.93	88.50	21.59	68.32	16 1 10	2292.4	-30.61	80.27
68.85	10 0 24	3885.11	-27.94	162.71	21.60	68.34	11 5 9	3285.1	-30.62	154.48
111.15	15 12 58	2892.43	-27.93	88.50	21.59	68.32	16 1 10	2292.4	-30.61	80.27

DIFFERENTIAL CORRECTIONS
TDE .0365 TRA -.9256 TC3 3.1185 BAU .4355
RDE .0743 RRA .1276 RC3 -.6280 FAU .38388
FDE 2.5473 FRA 4.9961 FC-32.4548 BSP .9973
BDE .0828 BRA .9344 BC3 3.1811 FSP .6938

MID-COURSE EXECUTION ACCURACY
SGT 2839.4 SGR 506.6 SG3 2064.5
RRT -.9420 RRF .9902 RTF -.9308
SGB 2884.3 R23 -.3287 R13 .9341
SG1 2879.4 SG2 167.6 THA 170.43

ORBIT DETERMINATION ACCURACY
ST 612.0 SR 157.6 SS 1754.8
CRT -.4415 CRS -.9975 CST .4973
LSA 1790.4 MSA 522.7 SSA 4.8
EL1 616.2 EL2 140.4 ALF 173.16

LAUNCH DATE NOV 13 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 599.498 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.999 GAL -1.37 AZL 87.75 HCA 186.28 SMA 188.44 ECC .21579 INC 2.2470 V1 30.101
RP 229.09 LAP -.25 LOP 236.93 VP 21.316 GAP .41 AZP 92.24 TAL 352.24 TAP 178.52 RCA 147.78 APO 229.11 V2 24.009
RC 233.848 GL 24.10 GP -2.43 ZAL 97.26 ZAP 132.66 ETS 180.82 ZAE 170.88 ETE 186.28 ZAC 87.43 ETC 255.88 CLP 132.71

PLANETOCENTRIC CONIC

C3 10.049 VHL 3.170 DLA 34.32 RAL 160.65 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.526 DPA -4.95 RAP 188.32 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.75	10 3 6	3865.39	-27.66	161.04	20.52	68.82	11 7 31	3265.4	-30.28	152.81
110.25	15 5 10	2904.61	-27.65	89.33	20.51	68.81	15 53 34	2304.6	-30.27	81.10
69.75	10 3 6	3865.39	-27.66	161.04	20.52	68.82	11 7 31	3265.4	-30.28	152.81
110.25	15 5 10	2904.61	-27.65	89.33	20.51	68.81	15 53 34	2304.6	-30.27	81.10
69.75	10 3 6	3865.39	-27.66	161.04	20.52	68.82	11 7 31	3265.4	-30.28	152.81
110.25	15 5 10	2904.61	-27.65	89.33	20.51	68.81	15 53 34	2304.6	-30.27	81.10

DIFFERENTIAL CORRECTIONS
TDE .0378 TRA -.8953 TC3 2.9451 BAU .4024
RDE .0737 RRA .1153 RC3 -.5464 FAU .39726
FDE 2.6038 FRA 5.1163 FC-34.2240 BSP .9772
BDE .0828 BRA .9027 BC3 2.9953 FSP .7308

MID-COURSE EXECUTION ACCURACY
SGT 2707.3 SGR 448.8 SG3 2148.4
RRT -.9318 RRF .9829 RTF -.9229
SGB 2744.3 R23 -.3303 R13 .9259
SG1 2739.5 SG2 161.0 THA 171.19

ORBIT DETERMINATION ACCURACY
ST 594.4 SR 153.5 SS 1772.7
CRT -.3942 CRS -.9938 CST .4884
LSA 1804.8 MSA 511.8 SSA 6.0
EL1 597.6 EL2 140.3 ALF 173.85

LAUNCH DATE NOV 13 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 603.356 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.988 GAL -1.35 AZL 87.81 HCA 187.31 SMA 188.24 ECC .21491 INC 2.1909 V1 30.101
RP 228.70 LAP -.28 LOP 237.96 VP 21.345 GAP .09 AZP 92.17 TAL 352.37 TAP 179.68 RCA 147.79 APO 228.70 V2 24.049
RC 235.703 GL 23.64 GP -2.13 ZAL 97.03 ZAP 131.16 ETS 180.45 ZAE 169.26 ETE 183.50 ZAC 87.62 ETC 255.90 CLP 131.20

PLANETOCENTRIC CONIC

C3 9.897 VHL 3.146 DLA 34.00 RAL 160.13 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.458 DPA -4.48 RAP 188.01 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.34	10 4 37	3851.45	-27.49	159.88	19.68	69.15	11 8 48	3251.5	-30.07	151.65
109.66	14 59 32	2912.45	-27.48	89.87	19.67	69.14	15 48 4	2312.5	-30.06	81.64
70.34	10 4 37	3851.45	-27.49	159.88	19.68	69.15	11 8 48	3251.5	-30.07	151.65
109.66	14 59 32	2912.45	-27.48	89.87	19.67	69.14	15 48 4	2312.5	-30.06	81.64
110.00	15 28 22	2824.46	-29.48	83.81	20.48	71.86	16 15 27	2224.5	-31.67	75.29
110.00	14 34 57	2987.44	-25.52	94.82	18.78	66.44	15 24 44	2387.4	-28.48	86.89

DIFFERENTIAL CORRECTIONS
TDE .0621 TRA -.8419 TC3 2.8424 BAU .3816
RDE .0738 RRA .1056 RC3 -.4887 FAU .41323
FDE 2.6363 FRA 5.1982 FC-36.1484 BSP .8946
BDE .0964 BRA .8485 BC3 2.8841 FSP .7572

MID-COURSE EXECUTION ACCURACY
SGT 2575.3 SGR 407.9 SG3 2237.7
RRT -.9174 RRF .9738 RTF -.9184
SGB 2607.4 R23 -.3215 R13 .9213
SG1 2602.5 SG2 160.6 THA 171.70

ORBIT DETERMINATION ACCURACY
ST 568.8 SR 151.6 SS 1774.1
CRT -.2774 CRS -.9886 CST .4129
LSA 1797.2 MSA 513.9 SSA 6.9
EL1 570.5 EL2 145.2 ALF 175.48

LAUNCH DATE NOV 13 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 607.222 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.977 GAL -1.32 AZL 87.85 HCA 188.35 SMA 188.06 ECC .21409 INC 2.1486 V1 30.101
RP 228.31 LAP -.31 LOP 239.00 VP 21.374 GAP -.23 AZP 92.13 TAL 352.48 TAP 180.83 RCA 147.80 APO 228.32 V2 24.090
RC 237.537 GL 23.30 GP -1.91 ZAL 96.82 ZAP 129.62 ETS 180.18 ZAE 167.57 ETE 181.79 ZAC 87.73 ETC 255.91 CLP 129.65

PLANETOCENTRIC CONIC

C3 9.769 VHL 3.126 DLA 33.78 RAL 159.71 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.393 DPA -4.06 RAP 187.64 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.76	10 5 28	3841.16	-27.38	159.03	19.00	69.39	11 9 29	3241.2	-29.93	150.80
109.24	14 55 19	2917.62	-27.37	90.22	19.00	69.37	15 43 57	2317.6	-29.92	82.00
70.76	10 5 28	3841.16	-27.38	159.03	19.00	69.39	11 9 29	3241.2	-29.93	150.80
109.24	14 55 19	2917.62	-27.37	90.22	19.00	69.37	15 43 57	2317.6	-29.92	82.00
110.00	15 39 31	2782.55	-30.33	80.84	20.14	73.43	16 25 54	2182.6	-32.30	72.18
110.00	14 20 26	3024.22	-24.50	97.19	17.67	65.38	15 10 50	2424.2	-27.60	89.40

DIFFERENTIAL CORRECTIONS
TDE .0735 TRA -.8012 TC3 2.6540 BAU .3513
RDE .0761 RRA .0994 RC3 -.4381 FAU .42717
FDE 2.7311 FRA 5.3365 FC-37.8544 BSP .8406
BDE .1058 BRA .8073 BC3 2.6899 FSP .7937

MID-COURSE EXECUTION ACCURACY
SGT 2427.6 SGR 377.5 SG3 2324.1
RRT -.8979 RRF .9610 RTF -.9094
SGB 2456.7 R23 -.3196 R13 .9124
SG1 2451.2 SG2 164.6 THA 172.01

ORBIT DETERMINATION ACCURACY
ST 549.2 SR 154.5 SS 1808.2
CRT -.1941 CRS -.9831 CST .3638
LSA 1826.4 MSA 509.2 SSA 7.9
EL1 550.1 EL2 151.3 ALF 176.62

LAUNCH DATE NOV 13 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 611.099 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.967	GAL	-1.30	AZL	87.88	HCA	189.39	SMA	187.88	ECC	.21332	INC	2.1152	V1	30.101
RP	227.92	LAP	-.35	LOP	240.04	VP	21.405	GAP	-.53	AZP	92.09	TAL	352.58	TAP	181.97	RCA	147.80	APO	227.96	V2	24.132
RC	239.350	GL	23.04	GP	-1.73	ZAL	96.62	ZAP	128.04	ETS	179.96	ZAE	165.83	ETE	180.68	ZAC	87.78	ETC	255.93	CLP	128.06

PLANETOCENTRIC CONIC

C3	9.661	VHL	3.108	DLA	33.63	RAL	159.36	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.332	DPA	-3.68	RAP	187.22	ECC	1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.05	10 5 52	3833.43	-27.32	158.40	18.44	69.57	11 9 46	3233.4	-29.84	150.17
108.95	14 52 7	2920.93	-27.30	90.45	18.44	69.56	15 40 48	2320.9	-29.83	82.22
71.05	10 5 52	3833.43	-27.32	158.40	18.44	69.57	11 9 46	3233.4	-29.84	150.17
108.95	14 52 7	2920.93	-27.30	90.45	18.44	69.56	15 40 48	2320.9	-29.83	82.22
110.00	15 45 2	2759.05	-30.78	79.16	19.73	74.33	16 31 1	2159.0	-32.62	70.42
110.00	14 12 7	3043.31	-23.95	98.40	16.87	64.85	15 2 51	2443.3	-27.13	90.68

DIFFERENTIAL CORRECTIONS

TDE	.0867	TRA	-.7603	TC3	2.4454	BAU	.3199
RDE	.0790	RRA	.0947	RC3	-.3959	FAU	.44191
FDE	2.8219	FRA	5.4731	FC-39.6015		BSP	7820
BDE	.1173	BRA	.7662	BC3	2.4773	FSP	8281

MID-COURSE EXECUTION ACCURACY

SGT	2273.8	SGR	354.7	SG3	2412.9		
RRT	-.8729	RRF	.9448	RTF	-.8975		
SGB	2301.2	R23	-.3217	R13	.9008		
SG1	2294.9	SG2	171.4	THA	172.20		

ORBIT DETERMINATION ACCURACY

ST	531.6	SR	158.8	SS	1839.2		
CRT	-.1045	CRS	-.9774	CST	.3056		
LSA	1853.4	MSA	505.4	SSA	8.9		
EL1	531.9	EL2	157.9	ALF	178.04		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 614.987 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.958	GAL	-1.28	AZL	87.91	HCA	190.44	SMA	187.72	ECC	.21260	INC	2.0878	V1	30.101
RP	227.53	LAP	-.38	LOP	241.09	VP	21.437	GAP	-.84	AZP	92.05	TAL	352.67	TAP	183.10	RCA	147.81	APO	227.62	V2	24.173
RC	241.142	GL	22.84	GP	-1.59	ZAL	96.45	ZAP	126.42	ETS	179.79	ZAE	164.03	ETE	179.95	ZAC	87.79	ETC	255.95	CLP	126.43

PLANETOCENTRIC CONIC

C3	9.566	VHL	3.093	DLA	33.52	RAL	159.07	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.273	DPA	-3.31	RAP	186.75	ECC	1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.26	10 6 0	3827.45	-27.28	157.92	17.97	69.71	11 9 48	3227.5	-29.78	149.69
108.74	14 49 38	2923.02	-27.27	90.60	17.97	69.70	15 38 21	2323.0	-29.77	82.37
71.26	10 6 0	3827.45	-27.28	157.92	17.97	69.71	11 9 48	3227.5	-29.78	149.69
108.74	14 49 38	2923.02	-27.27	90.60	17.97	69.70	15 38 21	2323.0	-29.77	82.37
110.00	15 48 16	2743.48	-31.06	78.03	19.35	74.95	16 34 0	2143.5	-32.81	69.25
110.00	14 6 32	3054.99	-23.61	99.14	16.26	64.53	14 57 27	2455.0	-26.84	91.46

DIFFERENTIAL CORRECTIONS

TDE	.1029	TRA	-.7149	TC3	2.2206	BAU	.2877
RDE	.0821	RRA	.0908	RC3	-.3600	FAU	.45763
FDE	2.8986	FRA	5.5854	FC-41.4176		BSP	7125
BDE	.1316	BRA	.7206	BC3	2.2496	FSP	8576

MID-COURSE EXECUTION ACCURACY

SGT	2108.7	SGR	336.8	SG3	2503.0		
RRT	-.8411	RRF	.9250	RTF	-.8821		
SGB	2135.5	R23	-.3284	R13	.8859		
SG1	2127.8	SG2	180.6	THA	172.29		

ORBIT DETERMINATION ACCURACY

ST	514.9	SR	163.9	SS	1860.7		
CRT	-.0015	CRS	-.9715	CST	.2311		
LSA	1871.5	MSA	501.5	SSA	9.9		
EL1	514.9	EL2	163.9	ALF	179.97		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 618.886 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.949	GAL	-1.27	AZL	87.93	HCA	191.49	SMA	187.56	ECC	.21192	INC	2.0653	V1	30.101
RP	227.14	LAP	-.41	LOP	242.13	VP	21.470	GAP	-1.13	AZP	92.02	TAL	352.74	TAP	184.22	RCA	147.81	APO	227.31	V2	24.214
RC	242.914	GL	22.68	GP	-1.47	ZAL	96.31	ZAP	124.75	ETS	179.66	ZAE	162.19	ETE	179.44	ZAC	87.77	ETC	255.97	CLP	124.77

PLANETOCENTRIC CONIC

C3	9.482	VHL	3.079	DLA	33.44	RAL	158.82	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	3.218	DPA	-2.94	RAP	186.23	ECC	1.1560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.43	10 6 3	3822.58	-27.25	157.54	17.58	69.83	11 9 45	3222.6	-29.74	149.30
108.57	14 47 37	2924.43	-27.24	90.70	17.57	69.81	15 36 22	2324.4	-29.73	82.46
71.43	10 6 3	3822.58	-27.25	157.54	17.58	69.83	11 9 45	3222.6	-29.74	149.30
108.57	14 47 37	2924.43	-27.24	90.70	17.57	69.81	15 36 22	2324.4	-29.73	82.46
110.00	15 50 22	2732.21	-31.25	77.21	19.01	75.39	16 35 54	2132.2	-32.94	68.39
110.00	14 2 29	3062.80	-23.38	99.63	15.76	64.32	14 53 31	2462.8	-26.63	91.98

DIFFERENTIAL CORRECTIONS

TDE	.1204	TRA	-.6705	TC3	1.9663	BAU	.2527
RDE	.0856	RRA	.0879	RC3	-.3272	FAU	.47291
FDE	2.9829	FRA	5.7148	FC-43.1794		BSP	6425
BDE	.1477	BRA	.6762	BC3	1.9934	FSP	8892

MID-COURSE EXECUTION ACCURACY

SGT	1937.0	SGR	323.1	SG3	2592.5		
RRT	-.8010	RRF	.9015	RTF	-.8605		
SGB	1963.7	R23	-.3431	R13	.8651		
SG1	1954.4	SG2	191.7	THA	172.31		

ORBIT DETERMINATION ACCURACY

ST	502.7	SR	169.9	SS	1886.8		
CRT	.1065	CRS	-.9659	CST	.1466		
LSA	1895.4	MSA	498.8	SSA	10.9		
EL1	503.0	EL2	168.9	ALF	2.33		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 622.794 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.940	GAL	-1.25	AZL	87.95	HCA	192.54	SMA	187.42	ECC	.21129	INC	2.0464	V1	30.101
RP	226.75	LAP	-.44	LOP	243.19	VP	21.504	GAP	-1.43	AZP	92.00	TAL	352.80	TAP	185.34	RCA	147.82	APO	227.02	V2	24.256
RC	244.666	GL	22.55	GP	-1.37	ZAL	96.18	ZAP	123.05	ETS	179.54	ZAE	160.30	ETE	179.09	ZAC	87.72	ETC	255.99	CLP	123.06

PLANETOCENTRIC CONIC

C3	9.407	VHL	3.067	DLA	33.37	RAL	158.62	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.166	DPA	-2.58	RAP	185.68	ECC	1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.56	10 6 3	3818.54	-27.24	157.22	17.24	69.93	11 9 42	3218.5	-29.72	148.98
108.44	14 46 0	2925.37	-27.23	90.76	17.24	69.91	15 34 46	2325.4	-29.71	82.53
71.56	10 6 3	3818.54	-27.24	157.22	17.24	69.93	11 9 42	3218.5	-29.72	148.98
108.44	14 46 0	2925.37	-27.23	90.76	17.24	69.91	15 34 46	2325.4	-29.71	82.53
110.00	15 51 54	2723.43	-31.40	76.57	18.72	75.75	16 37 17	2123.4	-33.04	67.73
110.00	13 59 20	3068.48	-23.21	99.98	15.36	64.17	14 50 29	2468.5	-26.49	92.36

DIFFERENTIAL CORRECTIONS

TDE	.1382	TRA	-.6261	TC3	1.6855	BAU	.2152
RDE	.0894	RRA	.0856	RC3	-.2969	FAU	.48813
FDE	3.0682	FRA	5.8494	FC-44.9234		BSP	5695
BDE	.1646	BRA	.6319	BC3	1.7115	FSP	9205

MID-COURSE EXECUTION ACCURACY

SGT	1759.8	SGR	312.6	SG3	2681.8		
RRT	-.7516	RRF	.8741	RTF	-.8300		
SGB	1787.4	R23	-.3665	R13	.8358		
SG1	1775.6	SG2	204.4	THA	172.29		

ORBIT DETERMINATION ACCURACY

ST	494.1	SR	176.6	SS	1913.5		
CRT	.2151	CRS	-.9605	CST	.0565		
LSA	1921.2	MSA	495.6	SSA	11.9		
EL1	495.7	EL2	171.9	ALF	5.00		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 16 1965

DISTANCE 626.713

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 32.933 GAL -1.24 AZL 87.97 HCA 193.59 SMA 187.28 ECC .21071 INC 2.0306 V1 30.101
RP 226.36 LAP -.48 LOP 244.24 VP 21.540 GAP -1.71 AZP 91.97 TAL 352.84 TAP 186.44 RCA 147.82 APO 226.74 V2 24.297
RC 246.398 GL 22.45 GP -1.29 ZAL 96.09 ZAP 121.30 ETS 179.45 ZAE 158.37 ETE 178.84 ZAC 87.65 ETC 256.02 CLP 121.31

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.340 VHL 3.056 DLA 33.32 RAL 158.46 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.116 DPA -2.21 RAP 185.08 ECC 1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.67	10 6 6	3815.02	-27.23	156.94	16.96	70.01	11 9 41	3215.0	-29.69	148.70
108.33	14 44 40	2926.10	-27.21	90.81	16.96	70.00	15 33 26	2326.1	-29.68	82.57
71.67	10 6 6	3815.02	-27.23	156.94	16.96	70.01	11 9 41	3215.0	-29.69	148.70
108.33	14 44 40	2926.10	-27.21	90.81	16.96	70.00	15 33 26	2326.1	-29.68	82.57
110.00	15 53 8	2716.16	-31.52	76.04	18.47	76.04	16 38 25	2116.2	-33.12	67.17
110.00	13 56 48	3072.96	-23.08	100.26	15.02	64.05	14 48 1	2473.0	-26.37	92.65

DIFFERENTIAL CORRECTIONS

TDE .1575 TRA -.5793 TC3 1.3847 BAU .1761
RDE .0933 RRA .0838 RC3 -.2686 FAU .50305
FDE 3.1591 FRA 5.9853 FC-46.6290 BSP 4898
BDE .1830 BRA .5853 BC3 1.4105 FSP 9517

MID-COURSE EXECUTION ACCURACY

SGT 1578.8 SGR 304.8 SG3 2769.8
RRT -.6893 RRF .8433 RTF -.7869
SGB 1608.0 R23 -.4007 R13 .7945
SG1 1593.0 SG2 218.8 THA 172.27

ORBIT DETERMINATION ACCURACY

ST 489.7 SR 183.8 SS 1942.4
CRT .3279 CRS -.9556 CST -.0442
LSA 1950.4 MSA 492.0 SSA 12.9
EL1 493.9 EL2 172.2 ALF 7.99

LAUNCH DATE NOV 13 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 18 1965

DISTANCE 630.641

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 32.926 GAL -1.24 AZL 87.98 HCA 194.65 SMA 187.16 ECC .21017 INC 2.0173 V1 30.101
RP 225.97 LAP -.51 LOP 245.30 VP 21.576 GAP -1.99 AZP 91.95 TAL 352.87 TAP 187.53 RCA 147.82 APO 226.49 V2 24.339
RC 248.110 GL 22.36 GP -1.22 ZAL 96.02 ZAP 119.52 ETS 179.37 ZAE 156.40 ETE 178.66 ZAC 87.56 ETC 256.05 CLP 119.53

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.279 VHL 3.046 DLA 33.27 RAL 158.33 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.071 DPA -1.85 RAP 184.46 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.77	10 6 14	3811.81	-27.22	156.69	16.73	70.09	11 9 46	3211.8	-29.67	148.44
108.23	14 43 32	2926.79	-27.20	90.86	16.72	70.07	15 32 19	2326.8	-29.66	82.62
71.77	10 6 14	3811.81	-27.22	156.69	16.73	70.09	11 9 46	3211.8	-29.67	148.44
108.23	14 43 32	2926.79	-27.20	90.86	16.72	70.07	15 32 19	2326.8	-29.66	82.62
110.00	15 54 19	2709.70	-31.63	75.56	18.26	76.30	16 39 29	2109.7	-33.19	66.68
110.00	13 54 38	3076.89	-22.96	100.51	14.74	63.95	14 45 55	2476.9	-26.27	92.91

DIFFERENTIAL CORRECTIONS

TDE .1789 TRA -.5324 TC3 1.0590 BAU .1347
RDE .0973 RRA .0825 RC3 -.2413 FAU .51702
FDE 3.2563 FRA 6.1426 FC-48.2361 BSP 4073
BDE .2037 BRA .5387 BC3 1.0862 FSP 9851

MID-COURSE EXECUTION ACCURACY

SGT 1401.3 SGR 299.2 SG3 2855.2
RRT -.6092 RRF .8095 RTF -.7223
SGB 1432.9 R23 -.4497 R13 .7325
SG1 1413.5 SG2 235.3 THA 172.38

ORBIT DETERMINATION ACCURACY

ST 492.6 SR 191.4 SS 1975.9
CRT .4403 CRS -.9512 CST -.1511
LSA 1985.8 MSA 489.7 SSA 13.8
EL1 500.7 EL2 169.0 ALF 10.97

LAUNCH DATE NOV 13 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 20 1965

DISTANCE 634.580

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 32.919 GAL -1.23 AZL 87.99 HCA 195.72 SMA 187.04 ECC .20967 INC 2.0054 V1 30.101
RP 225.58 LAP -.54 LOP 246.36 VP 21.612 GAP -2.27 AZP 91.93 TAL 352.89 TAP 188.61 RCA 147.82 APO 226.25 V2 24.381
RC 249.803 GL 22.28 GP -1.16 ZAL 95.97 ZAP 117.70 ETS 179.30 ZAE 154.38 ETE 178.54 ZAC 87.46 ETC 256.09 CLP 117.71

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.225 VHL 3.037 DLA 33.22 RAL 158.24 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.028 DPA -1.47 RAP 183.79 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.87	10 6 29	3808.79	-27.20	156.45	16.54	70.16	11 9 58	3208.8	-29.65	148.20
108.13	14 42 35	2927.53	-27.19	90.92	16.54	70.15	15 31 22	2327.5	-29.64	82.67
71.87	10 6 29	3808.79	-27.20	156.45	16.54	70.16	11 9 58	3208.8	-29.65	148.20
108.13	14 42 35	2927.53	-27.19	90.92	16.54	70.15	15 31 22	2327.5	-29.64	82.67
110.00	15 55 33	2703.64	-31.73	75.12	18.10	76.55	16 40 36	2103.6	-33.25	66.22
110.00	13 52 42	3080.68	-22.85	100.74	14.50	63.85	14 44 3	2480.7	-26.17	93.16

DIFFERENTIAL CORRECTIONS

TDE .2019 TRA -.4835 TC3 .7101 BAU .0915
RDE .1013 RRA .0813 RC3 -.2153 FAU .53102
FDE 3.3384 FRA 6.2873 FC-49.8331 BSP 3211
BDE .2259 BRA .4903 BC3 .7420 FSP 10164

MID-COURSE EXECUTION ACCURACY

SGT 1232.8 SGR 295.4 SG3 2938.9
RRT -.5040 RRF .7725 RTF -.6228
SGB 1267.7 R23 -.5148 R13 .6362
SG1 1242.2 SG2 253.2 THA 172.81

ORBIT DETERMINATION ACCURACY

ST 502.2 SR 198.9 SS 2002.2
CRT .5480 CRS -.9466 CST -.2591
LSA 2015.6 MSA 487.6 SSA 14.7
EL1 515.2 EL2 162.2 ALF 13.62

LAUNCH DATE NOV 13 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 22 1965

DISTANCE 638.527

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 32.913 GAL -1.23 AZL 88.00 HCA 196.79 SMA 186.93 ECC .20921 INC 1.9950 V1 30.101
RP 225.19 LAP -.58 LOP 247.43 VP 21.650 GAP -2.54 AZP 91.91 TAL 352.90 TAP 189.68 RCA 147.82 APO 226.04 V2 24.423
RC 251.477 GL 22.22 GP -1.10 ZAL 95.95 ZAP 115.85 ETS 179.25 ZAE 152.33 ETE 178.45 ZAC 87.34 ETC 256.12 CLP 115.85

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.176 VHL 3.029 DLA 33.17 RAL 158.19 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.988 DPA -1.09 RAP 183.10 ECC 1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.97	10 6 55	3805.78	-27.19	156.21	16.40	70.23	11 10 21	3205.8	-29.62	147.96
108.03	14 41 43	2928.48	-27.18	90.98	16.39	70.22	15 30 32	2328.5	-29.62	82.74
71.97	10 6 55	3805.78	-27.19	156.21	16.40	70.23	11 10 21	3205.8	-29.62	147.96
108.03	14 41 43	2928.48	-27.18	90.98	16.39	70.22	15 30 32	2328.5	-29.62	82.74
110.00	15 56 55	2697.66	-31.82	74.68	17.97	76.80	16 41 53	2097.7	-33.31	65.76
110.00	13 50 54	3084.60	-22.73	100.99	14.31	63.75	14 42 18	2484.6	-26.06	93.42

DIFFERENTIAL CORRECTIONS

TDE .2264 TRA -.4332 TC3 .3383 BAU .0476
RDE .1053 RRA .0804 RC3 -.1900 FAU .54440
FDE 3.4120 FRA 6.4307 FC-51.3605 BSP 2313
BDE .2497 BRA .4406 BC3 .3880 FSP 10457

MID-COURSE EXECUTION ACCURACY

SGT 1088.0 SGR 293.1 SG3 3019.1
RRT -.3641 RRF .7328 RTF -.4692
SGB 1126.8 R23 -.5910 R13 .4847
SG1 1093.5 SG2 271.6 THA 174.03

ORBIT DETERMINATION ACCURACY

ST 519.3 SR 206.6 SS 2025.2
CRT .6459 CRS -.9421 CST -.3628
LSA 2043.9 MSA 485.8 SSA 15.7
EL1 537.7 EL2 152.3 ALF 15.70

LAUNCH DATE NOV 13 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 642.485 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.907	GAL	-1.23	AZL	88.01	HCA	197.86	SMA	186.83	ECC	.20878	INC	1.9858
RP	224.80	LAP	-.61	LOP	248.50	VP	21.689	GAP	-2.80	AZP	91.89	TAL	352.89	TAP	190.74	RCA	147.82	APO	225.84
RC	253.132	GL	22.16	GP	-1.05	ZAL	95.96	ZAP	113.96	ETS	179.20	ZAE	150.24	ETE	178.39	ZAC	87.21	ETC	256.17

V1	30.101	V2	24.465	CLP	113.97														

PLANETOCENTRIC CONIC

C3	9.133	VHL	3.022	DLA	33.11	RAL	158.17	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	2.952	DPA	-.71	RAP	182.38
ECC	1.1503																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.08	10 7 32	3802.71	-27.17	155.96	16.29	70.30	11 10 54	3202.7	-29.59	147.72
107.92	14 40 56	2929.70	-27.15	91.07	16.29	70.28	15 29 46	2329.7	-29.59	82.82
72.08	10 7 32	3802.71	-27.17	155.96	16.29	70.30	11 10 54	3202.7	-29.59	147.72
107.92	14 40 56	2929.70	-27.15	91.07	16.29	70.28	15 29 46	2329.7	-29.59	82.82
110.00	15 58 29	2691.56	-31.91	74.23	17.89	77.05	16 43 21	2091.6	-33.37	65.30
110.00	13 49 9	3088.84	-22.60	101.25	14.16	63.64	14 40 38	2488.8	-25.95	93.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2521	TRA	-.3813	TC3	-.0506	BAU	.0211	SGT	987.0	SGR	292.4	SG3	3096.9	ST	543.6	SR	214.3	SS	2046.9
RDE	.1094	RRA	.0797	RC3	-.1655	FAU	.55732	RRT	-.1853	RRF	.6913	RTF	-.2464	CRT	.7305	CRS	-.9377	CST	-.4581
FDE	3.4802	FRA	6.5762	FC-52.8317		BSP	1404	SGB	1029.4	R23	-.6527	R13	.2578	LSA	2072.9	MSA	484.0	SSA	16.6
BDE	.2748	BRA	.3895	BC3	.1730	FSP	10742	SG1	988.6	SG2	286.9	THA	176.57	EL1	567.2	EL2	140.2	ALF	17.15

LAUNCH DATE NOV 13 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 646.452 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.901	GAL	-1.23	AZL	88.02	HCA	198.93	SMA	186.74	ECC	.20840	INC	1.9774
RP	224.41	LAP	-.64	LOP	249.58	VP	21.728	GAP	-3.06	AZP	91.87	TAL	352.86	TAP	191.79	RCA	147.82	APO	225.66
RC	254.766	GL	22.11	GP	-1.01	ZAL	96.00	ZAP	112.05	ETS	179.16	ZAE	148.12	ETE	178.35	ZAC	87.07	ETC	256.21

V1	30.101	V2	24.506	CLP	112.05														

PLANETOCENTRIC CONIC

C3	9.093	VHL	3.016	DLA	33.05	RAL	158.18	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	2.919	DPA	-.32	RAP	181.64
ECC	1.1497																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.20	10 8 21	3799.47	-27.14	155.70	16.23	70.37	11 11 41	3199.5	-29.56	147.45
107.80	14 40 12	2931.28	-27.13	91.18	16.22	70.35	15 29 4	2331.3	-29.55	82.93
72.20	10 8 21	3799.47	-27.14	155.70	16.23	70.37	11 11 41	3199.5	-29.56	147.45
107.80	14 40 12	2931.28	-27.13	91.18	16.22	70.35	15 29 4	2331.3	-29.55	82.93
110.00	16 0 18	2685.19	-32.01	73.75	17.85	77.31	16 45 4	2085.2	-33.42	64.81
110.00	13 47 26	3093.55	-22.46	101.54	14.03	63.53	14 38 59	2493.6	-25.83	94.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2780	TRA	-.3285	TC3	-.4657	BAU	.0592	SGT	955.2	SGR	293.0	SG3	3169.6	ST	573.6	SR	222.1	SS	2066.9
RDE	.1134	RRA	.0791	RC3	-.1412	FAU	.56928	RRT	.0151	RRF	.6481	RTF	.0397	CRT	.7993	CRS	-.9333	CST	-.5410
FDE	3.5422	FRA	6.7197	FC-54.1990		BSP	681	SGB	999.1	R23	.6475	R13	.0407	LSA	2101.9	MSA	481.9	SSA	17.5
BDE	.3003	BRA	.3379	BC3	.4866	FSP	11008	SG1	955.2	SG2	293.0	THA	.29	EL1	601.8	EL2	127.2	ALF	18.03

LAUNCH DATE NOV 13 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 650.428 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.897	GAL	-1.23	AZL	88.03	HCA	200.01	SMA	186.65	ECC	.20805	INC	1.9700
RP	224.02	LAP	-.67	LOP	250.65	VP	21.768	GAP	-3.32	AZP	91.85	TAL	352.82	TAP	192.83	RCA	147.82	APO	225.49
RC	256.380	GL	22.07	GP	-.97	ZAL	96.06	ZAP	110.11	ETS	179.13	ZAE	145.97	ETE	178.32	ZAC	86.93	ETC	256.26

V1	30.101	V2	24.548	CLP	110.11														

PLANETOCENTRIC CONIC

C3	9.058	VHL	3.010	DLA	32.98	RAL	158.22	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.890	DPA	.08	RAP	180.87
ECC	1.1491																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.33	10 9 23	3796.09	-27.10	155.43	16.20	70.44	11 12 39	3196.1	-29.51	147.18
107.67	14 39 32	2933.16	-27.09	91.31	16.19	70.42	15 28 25	2333.2	-29.50	83.06
72.33	10 9 23	3796.09	-27.10	155.43	16.20	70.44	11 12 39	3196.1	-29.51	147.18
107.67	14 39 32	2933.16	-27.09	91.31	16.19	70.42	15 28 25	2333.2	-29.50	83.06
110.00	16 2 24	2678.45	-32.11	73.25	17.84	77.59	16 47 2	2078.4	-33.48	64.29
110.00	13 45 41	3098.81	-22.30	101.87	13.94	63.39	14 37 20	2498.8	-25.68	94.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3058	TRA	-.2735	TC3	-.8967	BAU	.1095	SGT	1007.8	SGR	294.7	SG3	3237.6	ST	611.4	SR	229.9	SS	2082.6
RDE	.1174	RRA	.0787	RC3	-.1175	FAU	.58041	RRT	.1936	RRF	.6040	RTF	.3267	CRT	.8551	CRS	-.9287	CST	-.6130
FDE	3.5911	FRA	6.8616	FC-55.4713		BSP	1024	SGB	1050.0	R23	.5454	R13	.3363	LSA	2129.0	MSA	480.7	SSA	18.4
BDE	.3276	BRA	.2846	BC3	.9044	FSP	11250	SG1	1009.5	SG2	288.6	THA	3.53	EL1	643.3	EL2	113.3	ALF	18.41

LAUNCH DATE NOV 13 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 654.414 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.892	GAL	-1.24	AZL	88.04	HCA	201.09	SMA	186.58	ECC	.20774	INC	1.9632
RP	223.63	LAP	-.71	LOP	251.74	VP	21.808	GAP	-3.57	AZP	91.83	TAL	352.77	TAP	193.86	RCA	147.82	APO	225.34
RC	257.974	GL	22.02	GP	-.93	ZAL	96.15	ZAP	108.14	ETS	179.10	ZAE	143.80	ETE	178.31	ZAC	86.77	ETC	256.32

V1	30.101	V2	24.590	CLP	108.15														

PLANETOCENTRIC CONIC

C3	9.028	VHL	3.005	DLA	32.91	RAL	158.30	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.864	DPA	.48	RAP	180.09
ECC	1.1486																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.49	10 10 39	3792.43	-27.06	155.13	16.20	70.51	11 13 52	3192.4	-29.46	146.88
107.51	14 38 51	2935.52	-27.05	91.47	16.20	70.50	15 27 47	2335.5	-29.45	83.23
72.49	10 10 39	3792.43	-27.06	155.13	16.20	70.51	11 13 52	3192.4	-29.46	146.88
107.51	14 38 51	2935.52	-27.05	91.47	16.20	70.50	15 27 47	2335.5	-29.45	83.23
110.00	16 4 46	2671.28	-32.21	72.72	17.88	77.89	16 49 18	2071.3	-33.54	63.74
110.00	13 43 54	3104.66	-22.12	102.23	13.88	63.25	14 35 39	2504.7	-25.53	94.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3349	TRA	-.2166	TC3	-1.3428	BAU	.1625	SGT	1140.6	SGR	297.3	SG3	3301.1	ST	655.9	SR	237.5	SS	2090.3
RDE	.1213	RRA	.0783	RC3	-.0944	FAU	.59101	RRT	.3127	RRF	.5592	RTF	.5525	CRT	.8984	CRS	-.9236	CST	-.6729
FDE	3.6188	FRA	6.9911	FC-56.6766		BSP	1995	SGB	1178.7	R23	.3950	R13	.5610	LSA	2150.5	MSA	480.4	SSA	19.3
BDE	.3562	BRA	.2303	BC3	1.3461	FSP	11465	SG1	1144.6	SG2	281.4	THA	4.96	EL1	690.5	EL2	99.0	ALF	18.41

LAUNCH DATE NOV 13 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 658.409 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.888 GAL -1.25 AZL 88.04 HCA 202.18 SMA 186.51 ECC .20747 INC 1.9570 V1 30.101
RP 223.24 LAP -.74 LOP 252.82 VP 21.850 GAP -3.81 AZP 91.81 TAL 352.71 TAP 194.89 RCA 147.81 APO 225.20 V2 24.632
RC 259.547 GL 21.98 GP -.89 ZAL 96.26 ZAP 106.16 ETS 179.08 ZAE 141.60 ETE 178.31 ZAC 86.61 ETC 256.38 CLP 106.16

PLANETOCENTRIC CONIC

C3 9.001 VHL 3.000 DLA 32.83 RAL 158.40 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.841 DPA .89 RAP 179.29 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.66	10 12 11	3788.45	-27.01	154.80	16.24	70.59	11 15 19	3188.5	-29.40	146.56
107.34	14 38 10	2938.35	-26.99	91.67	16.23	70.57	15 27 9	2338.3	-29.39	83.42
72.66	10 12 11	3788.45	-27.01	154.80	16.24	70.59	11 15 19	3188.5	-29.40	146.56
107.34	14 38 10	2938.35	-26.99	91.67	16.23	70.57	15 27 9	2338.3	-29.39	83.42
110.00	16 7 27	2663.64	-32.32	72.15	17.95	78.21	16 51 50	2063.6	-33.61	63.15
110.00	13 42 5	3111.15	-21.92	102.62	13.85	63.09	14 33 56	2511.2	-25.35	95.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3650 TRA -.1577 TC3-1.8059 BAU .2175 SGT 1337.4 SGR 300.8 SG3 3357.8 ST 706.1 SR 245.0 SS 2093.6
RDE .1252 RRA .0780 RC3 -.0714 FAU .60036 RRT .3719 RRF .5143 RTF .7038 CRT .9309 CRS -.9180 CST -.7217
FDE 3.6313 FRA 7.1189 FC-57.7455 BSP 3093 SGB 1370.8 R23 .2593 R13 .7086 LSA 2170.2 MSA 481.1 SSA 20.2
BDE .3859 BRA .1760 BC3 1.8073 FSP 11652 SG1 1342.2 SG2 278.2 THA 5.00 EL1 742.5 EL2 85.1 ALF 18.15

LAUNCH DATE NOV 13 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 662.413 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.885 GAL -1.26 AZL 88.05 HCA 203.27 SMA 186.45 ECC .20722 INC 1.9515 V1 30.101
RP 222.85 LAP -.77 LOP 253.91 VP 21.891 GAP -4.05 AZP 91.79 TAL 352.63 TAP 195.90 RCA 147.81 APO 225.08 V2 24.674
RC 261.100 GL 21.94 GP -.86 ZAL 96.41 ZAP 104.16 ETS 179.06 ZAE 139.38 ETE 178.31 ZAC 86.45 ETC 256.44 CLP 104.16

PLANETOCENTRIC CONIC

C3 8.978 VHL 2.996 DLA 32.73 RAL 158.54 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.822 DPA 1.30 RAP 178.47 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.85	10 13 58	3784.12	-26.94	154.45	16.31	70.67	11 17 2	3184.1	-29.33	146.20
107.15	14 37 29	2941.69	-26.93	91.90	16.31	70.65	15 26 30	2341.7	-29.32	83.66
72.85	10 13 58	3784.12	-26.94	154.45	16.31	70.67	11 17 2	3184.1	-29.33	146.20
107.15	14 37 29	2941.69	-26.93	91.90	16.31	70.65	15 26 30	2341.7	-29.32	83.66
110.00	16 10 24	2655.54	-32.43	71.54	18.05	78.56	16 54 40	2055.5	-33.67	62.53
110.00	13 40 12	3118.27	-21.70	103.06	13.84	62.92	14 32 11	2518.3	-25.15	95.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3954 TRA -.0965 TC3-2.2816 BAU .2739 SGT 1577.7 SGR 305.1 SG3 3409.3 ST 760.0 SR 252.5 SS 2090.8
RDE .1291 RRA .0778 RC3 -.0491 FAU .60907 RRT .3907 RRF .4697 RTF .7993 CRT .9546 CRS -.9120 CST -.7614
FDE 3.6271 FRA 7.2309 FC-58.7336 BSP 4247 SGB 1606.9 R23 .1599 R13 .8016 LSA 2186.4 MSA 481.7 SSA 21.0
BDE .4159 BRA .1240 BC3 2.2822 FSP 11790 SG1 1582.4 SG2 280.0 THA 4.46 EL1 797.7 EL2 71.7 ALF 17.74

LAUNCH DATE NOV 13 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 666.424 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.881 GAL -1.28 AZL 88.05 HCA 204.36 SMA 186.39 ECC .20701 INC 1.9462 V1 30.101
RP 222.47 LAP -.80 LOP 255.00 VP 21.934 GAP -4.29 AZP 91.77 TAL 352.53 TAP 196.89 RCA 147.80 APO 224.98 V2 24.716
RC 262.633 GL 21.90 GP -.83 ZAL 96.58 ZAP 102.15 ETS 179.04 ZAE 137.14 ETE 178.32 ZAC 86.28 ETC 256.51 CLP 102.15

PLANETOCENTRIC CONIC

C3 8.958 VHL 2.993 DLA 32.63 RAL 158.71 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.806 DPA 1.71 RAP 177.65 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.07	10 16 2	3779.35	-26.87	154.05	16.42	70.75	11 19 1	3179.4	-29.24	145.81
106.93	14 36 45	2945.62	-26.86	92.18	16.41	70.74	15 25 50	2345.6	-29.23	83.93
73.07	10 16 2	3779.35	-26.87	154.05	16.42	70.75	11 19 1	3179.4	-29.24	145.81
106.93	14 36 45	2945.62	-26.86	92.18	16.41	70.74	15 25 50	2345.6	-29.23	83.93
110.00	16 13 41	2646.88	-32.55	70.89	18.19	78.92	16 57 48	2046.9	-33.73	61.86
110.00	13 38 16	3126.09	-21.46	103.54	13.87	62.73	14 30 22	2526.1	-24.94	96.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4240 TRA -.0349 TC3-2.7830 BAU .3333 SGT 1854.9 SGR 310.8 SG3 3448.8 ST 813.6 SR 260.4 SS 2104.9
RDE .1332 RRA .0779 RC3 -.0259 FAU .61430 RRT .3794 RRF .4276 RTF .8583 CRT .9709 CRS -.9070 CST -.7942
FDE 3.6531 FRA 7.3818 FC-59.3666 BSP 5402 SGB 1880.7 R23 .1015 R13 .8593 LSA 2220.3 MSA 480.2 SSA 21.8
BDE .4445 BRA .0854 BC3 2.7831 FSP 11996 SG1 1858.7 SG2 287.0 THA 3.73 EL1 852.2 EL2 59.6 ALF 17.35

LAUNCH DATE NOV 13 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 670.447 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.878 GAL -1.30 AZL 88.06 HCA 205.46 SMA 186.34 ECC .20684 INC 1.9416 V1 30.101
RP 222.08 LAP -.83 LOP 256.10 VP 21.976 GAP -4.52 AZP 91.75 TAL 352.42 TAP 197.88 RCA 147.80 APO 224.88 V2 24.758
RC 264.145 GL 21.87 GP -.80 ZAL 96.78 ZAP 100.12 ETS 179.03 ZAE 134.89 ETE 178.33 ZAC 86.11 ETC 256.58 CLP 100.13

PLANETOCENTRIC CONIC

C3 8.942 VHL 2.990 DLA 32.52 RAL 158.90 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.793 DPA 2.12 RAP 176.82 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.30	10 18 22	3774.21	-26.79	153.63	16.55	70.84	11 21 16	3174.2	-29.15	145.39
106.70	14 35 59	2950.08	-26.78	92.49	16.55	70.83	15 25 9	2350.1	-29.14	84.25
73.30	10 18 22	3774.21	-26.79	153.63	16.55	70.84	11 21 16	3174.2	-29.15	145.39
106.70	14 35 59	2950.08	-26.78	92.49	16.55	70.83	15 25 9	2350.1	-29.14	84.25
110.00	16 17 14	2637.82	-32.66	70.21	18.35	79.31	17 1 12	2037.8	-33.79	61.16
110.00	13 36 17	3134.47	-21.19	104.05	13.91	62.53	14 28 31	2534.5	-24.70	96.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4553 TRA .0311 TC3-3.2801 BAU .3921 SGT 2148.1 SGR 316.2 SG3 3486.0 ST 874.6 SR 267.6 SS 2083.3
RDE .1369 RRA .0777 RC3 -.0045 FAU .62117 RRT .3631 RRF .3837 RTF .8973 CRT .9825 CRS -.8994 CST -.8194
FDE 3.5982 FRA 7.4524 FC-60.1376 BSP 6624 SGB 2171.3 R23 .0555 R13 .8977 LSA 2223.4 MSA 482.2 SSA 22.6
BDE .4754 BRA .0837 BC3 3.2801 FSP 12043 SG1 2151.2 SG2 294.2 THA 3.12 EL1 913.4 EL2 47.7 ALF 16.78

LAUNCH DATE NOV 13 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 674.477 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.876 GAL -1.32 AZL 88.06 HCA 206.56 SMA 186.30 ECC .20669 INC 1.9372 V1 30.101
RP 221.70 LAP -.87 LOP 257.20 VP 22.020 GAP -4.75 AZP 91.73 TAL 352.30 TAP 198.86 RCA 147.79 APO 224.80 V2 24.799
RC 265.639 GL 21.83 GP -.77 ZAL 97.00 ZAP 98.10 ETS 179.02 ZAE 132.64 ETE 178.35 ZAC 85.94 ETC 256.65 CLP 98.10

PLANETOCENTRIC CONIC

C3 8.930 VHL 2.988 DLA 32.39 RAL 159.13 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.784 DPA 2.53 RAP 175.99 ECC 1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.57	10 21 3	3768.41	-26.70	153.15	16.72	70.94	11 23 51	3168.4	-29.05	144.91
106.43	14 35 6	2955.35	-26.68	92.85	16.72	70.92	15 24 21	2355.3	-29.04	84.62
73.57	10 21 3	3768.41	-26.70	153.15	16.72	70.94	11 23 51	3168.4	-29.05	144.91
106.43	14 35 6	2955.35	-26.68	92.85	16.72	70.92	15 24 21	2355.3	-29.04	84.62
110.00	16 21 4	2628.25	-32.78	69.49	18.55	79.72	17 4 52	2028.2	-33.85	60.42
110.00	13 34 15	3143.50	-20.91	104.59	13.99	62.32	14 26 39	2543.5	-24.44	97.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4846 TRA .0976 TC3-3.7943 BAU .4530 SGT 2460.6 SGR 322.7 SG3 3512.9 ST 934.0 SR 275.1 SS 2071.7
RDE .1408 RRA .0778 RC3 .0171 FAU .62532 RRT .3359 RRF .3427 RTF .9226 CRT .9898 CRS -.8922 CST -.8397
FDE 3.5580 FRA 7.5489 FC-60.6242 BSP 7843 SGB 2481.7 R23 .0298 R13 .9227 LSA 2237.4 MSA 483.2 SSA 23.4
BDE .5046 BRA .1248 BC3 3.7943 FSP 12114 SG1 2463.0 SG2 303.7 THA 2.56 EL1 972.9 EL2 37.6 ALF 16.28

LAUNCH DATE NOV 13 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 678.515 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.874 GAL -1.34 AZL 88.07 HCA 207.67 SMA 186.26 ECC .20657 INC 1.9330 V1 30.101
RP 221.32 LAP -.90 LOP 258.31 VP 22.063 GAP -4.97 AZP 91.71 TAL 352.17 TAP 199.83 RCA 147.78 APO 224.74 V2 24.841
RC 267.114 GL 21.79 GP -.75 ZAL 97.26 ZAP 96.07 ETS 179.02 ZAE 130.38 ETE 178.37 ZAC 85.77 ETC 256.73 CLP 96.07

PLANETOCENTRIC CONIC

C3 8.921 VHL 2.987 DLA 32.26 RAL 159.38 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.779 DPA 2.93 RAP 175.16 ECC 1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.87	10 24 1	3762.16	-26.59	152.63	16.92	71.03	11 26 43	3162.2	-28.93	144.40
106.13	14 34 10	2961.21	-26.58	93.26	16.92	71.02	15 23 31	2361.2	-28.92	85.03
73.87	10 24 1	3762.16	-26.59	152.63	16.92	71.03	11 26 43	3162.2	-28.93	144.40
106.13	14 34 10	2961.21	-26.58	93.26	16.92	71.02	15 23 31	2361.2	-28.92	85.03
110.00	16 25 11	2618.23	-32.90	68.73	18.78	80.16	17 8 49	2018.2	-33.91	59.64
110.00	13 32 11	3153.14	-20.60	105.17	14.09	62.10	14 24 44	2553.1	-24.17	97.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5139 TRA .1661 TC3-4.3162 BAU .5148 SGT 2786.0 SGR 329.7 SG3 3531.6 ST 995.3 SR 282.5 SS 2054.3
RDE .1446 RRA .0779 RC3 .0384 FAU .62800 RRT .3058 RRF .3033 RTF .9397 CRT .9940 CRS -.8837 CST -.8554
FDE 3.4969 FRA 7.6404 FC-60.9445 BSP 9089 SGB 2805.4 R23 .0129 R13 .9398 LSA 2248.1 MSA 485.9 SSA 24.2
BDE .5339 BRA .1835 BC3 4.3164 FSP 12150 SG1 2787.8 SG2 313.7 THA 2.10 EL1 1034.2 EL2 29.7 ALF 15.77

LAUNCH DATE NOV 13 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 682.562 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.872 GAL -1.36 AZL 88.07 HCA 208.77 SMA 186.23 ECC .20649 INC 1.9292 V1 30.101
RP 220.94 LAP -.93 LOP 259.42 VP 22.107 GAP -5.19 AZP 91.69 TAL 352.01 TAP 200.79 RCA 147.77 APO 224.68 V2 24.883
RC 268.570 GL 21.75 GP -.72 ZAL 97.54 ZAP 94.05 ETS 179.01 ZAE 128.13 ETE 178.39 ZAC 85.60 ETC 256.81 CLP 94.05

PLANETOCENTRIC CONIC

C3 8.915 VHL 2.986 DLA 32.11 RAL 159.67 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.776 DPA 3.33 RAP 174.34 ECC 1.1467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.19	10 27 20	3755.21	-26.48	152.05	17.15	71.14	11 29 55	3155.2	-28.80	143.83
105.81	14 33 7	2967.93	-26.47	93.73	17.15	71.12	15 22 35	2367.9	-28.79	85.50
74.19	10 27 20	3755.21	-26.48	152.05	17.15	71.14	11 29 55	3155.2	-28.80	143.83
105.81	14 33 7	2967.93	-26.47	93.73	17.15	71.12	15 22 35	2367.9	-28.79	85.50
110.00	16 29 33	2607.78	-33.02	67.94	19.05	80.61	17 13 1	2007.8	-33.96	58.83
110.00	13 30 4	3163.36	-20.28	105.78	14.22	61.87	14 22 48	2563.4	-23.87	98.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5418 TRA .2367 TC3-4.8433 BAU .5773 SGT 3119.9 SGR 337.4 SG3 3541.8 ST 1055.6 SR 289.9 SS 2037.5
RDE .1485 RRA .0781 RC3 .0593 FAU .62913 RRT .2744 RRF .2663 RTF .9519 CRT .9958 CRS -.8752 CST -.8687
FDE 3.4337 FRA 7.7229 FC-61.0916 BSP 10333 SGB 3138.1 R23 .0023 R13 .9520 LSA 2260.9 MSA 487.4 SSA 24.9
BDE .5618 BRA .2493 BC3 4.8437 FSP 12177 SG1 3121.3 SG2 324.3 THA 1.72 EL1 1094.4 EL2 25.5 ALF 15.31

LAUNCH DATE NOV 13 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 686.617 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.870 GAL -1.39 AZL 88.07 HCA 209.89 SMA 186.20 ECC .20643 INC 1.9258 V1 30.101
RP 220.56 LAP -.96 LOP 260.53 VP 22.151 GAP -5.40 AZP 91.67 TAL 351.85 TAP 201.74 RCA 147.76 APO 224.64 V2 24.924
RC 270.009 GL 21.71 GP -.70 ZAL 97.85 ZAP 92.04 ETS 179.01 ZAE 125.88 ETE 178.42 ZAC 85.44 ETC 256.89 CLP 92.04

PLANETOCENTRIC CONIC

C3 8.913 VHL 2.986 DLA 31.95 RAL 159.98 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.777 DPA 3.72 RAP 173.52 ECC 1.1467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.55	10 31 0	3747.64	-26.35	151.43	17.41	71.25	11 33 27	3147.6	-28.66	143.21
105.45	14 31 57	2975.42	-26.34	94.25	17.41	71.23	15 21 32	2375.4	-28.65	86.03
74.55	10 31 0	3747.64	-26.35	151.43	17.41	71.25	11 33 27	3147.6	-28.66	143.21
105.45	14 31 57	2975.42	-26.34	94.25	17.41	71.23	15 21 32	2375.4	-28.65	86.03
110.00	16 34 11	2596.92	-33.14	67.12	19.33	81.09	17 17 28	1996.9	-34.01	57.99
110.00	13 27 56	3174.13	-19.93	106.43	14.37	61.64	14 20 50	2574.1	-23.56	99.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5690 TRA .3099 TC3-5.3732 BAU .6404 SGT 3460.9 SGR 345.4 SG3 3541.9 ST 1116.2 SR 297.3 SS 2017.1
RDE .1524 RRA .0784 RC3 .0798 FAU .62830 RRT .2433 RRF .2314 RTF .9608 CRT .9958 CRS -.8656 CST -.8792
FDE 3.3555 FRA 7.8016 FC-61.0248 BSP 11595 SGB 3478.1 R23 -.0047 R13 .9607 LSA 2272.1 MSA 489.9 SSA 25.6
BDE .5891 BRA .3197 BC3 5.3738 FSP 12180 SG1 3461.9 SG2 334.9 THA 1.40 EL1 1154.9 EL2 26.3 ALF 14.86

LAUNCH DATE NOV 13 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 690.679 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.869 GAL -1.42 AZL 88.08 HCA 211.00 SMA 186.18 ECC .20640 INC 1.9225 V1 30.101
RP 220.18 LAP -.99 LOP 261.64 VP 22.196 GAP -5.61 AZP 91.65 TAL 351.67 TAP 202.67 RCA 147.75 APO 224.61 V2 24.965
RC 271.430 GL 21.67 GP -.68 ZAL 98.19 ZAP 90.04 ETS 179.01 ZAE 123.64 ETE 178.45 ZAC 85.27 ETC 256.98 CLP 90.04

PLANETOCENTRIC CONIC

C3 8.915 VHL 2.986 DLA 31.77 RAL 160.32 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.781 DPA 4.11 RAP 172.72 ECC 1.1467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.95	10 35 4	3739.18	-26.21	150.74	17.70	71.37	11 37 24	3139.2	-28.51	142.52
105.05	14 30 36	2983.94	-26.20	94.84	17.70	71.35	15 20 20	2383.9	-28.50	86.63
74.95	10 35 4	3739.18	-26.21	150.74	17.70	71.37	11 37 24	3139.2	-28.51	142.52
105.05	14 30 36	2983.94	-26.20	94.84	17.70	71.35	15 20 20	2383.9	-28.50	86.63
110.00	16 39 4	2585.64	-33.25	66.26	19.65	81.58	17 22 10	1985.6	-34.06	57.11
110.00	13 25 47	3185.47	-19.56	107.10	14.55	61.39	14 18 52	2585.5	-23.23	99.88

DIFFERENTIAL CORRECTIONS
TDE .5962 TRA .3873 TC3-5.8984 BAU .7031
RDE .1565 RRA .0789 RC3 .1004 FAU .62382
FDE 3.3184 FRA 7.9209 FC-60.5792 BSP 12901
BDE .6164 BRA .3952 BC3 5.8992 FSP 12258

MID-COURSE EXECUTION ACCURACY
SGT 3805.2 SGR 354.3 SG3 3529.6
RRT .2137 RRF .2023 RTF .9671
SGB 3821.6 R23 -.0062 R13 .9671
SG1 3805.9 SG2 346.1 THA 1.15

ORBIT DETERMINATION ACCURACY
ST 1178.4 SR 305.1 SS 2017.4
CRT .9942 CRS -.8578 CST -.8900
LSA 2304.7 MSA 489.5 SSA 26.2
EL1 1216.9 EL2 31.7 ALF 14.44

LAUNCH DATE NOV 13 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 694.752 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.868 GAL -1.46 AZL 88.08 HCA 212.12 SMA 186.17 ECC .20641 INC 1.9193 V1 30.101
RP 219.81 LAP -1.02 LOP 262.76 VP 22.241 GAP -5.82 AZP 91.63 TAL 351.48 TAP 203.60 RCA 147.74 APO 224.59 V2 25.006
RC 272.833 GL 21.62 GP -.66 ZAL 98.55 ZAP 88.05 ETS 179.01 ZAE 121.41 ETE 178.47 ZAC 85.12 ETC 257.06 CLP 88.05

PLANETOCENTRIC CONIC

C3 8.920 VHL 2.987 DLA 31.59 RAL 160.69 RAD 6567.3 VEL 11.415 PTH 1.98 VHP 2.788 DPA 4.48 RAP 171.94 ECC 1.1468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.39	10 39 31	3729.94	-26.06	149.98	18.02	71.49	11 41 41	3129.9	-28.34	141.77
104.61	14 29 5	2993.40	-26.05	95.50	18.02	71.47	15 18 58	2393.4	-28.33	87.30
75.39	10 39 31	3729.94	-26.06	149.98	18.02	71.49	11 41 41	3129.9	-28.34	141.77
104.61	14 29 5	2993.40	-26.05	95.50	18.02	71.47	15 18 58	2393.4	-28.33	87.30
110.00	16 44 9	2574.07	-33.37	65.37	20.00	82.10	17 27 4	1974.1	-34.10	56.21
110.00	13 23 37	3197.27	-19.18	107.80	14.76	61.14	14 16 55	2597.3	-22.87	100.61

DIFFERENTIAL CORRECTIONS
TDE .6192 TRA .4636 TC3-6.4306 BAU .7670
RDE .1603 RRA .0793 RC3 .1194 FAU .62161
FDE 3.1745 FRA 7.9388 FC-60.3297 BSP 14141
BDE .6396 BRA .4703 BC3 6.4317 FSP 12115

MID-COURSE EXECUTION ACCURACY
SGT 4154.0 SGR 362.6 SG3 3515.3
RRT .1842 RRF .1689 RTF .9723
SGB 4169.8 R23 -.0117 R13 .9723
SG1 4154.6 SG2 356.4 THA .93

ORBIT DETERMINATION ACCURACY
ST 1233.8 SR 312.1 SS 1972.2
CRT .9913 CRS -.8443 CST -.8948
LSA 2294.3 MSA 494.6 SSA 26.9
EL1 1272.1 EL2 39.8 ALF 14.09

LAUNCH DATE NOV 13 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 698.832 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.868 GAL -1.49 AZL 88.08 HCA 213.25 SMA 186.16 ECC .20644 INC 1.9164 V1 30.101
RP 219.44 LAP -1.05 LOP 263.89 VP 22.286 GAP -6.02 AZP 91.60 TAL 351.27 TAP 204.51 RCA 147.73 APO 224.58 V2 25.047
RC 274.220 GL 21.57 GP -.63 ZAL 98.94 ZAP 86.08 ETS 179.01 ZAE 119.20 ETE 178.50 ZAC 84.96 ETC 257.15 CLP 86.08

PLANETOCENTRIC CONIC

C3 8.929 VHL 2.988 DLA 31.39 RAL 161.09 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.799 DPA 4.85 RAP 171.18 ECC 1.1469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.87	10 44 25	3719.74	-25.90	149.15	18.37	71.62	11 46 24	3119.7	-28.16	140.95
104.13	14 27 21	3003.98	-25.89	96.24	18.37	71.60	15 17 25	2404.0	-28.15	88.05
75.87	10 44 25	3719.74	-25.90	149.15	18.37	71.62	11 46 24	3119.7	-28.16	140.95
104.13	14 27 21	3003.98	-25.89	96.24	18.37	71.60	15 17 25	2404.0	-28.15	88.05
110.00	16 49 29	2562.14	-33.47	64.46	20.36	82.63	17 32 11	1962.1	-34.13	55.28
110.00	13 21 27	3209.57	-18.77	108.52	14.99	60.89	14 14 57	2609.6	-22.50	101.38

DIFFERENTIAL CORRECTIONS
TDE .6413 TRA .5432 TC3-6.9533 BAU .8302
RDE .1642 RRA .0797 RC3 .1379 FAU .61760
FDE 3.0441 FRA 7.9676 FC-59.8808 BSP 15402
BDE .6619 BRA .5490 BC3 6.9547 FSP 11988

MID-COURSE EXECUTION ACCURACY
SGT 4502.0 SGR 371.4 SG3 3493.6
RRT .1573 RRF .1393 RTF .9763
SGB 4517.3 R23 -.0155 R13 .9763
SG1 4502.4 SG2 366.7 THA .75

ORBIT DETERMINATION ACCURACY
ST 1288.9 SR 319.3 SS 1935.1
CRT .9873 CRS -.8307 CST -.8992
LSA 2293.1 MSA 499.0 SSA . 27.4
EL1 1327.0 EL2 49.2 ALF 13.77

LAUNCH DATE NOV 13 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 702.920 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.867 GAL -1.53 AZL 88.09 HCA 214.38 SMA 186.15 ECC .20649 INC 1.9136 V1 30.101
RP 219.07 LAP -1.08 LOP 265.02 VP 22.331 GAP -6.22 AZP 91.58 TAL 351.04 TAP 205.42 RCA 147.71 APO 224.59 V2 25.088
RC 275.589 GL 21.52 GP -.61 ZAL 99.36 ZAP 84.14 ETS 179.02 ZAE 117.01 ETE 178.53 ZAC 84.81 ETC 257.23 CLP 84.14

PLANETOCENTRIC CONIC

C3 8.942 VHL 2.990 DLA 31.17 RAL 161.51 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.812 DPA 5.20 RAP 170.44 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.39	10 49 47	3708.37	-25.72	148.22	18.75	71.75	11 51 36	3108.4	-27.97	140.03
103.61	14 25 20	3015.89	-25.71	97.08	18.75	71.74	15 15 36	2415.9	-27.96	88.89
76.39	10 49 47	3708.37	-25.72	148.22	18.75	71.75	11 51 36	3108.4	-27.97	140.03
103.61	14 25 20	3015.89	-25.71	97.08	18.75	71.74	15 15 36	2415.9	-27.96	88.89
110.00	16 55 1	2549.90	-33.58	63.52	20.76	83.17	17 37 30	1949.9	-34.16	54.32
110.00	13 19 17	3222.36	-18.35	109.27	15.25	60.64	14 13 0	2622.4	-22.11	102.16

DIFFERENTIAL CORRECTIONS
TDE .6610 TRA .6253 TC3-7.4726 BAU .8935
RDE .1681 RRA .0803 RC3 .1560 FAU .61154
FDE 2.9129 FRA 7.9981 FC-59.2103 BSP 16649
BDE .6820 BRA .6304 BC3 7.4742 FSP 11864

MID-COURSE EXECUTION ACCURACY
SGT 4851.4 SGR 380.5 SG3 3462.3
RRT .1315 RRF .1124 RTF .9793
SGB 4866.3 R23 -.0173 R13 .9793
SG1 4851.7 SG2 377.1 THA .59

ORBIT DETERMINATION ACCURACY
ST 1341.0 SR 326.6 SS 1900.0
CRT .9823 CRS -.8162 CST -.9029
LSA 2293.7 MSA 503.0 SSA 28.0
EL1 1378.9 EL2 59.6 ALF 13.48

LAUNCH DATE NOV 13 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 707.016 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.867 GAL -1.57 AZL 88.09 HCA 215.51 SMA 186.15 ECC .20658 INC 1.9109 V1 30.101
RP 218.70 LAP -1.11 LOP 266.15 VP 22.376 GAP -6.41 AZP 91.56 TAL 350.81 TAP 206.31 RCA 147.69 APO 224.60 V2 25.128
RC 276.940 GL 21.47 GP -.59 ZAL 99.81 ZAP 82.22 ETS 179.02 ZAE 114.85 ETE 178.56 ZAC 84.67 ETC 257.32 CLP 82.22

PLANETOCENTRIC CONIC

C3 8.958 VHL 2.993 DLA 30.94 RAL 161.96 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.829 DPA 5.53 RAP 169.73 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.97	10 55 41	3695.76	-25.53	147.20	19.16	71.89	11 57 17	3095.8	-27.76	139.02
103.03	14 23 1	3029.21	-25.52	98.01	19.16	71.88	15 13 30	2429.2	-27.76	89.83
76.97	10 55 41	3695.76	-25.53	147.20	19.16	71.89	11 57 17	3095.8	-27.76	139.02
103.03	14 23 1	3029.21	-25.52	98.01	19.16	71.88	15 13 30	2429.2	-27.76	89.83
110.00	17 0 45	2537.35	-33.67	62.55	21.18	83.74	17 43 2	1937.4	-34.17	53.34
110.00	13 17 8	3235.61	-17.90	110.04	15.53	60.38	14 11 3	2635.6	-21.71	102.98

DIFFERENTIAL CORRECTIONS

TDE .6780 TRA .7087 TC3-7.9843 BAU .9664
RDE .1721 RRA .0809 RC3 .1733 FAU .60436
FDE 2.7701 FRA 8.0097 FC-58.4071 BSP 17873
BDE .6995 BRA .7133 BC3 7.9861 FSP 11695

MID-COURSE EXECUTION ACCURACY

SGT 5199.0 SGR 389.7 SG3 3423.6
RRT .1072 RRF .0871 RTF .9818
SGB 5213.6 RZ3 -.0188 RI3 .9818
SG1 5199.1 SG2 387.4 THA .46

ORBIT DETERMINATION ACCURACY

ST 1389.4 SR 333.9 SS 1861.0
CRT .9762 CRS -.8001 CST -.9053
LSA 2290.6 MSA 507.3 SSA 28.5
EL1 1427.2 EL2 70.5 ALF 13.23

LAUNCH DATE NOV 13 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 711.119 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.867 GAL -1.61 AZL 88.09 HCA 216.64 SMA 186.15 ECC .20669 INC 1.9083 V1 30.101
RP 218.34 LAP -1.14 LOP 267.28 VP 22.422 GAP -6.60 AZP 91.53 TAL 350.56 TAP 207.20 RCA 147.68 APO 224.63 V2 25.168
RC 278.273 GL 21.42 GP -.57 ZAL 100.28 ZAP 80.34 ETS 179.02 ZAE 112.71 ETE 178.59 ZAC 84.54 ETC 257.40 CLP 80.34

PLANETOCENTRIC CONIC

C3 8.979 VHL 2.996 DLA 30.70 RAL 162.43 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.848 DPA 5.86 RAP 169.04 ECC 1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.61	11 2 13	3681.54	-25.33	146.06	19.59	72.04	12 3 34	3081.5	-27.54	137.89
102.39	14 20 16	3044.30	-25.32	99.07	19.59	72.03	15 11 0	2444.3	-27.54	90.91
77.61	11 2 13	3681.54	-25.33	146.06	19.59	72.04	12 3 34	3081.5	-27.54	137.89
102.39	14 20 16	3044.30	-25.32	99.07	19.59	72.03	15 11 0	2444.3	-27.54	90.91
110.00	17 6 40	2524.54	-33.76	61.56	21.62	84.32	17 48 45	1924.5	-34.18	52.34
110.00	13 14 59	3249.31	-17.44	110.83	15.84	60.12	14 9 8	2649.3	-21.28	103.81

DIFFERENTIAL CORRECTIONS

TDE .6928 TRA .7953 TC3-8.4864 BAU 1.0189
RDE .1761 RRA .0815 RC3 .1901 FAU .59589
FDE 2.6159 FRA 8.0165 FC-57.4575 BSP 19089
BDE .7148 BRA .7995 BC3 8.4885 FSP 11513

MID-COURSE EXECUTION ACCURACY

SGT 5545.1 SGR 399.0 SG3 3377.9
RRT .0847 RRF .0637 RTF .9838
SGB 5559.4 RZ3 -.0201 RI3 .9838
SG1 5545.2 SG2 397.5 THA .35

ORBIT DETERMINATION ACCURACY

ST 1435.2 SR 341.0 SS 1819.7
CRT .9691 CRS -.7816 CST -.9065
LSA 2285.4 MSA 513.1 SSA 29.0
EL1 1472.8 EL2 82.0 ALF 13.01

LAUNCH DATE NOV 13 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 715.229 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.868 GAL -1.66 AZL 88.09 HCA 217.78 SMA 186.16 ECC .20683 INC 1.9060 V1 30.101
RP 217.98 LAP -1.17 LOP 268.42 VP 22.467 GAP -6.79 AZP 91.51 TAL 350.29 TAP 208.07 RCA 147.66 APO 224.66 V2 25.208
RC 279.589 GL 21.36 GP -.56 ZAL 100.78 ZAP 78.48 ETS 179.03 ZAE 110.60 ETE 178.62 ZAC 84.41 ETC 257.48 CLP 78.48

PLANETOCENTRIC CONIC

C3 9.003 VHL 3.001 DLA 30.44 RAL 162.93 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.870 DPA 6.16 RAP 168.39 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.32	11 9 25	3665.57	-25.11	144.79	20.06	72.20	12 10 30	3065.6	-27.31	136.63
101.68	14 17 3	3061.33	-25.10	100.27	20.05	72.18	15 8 4	2461.3	-27.30	92.11
78.32	11 9 25	3665.57	-25.11	144.79	20.06	72.20	12 10 30	3065.6	-27.31	136.63
101.68	14 17 3	3061.33	-25.10	100.27	20.05	72.18	15 8 4	2461.3	-27.30	92.11
110.00	17 12 47	2511.46	-33.85	60.55	22.09	84.91	17 54 39	1911.5	-34.18	51.32
110.00	13 12 51	3263.44	-16.96	111.65	16.18	59.87	14 7 14	2663.4	-20.83	104.66

DIFFERENTIAL CORRECTIONS

TDE .7053 TRA .8848 TC3-8.9727 BAU 1.0803
RDE .1801 RRA .0823 RC3 .2061 FAU .58620
FDE 2.4661 FRA 8.0178 FC-56.3682 BSP 20305
BDE .7279 BRA .8886 BC3 8.9751 FSP 11319

MID-COURSE EXECUTION ACCURACY

SGT 5886.3 SGR 408.4 SG3 3325.9
RRT .0642 RRF .0427 RTF .9854
SGB 5900.4 RZ3 -.0209 RI3 .9854
SG1 5886.3 SG2 407.5 THA .26

ORBIT DETERMINATION ACCURACY

ST 1478.3 SR 348.2 SS 1781.2
CRT .9609 CRS -.7624 CST -.9077
LSA 2282.6 MSA 517.9 SSA 29.4
EL1 1515.9 EL2 94.0 ALF 12.80

LAUNCH DATE NOV 13 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 719.348 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.869 GAL -1.71 AZL 88.10 HCA 218.92 SMA 186.17 ECC .20700 INC 1.9038 V1 30.101
RP 217.62 LAP -1.20 LOP 269.56 VP 22.513 GAP -6.97 AZP 91.48 TAL 350.01 TAP 208.93 RCA 147.64 APO 224.71 V2 25.248
RC 280.887 GL 21.29 GP -.54 ZAL 101.31 ZAP 76.66 ETS 179.03 ZAE 108.52 ETE 178.65 ZAC 84.29 ETC 257.56 CLP 76.66

PLANETOCENTRIC CONIC

C3 9.032 VHL 3.005 DLA 30.17 RAL 163.45 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.895 DPA 6.45 RAP 167.77 ECC 1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.12	11 17 24	3647.40	-24.88	143.35	20.55	72.36	12 18 12	3047.4	-27.06	135.21
100.88	14 13 14	3080.74	-24.87	101.64	20.55	72.35	15 4 35	2480.7	-27.05	93.49
79.12	11 17 24	3647.40	-24.88	143.35	20.55	72.36	12 18 12	3047.4	-27.06	135.21
100.88	14 13 14	3080.74	-24.87	101.64	20.55	72.35	15 4 35	2480.7	-27.05	93.49
110.00	17 19 5	2498.14	-33.92	59.52	22.58	85.52	18 0 43	1898.1	-34.17	50.28
110.00	13 10 44	3277.99	-16.46	112.48	16.54	59.61	14 5 22	2678.0	-20.37	105.54

DIFFERENTIAL CORRECTIONS

TDE .7148 TRA .9763 TC3-9.4467 BAU 1.1410
RDE .1842 RRA .0831 RC3 .2215 FAU .57531
FDE 2.3056 FRA 8.0101 FC-55.1431 BSP 21495
BDE .7381 BRA .9798 BC3 9.4493 FSP 11115

MID-COURSE EXECUTION ACCURACY

SGT 6223.6 SGR 417.8 SG3 3267.2
RRT .0450 RRF .0232 RTF .9867
SGB 6237.6 RZ3 -.0214 RI3 .9867
SG1 6223.7 SG2 417.4 THA .17

ORBIT DETERMINATION ACCURACY

ST 1517.6 SR 355.4 SS 1740.1
CRT .9516 CRS -.7404 CST -.9076
LSA 2276.3 MSA 524.3 SSA 29.8
EL1 1555.0 EL2 106.6 ALF 12.62

LAUNCH DATE NOV 13 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 723.473 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.870 GAL -1.76 AZL 88.10 HCA 220.07 SMA 186.19 ECC .20719 INC 1.9016 V1 30.101
RP 217.27 LAP -1.22 LOP 270.71 VP 22.559 GAP -7.15 AZP 91.46 TAL 349.71 TAP 209.79 RCA 147.61 APO 224.77 V2 25.287
RC 282.167 GL 21.23 GP -.52 ZAL 101.86 ZAP 74.87 ETS 179.04 ZAE 106.48 ETE 178.68 ZAC 84.18 ETC 257.64 CLP 74.87

PLANETOCENTRIC CONIC

C3 9.066 VHL 3.011 DLA 29.89 RAL 164.00 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.923 DPA 6.73 RAP 167.19 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.02	11 26 23	3626.46	-24.64	141.71	21.07	72.53	12 26 49	3026.5	-26.80	133.57
99.98	14 8 38	3103.10	-24.63	103.22	21.07	72.51	15 0 21	2503.1	-26.79	95.09
100.00	14 13 44	3086.77	-24.96	102.12	21.18	72.99	15 5 11	2486.8	-27.05	93.94
100.00	14 3 57	3118.03	-24.32	104.22	20.96	72.06	14 55 55	2518.0	-26.54	96.13
110.00	17 25 32	2484.61	-33.99	58.46	23.09	86.14	18 6 57	1884.6	-34.15	49.22
110.00	13 8 39	3292.96	-15.94	113.33	16.93	59.35	14 3 32	2693.0	-19.89	106.43

DIFFERENTIAL CORRECTIONS
TDE .7213 TRA 1.0705 TC3-9.9054 BAU 1.2009
RDE .1883 RRA .0839 RC3 .2360 FAU .56397
FDE 2.1381 FRA 7.9896 FC-53.8568 BSP 22654
BDE .7454 BRA 1.0738 BC3 9.9082 FSP 10880

MID-COURSE EXECUTION ACCURACY
SGT 6556.2 SGR 427.1 SG3 3204.8
RRT .0273 RRF .0049 RTF .9879
SGB 6570.1 R23 -.0223 R13 .9879
SG1 6556.2 SG2 427.0 THA .10

ORBIT DETERMINATION ACCURACY
ST 1553.3 SR 362.5 SS 1697.4
CRT .9410 CRS -.7158 CST -.9067
LSA 2267.6 MSA 531.4 SSA 30.1
EL1 1590.5 EL2 119.8 ALF 12.46

LAUNCH DATE NOV 13 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 727.606 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.871 GAL -1.81 AZL 88.10 HCA 221.22 SMA 186.21 ECC .20742 INC 1.8995 V1 30.101
RP 216.91 LAP -1.25 LOP 271.86 VP 22.604 GAP -7.33 AZP 91.43 TAL 349.41 TAP 210.63 RCA 147.59 APO 224.83 V2 25.327
RC 283.431 GL 21.16 GP -.51 ZAL 102.44 ZAP 73.12 ETS 179.04 ZAE 104.47 ETE 178.71 ZAC 84.08 ETC 257.71 CLP 73.12

PLANETOCENTRIC CONIC

C3 9.104 VHL 3.017 DLA 29.59 RAL 164.57 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.953 DPA 6.98 RAP 166.64 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.05	11 36 36	3601.90	-24.38	139.80	21.62	72.70	12 36 38	3001.9	-26.52	131.68
98.95	14 2 58	3129.29	-24.37	105.08	21.61	72.69	14 55 7	2529.3	-26.51	96.95
100.00	14 47 5	2988.16	-26.75	95.34	22.35	76.13	15 36 53	2388.2	-28.39	86.92
100.00	13 35 9	3218.26	-22.06	110.81	20.74	69.30	14 28 48	2618.3	-24.67	102.99
110.00	17 32 9	2470.86	-34.05	57.39	23.62	86.77	18 13 20	1870.9	-34.12	48.15
110.00	13 6 35	3308.33	-15.41	114.20	17.35	59.10	14 1 44	2708.3	-19.39	107.34

DIFFERENTIAL CORRECTIONS
TDE .7241 TRA 1.1670 TC-10.3480 BAU 1.2598
RDE .1924 RRA .0848 RC3 .2499 FAU .55180
FDE 1.9676 FRA 7.9610 FC-52.4728 BSP 23794
BDE .7493 BRA 1.1701 BC310.3510 FSP 10632

MID-COURSE EXECUTION ACCURACY
SGT 6883.3 SGR 436.5 SG3 3137.7
RRT .0108 RRF -.0121 RTF .9888
SGB 6897.1 R23 -.0228 R13 .9888
SG1 6883.3 SG2 436.5 THA .04

ORBIT DETERMINATION ACCURACY
ST 1584.4 SR 369.6 SS 1654.8
CRT .9290 CRS -.6886 CST -.9053
LSA 2257.0 MSA 538.8 SSA 30.4
EL1 1621.4 EL2 133.6 ALF 12.31

LAUNCH DATE NOV 13 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 731.745 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.872 GAL -1.87 AZL 88.10 HCA 222.38 SMA 186.23 ECC .20766 INC 1.8974 V1 30.101
RP 216.57 LAP -1.28 LOP 273.02 VP 22.650 GAP -7.50 AZP 91.40 TAL 349.08 TAP 211.46 RCA 147.56 APO 224.91 V2 25.365
RC 284.679 GL 21.08 GP -.49 ZAL 103.04 ZAP 71.41 ETS 179.05 ZAE 102.50 ETE 178.74 ZAC 83.98 ETC 257.78 CLP 71.41

PLANETOCENTRIC CONIC

C3 9.147 VHL 3.024 DLA 29.27 RAL 165.17 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.986 DPA 7.22 RAP 166.13 ECC 1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.27	11 48 31	3572.17	-24.11	137.51	22.19	72.89	12 48 3	2972.2	-26.23	129.40
97.73	13 55 47	3160.86	-24.10	107.32	22.18	72.87	14 48 28	2560.9	-26.22	99.21
100.00	15 4 43	2939.91	-27.49	91.94	23.17	77.77	15 53 43	2339.9	-28.90	83.42
100.00	13 22 16	3268.36	-20.81	114.01	20.92	68.05	14 16 44	2668.4	-23.61	106.33
110.00	17 38 55	2456.93	-34.10	56.31	24.17	87.41	18 19 52	1856.9	-34.08	47.06
110.00	13 4 33	3324.10	-14.85	115.09	17.79	58.85	13 59 58	2724.1	-18.87	108.27

DIFFERENTIAL CORRECTIONS
TDE .7238 TRA 1.2663 TC-10.7732 BAU 1.3179
RDE .1966 RRA .0857 RC3 .2631 FAU .53896
FDE 1.7962 FRA 7.9240 FC-51.0095 BSP 24906
BDE .7500 BRA 1.2692 BC310.7764 FSP 10380

MID-COURSE EXECUTION ACCURACY
SGT 7204.8 SGR 445.7 SG3 3066.6
RRT -.0044 RRF -.0277 RTF .9896
SGB 7218.6 R23 .0253 R13 -.9896
SG1 7204.8 SG2 445.7 THA 179.98

ORBIT DETERMINATION ACCURACY
ST 1612.2 SR 376.6 SS 1613.0
CRT .9154 CRS -.6588 CST -.9034
LSA 2245.7 MSA 546.6 SSA 30.6
EL1 1648.9 EL2 148.2 ALF 12.17

LAUNCH DATE NOV 13 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 735.892 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.874 GAL -1.93 AZL 88.10 HCA 223.53 SMA 186.26 ECC .20794 INC 1.8956 V1 30.101
RP 216.22 LAP -1.31 LOP 274.17 VP 22.695 GAP -7.67 AZP 91.37 TAL 348.74 TAP 212.28 RCA 147.53 APO 224.99 V2 25.404
RC 285.910 GL 21.00 GP -.47 ZAL 103.68 ZAP 69.74 ETS 179.05 ZAE 100.56 ETE 178.77 ZAC 83.89 ETC 257.84 CLP 69.74

PLANETOCENTRIC CONIC

C3 9.196 VHL 3.032 DLA 28.94 RAL 165.78 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.022 DPA 7.44 RAP 165.66 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.78	12 3 2	3534.37	-23.83	134.62	22.79	73.08	13 1 57	2934.4	-25.92	126.53
96.22	13 46 10	3200.71	-23.82	110.16	22.78	73.06	14 39 31	2600.7	-25.91	102.07
100.00	15 19 20	2901.54	-28.01	89.21	23.94	79.11	16 7 41	2301.5	-29.23	80.62
100.00	13 12 34	3308.77	-19.76	116.55	21.20	67.11	14 7 43	2708.8	-22.69	108.98
110.00	17 45 49	2442.82	-34.13	55.21	24.74	88.06	18 26 32	1842.8	-34.03	45.96
110.00	13 2 34	3340.26	-14.28	115.99	18.26	58.61	13 58 14	2740.3	-18.33	109.22

DIFFERENTIAL CORRECTIONS
TDE .7207 TRA 1.3688 TC-11.1751 BAU 1.3743
RDE .2008 RRA .0867 RC3 .2756 FAU .52515
FDE 1.6295 FRA 7.8840 FC-49.4403 BSP 26009
BDE .7481 BRA 1.3715 BC311.1785 FSP 10124

MID-COURSE EXECUTION ACCURACY
SGT 7518.2 SGR 455.0 SG3 2990.9
RRT -.0183 RRF -.0416 RTF .9903
SGB 7531.9 R23 .0234 R13 -.9903
SG1 7518.2 SG2 454.9 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 1637.5 SR 383.6 SS 1574.3
CRT .9002 CRS -.6271 CST -.9015
LSA 2235.8 MSA 554.2 SSA 30.8
EL1 1673.9 EL2 163.5 ALF 12.02

LAUNCH DATE NOV 13 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 740.045 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.876	GAL	-1.99	AZL	88.11	HCA	224.70	SMA	186.29	ECC	.20825	INC	1.8938
RP	215.88	LAP	-1.33	LOP	275.34	VP	22.740	GAP	-7.84	AZP	91.35	TAL	348.39	TAP	213.08	RCA	147.50	APO	225.09
RC	287.127	GL	20.92	GP	-.46	ZAL	104.33	ZAP	68.10	ETS	179.06	ZAE	98.67	ETE	178.80	ZAC	83.82	ETC	257.90

V1 30.101 V2 25.442 CLP 68.10

PLANETOCENTRIC CONIC

C3	9.250	VHL	3.041	DLA	28.59	RAL	166.42	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	3.059	DPA	7.64	RAP	165.23

ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.88	12 22 46	3480.01	-23.53	130.53	23.41	73.27	13 20 46	2880.0	-25.60	122.45
94.12	13 31 31	3257.34	-23.52	114.22	23.41	73.26	14 25 48	2657.3	-25.59	106.14
100.00	15 32 27	2868.12	-28.42	86.81	24.69	80.31	16 20 15	2268.1	-29.46	78.16
100.00	13 4 31	3344.47	-18.80	118.77	21.55	66.33	14 0 15	2744.5	-21.85	111.29
110.00	17 52 52	2428.55	-34.16	54.09	25.33	88.72	18 33 20	1828.5	-33.96	44.86
110.00	13 0 36	3356.80	-13.69	116.91	18.76	58.37	13 56 32	2756.8	-17.78	110.18

DIFFERENTIAL CORRECTIONS

TDE	.7140	TRA	1.4740	TC-11.5584	BAU	1.4298	
RDE	.2051	RRA	.0877	RC3 .2873	FAU	.51124	
FDE	1.4605	FRA	7.8342	FC-47.8496	BSP	27076	
BDE	.7429	BRA	1.4766	BC311.5619	FSP	9847	

MID-COURSE EXECUTION ACCURACY

SGT	7825.6	SGR	464.0	SG3	2913.6		
RRT	-.0313	RRF	-.0549	RTF	.9909		
SGB	7839.3	R23	.0238	R13	-.9909		
SG1	7825.6	SG2	463.8	THA	179.89		

ORBIT DETERMINATION ACCURACY

ST	1659.4	SR	390.6	SS	1535.8		
CRT	.8829	CRS	-.5920	CST	-.8991		
LSA	2224.3	MSA	562.6	SSA	30.9		
EL1	1695.3	EL2	179.5	ALF	11.87		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 744.202 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.878	GAL	-2.06	AZL	88.11	HCA	225.86	SMA	186.33	ECC	.20858	INC	1.8919
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.785	GAP	-8.00	AZP	91.32	TAL	348.02	TAP	213.88	RCA	147.46	APO	225.19
RC	288.329	GL	20.83	GP	-.44	ZAL	105.02	ZAP	66.52	ETS	179.06	ZAE	96.81	ETE	178.83	ZAC	83.75	ETC	257.96

V1 30.101 V2 25.480 CLP 66.52

PLANETOCENTRIC CONIC

C3	9.310	VHL	3.051	DLA	28.23	RAL	167.08	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.099	DPA	7.82	RAP	164.85

ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 35	3305.70	-24.46	118.05	24.45	75.27	14 14 40	2705.7	-26.25	109.84
90.00	12 39 58	3434.16	-21.97	126.64	23.64	71.67	13 37 12	2834.2	-24.27	118.73
100.00	15 44 44	2837.66	-28.75	84.61	25.44	81.43	16 32 2	2237.7	-29.63	75.92
100.00	12 57 30	3377.43	-17.89	120.79	21.95	65.65	13 53 47	2777.4	-21.03	113.40
110.00	18 0 4	2414.08	-34.18	52.97	25.95	89.39	18 40 18	1814.1	-33.89	43.73
110.00	12 58 40	3373.77	-13.08	117.85	19.29	58.14	13 54 53	2773.8	-17.20	111.16

DIFFERENTIAL CORRECTIONS

TDE	.7187	TRA	1.5982	TC-11.8606	BAU	1.4766	
RDE	.2095	RRA	.0888	RC3 .2985	FAU	.49247	
FDE	1.3788	FRA	7.8715	FC-45.7969	BSP	28488	
BDE	.7486	BRA	1.6006	BC311.8644	FSP	9758	

MID-COURSE EXECUTION ACCURACY

SGT	8112.2	SGR	473.2	SG3	2825.1		
RRT	-.0371	RRF	-.0579	RTF	.9912		
SGB	8126.0	R23	.0210	R13	-.9912		
SG1	8112.3	SG2	472.8	THA	179.88		

ORBIT DETERMINATION ACCURACY

ST	1706.7	SR	397.6	SS	1532.1		
CRT	.8664	CRS	-.5715	CST	-.9032		
LSA	2258.2	MSA	563.5	SSA	31.1		
EL1	1741.5	EL2	194.6	ALF	11.56		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 748.370 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.880	GAL	-2.13	AZL	88.11	HCA	227.03	SMA	186.37	ECC	.20894	INC	1.8902
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.830	GAP	-8.17	AZP	91.29	TAL	347.64	TAP	214.67	RCA	147.43	APO	225.30
RC	289.516	GL	20.73	GP	-.43	ZAL	105.72	ZAP	64.97	ETS	179.07	ZAE	94.99	ETE	178.86	ZAC	83.69	ETC	258.01

V1 30.101 V2 25.517 CLP 64.96

PLANETOCENTRIC CONIC

C3	9.376	VHL	3.062	DLA	27.85	RAL	167.75	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	3.141	DPA	7.98	RAP	164.50

ECC 1.1543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 37	3224.53	-25.75	112.46	25.54	77.79	14 41 21	2624.5	-27.18	104.08
90.00	12 17 19	3518.08	-20.07	132.06	23.74	69.60	13 15 57	2918.1	-22.67	124.36
100.00	15 56 22	2809.45	-29.02	82.55	26.18	82.48	16 43 12	2209.4	-29.75	73.83
100.00	12 51 15	3408.40	-17.01	122.67	22.39	65.04	13 48 3	2808.4	-20.23	115.36
110.00	18 7 20	2399.55	-34.18	51.83	26.58	90.06	18 47 20	1799.6	-33.80	42.61
110.00	12 56 46	3391.05	-12.46	118.80	19.84	57.91	13 53 17	2791.1	-16.61	112.15

DIFFERENTIAL CORRECTIONS

TDE	.6980	TRA	1.7021	TC-12.2253	BAU	1.5328	
RDE	.2139	RRA	.0899	RC3 .3088	FAU	.48002	
FDE	1.1688	FRA	7.7660	FC-44.3254	BSP	29342	
BDE	.7301	BRA	1.7045	BC312.2292	FSP	9394	

MID-COURSE EXECUTION ACCURACY

SGT	8410.3	SGR	481.9	SG3	2748.2		
RRT	-.0512	RRF	-.0738	RTF	.9917		
SGB	8424.1	R23	.0229	R13	-.9917		
SG1	8410.3	SG2	481.2	THA	179.83		

ORBIT DETERMINATION ACCURACY

ST	1710.1	SR	404.4	SS	1480.6		
CRT	.8434	CRS	-.5224	CST	-.8970		
LSA	2224.1	MSA	576.8	SSA	31.1		
EL1	1744.3	EL2	213.0	ALF	11.45		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 752.543 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.882	GAL	-2.20	AZL	88.11	HCA	228.20	SMA	186.41	ECC	.20932	INC	1.8886
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.875	GAP	-8.33	AZP	91.26	TAL	347.24	TAP	215.44	RCA	147.39	APO	225.43
RC	290.691	GL	20.63	GP	-.42	ZAL	106.45	ZAP	63.46	ETS	179.07	ZAE	93.22	ETE	178.89	ZAC	83.63	ETC	258.05

V1 30.101 V2 25.554 CLP 63.46

PLANETOCENTRIC CONIC

C3	9.448	VHL	3.074	DLA	27.46	RAL	168.45	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.186	DPA	8.13	RAP	164.19

ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 6 29	3173.23	-26.44	108.86	26.46	79.47	14 59 22	2573.2	-27.62	100.39
90.00	12 4 0	3572.38	-18.74	135.50	24.06	68.38	13 3 32	2972.4	-21.52	127.92
100.00	16 7 36	2782.75	-29.24	80.60	26.93	83.48	16 53 59	2182.7	-29.83	71.85
100.00	12 45 33	3438.10	-16.15	124.45	22.87	64.50	13 42 51	2838.1	-19.45	117.22
110.00	18 14 44	2384.90	-34.18	50.69	27.23	90.73	18 54 29	1784.9	-33.70	41.47
110.00	12 54 55	3408.72	-11.82	119.77	20.41	57.69	13 51 43	2808.7	-16.00	113.16

DIFFERENTIAL CORRECTIONS

TDE	.6764	TRA	1.8124	TC-12.5566	BAU	1.5865	
RDE	.2184	RRA	.0910	RC3 .3185	FAU	.46639	
FDE	.9802	FRA	7.6779	FC-42.7362	BSP	30235	
BDE	.7108	BRA	1.8147	BC312.5606	FSP	9065	

MID-COURSE EXECUTION ACCURACY

SGT	8698.9	SGR	490.5	SG3	2668.2		
RRT	-.0634	RRF	-.0870	RTF	.9921		
SGB	8712.7	R23	.0240	R13	-.9921		
SG1	8698.9	SG2	489.5	THA	179.79		

ORBIT DETERMINATION ACCURACY

ST	1716.9	SR	411.2	SS	1440.1		
CRT	.8179	CRS	-.4726	CST	-.8920		
LSA	2200.6	MSA	589.2	SSA	31.0		
EL1	1750.2	EL2	232.1	ALF	11.28		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 756.722 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.885 GAL -2.27 AZL 88.11 HCA 229.38 SMA 186.45 ECC .20974 INC 1.8870 V1 30.101
RP 214.56 LAP -1.43 LOP 280.02 VP 22.919 GAP -8.48 AZP 91.23 TAL 346.83 TAP 216.21 RCA 147.35 APO 225.56 V2 25.590
RC 291.851 GL 20.52 GP -.40 ZAL 107.21 ZAP 61.99 ETS 179.07 ZAE 91.48 ETE 178.91 ZAC 83.59 ETC 258.09 CLP 61.99

PLANETOCENTRIC CONIC

C3 9.527 VHL 3.087 DLA 27.05 RAL 169.16 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.232 DPA 8.26 RAP 163.93 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 22 25	3131.56	-26.92	105.91	27.33	80.87	15 14 37	2531.6	-27.91	97.38
90.00	11 53 44	3617.33	-17.59	138.29	24.47	67.45	12 54 2	3017.3	-20.50	130.82
100.00	16 18 32	2757.23	-29.42	78.73	27.69	84.46	17 4 30	2157.2	-29.88	69.95
100.00	12 40 19	3466.89	-15.30	126.17	23.39	64.00	13 38 5	2866.9	-18.67	119.00
110.00	18 22 15	2370.13	-34.16	49.53	27.89	91.42	19 1 45	1770.1	-33.58	40.34
110.00	12 53 6	3426.75	-11.16	120.75	21.01	57.48	13 50 12	2826.8	-15.37	114.18

DIFFERENTIAL CORRECTIONS
TDE .6523 TRA 1.9269 TC-12.8600 BAU 1.6385
RDE .2229 RRA .0921 RC3 .3275 FAU .45226
FDE .8043 FRA 7.5948 FC-41.0966 BSP 31127
BDE .6893 BRA 1.9291 BC312.8642 FSP 8751

MID-COURSE EXECUTION ACCURACY
SGT 8978.8 SGR 499.0 SG3 2586.8
RRT -.0744 RRF -.0987 RTF .9924
SGB 8992.7 R23 .0247 R13 -.9924
SG1 8978.9 SG2 497.6 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 1724.7 SR 417.9 SS 1406.4
CRT .7895 CRS -.4213 CST -.8878
LSA 2182.9 MSA 601.0 SSA 30.9
EL1 1756.6 EL2 251.8 ALF 11.06

LAUNCH DATE NOV 13 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 760.907 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.888 GAL -2.35 AZL 88.11 HCA 230.56 SMA 186.50 ECC .21019 INC 1.8855 V1 30.101
RP 214.24 LAP -1.46 LOP 281.20 VP 22.963 GAP -8.64 AZP 91.20 TAL 346.40 TAP 216.96 RCA 147.30 APO 225.70 V2 25.626
RC 292.998 GL 20.41 GP -.39 ZAL 107.98 ZAP 60.56 ETS 179.07 ZAE 89.78 ETE 178.94 ZAC 83.55 ETC 258.13 CLP 60.56

PLANETOCENTRIC CONIC

C3 9.614 VHL 3.101 DLA 26.62 RAL 169.89 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.281 DPA 8.36 RAP 163.70 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 50	3095.05	-27.29	103.30	28.18	82.13	15 28 25	2495.1	-28.10	94.72
90.00	11 45 10	3657.38	-16.53	140.75	24.95	66.68	12 46 7	3057.4	-19.55	133.38
100.00	16 29 15	2732.65	-29.57	76.91	28.46	85.40	17 14 47	2132.7	-29.89	68.12
100.00	12 35 26	3495.02	-14.45	127.83	23.95	63.55	13 33 41	2895.0	-17.89	120.72
110.00	18 29 51	2355.28	-34.13	48.37	28.58	92.10	19 9 6	1755.3	-33.46	39.19
110.00	12 51 19	3445.15	-10.49	121.75	21.64	57.28	13 48 44	2845.2	-14.73	115.21

DIFFERENTIAL CORRECTIONS
TDE .6257 TRA 2.0466 TC-13.1346 BAU 1.6887
RDE .2276 RRA .0932 RC3 .3360 FAU .43776
FDE .6384 FRA 7.5136 FC-39.4216 BSP 32024
BDE .6659 BRA 2.0487 BC313.1389 FSP 8453

MID-COURSE EXECUTION ACCURACY
SGT 9250.6 SGR 507.3 SG3 2504.4
RRT -.0844 RRF -.1092 RTF .9927
SGB 9264.5 R23 .0253 R13 -.9927
SG1 9250.7 SG2 505.5 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 1734.2 SR 424.6 SS 1378.3
CRT .7580 CRS -.3685 CST -.8844
LSA 2170.6 MSA 612.4 SSA 30.7
EL1 1764.5 EL2 272.1 ALF 10.77

LAUNCH DATE NOV 13 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 765.098 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.891 GAL -2.43 AZL 88.12 HCA 231.74 SMA 186.55 ECC .21066 INC 1.8840 V1 30.101
RP 213.93 LAP -1.48 LOP 282.38 VP 23.007 GAP -8.79 AZP 91.17 TAL 345.96 TAP 217.70 RCA 147.25 APO 225.85 V2 25.662
RC 294.131 GL 20.29 GP -.38 ZAL 108.78 ZAP 59.17 ETS 179.07 ZAE 88.12 ETE 178.97 ZAC 83.52 ETC 258.15 CLP 59.17

PLANETOCENTRIC CONIC

C3 9.708 VHL 3.116 DLA 26.18 RAL 170.64 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.331 DPA 8.46 RAP 163.51 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 16	3061.88	-27.58	100.91	29.02	83.30	15 41 18	2461.9	-28.22	92.30
90.00	11 37 41	3694.40	-15.52	143.00	25.47	66.01	12 39 15	3094.4	-18.63	135.70
100.00	16 39 47	2708.85	-29.69	75.15	29.24	86.32	17 24 55	2108.8	-29.88	66.35
100.00	12 30 52	3522.66	-13.61	129.45	24.53	63.13	13 29 34	2922.7	-17.10	122.40
110.00	18 37 33	2340.35	-34.08	47.21	29.28	92.79	19 16 33	1740.4	-33.32	38.05
110.00	12 49 35	3463.92	-9.79	122.76	22.30	57.09	13 47 18	2863.9	-14.06	116.26

DIFFERENTIAL CORRECTIONS
TDE .5961 TRA 2.1702 TC-13.3823 BAU 1.7374
RDE .2323 RRA .0943 RC3 .3438 FAU .42309
FDE .4816 FRA 7.4314 FC-37.7312 BSP 32903
BDE .6398 BRA 2.1723 BC313.3867 FSP 8163

MID-COURSE EXECUTION ACCURACY
SGT 9514.2 SGR 515.5 SG3 2421.5
RRT -.0936 RRF -.1188 RTF .9929
SGB 9528.2 R23 .0257 R13 -.9929
SG1 9514.3 SG2 513.2 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 1744.8 SR 431.2 SS 1354.8
CRT .7231 CRS -.3147 CST -.8819
LSA 2162.6 MSA 622.9 SSA 30.5
EL1 1773.2 EL2 293.0 ALF 10.42

LAUNCH DATE NOV 13 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 769.294 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.894 GAL -2.51 AZL 88.12 HCA 232.93 SMA 186.60 ECC .21117 INC 1.8825 V1 30.101
RP 213.62 LAP -1.50 LOP 283.57 VP 23.051 GAP -8.94 AZP 91.14 TAL 345.51 TAP 218.43 RCA 147.20 APO 226.01 V2 25.697
RC 295.251 GL 20.16 GP -.37 ZAL 109.61 ZAP 57.83 ETS 179.07 ZAE 86.49 ETE 178.99 ZAC 83.50 ETC 258.18 CLP 57.82

PLANETOCENTRIC CONIC

C3 9.810 VHL 3.132 DLA 25.73 RAL 171.40 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.384 DPA 8.53 RAP 163.37 ECC 1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 2	3031.05	-27.80	98.68	29.87	84.39	15 53 33	2431.1	-28.29	90.05
90.00	11 31 0	3729.36	-14.54	145.10	26.04	65.43	12 33 9	3129.4	-17.74	137.88
100.00	16 50 10	2685.70	-29.77	73.44	30.03	87.22	17 34 55	2085.7	-29.84	64.63
100.00	12 26 33	3549.95	-12.76	131.03	25.15	62.74	13 25 43	2950.0	-16.32	124.04
110.00	18 45 20	2325.36	-34.03	46.04	30.00	93.48	19 24 5	1725.4	-33.17	36.91
110.00	12 47 53	3483.05	-9.08	123.79	22.98	56.90	13 45 56	2883.1	-13.38	117.32

DIFFERENTIAL CORRECTIONS
TDE .5627 TRA 2.2972 TC-13.6040 BAU 1.7848
RDE .2371 RRA .0953 RC3 .3510 FAU .40848
FDE .3288 FRA 7.3468 FC-36.0491 BSP 33777
BDE .6106 BRA 2.2992 BC313.6086 FSP 7881

MID-COURSE EXECUTION ACCURACY
SGT 9769.4 SGR 523.5 SG3 2339.0
RRT -.1024 RRF -.1281 RTF .9931
SGB 9783.4 R23 .0262 R13 -.9931
SG1 9769.5 SG2 520.7 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 1755.9 SR 437.7 SS 1335.1
CRT .6845 CRS -.2583 CST -.8800
LSA 2157.5 MSA 633.5 SSA 30.3
EL1 1782.1 EL2 314.4 ALF 10.00

LAUNCH DATE NOV 13 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 773.495 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.897 GAL -2.60 AZL 88.12 HCA 234.12 SMA 186.66 ECC .21170 INC 1.8811 V1 30.101
RP 213.31 LAP -1.52 LOP 284.76 VP 23.094 GAP -9.09 AZP 91.10 TAL 345.04 TAP 219.15 RCA 147.14 APO 226.18 V2 25.731
RC 296.356 GL 20.03 GP -.36 ZAL 110.45 ZAP 56.52 ETS 179.07 ZAE 84.91 ETE 179.02 ZAC 83.49 ETC 258.19 CLP 56.52

PLANETOCENTRIC CONIC

C3 9.921 VHL 3.150 DLA 25.26 RAL 172.18 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.438 DPA 8.59 RAP 163.26 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 19	3002.00	-27.98	96.58	30.72	85.43	16 5 21	2402.0	-28.32	87.93
90.00	11 24 55	3762.87	-13.58	147.09	26.65	64.91	12 27 38	3162.9	-16.85	139.94
100.00	17 0 26	2663.12	-29.84	71.76	30.84	88.10	17 44 49	2063.1	-29.78	62.96
100.00	12 22 29	3576.99	-11.91	132.59	25.81	62.38	13 22 6	2977.0	-15.52	125.65
110.00	18 53 11	2310.33	-33.96	44.87	30.74	94.17	19 31 41	1710.3	-33.01	35.76
110.00	12 46 13	3502.53	-8.36	124.83	23.68	56.73	13 44 35	2902.5	-12.68	118.40

DIFFERENTIAL CORRECTIONS
TDE .5268 TRA 2.4295 TC-13.7980 BAU 1.8306
RDE .2421 RRA .0964 RC3 .3575 FAU .39379
FDE .1874 FRA 7.2639 FC-34.3645 BSP 34647
BDE .5798 BRA 2.4314 BC313.8026 FSP 7609

MID-COURSE EXECUTION ACCURACY
SGT10017.4 SGR 531.3 SG3 2256.7
RRT -.1105 RRF -.1364 RTF .9933
SGB10031.4 R23 .0265 R13 -.9933
SG110017.5 SG2 528.0 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 1770.7 SR 444.2 SS 1320.1
CRT .6426 CRS -.2030 CST -.8796
LSA 2159.1 MSA 642.6 SSA 30.0
EL1 1794.5 EL2 335.9 ALF 9.49

LAUNCH DATE NOV 13 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 777.701 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.900 GAL -2.69 AZL 88.12 HCA 235.31 SMA 186.72 ECC .21227 INC 1.8797 V1 30.101
RP 213.01 LAP -1.55 LOP 285.95 VP 23.136 GAP -9.23 AZP 91.07 TAL 344.55 TAP 219.86 RCA 147.08 APO 226.35 V2 25.765
RC 297.448 GL 19.89 GP -.35 ZAL 111.31 ZAP 55.24 ETS 179.07 ZAE 83.36 ETE 179.04 ZAC 83.49 ETC 258.20 CLP 55.24

PLANETOCENTRIC CONIC

C3 10.040 VHL 3.169 DLA 24.77 RAL 172.97 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.494 DPA 8.63 RAP 163.19 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 13	2974.35	-28.11	94.56	31.57	86.43	16 16 47	2374.4	-28.31	85.90
90.00	11 19 19	3795.30	-12.64	149.01	27.30	64.45	12 22 34	3195.3	-15.98	141.92
100.00	17 10 36	2641.03	-29.88	70.12	31.65	88.96	17 54 37	2041.0	-29.70	61.32
100.00	12 18 37	3603.85	-11.06	134.13	26.49	62.05	13 18 41	3003.9	-14.71	127.24
110.00	19 1 7	2295.28	-33.88	43.71	31.50	94.85	19 39 22	1695.3	-32.84	34.62
110.00	12 44 36	3522.37	-7.62	125.89	24.42	56.58	13 43 18	2922.4	-11.96	119.48

DIFFERENTIAL CORRECTIONS
TDE .4855 TRA 2.5641 TC-13.9707 BAU 1.8760
RDE .2471 RRA .0974 RC3 .3635 FAU .37944
FDE .0454 FRA 7.1750 FC-32.7172 BSP 35445
BDE .5448 BRA 2.5660 BC313.9755 FSP 7332

MID-COURSE EXECUTION ACCURACY
SGT10258.4 SGR 538.9 SG3 2175.6
RRT -.1188 RRF -.1450 RTF .9934
SGB10272.6 R23 .0269 R13 -.9934
SG110258.6 SG2 535.1 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 1785.5 SR 450.7 SS 1307.9
CRT .5960 CRS -.1444 CST -.8796
LSA 2162.4 MSA 651.9 SSA 29.7
EL1 1806.4 EL2 357.7 ALF 8.91

LAUNCH DATE NOV 13 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 781.910 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.904 GAL -2.78 AZL 88.12 HCA 236.51 SMA 186.78 ECC .21287 INC 1.8784 V1 30.101
RP 212.72 LAP -1.57 LOP 287.15 VP 23.179 GAP -9.38 AZP 91.04 TAL 344.05 TAP 220.56 RCA 147.02 APO 226.54 V2 25.798
RC 298.526 GL 19.74 GP -.34 ZAL 112.20 ZAP 54.01 ETS 179.07 ZAE 81.84 ETE 179.07 ZAC 83.49 ETC 258.21 CLP 54.01

PLANETOCENTRIC CONIC

C3 10.170 VHL 3.189 DLA 24.27 RAL 173.77 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.552 DPA 8.65 RAP 163.16 ECC 1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 49	2947.81	-28.21	92.63	32.44	87.40	16 27 57	2347.8	-28.27	83.96
90.00	11 14 7	3826.96	-11.70	150.86	27.98	64.03	12 17 54	3227.0	-15.10	143.83
100.00	17 20 41	2619.38	-29.89	68.51	32.48	89.81	18 4 21	2019.4	-29.60	59.72
100.00	12 14 56	3630.63	-10.20	135.65	27.20	61.75	13 15 27	3030.6	-13.90	128.81
110.00	19 9 6	2280.21	-33.79	42.54	32.27	95.54	19 47 6	1680.2	-32.65	33.49
110.00	12 43 1	3542.57	-6.86	126.96	25.18	56.43	13 42 3	2942.6	-11.22	120.59

DIFFERENTIAL CORRECTIONS
TDE .4503 TRA 2.7126 TC-14.0826 BAU 1.9154
RDE .2523 RRA .0984 RC3 .3687 FAU .36383
FDE -.0601 FRA 7.1118 FC-30.9722 BSP 36475
BDE .5161 BRA 2.7143 BC314.0874 FSP 7124

MID-COURSE EXECUTION ACCURACY
SGT10483.9 SGR 546.2 SG3 2092.8
RRT -.1239 RRF -.1495 RTF .9935
SGB10498.1 R23 .0263 R13 -.9935
SG110484.1 SG2 542.0 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 1816.4 SR 457.0 SS 1303.7
CRT .5518 CRS -.0986 CST -.8834
LSA 2185.5 MSA 656.3 SSA 29.4
EL1 1834.6 EL2 377.4 ALF 8.26

LAUNCH DATE NOV 13 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 786.127 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.908 GAL -2.88 AZL 88.12 HCA 237.71 SMA 186.84 ECC .21351 INC 1.8771 V1 30.101
RP 212.43 LAP -1.59 LOP 288.35 VP 23.221 GAP -9.52 AZP 91.00 TAL 343.54 TAP 221.24 RCA 146.95 APO 226.74 V2 25.831
RC 299.592 GL 19.59 GP -.33 ZAL 113.10 ZAP 52.81 ETS 179.06 ZAE 80.36 ETE 179.09 ZAC 83.50 ETC 258.21 CLP 52.81

PLANETOCENTRIC CONIC

C3 10.309 VHL 3.211 DLA 23.76 RAL 174.58 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.612 DPA 8.66 RAP 163.17 ECC 1.1697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 10	2922.28	-28.27	90.76	33.31	88.33	16 38 53	2322.3	-28.20	82.10
90.00	11 9 16	3857.97	-10.77	152.66	28.70	63.65	12 13 34	3258.0	-14.23	145.69
100.00	17 30 42	2598.18	-29.89	66.94	33.33	90.64	18 14 0	1998.2	-29.48	58.15
100.00	12 11 26	3657.30	-9.34	137.16	27.94	61.47	13 12 23	3057.3	-13.08	130.37
110.00	19 17 8	2265.17	-33.68	41.38	33.06	96.22	19 54 53	1665.2	-32.45	32.36
110.00	12 41 28	3563.08	-6.08	128.04	25.96	56.30	13 40 51	2963.1	-10.47	121.70

DIFFERENTIAL CORRECTIONS
TDE .3938 TRA 2.8474 TC-14.2340 BAU 1.9625
RDE .2576 RRA .0993 RC3 .3737 FAU .35123
FDE -.2146 FRA 6.9943 FC-29.4946 BSP 37043
BDE .4705 BRA 2.8492 BC314.2389 FSP 6808

MID-COURSE EXECUTION ACCURACY
SGT10717.6 SGR 553.6 SG3 2016.8
RRT -.1341 RRF -.1610 RTF .9936
SGB10731.8 R23 .0277 R13 -.9936
SG110717.8 SG2 548.5 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 1828.3 SR 463.4 SS 1294.4
CRT .4931 CRS -.0299 CST -.8835
LSA 2188.1 MSA 666.6 SSA 28.9
EL1 1843.3 EL2 399.9 ALF 7.48

LAUNCH DATE NOV 13 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 790.347 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.911	GAL	-2.97	AZL	88.12	HCA	238.91	SMA	186.91	ECC	.21417	INC	1.8758
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.262	GAP	-9.66	AZP	90.97	TAL	343.01	TAP	221.92	RCA	146.88	APO	226.94
RC	300.645	GL	19.43	GP	-.32	ZAL	114.02	ZAP	51.65	ETS	179.06	ZAE	78.92	ETE	179.12	ZAC	83.52	ETC	258.20

V1	30.101	V2	25.863	CLP	51.65														

PLANETOCENTRIC CONIC

C3	10.460	VHL	3.234	DLA	23.23	RAL	175.41	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	3.673	DPA	8.65	RAP	163.21

ECC	1.1721	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 1 19	2897.55	-28.31	88.96	34.19	89.24	16 49 37	2297.6	-28.11	80.30							
		90.00	11 4 42	3888.54	-9.84	154.43	29.45	63.31	12 9 30	3288.5	-13.35	147.50							
		100.00	17 40 38	2577.34	-29.86	65.39	34.18	91.45	18 23 35	1977.3	-29.34	56.62							
		100.00	12 8 4	3683.98	-8.47	138.66	28.71	61.23	13 9 28	3084.0	-12.24	131.91							
		110.00	19 25 13	2250.14	-33.56	40.22	33.87	96.89	20 2 43	1650.1	-32.25	31.23							
		110.00	12 39 58	3583.94	-5.29	129.14	26.77	56.18	13 39 42	2983.9	-9.70	122.82							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3418	TRA	2.9949	TC-14.3330	BAU	2.0050	SGT10938.9	SGR	560.6	SG3	1939.8	ST	1855.9	SR	469.7	SS	1292.0		
RDE	.2631	RRA	.1002	RC3 .3780	FAU	.33764	RRT -.1417	RRF	-.1690	RTF	.9937	CRT	.4365	CRS	.0263	CST	-.8871		
FDE	-.3362	FRA	6.9001	FC-27.9460	BSP	37789	SGB10953.2	R23	.0281	R13	-.9937	LSA	2209.6	MSA	671.8	SSA	28.5		
BDE	.4313	BRA	2.9966	BC314.3380	FSP	6551	SG110939.1	SG2	554.9	THA	179.58	EL1	1867.8	EL2	419.9	ALF	6.64		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 794.571 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.915	GAL	-3.08	AZL	88.13	HCA	240.12	SMA	186.98	ECC	.21488	INC	1.8745
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.303	GAP	-9.80	AZP	90.93	TAL	342.46	TAP	222.58	RCA	146.80	APO	227.16
RC	301.687	GL	19.26	GP	-.31	ZAL	114.96	ZAP	50.52	ETS	179.05	ZAE	77.51	ETE	179.14	ZAC	83.54	ETC	258.19

V1	30.101	V2	25.895	CLP	50.52														

PLANETOCENTRIC CONIC

C3	10.622	VHL	3.259	DLA	22.69	RAL	176.24	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	3.736	DPA	8.63	RAP	163.29

ECC	1.1748	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 12 18	2873.55	-28.32	87.20	35.09	90.12	17 0 12	2273.5	-28.00	78.55							
		90.00	11 0 23	3918.76	-8.91	156.16	30.22	63.01	12 5 41	3318.8	-12.46	149.28							
		100.00	17 50 31	2556.86	-29.82	63.87	35.05	92.25	18 33 8	1956.9	-29.18	55.12							
		100.00	12 4 51	3710.68	-7.59	140.16	29.51	61.00	13 6 41	3110.7	-11.40	133.44							
		110.00	19 33 21	2235.16	-33.44	39.07	34.69	97.56	20 10 36	1635.2	-32.03	30.12							
		110.00	12 38 31	3605.14	-4.49	130.26	27.61	56.08	13 38 36	3005.1	-8.91	123.96							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2867	TRA	3.1475	TC-14.4027	BAU	2.0459	SGT11151.6	SGR	567.5	SG3	1863.9	ST	1889.7	SR	475.9	SS	1292.3		
RDE	.2687	RRA	.1010	RC3 .3816	FAU	.32419	RRT -.1490	RRF	-.1767	RTF	.9937	CRT	.3779	CRS	.0806	CST	-.8916		
FDE	-.4510	FRA	6.8050	FC-26.4233	BSP	38544	SGB11166.1	R23	.0286	R13	-.9937	LSA	2258.3	MSA	675.7	SSA	28.1		
BDE	.3929	BRA	3.1491	BC314.4078	FSP	6304	SG111152.0	SG2	561.1	THA	179.56	EL1	1898.7	EL2	438.5	ALF	5.74		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 798.799 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.920	GAL	-3.18	AZL	88.13	HCA	241.32	SMA	187.05	ECC	.21561	INC	1.8733
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.343	GAP	-9.94	AZP	90.90	TAL	341.90	TAP	223.23	RCA	146.72	APO	227.38
RC	302.717	GL	19.09	GP	-.30	ZAL	115.92	ZAP	49.43	ETS	179.05	ZAE	76.13	ETE	179.17	ZAC	83.57	ETC	258.18

V1	30.101	V2	25.926	CLP	49.43														

PLANETOCENTRIC CONIC

C3	10.796	VHL	3.286	DLA	22.14	RAL	177.09	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	3.800	DPA	8.59	RAP	163.40

ECC	1.1777	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 23 7	2850.20	-28.30	85.49	36.00	90.98	17 10 38	2250.2	-27.87	76.85							
		90.00	10 56 17	3948.72	-7.98	157.87	31.03	62.74	12 2 6	3348.7	-11.58	151.04							
		100.00	18 0 20	2536.73	-29.75	62.37	35.94	93.03	18 42 37	1936.7	-29.01	53.65							
		100.00	12 1 45	3737.42	-6.70	141.65	30.34	60.80	13 4 3	3137.4	-10.55	134.97							
		110.00	19 41 30	2220.25	-33.30	37.93	35.53	98.23	20 18 30	1620.2	-31.80	29.02							
		110.00	12 37 5	3626.67	-3.67	131.38	28.47	55.99	13 37 32	3026.7	-8.11	125.11							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2280	TRA	3.3046	TC-14.4482	BAU	2.0860	SGT11358.1	SGR	574.1	SG3	1789.8	ST	1929.4	SR	482.0	SS	1294.9		
RDE	.2744	RRA	.1017	RC3 .3847	FAU	.31102	RRT -.1562	RRF	-.1843	RTF	.9937	CRT	.3175	CRS	.1331	CST	-.8969		
FDE	-.5597	FRA	6.7087	FC-24.9416	BSP	39260	SGB11372.6	R23	.0290	R13	-.9937	LSA	2274.0	MSA	678.0	SSA	27.6		
BDE	.3568	BRA	3.3062	BC314.4534	FSP	6060	SG111358.4	SG2	567.0	THA	179.55	EL1	1935.8	EL2	455.6	ALF	4.80		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 803.030 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	32.924	GAL	-3.29	AZL	88.13	HCA	242.54	SMA	187.13	ECC	.21639	INC	1.8721
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.383	GAP	-10.07	AZP	90.86	TAL	341.33	TAP	223.86	RCA	146.63	APO	227.62
RC	303.736	GL	18.91	GP	-.29	ZAL	116.89	ZAP	48.36	ETS	179.04	ZAE	74.78	ETE	179.19	ZAC	83.61	ETC	258.16

V1	30.101	V2	25.956	CLP	48.36														

PLANETOCENTRIC CONIC

C3	10.982	VHL	3.314	DLA	21.57	RAL	177.94	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	3.867	DPA	8.54	RAP	163.54

ECC	1.1807	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 33 49	2827.45	-28.26	83.83	36.92	91.81	17 20 56	2227.4	-27.71	75.21							
		90.00	10 52 24	3978.49	-7.05	159.56	31.87	62.50	11 58 42	3378.5	-10.68	152.76							
		100.00	18 10 6	2516.95	-29.67	60.91	36.84	93.80	18 52 3	1916.9	-28.83	52.20							
		100.00	11 58 47	3764.23	-5.81	143.14	31.20	60.63	13 1 31	3164.2	-9.68	136.49							
		110.00	19 49 41	2205.42	-33.15	36.79	36.39	98.88	20 26 26	1605.4	-31.56	27.93							
		110.00	12 35 42	3648.52	-2.84	132.53	29.36	55.92	13 36 31	3048.5	-7.29	126.27							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1649	TRA	3.4658	TC-14.4731	BAU	2.1257	SGT11559.3	SGR	580.6	SG3	1717.5	ST	1975.0	SR	488.1	SS	1299.3		
RDE	.2804	RRA	.1024	RC3 .3873	FAU	.29825	RRT -.1636	RRF	-.1921	RTF	.9937	CRT	.2555	CRS	.1840	CST	-.9027		
FDE	-.6637	FRA	6.6096	FC-23.5113	BSP	39946	SGB11573.9	R23	.0296	R13	-.9937	LSA	2316.4	MSA	678.8	SSA	27.2		
BDE	.3252	BRA	3.4673	BC314.4783	FSP	5821	SG111559.7	SG2	572.7	THA	179.53	EL1	1979.2	EL2	470.9	ALF	3.83		

LAUNCH DATE NOV 13 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 807.264 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.928 GAL -3.40 AZL 88.13 HCA 243.75 SMA 187.20 ECC .21720 INC 1.8710 V1 30.101
RP 211.08 LAP -1.68 LOP 294.40 VP 23.422 GAP -10.21 AZP 90.83 TAL 340.74 TAP 224.49 RCA 146.54 APO 227.86 V2 25.986
RC 304.746 GL 18.72 GP -.29 ZAL 117.88 ZAP 47.33 ETS 179.03 ZAE 73.46 ETE 179.21 ZAC 83.65 ETC 258.13 CLP 47.33

PLANETOCENTRIC CONIC

C3 11.182 VHL 3.344 DLA 21.00 RAL 178.80 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 3.934 DPA 8.47 RAP 163.71 ECC 1.1840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 22	2805.25	-28.21	82.21	37.85	92.62	17 31 8	2205.3	-27.54	73.60
90.00	10 48 41	4008.13	-6.12	161.24	32.74	62.30	11 55 29	3408.1	-9.78	154.47
100.00	18 19 49	2497.49	-29.58	59.47	37.75	94.55	19 1 27	1897.5	-28.63	50.79
100.00	11 55 56	3791.12	-4.91	144.63	32.08	60.48	12 59 7	3191.1	-8.81	138.01
110.00	19 57 53	2190.68	-32.99	35.67	37.26	99.53	20 34 24	1590.7	-31.32	26.85
110.00	12 34 21	3670.69	-1.99	133.69	30.27	55.87	13 35 32	3070.7	-6.46	127.45

DIFFERENTIAL CORRECTIONS
TDE .0991 TRA 3.6327 TC-14.4697 BAU 2.1640
RDE .2865 RRA .1029 RC3 .3893 FAU .28570
FDE -.7594 FRA 6.5108 FC-22.1186 BSP 40643
BDE .3031 BRA 3.6341 BC314.4749 FSP 5596

MID-COURSE EXECUTION ACCURACY
SGT11752.7 SGR 586.8 SG3 1646.8
RRT -.1707 RRF -.1997 RTF .9937
SGB11767.4 R23 .0301 R13 -.9937
SG111753.2 SG2 578.2 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 2028.1 SR 494.2 SS 1305.1
CRT .1940 CRS .2314 CST -.9089
LSA 2366.5 MSA 677.9 SSA 26.7
EL1 2030.5 EL2 484.2 ALF 2.87

LAUNCH DATE NOV 13 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 811.501 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.933 GAL -3.52 AZL 88.13 HCA 244.97 SMA 187.28 ECC .21805 INC 1.8699 V1 30.101
RP 210.82 LAP -1.69 LOP 295.61 VP 23.460 GAP -10.35 AZP 90.79 TAL 340.13 TAP 225.10 RCA 146.44 APO 228.12 V2 26.015
RC 305.746 GL 18.52 GP -.28 ZAL 118.88 ZAP 46.33 ETS 179.02 ZAE 72.17 ETE 179.23 ZAC 83.70 ETC 258.10 CLP 46.33

PLANETOCENTRIC CONIC

C3 11.397 VHL 3.376 DLA 20.41 RAL 179.66 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 4.004 DPA 8.40 RAP 163.92 ECC 1.1876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 49	2783.58	-28.13	80.83	38.80	93.41	17 41 13	2183.6	-27.36	72.05
90.00	10 45 9	4037.67	-5.18	162.90	33.64	62.12	11 52 26	3437.7	-8.87	156.17
100.00	18 29 28	2478.37	-29.46	58.06	38.68	95.29	19 10 47	1878.4	-28.42	49.41
100.00	11 53 11	3818.11	-4.00	146.12	33.00	60.35	12 56 49	3218.1	-7.92	139.52
110.00	20 6 6	2176.07	-32.82	34.57	38.15	100.16	20 42 22	1576.1	-31.07	25.78
110.00	12 33 3	3693.17	-1.13	134.86	31.21	55.83	13 34 36	3093.2	-5.61	128.63

DIFFERENTIAL CORRECTIONS
TDE .0303 TRA 3.8056 TC-14.4429 BAU 2.2015
RDE .2928 RRA .1033 RC3 .3907 FAU .27350
FDE -.8483 FRA 6.4119 FC-20.7756 BSP 41315
BDE .2944 BRA 3.8070 BC314.4482 FSP 5373

MID-COURSE EXECUTION ACCURACY
SGT11941.1 SGR 592.9 SG3 1578.2
RRT -.1777 RRF -.2072 RTF .9936
SGB11955.8 R23 .0307 R13 -.9937
SG111941.5 SG2 583.4 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 2088.6 SR 500.1 SS 1311.9
CRT .1333 CRS .2759 CST -.9153
LSA 2424.1 MSA 675.7 SSA 26.2
EL1 2089.7 EL2 495.4 ALF 1.94

LAUNCH DATE NOV 13 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 815.741 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.937 GAL -3.64 AZL 88.13 HCA 246.19 SMA 187.36 ECC .21894 INC 1.8687 V1 30.101
RP 210.58 LAP -1.71 LOP 296.84 VP 23.498 GAP -10.48 AZP 90.75 TAL 339.51 TAP 225.70 RCA 146.34 APO 228.38 V2 26.043
RC 306.737 GL 18.32 GP -.27 ZAL 119.90 ZAP 45.36 ETS 179.01 ZAE 70.91 ETE 179.25 ZAC 83.76 ETC 258.07 CLP 45.36

PLANETOCENTRIC CONIC

C3 11.627 VHL 3.410 DLA 19.81 RAL 180.53 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 4.075 DPA 8.30 RAP 164.15 ECC 1.1914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 10	2762.41	-28.03	79.09	39.76	94.18	17 51 12	2162.4	-27.16	70.53
90.00	10 41 45	4067.15	-4.24	164.56	34.57	61.98	11 49 32	3467.2	-7.95	157.85
100.00	18 39 4	2459.59	-29.34	56.68	39.63	96.00	19 20 4	1859.6	-28.20	48.06
100.00	11 50 32	3845.20	-3.09	147.61	33.94	60.25	12 54 37	3245.2	-7.03	141.04
110.00	20 14 19	2161.60	-32.64	33.48	39.06	100.78	20 50 20	1561.6	-30.81	24.74
110.00	12 31 46	3715.95	-.26	136.05	32.17	55.82	13 33 42	3116.0	-4.74	129.83

DIFFERENTIAL CORRECTIONS
TDE -.0425 TRA 3.9830 TC-14.3958 BAU 2.2386
RDE .2993 RRA .1036 RC3 .3916 FAU .26161
FDE -.9315 FRA 6.3111 FC-19.4791 BSP 41980
BDE .3023 BRA 3.9843 BC314.4011 FSP 5158

MID-COURSE EXECUTION ACCURACY
SGT12123.9 SGR 598.7 SG3 1511.3
RRT -.1848 RRF -.2148 RTF .9936
SGB12138.7 R23 .0313 R13 -.9936
SG112124.4 SG2 588.4 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 2155.4 SR 506.0 SS 1319.3
CRT .0735 CRS .3178 CST -.9217
LSA 2488.0 MSA 672.0 SSA 25.7
EL1 2155.8 EL2 504.6 ALF 1.05

LAUNCH DATE NOV 13 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 819.982 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.942 GAL -3.76 AZL 88.13 HCA 247.42 SMA 187.44 ECC .21988 INC 1.8676 V1 30.101
RP 210.34 LAP -1.72 LOP 298.06 VP 23.535 GAP -10.62 AZP 90.72 TAL 338.88 TAP 226.29 RCA 146.23 APO 228.66 V2 26.071
RC 307.719 GL 18.11 GP -.26 ZAL 120.92 ZAP 44.42 ETS 179.00 ZAE 69.68 ETE 179.27 ZAC 83.82 ETC 258.03 CLP 44.42

PLANETOCENTRIC CONIC

C3 11.873 VHL 3.446 DLA 19.20 RAL 181.41 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 4.147 DPA 8.20 RAP 164.42 ECC 1.1954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 24	2741.72	-27.92	77.58	40.74	94.92	18 1 6	2141.7	-26.95	69.05
90.00	10 38 30	4096.61	-3.29	166.21	35.53	61.86	11 46 46	3496.6	-7.03	159.52
100.00	18 48 37	2441.14	-29.20	55.32	40.59	96.70	19 29 18	1841.1	-27.96	46.74
100.00	11 47 58	3872.42	-2.17	149.11	34.91	60.18	12 52 30	3272.4	-6.12	142.55
110.00	20 22 32	2147.30	-32.45	32.40	39.99	101.39	20 58 19	1547.3	-30.54	23.71
110.00	12 30 32	3739.04	.62	137.25	33.16	55.82	13 32 51	3139.0	-3.87	131.04

DIFFERENTIAL CORRECTIONS
TDE -.1195 TRA 4.1655 TC-14.3284 BAU 2.2753
RDE .3061 RRA .1037 RC3 .3920 FAU .25009
FDE-1.0098 FRA 6.2094 FC-18.2352 BSP 42609
BDE .3286 BRA 4.1668 BC314.3338 FSP 4949

MID-COURSE EXECUTION ACCURACY
SGT12301.8 SGR 604.4 SG3 1446.5
RRT -.1922 RRF -.2226 RTF .9935
SGB12316.6 R23 .0318 R13 -.9935
SG112302.3 SG2 593.1 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 2229.0 SR 511.9 SS 1327.2
CRT .0149 CRS .3575 CST -.9280
LSA 2558.5 MSA 667.2 SSA 25.3
EL1 2229.0 EL2 511.9 ALF .21

LAUNCH DATE NOV 13 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 824.226 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.947 GAL -3.89 AZL 88.13 HCA 248.64 SMA 187.53 ECC .22085 INC 1.8665 V1 30.101
RP 210.10 LAP -1.74 LOP 299.29 VP 23.572 GAP -10.75 AZP 90.68 TAL 338.22 TAP 226.87 RCA 146.11 APO 228.94 V2 26.098
RC 308.691 GL 17.90 GP -.26 ZAL 121.96 ZAP 43.50 ETS 178.99 ZAE 68.47 ETE 179.30 ZAC 83.89 ETC 257.99 CLP 43.50

PLANETOCENTRIC CONIC

C3 12.136 VHL 3.484 DLA 18.58 RAL 182.29 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 4.221 DPA 8.08 RAP 164.71 ECC 1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 32	2721.51	-27.79	76.12	41.73	95.65	18 10 54	2121.5	-26.72	67.61
90.00	10 35 22	4126.06	-2.35	167.86	36.51	61.77	11 44 8	3526.1	-6.10	161.19
100.00	18 58 5	2423.04	-29.05	54.00	41.57	97.38	19 38 28	1823.0	-27.72	45.45
100.00	11 45 30	3899.77	-1.24	150.61	35.90	60.13	12 50 29	3299.8	-5.21	144.07
110.00	20 30 44	2133.17	-32.25	31.35	40.93	101.99	21 6 18	1533.2	-30.27	22.70
110.00	12 29 20	3762.41	1.51	138.47	34.18	55.85	13 32 2	3162.4	-2.98	132.26

DIFFERENTIAL CORRECTIONS
TDE -.1991 TRA 4.3545 TC-14.2363 BAU 2.3108
RDE .3130 RRA .1037 RC3 .3918 FAU .23886
FDE-1.0815 FRA 6.1069 FC-17.0390 BSP 43253
BDE .3710 BRA 4.3557 BC314.2417 FSP 4748

MID-COURSE EXECUTION ACCURACY
SGT12473.1 SGR 609.9 SG3 1383.4
RRT -.1993 RRF -.2303 RTF .9934
SGB12488.0 R23 .0325 R13 -.9934
SG112473.7 SG2 597.6 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 2309.4 SR 517.7 SS 1334.9
CRT -.0407 CRS .3942 CST -.9339
LSA 2635.2 MSA 661.7 SSA 24.7
EL1 2309.5 EL2 517.3 ALF 179.45

LAUNCH DATE NOV 13 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 828.470 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.952 GAL -4.02 AZL 88.13 HCA 249.87 SMA 187.61 ECC .22188 INC 1.8654 V1 30.101
RP 209.88 LAP -1.75 LOP 300.52 VP 23.607 GAP -10.88 AZP 90.64 TAL 337.56 TAP 227.43 RCA 145.98 APO 229.24 V2 26.124
RC 309.654 GL 17.68 GP -.25 ZAL 123.00 ZAP 42.61 ETS 178.98 ZAE 67.29 ETE 179.32 ZAC 83.96 ETC 257.95 CLP 42.61

PLANETOCENTRIC CONIC

C3 12.418 VHL 3.524 DLA 17.95 RAL 183.17 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 4.297 DPA 7.95 RAP 165.03 ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 34	2701.77	-27.65	74.69	42.74	96.35	18 20 36	2101.8	-26.49	66.22
90.00	10 32 22	4155.53	-1.40	169.50	37.53	61.71	11 41 37	3555.5	-5.17	162.85
100.00	19 7 31	2405.29	-28.89	52.70	42.56	98.05	19 47 36	1805.3	-27.47	44.19
100.00	11 43 6	3927.24	-.31	152.12	36.92	60.11	12 48 34	3327.2	-4.29	145.58
110.00	20 38 56	2119.24	-32.05	30.31	41.89	102.57	21 14 15	1519.2	-29.99	21.71
110.00	12 28 10	3786.06	2.42	139.70	35.22	55.89	13 31 16	3186.1	-2.07	133.50

DIFFERENTIAL CORRECTIONS
TDE -.2810 TRA 4.5487 TC-14.1242 BAU 2.3457
RDE .3202 RRA .1036 RC3 .3911 FAU .22795
FDE-1.1458 FRA 6.0033 FC-15.8916 BSP 43880
BDE .4260 BRA 4.5499 BC314.1296 FSP 4553

MID-COURSE EXECUTION ACCURACY
SGT12638.7 SGR 615.1 SG3 1322.2
RRT -.2065 RRF -.2380 RTF .9933
SGB12653.7 R23 .0332 R13 -.9933
SG112639.3 SG2 601.8 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 2395.2 SR 523.4 SS 1341.6
CRT -.0929 CRS .4279 CST -.9393
LSA 2716.7 MSA 655.5 SSA 24.2
EL1 2395.8 EL2 521.0 ALF 178.78

LAUNCH DATE NOV 13 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 832.716 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.957 GAL -4.16 AZL 88.14 HCA 251.10 SMA 187.70 ECC .22294 INC 1.8643 V1 30.101
RP 209.66 LAP -1.76 LOP 301.75 VP 23.642 GAP -11.02 AZP 90.60 TAL 336.88 TAP 227.98 RCA 145.85 APO 229.55 V2 26.149
RC 310.607 GL 17.45 GP -.25 ZAL 124.06 ZAP 41.75 ETS 178.97 ZAE 66.14 ETE 179.34 ZAC 84.04 ETC 257.90 CLP 41.75

PLANETOCENTRIC CONIC

C3 12.719 VHL 3.566 DLA 17.31 RAL 184.05 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 4.374 DPA 7.81 RAP 165.37 ECC 1.2093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 31	2682.49	-27.50	73.30	43.76	97.03	18 30 13	2082.5	-26.24	64.86
90.00	10 29 28	4185.03	-.44	171.15	38.57	61.69	11 39 13	3585.0	-4.23	164.51
100.00	19 16 52	2387.91	-28.71	51.44	43.57	98.69	19 56 40	1787.9	-27.21	42.96
100.00	11 40 48	3954.84	.62	153.63	37.98	60.11	12 46 43	3354.8	-3.36	147.10
110.00	20 47 7	2105.53	-31.84	29.30	42.87	103.14	21 22 12	1505.5	-29.71	20.74
110.00	12 27 2	3809.98	3.33	140.95	36.29	55.96	13 30 32	3210.0	-1.16	134.75

DIFFERENTIAL CORRECTIONS
TDE -.3678 TRA 4.7488 TC-13.9953 BAU 2.3806
RDE .3277 RRA .1032 RC3 .3899 FAU .21736
FDE-1.2064 FRA 5.8980 FC-14.7956 BSP 44471
BDE .4926 BRA 4.7499 BC314.0007 FSP 4363

MID-COURSE EXECUTION ACCURACY
SGT12800.7 SGR 620.2 SG3 1262.9
RRT -.2140 RRF -.2461 RTF .9931
SGB12815.7 R23 .0339 R13 -.9931
SG112801.4 SG2 605.8 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 2487.3 SR 529.1 SS 1348.0
CRT -.1434 CRS .4598 CST -.9444
LSA 2804.0 MSA 648.6 SSA 23.8
EL1 2488.5 EL2 523.4 ALF 178.17

LAUNCH DATE NOV 13 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 836.962 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.962 GAL -4.29 AZL 88.14 HCA 252.34 SMA 187.79 ECC .22406 INC 1.8633 V1 30.101
RP 209.44 LAP -1.78 LOP 302.99 VP 23.677 GAP -11.15 AZP 90.57 TAL 336.18 TAP 228.52 RCA 145.71 APO 229.86 V2 26.174
RC 311.551 GL 17.22 GP -.24 ZAL 125.12 ZAP 40.91 ETS 178.95 ZAE 65.00 ETE 179.36 ZAC 84.12 ETC 257.85 CLP 40.91

PLANETOCENTRIC CONIC

C3 13.040 VHL 3.611 DLA 16.67 RAL 184.94 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 4.453 DPA 7.66 RAP 165.74 ECC 1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 22	2663.67	-27.34	71.95	44.80	97.69	18 39 46	2063.7	-25.99	63.54
90.00	10 26 40	4214.57	.51	172.79	39.64	61.69	11 36 55	3614.6	-3.28	166.16
100.00	19 26 9	2370.89	-28.53	50.21	44.59	99.31	20 5 40	1770.9	-26.95	41.76
100.00	11 38 34	3982.58	1.57	155.15	39.05	60.14	12 44 57	3382.6	-2.42	148.63
110.00	20 55 16	2092.07	-31.63	28.30	43.86	103.69	21 30 8	1492.1	-29.43	19.79
110.00	12 25 57	3834.17	4.25	142.22	37.38	56.05	13 29 51	3234.2	-.24	136.01

DIFFERENTIAL CORRECTIONS
TDE -.4567 TRA 4.9564 TC-13.8442 BAU 2.4144
RDE .3354 RRA .1027 RC3 .3882 FAU .20706
FDE-1.2594 FRA 5.7936 FC-13.7472 BSP 45081
BDE .5666 BRA 4.9575 BC313.8497 FSP 4181

MID-COURSE EXECUTION ACCURACY
SGT12957.1 SGR 625.1 SG3 1205.4
RRT -.2213 RRF -.2539 RTF .9929
SGB12972.2 R23 .0346 R13 -.9929
SG112957.8 SG2 609.6 THA 179.39

ORBIT DETERMINATION ACCURACY
ST 2584.6 SR 534.7 SS 1353.1
CRT -.1899 CRS .4887 CST -.9491
LSA 2895.7 MSA 641.3 SSA 23.3
EL1 2586.7 EL2 524.5 ALF 177.65

LAUNCH DATE NOV 13 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 841.208 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.967 GAL -4.44 AZL 88.14 HCA 253.58 SMA 187.88 ECC .22523 INC 1.8623 V1 30.101
RP 209.24 LAP -1.79 LOP 304.22 VP 23.710 GAP -11.29 AZP 90.53 TAL 335.47 TAP 229.04 RCA 145.56 APO 230.19 V2 26.198
RC 312.486 GL 16.98 GP -.23 ZAL 126.19 ZAP 40.10 ETS 178.94 ZAE 63.90 ETE 179.37 ZAC 84.21 ETC 257.80 CLP 40.10

PLANETOCENTRIC CONIC

C3 13.383 VHL 3.658 DLA 16.02 RAL 185.82 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 4.533 DPA 7.50 RAP 166.13 ECC 1.2202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 7	2645.31	-27.16	70.63	45.85	98.33	18 49 13	2045.3	-25.73	62.26
90.00	10 23 59	4244.16	1.46	174.44	40.74	61.72	11 34 43	3644.2	-2.33	167.82
100.00	19 35 23	2354.25	-28.34	49.01	45.63	99.92	20 14 37	1754.2	-26.68	40.60
100.00	11 36 24	4010.45	2.51	156.68	40.16	60.20	12 43 15	3410.5	-1.47	150.16
110.00	21 3 24	2078.86	-31.42	27.34	44.88	104.23	21 38 2	1478.9	-29.14	18.87
110.00	12 24 53	3858.61	5.18	143.51	38.50	56.16	13 29 11	3258.6	.70	137.28

DIFFERENTIAL CORRECTIONS
TDE -.5481 TRA 5.1700 TC-13.6767 BAU 2.4479
RDE .3434 RRA .1020 RC3 .3860 FAU .19707
FDE-1.3071 FRA 5.6877 FC-12.7489 BSP 45692
BDE .6468 BRA 5.1710 BC313.6822 FSP 4005

MID-COURSE EXECUTION ACCURACY
SGT13108.7 SGR 629.8 SG3 1149.8
RRT -.2286 RRF -.2619 RTF .9927
SGB13123.8 R23 .0354 R13 -.9927
SG113109.5 SG2 613.0 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 2686.0 SR 540.2 SS 1356.9
CRT -.2331 CRS .5156 CST -.9531
LSA 2990.8 MSA 634.1 SSA 22.9
EL1 2689.0 EL2 524.7 ALF 177.21

LAUNCH DATE NOV 13 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 845.453 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.972 GAL -4.59 AZL 88.14 HCA 254.82 SMA 187.97 ECC .22644 INC 1.8612 V1 30.101
RP 209.04 LAP -1.80 LOP 305.46 VP 23.743 GAP -11.42 AZP 90.49 TAL 334.74 TAP 229.56 RCA 145.41 APO 230.54 V2 26.221
RC 313.411 GL 16.73 GP -.23 ZAL 127.27 ZAP 39.31 ETS 178.93 ZAE 62.81 ETE 179.39 ZAC 84.30 ETC 257.74 CLP 39.31

PLANETOCENTRIC CONIC

C3 13.748 VHL 3.708 DLA 15.36 RAL 186.71 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 4.615 DPA 7.32 RAP 166.55 ECC 1.2263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 47	2627.42	-26.98	69.35	46.92	98.94	18 58 34	2027.4	-25.47	61.01
90.00	10 21 23	4273.81	2.42	176.10	41.87	61.78	11 32 36	3673.8	-1.37	169.47
100.00	19 44 32	2338.00	-28.15	47.84	46.69	100.50	20 23 30	1738.0	-26.41	39.47
100.00	11 34 19	4038.46	3.46	158.22	41.29	60.29	12 41 37	3438.5	-.52	151.70
110.00	21 11 29	2065.93	-31.19	26.39	45.91	104.74	21 45 55	1465.9	-28.86	17.97
110.00	12 23 51	3883.30	6.11	144.81	39.65	56.30	13 28 34	3283.3	1.64	138.57

DIFFERENTIAL CORRECTIONS
TDE -.6432 TRA 5.3894 TC-13.4927 BAU 2.4810
RDE .3516 RRA .1010 RC3 .3833 FAU .18738
FDE-1.3503 FRA 5.5792 FC-11.7992 BSP 46276
BDE .7330 BRA 5.3904 BC313.4981 FSP 3835

MID-COURSE EXECUTION ACCURACY
SGT13255.1 SGR 634.2 SG3 1095.8
RRT -.2362 RRF -.2702 RTF .9925
SGB13270.2 R23 .0363 R13 -.9925
SG113255.9 SG2 616.3 THA 179.35

ORBIT DETERMINATION ACCURACY
ST 2791.3 SR 545.6 SS 1359.1
CRT -.2736 CRS .5408 CST -.9568
LSA 3089.2 MSA 626.7 SSA 22.5
EL1 2795.4 EL2 524.0 ALF 176.83

LAUNCH DATE NOV 13 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 849.698 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.978 GAL -4.74 AZL 88.14 HCA 256.06 SMA 188.07 ECC .22772 INC 1.8602 V1 30.101
RP 208.85 LAP -1.81 LOP 306.71 VP 23.775 GAP -11.56 AZP 90.45 TAL 334.00 TAP 230.06 RCA 145.24 APO 230.89 V2 26.243
RC 314.329 GL 16.48 GP -.22 ZAL 128.35 ZAP 38.54 ETS 178.91 ZAE 61.74 ETE 179.41 ZAC 84.40 ETC 257.69 CLP 38.54

PLANETOCENTRIC CONIC

C3 14.138 VHL 3.760 DLA 14.71 RAL 187.59 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 4.699 DPA 7.14 RAP 166.99 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 21	2610.00	-26.79	68.11	48.00	99.53	19 7 51	2010.0	-25.20	59.81
90.00	10 18 52	4303.52	3.37	177.76	43.02	61.87	11 30 35	3703.5	-.41	171.13
100.00	19 53 36	2322.15	-27.95	46.70	47.77	101.07	20 32 19	1722.2	-26.13	38.37
100.00	11 32 18	4066.60	4.40	159.77	42.45	60.40	12 40 4	3466.6	.43	153.24
110.00	21 19 32	2053.30	-30.97	25.48	46.96	105.24	21 53 45	1453.3	-28.57	17.10
110.00	12 22 51	3908.22	7.05	146.12	40.82	56.47	13 28 0	3308.2	2.60	139.87

DIFFERENTIAL CORRECTIONS
TDE -.7421 TRA 5.6157 TC-13.2976 BAU 2.5145
RDE .3602 RRA .0999 RC3 .3802 FAU .17810
FDE-1.3884 FRA 5.4701 FC-10.9056 BSP 46831
BDE .8249 BRA 5.6166 BC313.3030 FSP 3669

MID-COURSE EXECUTION ACCURACY
SGT13399.5 SGR 638.6 SG3 1044.0
RRT -.2440 RRF -.2787 RTF .9922
SGB13414.7 R23 .0372 R13 -.9922
SG113400.4 SG2 619.2 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 2900.5 SR 551.0 SS 1359.9
CRT -.3116 CRS .5642 CST -.9601
LSA 3190.9 MSA 619.0 SSA 22.0
EL1 2905.7 EL2 522.6 ALF 176.50

LAUNCH DATE NOV 13 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 853.941 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.983 GAL -4.89 AZL 88.14 HCA 257.30 SMA 188.16 ECC .22904 INC 1.8592 V1 30.101
RP 208.67 LAP -1.81 LOP 307.95 VP 23.806 GAP -11.69 AZP 90.41 TAL 333.24 TAP 230.54 RCA 145.07 APO 231.26 V2 26.264
RC 315.238 GL 16.23 GP -.22 ZAL 129.43 ZAP 37.79 ETS 178.89 ZAE 60.70 ETE 179.43 ZAC 84.51 ETC 257.63 CLP 37.79

PLANETOCENTRIC CONIC

C3 14.554 VHL 3.815 DLA 14.04 RAL 188.47 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 4.784 DPA 6.94 RAP 167.45 ECC 1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 49	2593.05	-26.59	66.91	49.11	100.11	19 17 3	1993.0	-24.98	58.84
90.00	10 16 26	4333.30	4.33	179.43	44.21	61.99	11 28 39	3733.3	.55	172.79
100.00	20 2 37	2306.72	-27.74	45.60	48.86	101.61	20 41 3	1706.7	-25.86	37.31
100.00	11 30 20	4094.86	5.35	161.34	43.64	60.55	12 38 35	3494.9	1.39	154.79
110.00	21 27 32	2040.98	-30.75	24.59	48.02	105.73	22 1 33	1441.0	-28.29	16.25
110.00	12 21 54	3933.37	8.00	147.46	42.02	56.65	13 27 27	3333.4	3.55	141.19

DIFFERENTIAL CORRECTIONS
TDE -.8434 TRA 5.8490 TC-13.0852 BAU 2.5471
RDE .3691 RRA .0984 RC3 .3766 FAU .16905
FDE-1.4219 FRA 5.3598 FC-10.0557 BSP 47398
BDE .9206 BRA 5.8499 BC313.0906 FSP 3508

MID-COURSE EXECUTION ACCURACY
SGT13538.0 SGR 642.7 SG3 993.7
RRT -.2519 RRF -.2874 RTF .9919
SGB13553.3 R23 .0382 R13 -.9919
SG113539.0 SG2 621.9 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 3012.2 SR 556.2 SS 1359.0
CRT -.3464 CRS .5861 CST -.9629
LSA 3294.7 MSA 611.7 SSA 21.6
EL1 3018.6 EL2 520.7 ALF 176.23

LAUNCH DATE NOV 13 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 858.181 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.989 GAL -5.05 AZL 88.14 HCA 258.55 SMA 188.26 ECC .23043 INC 1.8582 V1 30.101
RP 208.49 LAP -1.82 LOP 309.20 VP 23.836 GAP -11.83 AZP 90.37 TAL 332.47 TAP 231.01 RCA 144.88 APO 231.64 V2 26.285
RC 316.140 GL 15.97 GP -.21 ZAL 130.51 ZAP 37.06 ETS 178.88 ZAE 59.67 ETE 179.45 ZAC 84.62 ETC 257.56 CLP 37.06

PLANETOCENTRIC CONIC

C3 14.998 VHL 3.873 DLA 13.38 RAL 189.35 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 4.871 DPA 6.74 RAP 167.93 ECC 1.2468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 12	2576.58	-26.39	65.75	50.23	100.66	19 26 9	1976.6	-24.65	57.51
90.00	10 14 5	4363.14	5.28	181.10	45.42	62.14	11 26 48	3763.1	1.51	174.45
100.00	20 11 32	2291.70	-27.53	44.54	49.97	102.14	20 49 44	1691.7	-25.58	36.28
100.00	11 28 26	4123.25	6.30	162.91	44.86	60.72	12 37 9	3523.3	2.35	156.35
110.00	21 35 30	2028.99	-30.52	23.72	49.10	106.19	22 9 19	1429.0	-28.00	15.43
110.00	12 20 58	3958.73	8.94	148.81	43.24	56.87	13 26 56	3358.7	4.52	142.52

DIFFERENTIAL CORRECTIONS
TDE -.9486 TRA 6.0895 TC-12.8616 BAU 2.5799
RDE .3782 RRA .0968 RC3 .3727 FAU .16028
FDE-1.4507 FRA 5.2478 FC3-9.2523 BSP 47934
BDE 1.0212 BRA 6.0902 BC312.8670 FSP 3352

MID-COURSE EXECUTION ACCURACY
SGT13673.4 SGR 646.6 SG3 945.1
RRT -.2599 RRF -.2962 RTF .9916
SGB13688.7 R23 .0393 R13 -.9916
SG113674.4 SG2 624.3 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 3126.8 SR 561.4 SS 1356.3
CRT -.3790 CRS .6065 CST -.9654
LSA 3400.9 MSA 604.2 SSA 21.2
EL1 3134.3 EL2 518.3 ALF 176.00

LAUNCH DATE NOV 13 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 862.420 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 32.994 GAL -5.22 AZL 88.14 HCA 259.80 SMA 188.36 ECC .23187 INC 1.8572 V1 30.101
RP 208.32 LAP -1.83 LOP 310.45 VP 23.865 GAP -11.97 AZP 90.33 TAL 331.68 TAP 231.47 RCA 144.68 APO 232.04 V2 26.304
RC 317.035 GL 15.71 GP -.21 ZAL 131.60 ZAP 36.36 ETS 178.86 ZAE 58.67 ETE 179.47 ZAC 84.73 ETC 257.50 CLP 36.36

PLANETOCENTRIC CONIC

C3 15.470 VHL 3.933 DLA 12.71 RAL 190.23 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 4.960 DPA 6.52 RAP 168.43 ECC 1.2546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 29	2560.60	-26.18	64.62	51.36	101.18	19 35 10	1960.6	-24.38	56.42
90.00	10 11 48	4393.05	6.23	182.79	46.66	62.32	11 25 1	3793.1	2.48	176.12
100.00	20 20 23	2277.12	-27.32	43.51	51.10	102.64	20 58 20	1677.1	-25.30	35.29
100.00	11 26 35	4151.76	7.25	164.50	46.10	60.92	12 35 47	3551.8	3.31	157.92
110.00	21 43 24	2017.35	-30.30	22.89	50.21	106.64	22 17 2	1417.3	-27.72	14.64
110.00	12 20 4	3984.30	9.89	150.19	44.50	57.11	13 26 28	3384.3	5.49	143.86

DIFFERENTIAL CORRECTIONS
TDE-1.0559 TRA 6.3366 TC-12.6256 BAU 2.6123
RDE .3877 RRA .0948 RC3 .3683 FAU .15182
FDE-1.4747 FRA 5.1338 FC3-8.4961 BSP 48471
BDE 1.1249 BRA 6.3373 BC312.6310 FSP 3201

MID-COURSE EXECUTION ACCURACY
SGT13803.7 SGR 650.4 SG3 898.1
RRT -.2680 RRF -.3053 RTF .9912
SGB13819.0 R23 .0406 R13 -.9912
SG113804.8 SG2 626.5 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 3242.4 SR 566.4 SS 1351.3
CRT -.4088 CRS .6255 CST -.9675
LSA 3507.6 MSA 597.2 SSA 20.9
EL1 3250.8 EL2 515.6 ALF 175.81

LAUNCH DATE NOV 13 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 866.654 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.000 GAL -5.39 AZL 88.14 HCA 261.05 SMA 188.46 ECC .23338 INC 1.8562 V1 30.101
RP 208.16 LAP -1.83 LOP 311.70 VP 23.894 GAP -12.11 AZP 90.29 TAL 330.87 TAP 231.92 RCA 144.48 APO 232.44 V2 26.323
RC 317.924 GL 15.44 GP -.20 ZAL 132.68 ZAP 35.67 ETS 178.84 ZAE 57.69 ETE 179.48 ZAC 84.85 ETC 257.44 CLP 35.67

PLANETOCENTRIC CONIC

C3 15.973 VHL 3.997 DLA 12.04 RAL 191.11 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 5.050 DPA 6.30 RAP 168.95 ECC 1.2629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 41	2545.11	-25.98	63.54	52.51	101.69	19 44 6	1945.1	-24.10	55.37
90.00	10 9 36	4423.03	7.17	184.49	47.93	62.53	11 23 19	3823.0	3.44	177.80
100.00	20 29 9	2262.99	-27.10	42.51	52.24	103.12	21 6 52	1663.0	-25.02	34.33
100.00	11 24 48	4180.39	8.19	166.10	47.38	61.15	12 34 29	3580.4	4.28	159.50
110.00	21 51 16	2006.07	-30.08	22.09	51.32	107.07	22 24 42	1406.1	-27.45	13.88
110.00	12 19 11	4010.07	10.84	151.58	45.78	57.38	13 26 2	3410.1	6.46	145.22

DIFFERENTIAL CORRECTIONS
TDE-1.1665 TRA 6.5912 TC-12.3799 BAU 2.6449
RDE .3975 RRA .0926 RC3 .3636 FAU .14361
FDE-1.4942 FRA 5.0190 FC3-7.7835 BSP 48998
BDE 1.2324 BRA 6.5918 BC312.3852 FSP 3054

MID-COURSE EXECUTION ACCURACY
SGT13930.6 SGR 653.9 SG3 852.8
RRT -.2764 RRF -.3145 RTF .9908
SGB13946.0 R23 .0418 R13 -.9908
SG113931.8 SG2 628.4 THA 179.26

ORBIT DETERMINATION ACCURACY
ST 3359.4 SR 571.4 SS 1344.5
CRT -.4363 CRS .6432 CST -.9694
LSA 3615.4 MSA 590.2 SSA 20.5
EL1 3368.9 EL2 512.7 ALF 175.65

LAUNCH DATE NOV 13 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 870.885 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.006 GAL -5.57 AZL 88.14 HCA 262.30 SMA 188.56 ECC .23496 INC 1.8552 V1 30.101
RP 208.01 LAP -1.84 LOP 312.95 VP 23.921 GAP -12.25 AZP 90.25 TAL 330.05 TAP 232.35 RCA 144.26 APO 232.87 V2 26.341
RC 318.808 GL 15.17 GP -.20 ZAL 133.77 ZAP 35.01 ETS 178.83 ZAE 56.72 ETE 179.50 ZAC 84.97 ETC 257.37 CLP 35.01

PLANETOCENTRIC CONIC

C3 16.509 VHL 4.063 DLA 11.36 RAL 191.98 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 5.142 DPA 6.07 RAP 169.49 ECC 1.2717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 46	2530.12	-25.76	62.49	53.68	102.17	19 52 56	1930.1	-23.83	54.36
90.00	10 7 28	4453.07	8.11	186.19	49.22	62.78	11 21 41	3853.1	4.40	179.48
100.00	20 37 50	2249.30	-26.89	41.55	53.40	103.58	21 15 20	1649.3	-24.75	33.40
100.00	11 23 5	4209.12	9.13	167.71	48.68	61.41	12 33 14	3609.1	5.24	161.08
110.00	21 59 3	1995.16	-29.86	21.31	52.46	107.47	22 32 19	1395.2	-27.18	13.15
110.00	12 18 21	4036.03	11.79	152.99	47.09	57.68	13 25 37	3436.0	7.44	146.60

DIFFERENTIAL CORRECTIONS
TDE-1.2813 TRA 6.8526 TC-12.1283 BAU 2.6781
RDE .4077 RRA .0901 RC3 .3586 FAU .13573
FDE-1.5098 FRA 4.9016 FC3-7.1174 BSP 49489
BDE 1.3446 BRA 6.8532 BC312.1336 FSP 2910

MID-COURSE EXECUTION ACCURACY
SGT14055.1 SGR 657.4 SG3 809.1
RRT -.2850 RRF -.3242 RTF .9903
SGB14070.5 R23 .0432 R13 -.9903
SG114056.4 SG2 630.1 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 3477.8 SR 576.2 SS 1335.6
CRT -.4622 CRS .6600 CST -.9711
LSA 3724.3 MSA 583.2 SSA 20.1
EL1 3488.2 EL2 509.5 ALF 175.52

LAUNCH DATE NOV 13 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 875.112 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.012 GAL -5.75 AZL 88.15 HCA 263.55 SMA 188.67 ECC .23660 INC 1.8542 V1 30.101
RP 207.86 LAP -1.84 LOP 314.21 VP 23.948 GAP -12.40 AZP 90.21 TAL 329.21 TAP 232.77 RCA 144.03 APO 233.30 V2 26.357
RC 319.685 GL 14.90 GP -.20 ZAL 134.86 ZAP 34.36 ETS 178.81 ZAE 55.77 ETE 179.52 ZAC 85.10 ETC 257.30 CLP 34.36

PLANETOCENTRIC CONIC

C3 17.080 VHL 4.133 DLA 10.69 RAL 192.85 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 5.236 DPA 5.82 RAP 170.05 ECC 1.2811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 46	2515.63	-25.55	61.48	54.87	102.64	20 1 41	1915.6	-23.56	53.38
90.00	10 5 24	4483.18	9.05	187.91	50.55	63.05	11 20 7	3883.2	5.36	181.17
100.00	20 46 27	2236.08	-26.67	40.63	54.58	104.03	21 23 43	1636.1	-24.48	32.51
100.00	11 21 24	4237.96	10.07	169.34	50.01	61.70	12 32 2	3638.0	6.21	162.68
110.00	22 6 47	1984.65	-29.64	20.57	53.61	107.86	22 39 52	1384.7	-26.91	12.45
110.00	12 17 32	4062.16	12.74	154.42	48.43	58.01	13 25 15	3462.2	8.42	147.99

DIFFERENTIAL CORRECTIONS
TDE-1.3985 TRA 7.1219 TC-11.8669 BAU 2.7110
RDE .4182 RRA .0873 RC3 .3532 FAU .12809
FDE-1.5213 FRA 4.7828 FC3-6.4922 BSP 49991
BDE 1.4597 BRA 7.1224 BC311.8722 FSP 2772

MID-COURSE EXECUTION ACCURACY
SGT14175.1 SGR 660.6 SG3 766.9
RRT -.2937 RRF -.3340 RTF .9898
SGB14190.5 R23 .0447 R13 -.9898
SG114176.4 SG2 631.5 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 3596.1 SR 581.0 SS 1324.6
CRT -.4859 CRS .6757 CST -.9724
LSA 3833.0 MSA 576.5 SSA 19.8
EL1 3607.4 EL2 506.2 ALF 175.42

LAUNCH DATE NOV 13 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 879.332 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.018 GAL -5.93 AZL 88.15 HCA 264.81 SMA 188.77 ECC .23831 INC 1.8533 V1 30.101
RP 207.73 LAP -1.85 LOP 315.46 VP 23.974 GAP -12.55 AZP 90.17 TAL 328.36 TAP 233.17 RCA 143.79 APO 233.76 V2 26.373
RC 320.558 GL 14.63 GP -.19 ZAL 135.94 ZAP 33.73 ETS 178.79 ZAE 54.84 ETE 179.53 ZAC 85.23 ETC 257.24 CLP 33.73

PLANETOCENTRIC CONIC

C3 17.688 VHL 4.206 DLA 10.02 RAL 193.71 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 5.332 DPA 5.57 RAP 170.63 ECC 1.2911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 40	2501.65	-25.34	60.51	56.07	103.08	20 10 21	1901.7	-23.29	52.44
90.00	10 3 23	4513.35	9.97	189.65	51.91	63.36	11 18 36	3913.3	6.32	182.87
100.00	20 54 58	2223.33	-26.46	39.74	55.77	104.45	21 32 1	1623.3	-24.21	31.66
100.00	11 19 46	4266.91	10.99	170.99	51.37	62.03	12 30 53	3666.9	7.17	164.29
110.00	22 14 28	1974.54	-29.43	19.86	54.78	108.23	22 47 22	1374.5	-26.65	11.78
110.00	12 16 46	4088.45	13.68	155.88	49.80	58.36	13 24 54	3488.5	9.40	149.40

DIFFERENTIAL CORRECTIONS
TDE-1.5196 TRA 7.3986 TC-11.6017 BAU 2.7447
RDE .4290 RRA .0841 RC3 .3475 FAU .12073
FDE-1.5295 FRA 4.6617 FC3-5.9091 BSP 50439
BDE 1.5790 BRA 7.3991 BC311.6069 FSP 2636

MID-COURSE EXECUTION ACCURACY
SGT14292.9 SGR 663.8 SG3 726.2
RRT -.3027 RRF -.3443 RTF .9892
SGB14308.3 R23 .0464 R13 -.9892
SG114294.3 SG2 632.6 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 3714.9 SR 585.6 SS 1311.8
CRT -.5081 CRS .6907 CST -.9736
LSA 3941.9 MSA 570.1 SSA 19.5
EL1 3727.0 EL2 502.7 ALF 175.34

LAUNCH DATE NOV 13 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 883.547 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.024 GAL -6.12 AZL 88.15 HCA 266.07 SMA 188.88 ECC .24009 INC 1.8523 V1 30.101
RP 207.60 LAP -1.85 LOP 316.72 VP 23.999 GAP -12.70 AZP 90.13 TAL 327.49 TAP 233.56 RCA 143.53 APO 234.23 V2 26.388
RC 321.425 GL 14.35 GP -.19 ZAL 137.02 ZAP 33.11 ETS 178.77 ZAE 53.92 ETE 179.55 ZAC 85.37 ETC 257.17 CLP 33.11

PLANETOCENTRIC CONIC

C3 18.335 VHL 4.282 DLA 9.35 RAL 194.57 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 5.430 DPA 5.31 RAP 171.22 ECC 1.3017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 28	2488.18	-25.13	59.58	57.29	103.50	20 18 56	1888.2	-23.02	51.55
90.00	10 1 26	4543.57	10.89	191.39	53.29	63.70	11 17 10	3943.6	7.27	184.59
100.00	21 3 24	2211.05	-26.25	38.89	56.98	104.85	21 40 15	1611.0	-23.95	30.84
100.00	11 18 12	4295.94	11.92	172.65	52.76	62.38	12 29 48	3695.9	8.13	165.92
110.00	22 22 4	1964.85	-29.22	19.19	55.97	108.59	22 54 49	1364.8	-26.40	11.13
110.00	12 16 1	4114.91	14.62	157.35	51.19	58.75	13 24 35	3514.9	10.37	150.82

DIFFERENTIAL CORRECTIONS
TDE-1.6431 TRA 7.6838 TC-11.3292 BAU 2.7783
RDE .4402 RRA .0806 RC3 .3416 FAU .11358
FDE-1.5331 FRA 4.5391 FC3-5.3632 BSP 50897
BDE 1.7011 BRA 7.6842 BC311.3344 FSP 2505

MID-COURSE EXECUTION ACCURACY
SGT14406.4 SGR 666.7 SG3 686.8
RRT -.3118 RRF -.3546 RTF .9886
SGB14421.8 R23 .0482 R13 -.9886
SG114407.9 SG2 633.4 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 3832.9 SR 590.0 SS 1296.6
CRT -.5285 CRS .7047 CST -.9746
LSA 4049.9 MSA 563.8 SSA 19.1
EL1 3845.7 EL2 499.2 ALF 175.27

LAUNCH DATE NOV 13 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 887.755 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.030 GAL -6.32 AZL 88.15 HCA 267.32 SMA 188.99 ECC .24196 INC 1.8514 V1 30.101
RP 207.48 LAP -1.85 LOP 317.98 VP 24.022 GAP -12.85 AZP 90.09 TAL 326.61 TAP 233.93 RCA 143.26 APO 234.71 V2 26.402
RC 322.286 GL 14.07 GP -.19 ZAL 138.09 ZAP 32.52 ETS 178.75 ZAE 53.03 ETE 179.56 ZAC 85.51 ETC 257.10 CLP 32.52

PLANETOCENTRIC CONIC

C3 19.024 VHL 4.362 DLA 8.69 RAL 195.43 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 5.530 DPA 5.05 RAP 171.83 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 10	2475.23	-24.92	58.69	58.53	103.90	20 27 26	1875.2	-22.77	50.68
90.00	9 59 33	4573.85	11.80	193.15	54.70	64.07	11 15 47	3973.9	8.22	186.31
100.00	21 11 44	2199.25	-26.04	38.07	58.21	105.23	21 48 24	1599.3	-23.69	30.06
100.00	11 16 40	4325.06	12.83	174.33	54.18	62.77	12 28 45	3725.1	9.08	167.55
110.00	22 29 37	1955.57	-29.02	18.54	57.18	108.92	23 2 12	1355.6	-26.16	10.52
110.00	12 15 17	4141.51	15.55	158.85	52.62	59.17	13 24 19	3541.5	11.35	152.26

DIFFERENTIAL CORRECTIONS
TDE-1.7704 TRA 7.9764 TC-11.0542 BAU 2.8127
RDE .4518 RRA .0767 RC3 .3354 FAU .10667
FDE-1.5334 FRA 4.4142 FC3-4.8542 BSP 51315
BDE 1.8272 BRA 7.9768 BC311.0593 FSP 2377

MID-COURSE EXECUTION ACCURACY
SGT14517.1 SGR 669.5 SG3 648.9
RRT -.3211 RRF -.3653 RTF .9878
SGB14532.5 R23 .0501 R13 -.9879
SG114518.7 SG2 634.0 THA 179.15

ORBIT DETERMINATION ACCURACY
ST 3950.2 SR 594.4 SS 1279.4
CRT -.5476 CRS .7180 CST -.9754
LSA 4157.3 MSA 557.7 SSA 18.9
EL1 3963.8 EL2 495.6 ALF 175.22

LAUNCH DATE NOV 13 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 22 1965

DISTANCE 891.954

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 33.036 GAL -6.52 AZL 88.15 HCA 268.58 SMA 189.10 ECC .24390 INC 1.8504 V1 30.101
RP 207.36 LAP -1.85 LOP 319.24 VP 24.045 GAP -13.00 AZP 90.05 TAL 325.71 TAP 234.29 RCA 142.98 APO 235.22 V2 26.416
RC 323.141 GL 13.79 GP -.18 ZAL 139.16 ZAP 31.94 ETS 178.73 ZAE 52.14 ETE 179.58 ZAC 85.65 ETC 257.03 CLP 31.94

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.756 VHL 4.445 DLA 8.02 RAL 196.28 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 5.632 DPA 4.77 RAP 172.46 ECC 1.3251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 47	2462.79	-24.72	57.84	59.79	104.28	20 35 50	1862.8	-22.51	49.86
90.00	9 57 43	4604.18	12.69	194.93	56.15	64.47	11 14 27	4004.2	9.15	188.04
100.00	21 20 0	2187.95	-25.83	37.30	59.46	105.59	21 56 28	1587.9	-23.44	29.31
100.00	11 15 11	4354.26	13.73	176.03	55.62	63.19	12 27 45	3754.3	10.03	169.20
110.00	22 37 5	1946.73	-28.82	17.93	58.40	109.23	23 9 32	1346.7	-25.92	9.94
110.00	12 14 36	4168.24	16.48	160.36	54.07	59.62	13 24 4	3568.2	12.32	153.72

DIFFERENTIAL CORRECTIONS

TDE-1.9022 TRA 8.2767 TC-10.7775 BAU 2.8479
RDE .4638 RRA .0725 RC3 .3291 FAU .10003
FDE-1.5310 FRA 4.2866 FC3-4.3835 BSP 51706
BDE 1.9580 BRA 8.2770 BC310.7825 FSP 2251

MID-COURSE EXECUTION ACCURACY

SGT14625.1 SGR 672.2 SG3 612.3
RRT -.3308 RRF -.3764 RTF .9870
SGB14640.5 R23 .0523 R13 -.9871
SG114626.8 SG2 634.3 THA 179.13

ORBIT DETERMINATION ACCURACY

ST 4067.3 SR 598.6 SS 1260.5
CRT -.5656 CRS .7310 CST -.9760
LSA 4264.5 MSA 551.7 SSA 18.5
EL1 4081.6 EL2 491.9 ALF 175.17

LAUNCH DATE NOV 13 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 24 1965

DISTANCE 896.145

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 33.042 GAL -6.73 AZL 88.15 HCA 269.85 SMA 189.21 ECC .24592 INC 1.8494 V1 30.101
RP 207.26 LAP -1.85 LOP 320.50 VP 24.067 GAP -13.16 AZP 90.00 TAL 324.79 TAP 234.64 RCA 142.68 APO 235.74 V2 26.428
RC 323.990 GL 13.51 GP -.18 ZAL 140.23 ZAP 31.38 ETS 178.71 ZAE 51.28 ETE 179.59 ZAC 85.80 ETC 256.97 CLP 31.38

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.536 VHL 4.532 DLA 7.36 RAL 197.12 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 5.736 DPA 4.49 RAP 173.10 ECC 1.3380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 18	2450.88	-24.51	57.02	61.06	104.64	20 44 9	1850.9	-22.26	49.08
90.00	9 55 56	4634.55	13.58	196.72	57.62	64.91	11 13 11	4034.6	10.09	189.79
100.00	21 28 10	2177.13	-25.63	36.55	60.72	105.93	22 4 27	1577.1	-23.20	28.60
100.00	11 13 45	4383.53	14.62	177.75	57.10	63.64	12 26 48	3783.5	10.97	170.87
110.00	22 44 29	1938.32	-28.63	17.35	59.64	109.53	23 16 47	1338.3	-25.70	9.39
110.00	12 13 56	4195.10	17.40	161.90	55.56	60.10	13 23 51	3595.1	13.29	155.20

DIFFERENTIAL CORRECTIONS

TDE-2.0359 TRA 8.5864 TC-10.4989 BAU 2.8839
RDE .4761 RRA .0678 RC3 .3225 FAU .09362
FDE-1.5242 FRA 4.1572 FC3-3.9468 BSP 52083
BDE 2.0909 BRA 8.5866 BC310.5039 FSP 2129

MID-COURSE EXECUTION ACCURACY

SGT14730.7 SGR 674.8 SG3 577.0
RRT -.3405 RRF -.3878 RTF .9862
SGB14746.1 R23 .0546 R13 -.9862
SG114732.5 SG2 634.4 THA 179.10

ORBIT DETERMINATION ACCURACY

ST 4182.3 SR 602.6 SS 1239.2
CRT -.5820 CRS .7431 CST -.9765
LSA 4369.4 MSA 546.0 SSA 18.2
EL1 4197.2 EL2 488.3 ALF 175.14

LAUNCH DATE NOV 13 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 26 1965

DISTANCE 900.326

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 33.048 GAL -6.95 AZL 88.15 HCA 271.11 SMA 189.32 ECC .24804 INC 1.8484 V1 30.101
RP 207.16 LAP -1.85 LOP 321.77 VP 24.088 GAP -13.32 AZP 89.96 TAL 323.86 TAP 234.97 RCA 142.36 APO 236.28 V2 26.439
RC 324.833 GL 13.23 GP -.18 ZAL 141.29 ZAP 30.83 ETS 178.69 ZAE 50.42 ETE 179.60 ZAC 85.95 ETC 256.90 CLP 30.83

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.366 VHL 4.622 DLA 6.70 RAL 197.96 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 5.842 DPA 4.19 RAP 173.75 ECC 1.3516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 43	2439.48	-24.31	56.25	62.34	104.98	20 52 22	1839.5	-22.02	48.33
90.00	9 54 12	4664.96	14.45	198.53	59.12	65.38	11 11 57	4065.0	11.01	191.55
100.00	21 36 15	2166.81	-25.44	35.85	62.00	106.25	22 12 22	1566.8	-22.97	27.92
100.00	11 12 21	4412.87	15.50	179.48	58.61	64.12	12 25 54	3812.9	11.90	172.55
110.00	22 51 49	1930.36	-28.45	16.80	60.90	109.81	23 23 59	1330.4	-25.48	8.88
110.00	12 13 17	4222.08	18.31	163.47	57.08	60.62	13 23 39	3622.1	14.25	156.70

DIFFERENTIAL CORRECTIONS

TDE-2.1743 TRA 8.9030 TC-10.2205 BAU 2.9209
RDE .4889 RRA .0628 RC3 .3159 FAU .08741
FDE-1.5148 FRA 4.0250 FC3-3.5419 BSP 52409
BDE 2.2286 BRA 8.9032 BC310.2254 FSP 2008

MID-COURSE EXECUTION ACCURACY

SGT14832.6 SGR 677.2 SG3 542.9
RRT -.3505 RRF -.3995 RTF .9852
SGB14848.0 R23 .0572 R13 -.9852
SG114834.5 SG2 634.2 THA 179.08

ORBIT DETERMINATION ACCURACY

ST 4296.0 SR 606.5 SS 1216.3
CRT -.5977 CRS .7549 CST -.9768
LSA 4473.3 MSA 540.3 SSA 18.0
EL1 4311.5 EL2 484.5 ALF 175.12

LAUNCH DATE NOV 13 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 28 1965

DISTANCE 904.497

HELIOCENTRIC CONIC

RL 148.02 LAL .00 LOL 50.66 VL 33.055 GAL -7.17 AZL 88.15 HCA 272.37 SMA 189.43 ECC .25024 INC 1.8475 V1 30.101
RP 207.08 LAP -1.85 LOP 323.03 VP 24.108 GAP -13.49 AZP 89.92 TAL 322.92 TAP 235.29 RCA 142.03 APO 236.83 V2 26.449
RC 325.671 GL 12.95 GP -.17 ZAL 142.34 ZAP 30.30 ETS 178.67 ZAE 49.59 ETE 179.62 ZAC 86.11 ETC 256.83 CLP 30.30

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.250 VHL 4.717 DLA 6.05 RAL 198.79 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 5.950 DPA 3.90 RAP 174.42 ECC 1.3662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 2	2428.61	-24.12	55.51	63.65	105.30	21 0 31	1828.6	-21.79	47.62
90.00	9 52 32	4695.41	15.30	200.36	60.66	65.88	11 10 47	4095.4	11.92	193.32
100.00	21 44 15	2156.99	-25.25	35.18	63.29	106.56	22 20 12	1557.0	-22.74	27.28
100.00	11 11 0	4442.26	16.37	181.23	60.15	64.63	12 25 2	3842.3	12.82	174.24
110.00	22 59 4	1922.85	-28.27	16.28	62.17	110.07	23 31 7	1322.8	-25.28	8.39
110.00	12 12 40	4249.16	19.20	165.06	58.62	61.16	13 23 30	3649.2	15.21	158.22

DIFFERENTIAL CORRECTIONS

TDE-2.3160 TRA 9.2290 TC3-9.9413 BAU 2.9585
RDE .5020 RRA .0574 RC3 .3090 FAU .08140
FDE-1.5020 FRA 3.8906 FC3-3.1674 BSP 52718
BDE 2.3698 BRA 9.2292 BC3 9.9461 FSP 1892

MID-COURSE EXECUTION ACCURACY

SGT14931.7 SGR 679.5 SG3 510.0
RRT -.3607 RRF -.4115 RTF .9840
SGB14947.1 R23 .0600 R13 -.9841
SG114933.7 SG2 633.7 THA 179.06

ORBIT DETERMINATION ACCURACY

ST 4408.0 SR 610.2 SS 1191.3
CRT -.6122 CRS .7662 CST -.9770
LSA 4575.6 MSA 534.8 SSA 17.7
EL1 4424.0 EL2 480.7 ALF 175.10

LAUNCH DATE NOV 13 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 908.655 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.061 GAL -7.40 AZL 88.15 HCA 273.64 SMA 189.55 ECC .25254 INC 1.8465 V1 30.101
RP 207.00 LAP -1.84 LOP 324.30 VP 24.127 GAP -13.66 AZP 89.88 TAL 321.95 TAP 235.59 RCA 141.68 APO 237.41 V2 26.459
RC 326.503 GL 12.67 GP -.17 ZAL 143.39 ZAP 29.78 ETS 178.65 ZAE 48.76 ETE 179.63 ZAC 86.27 ETC 256.77 CLP 29.78

PLANETOCENTRIC CONIC

C3 23.190 VHL 4.816 DLA 5.40 RAL 199.62 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 6.061 DPA 3.59 RAP 175.10 ECC 1.3816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 16	2418.25	-23.93	54.81	64.96	105.60	21 8 35	1818.2	-21.56	46.94
90.00	9 50 54	4725.88	16.14	202.20	62.22	66.42	11 9 40	4125.9	12.82	195.10
100.00	21 52 10	2147.66	-25.07	34.55	64.60	106.84	22 27 58	1547.7	-22.52	26.67
100.00	11 9 41	4471.71	17.22	183.01	61.71	65.18	12 24 13	3871.7	13.73	175.95
110.00	23 6 15	1915.78	-28.11	15.80	63.46	110.31	23 38 11	1315.8	-25.08	7.93
110.00	12 12 5	4276.35	20.09	166.67	60.20	61.74	13 23 22	3676.3	16.15	159.76

DIFFERENTIAL CORRECTIONS
TDE-2.4616 TRA 9.5640 TC3-9.6645 BAU 2.9977
RDE .5155 RRA .0515 RC3 .3021 FAU .07559
FDE-1.4861 FRA 3.7538 FC3-2.8220 BSP 52995
BDE 2.5150 BRA 9.5642 BC3 9.6692 FSP 1779

MID-COURSE EXECUTION ACCURACY
SGT15028.8 SGR 681.7 SG3 478.3
RRT -.3711 RRF -.4239 RTF .9828
SGB15044.2 R23 .0630 R13 -.9828
SG115030.9 SG2 632.9 THA 179.03

ORBIT DETERMINATION ACCURACY
ST 4518.2 SR 613.7 SS 1164.5
CRT -.6259 CRS .7771 CST -.9771
LSA 4676.2 MSA 529.3 SSA 17.4
EL1 4534.7 EL2 476.9 ALF 175.09

LAUNCH DATE NOV 13 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 912.800 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.067 GAL -7.63 AZL 88.15 HCA 274.90 SMA 189.66 ECC .25493 INC 1.8455 V1 30.101
RP 206.93 LAP -1.84 LOP 325.56 VP 24.145 GAP -13.83 AZP 89.84 TAL 320.97 TAP 235.88 RCA 141.31 APO 238.01 V2 26.467
RC 327.330 GL 12.39 GP -.17 ZAL 144.43 ZAP 29.28 ETS 178.63 ZAE 47.96 ETE 179.64 ZAC 86.43 ETC 256.70 CLP 29.28

PLANETOCENTRIC CONIC

C3 24.190 VHL 4.918 DLA 4.76 RAL 200.44 RAD 6568.0 VEL 12.065 PTH 2.16 VHP 6.174 DPA 3.28 RAP 175.80 ECC 1.3981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 24	2408.41	-23.75	54.15	66.30	105.89	21 16 33	1808.4	-21.34	46.30
90.00	9 49 19	4756.38	16.96	204.06	63.81	66.98	11 8 35	4156.4	13.70	196.91
100.00	21 59 59	2138.82	-24.89	33.95	65.93	107.11	22 35 38	1538.8	-22.31	26.10
100.00	11 8 25	4501.20	18.05	184.80	63.31	65.76	12 23 26	3901.2	14.63	177.68
110.00	23 13 22	1909.17	-27.95	15.35	64.77	110.53	23 45 11	1309.2	-24.90	7.51
110.00	12 11 32	4303.62	20.96	168.31	61.81	62.36	13 23 15	3703.6	17.09	161.31

DIFFERENTIAL CORRECTIONS
TDE-2.6100 TRA 9.9084 TC3-9.3881 BAU 3.0376
RDE .5295 RRA .0452 RC3 .2951 FAU .06996
FDE-1.4670 FRA 3.6146 FC3-2.5038 BSP 53241
BDE 2.6632 BRA 9.9085 BC3 9.3927 FSP 1668

MID-COURSE EXECUTION ACCURACY
SGT15122.3 SGR 683.8 SG3 447.6
RRT -.3815 RRF -.4365 RTF .9813
SGB15137.8 R23 .0664 R13 -.9814
SG115124.6 SG2 631.9 THA 179.01

ORBIT DETERMINATION ACCURACY
ST 4625.6 SR 617.1 SS 1135.7
CRT -.6386 CRS .7876 CST -.9770
LSA 4774.1 MSA 524.1 SSA 17.1
EL1 4642.5 EL2 473.1 ALF 175.08

LAUNCH DATE NOV 13 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 916.931 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.074 GAL -7.87 AZL 88.16 HCA 276.17 SMA 189.78 ECC .25743 INC 1.8445 V1 30.101
RP 206.86 LAP -1.83 LOP 326.83 VP 24.162 GAP -14.01 AZP 89.80 TAL 319.98 TAP 236.15 RCA 140.92 APO 238.63 V2 26.474
RC 328.152 GL 12.11 GP -.16 ZAL 145.46 ZAP 28.79 ETS 178.61 ZAE 47.16 ETE 179.65 ZAC 86.60 ETC 256.64 CLP 28.79

PLANETOCENTRIC CONIC

C3 25.254 VHL 5.025 DLA 4.12 RAL 201.26 RAD 6568.0 VEL 12.109 PTH 2.17 VHP 6.290 DPA 2.96 RAP 176.51 ECC 1.4156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 27	2399.08	-23.58	53.52	67.65	106.16	21 24 26	1799.1	-21.14	45.70
90.00	9 47 47	4786.89	17.77	205.94	65.43	67.58	11 7 34	4186.9	14.57	198.72
100.00	22 7 44	2130.48	-24.72	33.39	67.27	107.36	22 43 14	1530.5	-22.11	25.56
100.00	11 7 11	4530.73	18.87	186.61	64.94	66.38	12 22 42	3930.7	15.51	179.43
110.00	23 20 24	1903.01	-27.80	14.93	66.09	110.74	23 52 7	1303.0	-24.72	7.11
110.00	12 11 0	4330.96	21.81	169.97	63.46	63.00	13 23 11	3731.0	18.02	162.89

DIFFERENTIAL CORRECTIONS
TDE-2.7626 TRA10.2619 TC3-9.1144 BAU 3.0788
RDE .5438 RRA .0383 RC3 .2881 FAU .06451
FDE-1.4449 FRA 3.4726 FC3-2.2114 BSP 53464
BDE 2.8156 BRA10.2620 BC3 9.1189 FSP 1561

MID-COURSE EXECUTION ACCURACY
SGT15213.1 SGR 685.7 SG3 418.0
RRT -.3922 RRF -.4494 RTF .9797
SGB15228.5 R23 .0701 R13 -.9797
SG115215.4 SG2 630.7 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 4730.8 SR 620.2 SS 1105.2
CRT -.6506 CRS .7978 CST -.9767
LSA 4870.0 MSA 518.9 SSA 16.9
EL1 4748.1 EL2 469.3 ALF 175.08

LAUNCH DATE NOV 13 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 921.046 EARTH TO MARS

RL 148.02 LAL .00 LOL 50.66 VL 33.081 GAL -8.12 AZL 88.16 HCA 277.44 SMA 189.90 ECC .26004 INC 1.8435 V1 30.101
RP 206.81 LAP -1.83 LOP 328.10 VP 24.178 GAP -14.20 AZP 89.76 TAL 318.97 TAP 236.41 RCA 140.52 APO 239.28 V2 26.480
RC 328.970 GL 11.84 GP -.16 ZAL 146.49 ZAP 28.32 ETS 178.58 ZAE 46.38 ETE 179.66 ZAC 86.77 ETC 256.57 CLP 28.32

PLANETOCENTRIC CONIC

C3 26.387 VHL 5.137 DLA 3.49 RAL 202.07 RAD 6568.1 VEL 12.156 PTH 2.18 VHP 6.408 DPA 2.63 RAP 177.24 ECC 1.4343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 25	2390.26	-23.41	52.93	69.02	106.41	21 32 15	1790.3	-20.94	45.13
90.00	9 46 17	4817.41	18.55	207.84	67.09	68.21	11 6 35	4217.4	15.43	200.56
100.00	22 15 23	2122.62	-24.56	32.86	68.63	107.59	22 50 46	1522.6	-21.92	25.05
100.00	11 6 0	4560.28	19.66	188.45	66.60	67.02	12 22 0	3960.3	16.38	181.19
110.00	23 27 23	1897.30	-27.66	14.55	67.42	110.93	23 59 0	1297.3	-24.56	6.75
110.00	12 10 30	4358.37	22.65	171.66	65.13	63.69	13 23 8	3758.4	18.93	164.50

DIFFERENTIAL CORRECTIONS
TDE-2.9182 TRA10.6259 TC3-8.8433 BAU 3.1213
RDE .5586 RRA .0310 RC3 .2810 FAU .05920
FDE-1.4196 FRA 3.3280 FC3-1.9424 BSP 53655
BDE 2.9712 BRA10.6260 BC3 8.8478 FSP 1456

MID-COURSE EXECUTION ACCURACY
SGT15301.4 SGR 687.5 SG3 389.5
RRT -.4029 RRF -.4626 RTF .9778
SGB15316.8 R23 .0742 R13 -.9778
SG115303.9 SG2 629.1 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 4833.0 SR 623.2 SS 1072.9
CRT -.6618 CRS .8077 CST -.9763
LSA 4963.2 MSA 513.8 SSA 16.6
EL1 4850.8 EL2 465.5 ALF 175.08

LAUNCH DATE NOV 13 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 925.144 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.087	GAL	-8.38	AZL	88.16	HCA	278.71	SMA	190.02	ECC	.26275	INC	1.8425
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.193	GAP	-14.39	AZP	89.72	TAL	317.94	TAP	236.65	RCA	140.09	APO	239.94
RC	329.784	GL	11.56	GP	-.16	ZAL	147.50	ZAP	27.86	ETS	178.56	ZAE	45.61	ETE	179.68	ZAC	86.95	ETC	256.51

V1	30.101	CLP	27.86																
V2	26.486																		

PLANETOCENTRIC CONIC

C3	27.593	VHL	5.253	DLA	2.87	RAL	202.87	RAD	6568.1	VEL	12.205	PTH	2.19	VHP	6.529	DPA	2.30	RAP	177.98

ECC	1.4541																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 16	2381.94	-23.25	52.37	70.40	106.64	21 39 58	1781.9	-20.75	44.59
90.00	9 44 50	4847.94	19.31	209.76	68.77	68.88	11 5 38	4247.9	16.27	202.41
100.00	22 22 57	2115.25	-24.41	32.36	70.00	107.81	22 58 13	1515.2	-21.74	24.58
100.00	11 4 50	4589.86	20.44	190.30	68.29	67.70	12 21 20	3989.9	17.24	182.97
110.00	23 34 16	1892.03	-27.53	14.19	68.77	111.11	24 5 48	1292.0	-24.41	6.41
110.00	12 10 1	4385.84	23.47	173.37	66.84	64.40	13 23 7	3785.8	19.83	166.12

DIFFERENTIAL CORRECTIONS

TDE	-3.0781	TRA	10.9990	TC3	-8.5766	BAU	3.1655
RDE	.5738	RRA	.0232	RC3	.2739	FAU	.05406
FDE	-1.3916	FRA	3.1802	FC3	-1.6963	BSP	53808
BDE	3.1311	BRA	10.9990	BC3	8.5810	FSP	1354

MID-COURSE EXECUTION ACCURACY

SGT	15386.7	SGR	689.3	SG3	361.9		
RRT	-.4139	RRF	-.4762	RTF	.9756		
SGB	15402.1	R23	.0788	R13	-.9757		
SG1	15389.4	SG2	627.4	THA	178.94		

ORBIT DETERMINATION ACCURACY

ST	4932.7	SR	625.9	SS	1039.0
CRT	-.6724	CRS	.8175	CST	-.9758
LSA	5054.1	MSA	508.8	SSA	16.3
EL1	4950.8	EL2	461.6	ALF	175.08

LAUNCH DATE NOV 13 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 929.224 EARTH TO MARS

RL	148.02	LAL	.00	LOL	50.66	VL	33.094	GAL	-8.64	AZL	88.16	HCA	279.97	SMA	190.14	ECC	.26559	INC	1.8416
RP	206.73	LAP	-1.81	LOP	330.63	VP	24.206	GAP	-14.58	AZP	89.68	TAL	316.90	TAP	236.87	RCA	139.64	APO	240.63
RC	330.595	GL	11.28	GP	-.16	ZAL	148.51	ZAP	27.41	ETS	178.54	ZAE	44.86	ETE	179.69	ZAC	87.13	ETC	256.45

V1	30.101	CLP	27.41																
V2	26.490																		

PLANETOCENTRIC CONIC

C3	28.877	VHL	5.374	DLA	2.25	RAL	203.67	RAD	6568.2	VEL	12.258	PTH	2.21	VHP	6.653	DPA	1.95	RAP	178.73

ECC	1.4752																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 3	2374.11	-23.09	51.85	71.79	106.86	21 47 37	1774.1	-20.57	44.09
90.00	9 43 26	4878.46	20.05	211.70	70.48	69.57	11 4 44	4278.5	17.09	204.27
100.00	22 30 27	2108.35	-24.27	31.90	71.39	108.01	23 5 35	1508.3	-21.58	24.14
100.00	11 3 43	4619.45	21.19	192.18	70.01	68.41	12 20 43	4019.5	18.07	184.77
110.00	23 41 6	1887.21	-27.42	13.87	70.14	111.27	24 12 33	1287.2	-24.28	6.10
110.00	12 9 33	4413.35	24.27	175.11	68.58	65.15	13 23 7	3813.4	20.71	167.76

DIFFERENTIAL CORRECTIONS

TDE	-3.2415	TRA	11.3829	TC3	-8.3138	BAU	3.2113
RDE	.5894	RRA	.0149	RC3	.2668	FAU	.04907
FDE	-1.3605	FRA	3.0301	FC3	-1.4710	BSP	53939
BDE	3.2947	BRA	11.3830	BC3	8.3181	FSP	1256

MID-COURSE EXECUTION ACCURACY

SGT	15469.7	SGR	690.9	SG3	335.3		
RRT	-.4249	RRF	-.4900	RTF	.9731		
SGB	15485.1	R23	.0838	R13	-.9731		
SG1	15472.5	SG2	625.3	THA	178.91		

ORBIT DETERMINATION ACCURACY

ST	5029.4	SR	628.5	SS	1003.4
CRT	-.6824	CRS	.8270	CST	-.9751
LSA	5142.2	MSA	503.8	SSA	16.1
EL1	5047.8	EL2	457.7	ALF	175.09

LAUNCH DATE NOV 14 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 433.255 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 35.289 GAL -6.39 AZL 88.24 HCA 137.72 SMA 242.03 ECC .40189 INC 1.7643 V1 30.108
RP 244.91 LAP 1.19 LOP 189.39 VP 23.140 GAP 23.69 AZP 91.31 TAL 337.52 TAP 115.24 RCA 144.76 APO 339.30 V2 22.396
RC 126.220 GL 10.06 GP .23 ZAL 124.99 ZAP 173.68 ETS 176.68 ZAE 155.80 ETE 357.86 ZAC 88.59 ETC 256.14 CLP 173.68

PLANETOCENTRIC CONIC

C3 38.202 VHL 6.181 DLA 10.30 RAL 181.55 RAD 6568.5 VEL 12.632 PTH 2.29 VHP 10.625 DPA .21 RAP 183.45 ECC 1.6287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 57	2700.11	-27.64	74.57	58.23	96.41	19 18 57	2100.1	-26.47	66.10
90.00	9 13 13	4693.42	15.25	200.24	51.66	65.85	10 31 26	4093.4	11.86	193.20
100.00	20 0 25	2421.28	-29.03	53.87	58.04	97.45	20 40 46	1821.3	-27.70	45.32
100.00	10 29 27	4447.48	16.52	181.55	51.05	64.73	11 43 34	3847.5	12.98	174.54
110.00	21 20 16	2171.40	-32.76	34.22	57.36	100.36	21 56 27	1571.4	-30.98	25.44
110.00	11 26 5	4270.13	19.89	166.30	49.26	61.61	12 37 15	3670.1	15.94	159.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0350 TRA-2.5402 TC3 .6659 BAU .3417 SGT 2706.7 SGR 472.4 SG3 209.9 ST 1198.6 SR 442.5 SS 593.3
RDE -.4748 RRA -.1609 RC3 -.0652 FAU .06384 RRT -.0984 RRF .0827 RTF -.8644 CRT -.7347 CRS -.5933 CST .9804
FDE -.4685 FRA 1.6825 FC3-1.4467 BSP 9112 SGB 2747.6 R23 .0050 R13 .8644 LSA 1371.7 MSA 319.4 SSA 29.3
BDE 1.1387 BRA 2.5453 BC3 .6691 FSP 572 SG1 2707.1 SG2 470.0 THA 178.99 EL1 1244.5 EL2 289.1 ALF 163.93

LAUNCH DATE NOV 14 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 435.318 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 35.180 GAL -6.20 AZL 88.24 HCA 138.62 SMA 238.70 ECC .39294 INC 1.7616 V1 30.108
RP 244.68 LAP 1.16 LOP 190.30 VP 22.995 GAP 23.10 AZP 91.32 TAL 337.84 TAP 116.46 RCA 144.90 APO 332.49 V2 22.418
RC 128.287 GL 10.27 GP .24 ZAL 124.50 ZAP 173.21 ETS 176.73 ZAE 155.51 ETE 358.07 ZAC 88.69 ETC 256.12 CLP 173.21

PLANETOCENTRIC CONIC

C3 36.361 VHL 6.030 DLA 10.69 RAL 181.20 RAD 6568.4 VEL 12.559 PTH 2.28 VHP 10.387 DPA .04 RAP 183.84 ECC 1.5984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 26	2700.26	-27.64	74.58	57.11	96.40	19 14 26	2100.3	-26.47	66.11
90.00	9 14 56	4668.31	14.54	198.73	50.48	65.43	10 32 44	4068.3	11.11	191.74
100.00	19 56 6	2420.72	-29.03	53.83	56.91	97.47	20 36 27	1820.7	-27.69	45.28
100.00	10 30 56	4423.08	15.81	180.09	49.86	64.29	11 44 40	3823.1	12.22	173.13
110.00	21 16 26	2169.32	-32.73	34.06	56.23	100.45	21 52 36	1569.3	-30.95	25.29
110.00	11 27 6	4247.23	19.14	164.94	48.06	61.12	12 37 53	3647.2	15.14	158.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0149 TRA-2.5123 TC3 .7249 BAU .3539 SGT 2756.0 SGR 465.2 SG3 220.3 ST 1209.0 SR 435.7 SS 601.3
RDE -.4561 RRA -.1528 RC3 -.0678 FAU .06562 RRT -.1018 RRF .0857 RTF -.8691 CRT -.7322 CRS -.5853 CST .9793
FDE -.4682 FRA 1.7163 FC3-1.5624 BSP 9298 SGB 2794.9 R23 .0054 R13 .8691 LSA 1382.3 MSA 318.4 SSA 29.5
BDE 1.1127 BRA 2.5169 BC3 .7280 FSP 606 SG1 2756.4 SG2 462.7 THA 178.99 EL1 1252.8 EL2 286.3 ALF 164.38

LAUNCH DATE NOV 14 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 437.502 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 35.076 GAL -6.01 AZL 88.24 HCA 139.53 SMA 235.59 ECC .38436 INC 1.7587 V1 30.108
RP 244.46 LAP 1.14 LOP 191.20 VP 22.857 GAP 22.51 AZP 91.34 TAL 338.17 TAP 117.70 RCA 145.04 APO 326.14 V2 22.440
RC 130.354 GL 10.48 GP .24 ZAL 123.98 ZAP 172.73 ETS 176.78 ZAE 155.27 ETE 358.27 ZAC 88.79 ETC 256.10 CLP 172.73

PLANETOCENTRIC CONIC

C3 34.631 VHL 5.885 DLA 11.08 RAL 180.83 RAD 6568.4 VEL 12.490 PTH 2.26 VHP 10.154 DPA -.13 RAP 184.24 ECC 1.5699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 45	2700.90	-27.65	74.63	55.98	96.38	19 9 46	2100.9	-26.48	66.16
90.00	9 16 41	4643.03	13.82	197.23	49.30	65.04	10 34 4	4043.0	10.34	190.28
100.00	19 51 39	2420.63	-29.03	53.82	55.79	97.47	20 31 59	1820.6	-27.69	45.27
100.00	10 32 28	4398.53	15.08	178.63	48.68	63.88	11 45 46	3798.5	11.44	171.72
110.00	21 12 29	2167.66	-32.71	33.93	55.11	100.52	21 48 37	1567.7	-30.92	25.17
110.00	11 28 6	4224.26	18.38	163.60	46.87	60.66	12 38 31	3624.3	14.33	156.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9942 TRA-2.4842 TC3 .7873 BAU .3660 SGT 2805.4 SGR 457.7 SG3 231.3 ST 1218.4 SR 428.7 SS 609.1
RDE -.4380 RRA -.1450 RC3 -.0704 FAU .06749 RRT -.1051 RRF .0888 RTF -.8736 CRT -.7295 CRS -.5771 CST .9781
FDE -.4674 FRA 1.7504 FC3-1.6872 BSP 9484 SGB 2842.5 R23 .0056 R13 .8736 LSA 1392.0 MSA 317.4 SSA 29.7
BDE 1.0864 BRA 2.4885 BC3 .7905 FSP 641 SG1 2805.8 SG2 455.1 THA 178.99 EL1 1260.1 EL2 283.5 ALF 164.82

LAUNCH DATE NOV 14 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 439.798 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.976 GAL -5.83 AZL 88.24 HCA 140.44 SMA 232.70 ECC .37614 INC 1.7558 V1 30.108
RP 244.23 LAP 1.12 LOP 192.11 VP 22.726 GAP 21.92 AZP 91.35 TAL 338.50 TAP 118.94 RCA 145.17 APO 320.22 V2 22.463
RC 132.477 GL 10.69 GP .25 ZAL 123.46 ZAP 172.24 ETS 176.82 ZAE 155.08 ETE 358.47 ZAC 88.89 ETC 256.08 CLP 172.25

PLANETOCENTRIC CONIC

C3 33.005 VHL 5.745 DLA 11.48 RAL 180.45 RAD 6568.3 VEL 12.425 PTH 2.25 VHP 9.927 DPA -.30 RAP 184.63 ECC 1.5432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 55	2702.06	-27.66	74.71	54.86	96.34	19 4 57	2102.1	-26.49	66.24
90.00	9 18 27	4617.60	13.09	195.72	48.14	64.66	10 35 25	4017.6	9.57	188.81
100.00	19 47 3	2421.03	-29.03	53.85	54.67	97.46	20 27 24	1821.0	-27.69	45.30
100.00	10 34 0	4373.87	14.33	177.18	47.52	63.48	11 46 54	3773.9	10.66	170.32
110.00	21 8 25	2166.44	-32.70	33.84	53.99	100.57	21 44 31	1566.4	-30.89	25.09
110.00	11 29 8	4201.23	17.61	162.26	45.69	60.21	12 39 9	3601.2	13.51	155.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9739 TRA-2.4549 TC3 .8540 BAU .3782 SGT 2854.4 SGR 450.0 SG3 242.8 ST 1227.2 SR 421.5 SS 616.6
RDE -.4205 RRA -.1376 RC3 -.0730 FAU .06946 RRT -.1089 RRF .0920 RTF -.8780 CRT -.7268 CRS -.5683 CST .9767
FDE -.4661 FRA 1.7846 FC3-1.8221 BSP 9658 SGB 2889.6 R23 .0061 R13 .8780 LSA 1401.0 MSA 316.4 SSA 29.9
BDE 1.0608 BRA 2.4587 BC3 .8571 FSP 677 SG1 2854.8 SG2 447.3 THA 178.99 EL1 1266.9 EL2 280.4 ALF 165.24

LAUNCH DATE NOV 14 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 442.196 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.880 GAL -5.65 AZL 88.25 HCA 141.35 SMA 230.00 ECC .36825 INC 1.7527 V1 30.108
RP 243.99 LAP 1.09 LOP 193.02 VP 22.602 GAP 21.34 AZP 91.37 TAL 338.84 TAP 120.19 RCA 145.30 APO 314.69 V2 22.486
RC 134.631 GL 10.91 GP .27 ZAL 122.91 ZAP 171.75 ETS 176.85 ZAE 154.94 ETE 358.66 ZAC 89.00 ETC 256.06 CLP 171.76

PLANETOCENTRIC CONIC

C3 31.477 VHL 5.610 DLA 11.88 RAL 180.05 RAD 6568.3 VEL 12.363 PTH 2.23 VHP 9.705 DPA -.47 RAP 185.01 ECC 1.5180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 56	2703.75	-27.67	74.83	53.74	96.28	19 0 0	2103.7	-26.51	66.36
90.00	9 20 16	4592.05	12.34	194.22	46.98	64.31	10 36 48	3992.1	8.78	187.35
100.00	19 42 19	2421.93	-29.04	53.92	53.55	97.43	20 22 41	1821.9	-27.71	45.37
100.00	10 35 34	4349.11	13.57	175.73	46.35	63.11	11 48 3	3749.1	9.86	168.91
110.00	21 4 13	2165.65	-32.69	33.78	52.88	100.61	21 40 18	1565.7	-30.88	25.03
110.00	11 30 9	4178.14	16.82	160.93	44.53	59.79	12 39 47	3578.1	12.68	154.27

DIFFERENTIAL CORRECTIONS
TDE .9522 TRA-2.4254 TC3 .9240 BAU .3901
RDE -.4035 RRA -.1304 RC3 -.0756 FAU .07152
FDE -.4634 FRA 1.8193 FC3-1.9670 BSP 9838
BDE 1.0342 BRA 2.4289 BC3 .9270 FSP 716

MID-COURSE EXECUTION ACCURACY
SGT 2902.9 SGR 442.1 SG3 254.8
RRT -.1124 RRF .0951 RTF -.8822
SGB 2936.4 R23 .0065 R13 .8822
SG1 2903.4 SG2 439.3 THA 179.00

ORBIT DETERMINATION ACCURACY
ST 1234.2 SR 414.1 SS 623.4
CRT -.7236 CRS -.5585 CST .9751
LSA 1408.1 MSA 315.6 SSA 30.1
EL1 1271.9 EL2 277.3 ALF 165.66

LAUNCH DATE NOV 14 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 444.687 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.788 GAL -5.47 AZL 88.25 HCA 142.26 SMA 227.47 ECC .36068 INC 1.7496 V1 30.108
RP 243.75 LAP 1.07 LOP 193.93 VP 22.484 GAP 20.76 AZP 91.38 TAL 339.19 TAP 121.45 RCA 145.43 APO 309.52 V2 22.510
RC 136.814 GL 11.12 GP .28 ZAL 122.35 ZAP 171.25 ETS 176.87 ZAE 154.85 ETE 358.84 ZAC 89.10 ETC 256.05 CLP 171.26

PLANETOCENTRIC CONIC

C3 30.039 VHL 5.481 DLA 12.30 RAL 179.64 RAD 6568.2 VEL 12.305 PTH 2.22 VHP 9.488 DPA -.63 RAP 185.39 ECC 1.4944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 47	2705.97	-27.69	74.99	52.62	96.20	18 54 53	2106.0	-26.54	66.51
90.00	9 22 6	4566.35	11.57	192.72	45.83	63.98	10 38 12	3966.3	7.98	185.88
100.00	19 37 26	2423.33	-29.05	54.02	52.44	97.37	20 17 49	1823.3	-27.73	45.47
100.00	10 37 9	4324.23	12.80	174.29	45.20	62.76	11 49 13	3724.2	9.05	167.51
110.00	20 59 53	2165.31	-32.68	33.76	51.77	100.62	21 35 58	1565.3	-30.87	25.00
110.00	11 31 11	4155.01	16.02	159.61	43.37	59.39	12 40 26	3555.0	11.84	153.00

DIFFERENTIAL CORRECTIONS
TDE .9397 TRA-2.3859 TC3 1.0101 BAU .4069
RDE -.3871 RRA -.1237 RC3 -.0784 FAU .07355
FDE -.4574 FRA 1.8571 FC3-2.1197 BSP 9793
BDE 1.0163 BRA 2.3891 BC3 1.0131 FSP 762

MID-COURSE EXECUTION ACCURACY
SGT 2950.9 SGR 434.4 SG3 267.4
RRT -.1209 RRF .0970 RTF -.8887
SGB 2982.7 R23 .0129 R13 .8886
SG1 2951.4 SG2 431.1 THA 178.96

ORBIT DETERMINATION ACCURACY
ST 1246.1 SR 406.7 SS 629.0
CRT -.7248 CRS -.5449 CST .9711
LSA 1418.8 MSA 316.0 SSA 29.7
EL1 1282.2 EL2 272.3 ALF 166.05

LAUNCH DATE NOV 14 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 447.265 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.700 GAL -5.30 AZL 88.25 HCA 143.17 SMA 225.11 ECC .35344 INC 1.7462 V1 30.108
RP 243.50 LAP 1.05 LOP 194.85 VP 22.372 GAP 20.18 AZP 91.40 TAL 339.54 TAP 122.71 RCA 145.55 APO 304.67 V2 22.535
RC 139.022 GL 11.34 GP .29 ZAL 121.78 ZAP 170.75 ETS 176.89 ZAE 154.80 ETE 359.02 ZAC 89.20 ETC 256.03 CLP 170.75

PLANETOCENTRIC CONIC

C3 28.690 VHL 5.356 DLA 12.71 RAL 179.21 RAD 6568.2 VEL 12.250 PTH 2.20 VHP 9.276 DPA -.79 RAP 185.77 ECC 1.4722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 31	2708.71	-27.71	75.19	51.51	96.10	18 49 40	2108.7	-26.57	66.71
90.00	9 23 58	4540.61	10.80	191.22	44.70	63.66	10 39 39	3940.6	7.18	184.42
100.00	19 32 25	2425.21	-29.07	54.16	51.33	97.30	20 12 50	1825.2	-27.75	45.60
100.00	10 38 45	4299.34	12.02	172.85	44.07	62.43	11 50 25	3699.3	8.24	166.11
110.00	20 55 27	2165.40	-32.68	33.76	50.66	100.62	21 31 33	1565.4	-30.87	25.01
110.00	11 32 13	4131.91	15.22	158.30	42.22	59.02	12 41 5	3531.9	11.00	151.74

DIFFERENTIAL CORRECTIONS
TDE .9121 TRA-2.3608 TC3 1.0800 BAU .4154
RDE -.3710 RRA -.1169 RC3 -.0808 FAU .07587
FDE -.4547 FRA 1.8909 FC3-2.2895 BSP 10097
BDE .9846 BRA 2.3637 BC3 1.0831 FSP 802

MID-COURSE EXECUTION ACCURACY
SGT 2998.7 SGR 425.9 SG3 280.7
RRT -.1217 RRF .1007 RTF -.8911
SGB 3028.8 R23 .0100 R13 .8911
SG1 2999.2 SG2 422.7 THA 178.99

ORBIT DETERMINATION ACCURACY
ST 1247.5 SR 398.7 SS 635.6
CRT -.7185 CRS -.5354 CST .9706
LSA 1421.0 MSA 314.8 SSA 30.1
EL1 1281.5 EL2 269.9 ALF 166.45

LAUNCH DATE NOV 14 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 449.922 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.615 GAL -5.13 AZL 88.26 HCA 144.09 SMA 222.90 ECC .34649 INC 1.7427 V1 30.108
RP 243.25 LAP 1.02 LOP 195.76 VP 22.266 GAP 19.61 AZP 91.41 TAL 339.90 TAP 123.99 RCA 145.67 APO 300.13 V2 22.560
RC 141.251 GL 11.55 GP .30 ZAL 121.19 ZAP 170.23 ETS 176.90 ZAE 154.79 ETE 359.20 ZAC 89.30 ETC 256.01 CLP 170.24

PLANETOCENTRIC CONIC

C3 27.422 VHL 5.237 DLA 13.14 RAL 178.77 RAD 6568.1 VEL 12.198 PTH 2.19 VHP 9.069 DPA -.94 RAP 186.14 ECC 1.4513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 6	2711.98	-27.73	75.43	50.40	95.99	18 44 18	2112.0	-26.61	66.94
90.00	9 25 52	4514.79	10.02	189.73	43.58	63.38	10 41 7	3914.8	6.36	182.96
100.00	19 27 16	2427.60	-29.09	54.33	50.22	97.21	20 7 44	1827.6	-27.78	45.77
100.00	10 40 23	4274.40	11.23	171.42	42.94	62.12	11 51 37	3674.4	7.42	164.71
110.00	20 50 54	2165.94	-32.69	33.80	49.56	100.60	21 27 0	1565.9	-30.88	25.05
110.00	11 33 15	4108.83	14.40	157.01	41.09	58.66	12 41 43	3508.8	10.15	150.49

DIFFERENTIAL CORRECTIONS
TDE .8871 TRA-2.3321 TC3 1.1581 BAU .4257
RDE -.3554 RRA -.1105 RC3 -.0831 FAU .07829
FDE -.4503 FRA 1.9260 FC3-2.4717 BSP 10323
BDE .9557 BRA 2.3347 BC3 1.1611 FSP 845

MID-COURSE EXECUTION ACCURACY
SGT 3046.2 SGR 417.4 SG3 294.6
RRT -.1240 RRF .1041 RTF -.8942
SGB 3074.6 R23 .0089 R13 .8942
SG1 3046.6 SG2 414.1 THA 179.01

ORBIT DETERMINATION ACCURACY
ST 1249.5 SR 390.7 SS 641.5
CRT -.7134 CRS -.5241 CST .9691
LSA 1423.4 MSA 313.9 SSA 30.4
EL1 1281.7 EL2 266.9 ALF 166.85

LAUNCH DATE NOV 14 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 452.652 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	34.534	GAL	-4.97	AZL	88.26	HCA	145.00	SMA	220.82	ECC	.33983	INC	1.7391
RP	243.00	LAP	1.00	LOP	196.68	VP	22.166	GAP	19.04	AZP	91.42	TAL	340.26	TAP	125.26	RCA	145.78	APO	295.86
RC	143.499	GL	11.76	GP	.31	ZAL	120.59	ZAP	169.71	ETS	176.91	ZAE	154.83	ETE	359.38	ZAC	89.40	ETC	256.00

V1 30.108 V2 22.585 CLP 169.71

PLANETOCENTRIC CONIC

C3 26.229 VHL 5.121 DLA 13.57 RAL 178.31 RAD 6568.1 VEL 12.149 PTH 2.18 VHP 8.867 DPA -1.10 RAP 186.50 ECC 1.4317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 32	2715.80	-27.76	75.70	49.30	95.85	18 38 48	2115.8	-26.65	67.21
90.00	9 27 48	4488.90	9.22	188.24	42.47	63.11	10 42 37	3888.9	5.54	181.50
100.00	19 22 0	2430.50	-29.11	54.54	49.12	97.10	20 2 30	1830.5	-27.82	45.98
100.00	10 42 2	4249.42	10.43	170.00	41.82	61.83	11 52 51	3649.4	6.59	163.32
110.00	20 46 14	2166.91	-32.70	33.88	48.47	100.55	21 22 21	1566.9	-30.90	25.12
110.00	11 34 17	4085.78	13.58	155.73	39.97	58.33	12 42 22	3485.8	9.30	149.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8625	TRA	-2.3017	TC3	1.2413	BAU	.4363	SGT	3092.7	SGR	408.7	SG3	309.2	ST	1250.6	SR	382.4
RDE	-.3403	RRA	-.1044	RC3	-.0853	FAU	.08079	RRT	-.1268	RRF	.1071	RTF	-.8976	CRT	-.7084	CRS	-.5110
FDE	-.4441	FRA	1.9618	FC3	-2.6665	BSP	10528	SGB	3119.6	R23	.0088	R13	.8975	LSA	1424.5	MSA	313.5
BDE	.9272	BRA	2.3041	BC3	1.2442	FSP	892	SG1	3093.1	SG2	405.3	THA	179.02	EL1	1281.0	EL2	263.5

SS 646.6 CST .9671 SSA 30.5 ALF 167.23

LAUNCH DATE NOV 14 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 455.451 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	34.457	GAL	-4.81	AZL	88.26	HCA	145.92	SMA	218.87	ECC	.33344	INC	1.7352
RP	242.74	LAP	.97	LOP	197.60	VP	22.071	GAP	18.48	AZP	91.44	TAL	340.63	TAP	126.55	RCA	145.89	APO	291.85
RC	145.763	GL	11.98	GP	.33	ZAL	119.98	ZAP	169.18	ETS	176.91	ZAE	154.91	ETE	359.55	ZAC	89.50	ETC	255.98

V1 30.108 V2 22.611 CLP 169.18

PLANETOCENTRIC CONIC

C3 25.108 VHL 5.011 DLA 14.00 RAL 177.84 RAD 6568.0 VEL 12.103 PTH 2.17 VHP 8.670 DPA -1.24 RAP 186.86 ECC 1.4132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 49	2720.14	-27.79	76.02	48.20	95.69	18 33 9	2120.1	-26.71	67.52
90.00	9 29 46	4462.98	8.42	186.76	41.37	62.86	10 44 9	3863.0	4.72	180.04
100.00	19 16 35	2433.89	-29.14	54.79	48.03	96.98	19 57 9	1833.9	-27.87	46.22
100.00	10 43 42	4224.46	9.63	168.58	40.72	61.56	11 54 6	3624.5	5.76	161.93
110.00	20 41 27	2168.32	-32.72	33.98	47.38	100.49	21 17 36	1568.3	-30.93	25.22
110.00	11 35 19	4062.79	12.76	154.46	38.87	58.02	12 43 1	3462.8	8.44	148.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8388	TRA	-2.2701	TC3	1.3293	BAU	.4472	SGT	3138.7	SGR	399.8	SG3	324.4	ST	1251.3	SR	374.0
RDE	-.3257	RRA	-.0986	RC3	-.0875	FAU	.08341	RRT	-.1301	RRF	.1100	RTF	-.9009	CRT	-.7037	CRS	-.4970
FDE	-.4369	FRA	1.9982	FC3	-2.8758	BSP	10701	SGB	3164.1	R23	.0092	R13	.9009	LSA	1425.0	MSA	313.4
BDE	.8998	BRA	2.2722	BC3	1.3322	FSP	940	SG1	3139.2	SG2	396.3	THA	179.04	EL1	1279.9	EL2	259.8

SS 651.3 CST .9647 SSA 30.6 ALF 167.60

LAUNCH DATE NOV 14 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 458.313 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	34.382	GAL	-4.65	AZL	88.27	HCA	146.84	SMA	217.04	ECC	.32731	INC	1.7312
RP	242.47	LAP	.95	LOP	198.52	VP	21.982	GAP	17.92	AZP	91.45	TAL	341.00	TAP	127.84	RCA	146.00	APO	288.07
RC	148.041	GL	12.19	GP	.34	ZAL	119.35	ZAP	168.63	ETS	176.91	ZAE	155.03	ETE	359.73	ZAC	89.59	ETC	255.97

V1 30.108 V2 22.638 CLP 168.64

PLANETOCENTRIC CONIC

C3 24.055 VHL 4.905 DLA 14.44 RAL 177.36 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 8.476 DPA -1.39 RAP 187.21 ECC 1.3959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 58	2725.01	-27.82	76.37	47.10	95.52	18 27 23	2125.0	-26.76	67.86
90.00	9 31 46	4437.04	7.61	185.28	40.28	62.64	10 45 43	3837.0	3.89	178.58
100.00	19 11 2	2437.77	-29.17	55.08	46.94	96.83	19 51 40	1837.8	-27.92	46.50
100.00	10 45 23	4199.51	8.82	167.17	39.63	61.32	11 55 22	3599.5	4.92	160.55
110.00	20 36 34	2170.15	-32.74	34.12	46.31	100.41	21 12 44	1570.2	-30.96	25.35
110.00	11 36 20	4039.89	11.93	153.20	37.77	57.73	12 43 40	3439.9	7.58	146.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8155	TRA	-2.2374	TC3	1.4218	BAU	.4581	SGT	3183.9	SGR	390.8	SG3	340.5	ST	1251.0	SR	365.5
RDE	-.3115	RRA	-.0930	RC3	-.0894	FAU	.08615	RRT	-.1336	RRF	.1128	RTF	-.9042	CRT	-.6989	CRS	-.4820
FDE	-.4288	FRA	2.0350	FC3	-3.1007	BSP	10862	SGB	3207.8	R23	.0099	R13	.9042	LSA	1424.5	MSA	313.4
BDE	.8729	BRA	2.2393	BC3	1.4246	FSP	992	SG1	3184.3	SG2	387.2	THA	179.05	EL1	1277.9	EL2	255.9

SS 655.7 CST .9619 SSA 30.6 ALF 167.97

LAUNCH DATE NOV 14 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 461.234 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	34.311	GAL	-4.50	AZL	88.27	HCA	147.77	SMA	215.31	ECC	.32144	INC	1.7271
RP	242.20	LAP	.92	LOP	199.44	VP	21.898	GAP	17.37	AZP	91.46	TAL	341.37	TAP	129.14	RCA	146.10	APO	284.52
RC	150.330	GL	12.40	GP	.36	ZAL	118.71	ZAP	168.08	ETS	176.91	ZAE	155.19	ETE	359.91	ZAC	89.69	ETC	255.96

V1 30.108 V2 22.664 CLP 168.09

PLANETOCENTRIC CONIC

C3 23.064 VHL 4.803 DLA 14.89 RAL 176.87 RAD 6567.9 VEL 12.018 PTH 2.15 VHP 8.288 DPA -1.53 RAP 187.55 ECC 1.3796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 0	2730.40	-27.85	76.76	46.02	95.33	18 21 30	2130.4	-26.82	68.25
90.00	9 33 47	4411.10	6.80	183.81	39.21	62.45	10 47 18	3811.1	3.06	177.13
100.00	19 5 23	2442.13	-29.21	55.40	45.86	96.67	19 46 5	1842.1	-27.98	46.81
100.00	10 47 5	4174.60	8.00	165.77	38.56	61.10	11 56 40	3574.6	4.08	159.18
110.00	20 31 35	2172.41	-32.77	34.29	45.24	100.32	21 7 47	1572.4	-31.00	25.52
110.00	11 37 22	4017.09	11.10	151.96	36.69	57.46	12 44 19	3417.1	6.73	145.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7911	TRA	-2.2053	TC3	1.5164	BAU	.4684	SGT	3228.5	SGR	381.5	SG3	357.2	ST	1248.9	SR	356.7
RDE	-.2977	RRA	-.0877	RC3	-.0912	FAU	.08901	RRT	-.1365	RRF	.1151	RTF	-.9073	CRT	-.6933	CRS	-.4650
FDE	-.4187	FRA	2.0730	FC3	-3.3409	BSP	11043	SGB	3251.0	R23	.0106	R13	.9073	LSA	1422.1	MSA	313.9
BDE	.8453	BRA	2.2070	BC3	1.5192	FSP	1048	SG1	3228.9	SG2	377.9	THA	179.06	EL1	1274.2	EL2	252.0

SS 659.5 CST .9587 SSA 30.6 ALF 168.34

LAUNCH DATE NOV 14 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 464.210 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.242 GAL -4.35 AZL 88.28 HCA 148.69 SMA 213.68 ECC .31581 INC 1.7226 V1 30.108
RP 241.93 LAP .89 LOP 200.37 VP 21.819 GAP 16.82 AZP 91.47 TAL 341.75 TAP 130.44 RCA 146.20 APO 281.16 V2 22.692
RC 152.629 GL 12.60 GP .38 ZAL 118.06 ZAP 167.52 ETS 176.90 ZAE 155.38 ETE .09 ZAC 89.79 ETC 255.95 CLP 167.53

PLANETOCENTRIC CONIC

C3 22.133 VHL 4.705 DLA 15.33 RAL 176.35 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 8.103 DPA -1.66 RAP 187.89 ECC 1.3642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 52	2736.31	-27.89	77.19	44.94	95.12	18 15 29	2136.3	-26.89	68.67
90.00	9 35 50	4385.16	5.98	182.34	38.15	62.27	10 48 55	3785.2	2.22	175.68
100.00	18 59 35	2446.97	-29.24	55.75	44.78	96.48	19 40 22	1847.0	-28.04	47.15
100.00	10 48 48	4149.72	7.18	164.38	37.49	60.90	11 57 58	3549.7	3.24	157.81
110.00	20 26 29	2175.07	-32.80	34.49	44.17	100.20	21 2 44	1575.1	-31.05	25.71
110.00	11 38 23	3994.39	10.26	150.73	35.62	57.21	12 44 58	3394.4	5.87	144.39

DIFFERENTIAL CORRECTIONS
TDE .7741 TRA-2.1643 TC3 1.6291 BAU .4828
RDE -.2846 RRA -.0828 RC3 -.0930 FAU .09198
FDE -.4067 FRA 2.1116 FC3-3.5978 BSP 11017
BDE .8247 BRA 2.1659 BC3 1.6318 FSP 1108

MID-COURSE EXECUTION ACCURACY
SGT 3272.4 SGR 372.4 SG3 374.8
RRT -.1436 RRF .1171 RTF -.9119
SGB 3293.5 R23 .0157 R13 .9119
SG1 3272.8 SG2 368.5 THA 179.05

ORBIT DETERMINATION ACCURACY
ST 1250.3 SR 348.0 SS 662.6
CRT -.6921 CRS -.4459 CST .9530
LSA 1422.1 MSA 316.3 SSA 30.1
EL1 1274.2 EL2 246.5 ALF 168.67

LAUNCH DATE NOV 14 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 467.237 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.177 GAL -4.21 AZL 88.28 HCA 149.62 SMA 212.15 ECC .31042 INC 1.7179 V1 30.108
RP 241.65 LAP .87 LOP 201.29 VP 21.745 GAP 16.28 AZP 91.48 TAL 342.12 TAP 131.74 RCA 146.29 APO 278.00 V2 22.720
RC 154.936 GL 12.80 GP .40 ZAL 117.40 ZAP 166.95 ETS 176.89 ZAE 155.62 ETE .28 ZAC 89.89 ETC 255.93 CLP 166.96

PLANETOCENTRIC CONIC

C3 21.258 VHL 4.611 DLA 15.78 RAL 175.83 RAD 6567.9 VEL 11.943 PTH 2.13 VHP 7.923 DPA -1.79 RAP 188.22 ECC 1.3499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 39	2742.68	-27.93	77.65	43.87	94.89	18 9 21	2142.7	-26.96	69.12
90.00	9 37 54	4359.32	5.16	180.89	37.10	62.12	10 50 34	3759.3	1.39	174.24
100.00	18 53 42	2452.25	-29.28	56.14	43.71	96.28	19 34 35	1852.2	-28.11	47.53
100.00	10 50 32	4125.00	6.36	163.01	36.45	60.73	11 59 17	3525.0	2.41	156.45
110.00	20 21 19	2178.11	-32.84	34.72	43.12	100.07	20 57 38	1578.1	-31.10	25.93
110.00	11 39 24	3971.90	9.43	149.52	34.57	56.99	12 45 36	3371.9	5.02	143.21

DIFFERENTIAL CORRECTIONS
TDE .7416 TRA-2.1388 TC3 1.7186 BAU .4892
RDE -.2715 RRA -.0779 RC3 -.0940 FAU .09518
FDE -.3948 FRA 2.1496 FC3-3.8763 BSP 11356
BDE .7897 BRA 2.1402 BC3 1.7212 FSP 1167

MID-COURSE EXECUTION ACCURACY
SGT 3314.9 SGR 362.5 SG3 393.3
RRT -.1420 RRF .1190 RTF -.9134
SGB 3334.7 R23 .0124 R13 .9134
SG1 3315.3 SG2 358.8 THA 179.10

ORBIT DETERMINATION ACCURACY
ST 1240.2 SR 338.7 SS 665.7
CRT -.6809 CRS -.4271 CST .9512
LSA 1412.5 MSA 315.9 SSA 30.4
EL1 1262.3 EL2 243.7 ALF 169.05

LAUNCH DATE NOV 14 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 470.312 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.114 GAL -4.07 AZL 88.29 HCA 150.55 SMA 210.70 ECC .30525 INC 1.7130 V1 30.108
RP 241.36 LAP .84 LOP 202.22 VP 21.676 GAP 15.74 AZP 91.49 TAL 342.50 TAP 133.05 RCA 146.38 APO 275.01 V2 22.748
RC 157.250 GL 13.00 GP .42 ZAL 116.73 ZAP 166.37 ETS 176.87 ZAE 155.89 ETE .47 ZAC 89.98 ETC 255.92 CLP 166.37

PLANETOCENTRIC CONIC

C3 20.436 VHL 4.521 DLA 16.22 RAL 175.30 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 7.746 DPA -1.92 RAP 188.55 ECC 1.3363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 17	2749.56	-27.97	78.15	42.80	94.64	18 3 7	2149.6	-27.03	69.61
90.00	9 40 0	4333.52	4.34	179.44	36.07	61.99	10 52 14	3733.5	.56	172.80
100.00	18 47 42	2457.98	-29.33	56.56	42.65	96.06	19 28 40	1858.0	-28.18	47.94
100.00	10 52 16	4100.33	5.53	161.64	35.41	60.58	12 0 36	3500.3	1.57	155.09
110.00	20 16 3	2181.53	-32.88	34.98	42.07	99.92	20 52 25	1581.5	-31.16	26.18
110.00	11 40 24	3949.55	8.60	148.32	33.53	56.79	12 46 14	3349.5	4.17	142.04

DIFFERENTIAL CORRECTIONS
TDE .7212 TRA-2.1004 TC3 1.8314 BAU .5010
RDE -.2590 RRA -.0734 RC3 -.0952 FAU .09847
FDE -.3808 FRA 2.1887 FC3-4.1717 BSP 11400
BDE .7663 BRA 2.1017 BC3 1.8339 FSP 1231

MID-COURSE EXECUTION ACCURACY
SGT 3356.2 SGR 353.0 SG3 412.6
RRT -.1467 RRF .1204 RTF -.9169
SGB 3374.7 R23 .0158 R13 .9169
SG1 3356.6 SG2 349.1 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 1236.9 SR 329.6 SS 668.2
CRT -.6771 CRS -.4058 CST .9455
LSA 1408.1 MSA 318.5 SSA 30.0
EL1 1257.6 EL2 238.5 ALF 169.39

LAUNCH DATE NOV 14 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 473.431 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 34.053 GAL -3.93 AZL 88.29 HCA 151.48 SMA 209.33 ECC .30029 INC 1.7076 V1 30.108
RP 241.08 LAP .82 LOP 203.15 VP 21.611 GAP 15.20 AZP 91.50 TAL 342.88 TAP 134.37 RCA 146.47 APO 272.19 V2 22.777
RC 159.568 GL 13.20 GP .44 ZAL 116.05 ZAP 165.77 ETS 176.85 ZAE 156.20 ETE .66 ZAC 90.08 ETC 255.91 CLP 165.78

PLANETOCENTRIC CONIC

C3 19.663 VHL 4.434 DLA 16.67 RAL 174.75 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 7.574 DPA -2.04 RAP 188.86 ECC 1.3236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2756.88	-28.00	78.68	41.74	94.38	17 56 46	2156.9	-27.10	70.13
90.00	9 42 7	4307.84	3.51	178.00	35.06	61.88	10 53 55	3707.8	-.27	171.37
100.00	18 41 37	2464.10	-29.37	57.01	41.60	95.83	19 22 41	1864.1	-28.25	48.38
100.00	10 54 1	4075.85	4.71	160.28	34.39	60.45	12 1 57	3475.8	.74	153.75
110.00	20 10 43	2185.29	-32.92	35.27	41.03	99.76	20 47 9	1585.3	-31.23	26.45
110.00	11 41 23	3927.43	7.77	147.14	32.51	56.61	12 46 51	3327.4	3.33	140.88

DIFFERENTIAL CORRECTIONS
TDE .6919 TRA-2.0703 TC3 1.9319 BAU .5085
RDE -.2468 RRA -.0691 RC3 -.0956 FAU .10197
FDE -.3655 FRA 2.2279 FC3-4.4894 BSP 11651
BDE .7346 BRA 2.0715 BC3 1.9343 FSP 1298

MID-COURSE EXECUTION ACCURACY
SGT 3395.9 SGR 342.8 SG3 432.9
RRT -.1462 RRF .1212 RTF -.9189
SGB 3413.2 R23 .0146 R13 .9189
SG1 3396.3 SG2 339.1 THA 179.15

ORBIT DETERMINATION ACCURACY
ST 1226.2 SR 320.1 SS 670.5
CRT -.6669 CRS -.3833 CST .9420
LSA 1397.4 MSA 319.4 SSA 30.0
EL1 1245.4 EL2 234.8 ALF 169.76

LAUNCH DATE NOV 14 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 476.594 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.996 GAL -3.79 AZL 88.30 HCA 152.42 SMA 208.04 ECC .29554 INC 1.7019 V1 30.108
RP 240.79 LAP .79 LOP 204.09 VP 21.551 GAP 14.67 AZP 91.51 TAL 343.27 TAP 135.68 RCA 146.56 APO 269.53 V2 22.806
RC 161.890 GL 13.39 GP .46 ZAL 115.37 ZAP 165.16 ETS 176.83 ZAE 156.54 ETE .87 ZAC 90.17 ETC 255.91 CLP 165.17

PLANETOCENTRIC CONIC

C3 18.935 VHL 4.351 DLA 17.11 RAL 174.20 RAD 6567.8 VEL 11.846 PTH 2.10 VHP 7.404 DPA -2.15 RAP 189.17 ECC 1.3116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 14	2764.68	-28.04	79.25	40.69	94.09	17 50 18	2164.7	-27.18	70.69
90.00	9 44 15	4282.21	2.69	176.57	34.05	61.80	10 55 37	3682.2	-1.10	169.94
100.00	18 35 24	2470.66	-29.41	57.49	40.56	95.58	19 16 35	1870.7	-28.33	48.86
100.00	10 55 46	4051.45	3.89	158.94	33.38	60.34	12 3 17	3451.5	-.08	152.41
110.00	20 5 18	2189.40	-32.97	35.58	40.00	99.58	20 41 47	1589.4	-31.30	26.75
110.00	11 42 21	3905.48	6.95	145.98	31.49	56.45	12 47 27	3305.5	2.49	139.73

DIFFERENTIAL CORRECTIONS
TDE .6824 TRA-2.0204 TC3 2.0758 BAU .5260
RDE -.2353 RRA -.0653 RC3 -.0965 FAU .10566
FDE -.3496 FRA 2.2669 FC3-4.8307 BSP 11421
BDE .7219 BRA 2.0215 BC3 2.0780 FSP 1367

MID-COURSE EXECUTION ACCURACY
SGT 3437.9 SGR 333.4 SG3 454.2
RRT -.1566 RRF .1223 RTF -.9241
SGB 3454.1 R23 .0240 R13 .9240
SG1 3438.3 SG2 329.3 THA 179.12

ORBIT DETERMINATION ACCURACY
ST 1227.9 SR 311.0 SS 672.7
CRT -.6703 CRS -.3597 CST .9317
LSA 1396.4 MSA 325.7 SSA 28.8
EL1 1246.1 EL2 227.5 ALF 170.03

LAUNCH DATE NOV 14 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 479.794 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.940 GAL -3.66 AZL 88.30 HCA 153.35 SMA 206.82 ECC .29100 INC 1.6959 V1 30.108
RP 240.49 LAP .76 LOP 205.02 VP 21.495 GAP 14.15 AZP 91.52 TAL 343.65 TAP 137.00 RCA 146.64 APO 267.01 V2 22.836
RC 164.213 GL 13.57 GP .49 ZAL 114.68 ZAP 164.54 ETS 176.80 ZAE 156.92 ETE 1.08 ZAC 90.27 ETC 255.90 CLP 164.55

PLANETOCENTRIC CONIC

C3 18.253 VHL 4.272 DLA 17.55 RAL 173.63 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 7.240 DPA -2.26 RAP 189.47 ECC 1.3004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 35	2772.80	-28.08	79.84	39.65	93.80	17 43 48	2172.8	-27.26	71.27
90.00	9 46 23	4256.87	1.87	175.15	33.06	61.74	10 57 20	3656.9	-1.92	168.52
100.00	18 29 9	2477.51	-29.46	58.00	39.52	95.32	19 10 27	1877.5	-28.41	49.35
100.00	10 57 30	4027.38	3.08	157.61	32.39	60.25	12 4 38	3427.4	-.90	151.09
110.00	19 59 51	2193.76	-33.02	35.91	38.98	99.39	20 36 25	1593.8	-31.37	27.07
110.00	11 43 18	3883.90	6.14	144.84	30.50	56.31	12 48 2	3283.9	1.67	138.60

DIFFERENTIAL CORRECTIONS
TDE .6404 TRA-2.0022 TC3 2.1532 BAU .5260
RDE -.2235 RRA -.0612 RC3 -.0954 FAU .10947
FDE -.3307 FRA 2.3078 FC3-5.1921 BSP 11947
BDE .6783 BRA 2.0031 BC3 2.1553 FSP 1442

MID-COURSE EXECUTION ACCURACY
SGT 3471.9 SGR 322.4 SG3 476.5
RRT -.1473 RRF .1209 RTF -.9236
SGB 3486.8 R23 .0165 R13 .9236
SG1 3472.2 SG2 318.8 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 1206.0 SR 300.9 SS 674.5
CRT -.6497 CRS -.3333 CST .9312
LSA 1376.2 MSA 324.0 SSA 29.5
EL1 1222.3 EL2 225.7 ALF 170.46

LAUNCH DATE NOV 14 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 483.032 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.887 GAL -3.54 AZL 88.31 HCA 154.29 SMA 205.67 ECC .28664 INC 1.6894 V1 30.108
RP 240.19 LAP .73 LOP 205.96 VP 21.443 GAP 13.63 AZP 91.52 TAL 344.03 TAP 138.32 RCA 146.71 APO 264.62 V2 22.866
RC 166.536 GL 13.75 GP .52 ZAL 113.98 ZAP 163.91 ETS 176.77 ZAE 157.34 ETE 1.31 ZAC 90.36 ETC 255.89 CLP 163.92

PLANETOCENTRIC CONIC

C3 17.611 VHL 4.197 DLA 17.99 RAL 173.05 RAD 6567.7 VEL 11.790 PTH 2.08 VHP 7.078 DPA -2.36 RAP 189.76 ECC 1.2898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 50	2781.33	-28.12	80.46	38.61	93.49	17 37 11	2181.3	-27.34	71.88
90.00	9 48 32	4231.64	1.06	173.74	32.09	61.70	10 59 4	3631.6	-2.73	167.12
100.00	18 22 49	2484.72	-29.50	58.53	38.49	95.04	19 4 13	1884.7	-28.49	49.87
100.00	10 59 14	4003.48	2.27	156.30	31.41	60.19	12 5 58	3403.5	-1.71	149.78
110.00	19 54 19	2198.40	-33.07	36.26	37.97	99.19	20 30 58	1598.4	-31.45	27.41
110.00	11 44 13	3862.56	5.33	143.71	29.52	56.18	12 48 35	3262.6	.85	137.49

DIFFERENTIAL CORRECTIONS
TDE .6159 TRA-1.9663 TC3 2.2697 BAU .5348
RDE -.2125 RRA -.0577 RC3 -.0945 FAU .11353
FDE -.3117 FRA 2.3480 FC3-5.5809 BSP 12074
BDE .6515 BRA 1.9672 BC3 2.2716 FSP 1519

MID-COURSE EXECUTION ACCURACY
SGT 3507.6 SGR 311.9 SG3 499.9
RRT -.1474 RRF .1196 RTF -.9260
SGB 3521.5 R23 .0181 R13 .9260
SG1 3507.9 SG2 308.5 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 1194.7 SR 291.1 SS 676.4
CRT -.6411 CRS -.3064 CST .9249
LSA 1364.5 MSA 327.1 SSA 29.1
EL1 1209.7 EL2 220.7 ALF 170.81

LAUNCH DATE NOV 14 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 486.306 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.836 GAL -3.41 AZL 88.32 HCA 155.23 SMA 204.57 ECC .28247 INC 1.6826 V1 30.108
RP 239.88 LAP .70 LOP 206.90 VP 21.395 GAP 13.12 AZP 91.53 TAL 344.41 TAP 139.64 RCA 146.79 APO 262.36 V2 22.897
RC 168.857 GL 13.92 GP .55 ZAL 113.28 ZAP 163.26 ETS 176.74 ZAE 157.79 ETE 1.55 ZAC 90.46 ETC 255.88 CLP 163.27

PLANETOCENTRIC CONIC

C3 17.007 VHL 4.124 DLA 18.43 RAL 172.47 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 6.920 DPA -2.46 RAP 190.04 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 0	2790.20	-28.15	81.11	37.58	93.17	17 30 30	2190.2	-27.42	72.52
90.00	9 50 41	4206.64	.25	172.35	31.13	61.68	11 0 47	3606.6	-3.53	165.72
100.00	18 16 24	2492.22	-29.55	59.08	37.47	94.75	18 57 57	1892.2	-28.57	50.41
100.00	11 0 57	3979.85	1.47	155.00	30.45	60.14	12 7 17	3379.8	-2.51	148.48
110.00	19 48 46	2203.28	-33.12	36.63	36.97	98.97	20 25 29	1603.3	-31.53	27.77
110.00	11 45 6	3841.55	4.53	142.61	28.54	56.08	12 49 7	3241.6	.05	136.40

DIFFERENTIAL CORRECTIONS
TDE .5904 TRA-1.9312 TC3 2.3852 BAU .5427
RDE -.2017 RRA -.0544 RC3 -.0930 FAU .11770
FDE -.2893 FRA 2.3903 FC3-5.9913 BSP 12200
BDE .6239 BRA 1.9320 BC3 2.3870 FSP 1602

MID-COURSE EXECUTION ACCURACY
SGT 3541.4 SGR 301.3 SG3 524.4
RRT -.1457 RRF .1164 RTF -.9282
SGB 3554.2 R23 .0200 R13 .9282
SG1 3541.6 SG2 298.0 THA 179.28

ORBIT DETERMINATION ACCURACY
ST 1181.6 SR 281.2 SS 678.1
CRT -.6311 CRS -.2755 CST .9174
LSA 1350.8 MSA 331.2 SSA 28.6
EL1 1195.3 EL2 215.7 ALF 171.17

LAUNCH DATE NOV 14 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 489.613 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.787 GAL -3.30 AZL 88.32 HCA 156.17 SMA 203.54 ECC .27847 INC 1.6751 V1 30.108
RP 239.58 LAP .68 LOP 207.85 VP 21.351 GAP 12.61 AZP 91.53 TAL 344.79 TAP 140.97 RCA 146.86 APO 260.22 V2 22.928
RC 171.174 GL 14.08 GP .58 ZAL 112.58 ZAP 162.60 ETS 176.70 ZAE 158.27 ETE 1.81 ZAC 90.55 ETC 255.88 CLP 162.61

PLANETOCENTRIC CONIC

C3 16.439 VHL 4.055 DLA 18.85 RAL 171.87 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 6.765 DPA -2.55 RAP 190.31 ECC 1.2705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 6	2799.36	-28.19	81.78	36.56	92.83	17 23 46	2199.4	-27.50	73.18
90.00	9 52 49	4181.88	-.55	170.97	30.18	61.69	11 2 30	3581.9	-4.33	164.33
100.00	18 9 57	2499.97	-29.59	59.65	36.46	94.46	18 51 37	1900.0	-28.66	50.97
100.00	11 2 39	3956.51	.68	153.72	29.50	60.11	12 8 36	3356.5	-3.30	147.20
110.00	19 43 10	2208.34	-33.18	37.02	35.97	98.75	20 19 58	1608.3	-31.61	28.14
110.00	11 45 56	3820.90	3.75	141.53	27.58	56.00	12 49 37	3220.9	-.74	135.32

DIFFERENTIAL CORRECTIONS
TDE .5698 TRA-1.8912 TC3 2.5149 BAU .5531
RDE -.1914 RRA -.0515 RC3 -.0911 FAU .12217
FDE -.2666 FRA 2.4319 FC3-6.4337 BSP 12198
BDE .6011 BRA 1.8919 BC3 2.5166 FSP 1687

MID-COURSE EXECUTION ACCURACY
SGT 3575.2 SGR 290.6 SG3 550.2
RRT -.1456 RRF .1124 RTF -.9311
SGB 3587.0 R23 .0243 R13 .9311
SG1 3575.5 SG2 287.5 THA 179.32

ORBIT DETERMINATION ACCURACY
ST 1170.4 SR 271.4 SS 680.0
CRT -.6244 CRS -.2442 CST .9077
LSA 1338.5 MSA 337.1 SSA 27.8
EL1 1183.1 EL2 209.7 ALF 171.49

LAUNCH DATE NOV 14 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 492.951 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.740 GAL -3.18 AZL 88.33 HCA 157.12 SMA 202.56 ECC .27465 INC 1.6671 V1 30.108
RP 239.26 LAP .65 LOP 208.79 VP 21.311 GAP 12.11 AZP 91.54 TAL 345.17 TAP 142.29 RCA 146.92 APO 258.19 V2 22.959
RC 173.485 GL 14.23 GP .62 ZAL 111.88 ZAP 161.92 ETS 176.66 ZAE 158.79 ETE 2.10 ZAC 90.65 ETC 255.87 CLP 161.93

PLANETOCENTRIC CONIC

C3 15.906 VHL 3.988 DLA 19.27 RAL 171.26 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 6.614 DPA -2.62 RAP 190.57 ECC 1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 11	2808.72	-28.22	82.46	35.55	92.49	17 17 0	2208.7	-27.57	73.85
90.00	9 54 55	4157.49	-1.33	169.61	29.25	61.71	11 4 13	3557.5	-5.11	162.96
100.00	18 3 29	2507.87	-29.63	60.24	35.45	94.15	18 45 16	1907.9	-28.74	51.55
100.00	11 4 18	3933.57	-.10	152.46	28.56	60.11	12 9 52	3333.6	-4.07	145.93
110.00	19 37 33	2213.53	-33.23	37.41	34.98	98.52	20 14 27	1613.5	-31.70	28.52
110.00	11 46 43	3800.68	2.98	140.47	26.64	55.93	12 50 4	3200.7	-1.52	134.26

DIFFERENTIAL CORRECTIONS
TDE .5395 TRA-1.8610 TC3 2.6207 BAU .5576
RDE -.1811 RRA -.0486 RC3 -.0878 FAU .12679
FDE -.2413 FRA 2.4753 FC3-6.9012 BSP 12443
BDE .5691 BRA 1.8616 BC3 2.6221 FSP 1779

MID-COURSE EXECUTION ACCURACY
SGT 3604.4 SGR 279.4 SG3 577.1
RRT -.1377 RRF .1056 RTF -.9323
SGB 3615.2 R23 .0237 R13 .9323
SG1 3604.6 SG2 276.7 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 1151.8 SR 261.1 SS 682.1
CRT -.6083 CRS -.2100 CST .9014
LSA 1320.5 MSA 340.0 SSA 27.6
EL1 1163.0 EL2 205.3 ALF 171.89

LAUNCH DATE NOV 14 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 496.318 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.696 GAL -3.07 AZL 88.34 HCA 158.07 SMA 201.63 ECC .27099 INC 1.6584 V1 30.108
RP 238.95 LAP .62 LOP 209.74 VP 21.274 GAP 11.62 AZP 91.54 TAL 345.55 TAP 143.62 RCA 146.99 APO 256.26 V2 22.991
RC 175.790 GL 14.37 GP .66 ZAL 111.17 ZAP 161.23 ETS 176.61 ZAE 159.34 ETE 2.40 ZAC 90.74 ETC 255.87 CLP 161.24

PLANETOCENTRIC CONIC

C3 15.404 VHL 3.925 DLA 19.68 RAL 170.65 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 6.466 DPA -2.69 RAP 190.82 ECC 1.2535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 13	2818.26	-28.24	83.16	34.54	92.14	17 10 11	2218.3	-27.65	74.54
90.00	9 56 59	4133.45	-2.11	168.27	28.32	61.76	11 5 53	3533.5	-5.87	161.61
100.00	17 56 59	2515.92	-29.67	60.83	34.45	93.84	18 38 55	1915.9	-28.82	52.13
100.00	11 5 55	3911.03	-.86	151.23	27.63	60.12	12 11 6	3311.0	-4.83	144.69
110.00	19 31 57	2218.81	-33.28	37.82	34.00	98.29	20 8 56	1618.8	-31.78	28.91
110.00	11 47 26	3780.91	2.22	139.43	25.70	55.88	12 50 27	3180.9	-2.27	133.23

DIFFERENTIAL CORRECTIONS
TDE .5135 TRA-1.8261 TC3 2.7373 BAU .5640
RDE -.1713 RRA -.0460 RC3 -.0838 FAU .13164
FDE -.2139 FRA 2.5193 FC3-7.3987 BSP 12560
BDE .5413 BRA 1.8267 BC3 2.7386 FSP 1874

MID-COURSE EXECUTION ACCURACY
SGT 3632.4 SGR 268.2 SG3 605.3
RRT -.1300 RRF .0965 RTF -.9341
SGB 3642.3 R23 .0258 R13 .9341
SG1 3632.6 SG2 265.9 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 1134.7 SR 250.9 SS 684.5
CRT -.5948 CRS -.1735 CST .8924
LSA 1303.5 MSA 345.2 SSA 26.9
EL1 1144.8 EL2 199.9 ALF 172.27

LAUNCH DATE NOV 14 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 499.714 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.653 GAL -2.96 AZL 88.35 HCA 159.02 SMA 200.74 ECC .26749 INC 1.6491 V1 30.108
RP 238.63 LAP .59 LOP 210.69 VP 21.241 GAP 11.13 AZP 91.54 TAL 345.92 TAP 144.94 RCA 147.05 APO 254.44 V2 23.024
RC 178.086 GL 14.49 GP .70 ZAL 110.47 ZAP 160.52 ETS 176.55 ZAE 159.93 ETE 2.74 ZAC 90.84 ETC 255.86 CLP 160.53

PLANETOCENTRIC CONIC

C3 14.931 VHL 3.864 DLA 20.08 RAL 170.03 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 6.322 DPA -2.75 RAP 191.06 ECC 1.2457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 15	2827.90	-28.26	83.86	33.54	91.79	17 3 23	2227.9	-27.72	75.24
90.00	9 59 1	4109.84	-2.87	166.95	27.41	61.82	11 7 30	3509.8	-6.62	160.27
100.00	17 50 29	2524.02	-29.70	61.43	33.46	93.53	18 32 33	1924.0	-28.90	52.72
100.00	11 7 27	3888.95	-1.61	150.02	26.71	60.15	12 12 16	3289.0	-5.57	143.47
110.00	19 26 21	2224.11	-33.33	38.22	33.03	98.06	20 3 25	1624.1	-31.86	29.30
110.00	11 48 5	3761.63	1.48	138.43	24.78	55.85	12 50 47	3161.6	-3.01	132.22

DIFFERENTIAL CORRECTIONS
TDE .4891 TRA-1.7908 TC3 2.8534 BAU .5698
RDE -.1617 RRA -.0438 RC3 -.0788 FAU .13669
FDE -.1851 FRA 2.5646 FC3-7.9252 BSP 12687
BDE .5151 BRA 1.7913 BC3 2.8545 FSP 1979

MID-COURSE EXECUTION ACCURACY
SGT 3658.0 SGR 256.9 SG3 634.8
RRT -.1200 RRF .0842 RTF -.9358
SGB 3667.1 R23 .0288 R13 .9358
SG1 3658.2 SG2 255.0 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 1117.9 SR 240.7 SS 687.5
CRT -.5814 CRS -.1351 CST .8822
LSA 1286.9 MSA 351.5 SSA 26.2
EL1 1126.9 EL2 194.3 ALF 172.64

LAUNCH DATE NOV 14 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 503.137 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.612 GAL -2.85 AZL 88.36 HCA 159.97 SMA 199.91 ECC .26414 INC 1.6383 V1 30.108
RP 238.31 LAP .56 LOP 211.64 VP 21.212 GAP 10.65 AZP 91.54 TAL 346.29 TAP 146.26 RCA 147.10 APO 252.71 V2 23.056
RC 180.373 GL 14.61 GP .75 ZAL 109.77 ZAP 159.80 ETS 176.49 ZAE 160.54 ETE 3.12 ZAC 90.94 ETC 255.86 CLP 159.81

PLANETOCENTRIC CONIC

C3 14.487 VHL 3.806 DLA 20.46 RAL 169.41 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 6.180 DPA -2.80 RAP 191.29 ECC 1.2384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 18	2837.54	-28.28	84.57	32.54	91.44	16 56 36	2237.5	-27.78	75.94
90.00	10 0 57	4086.74	-3.61	165.66	26.51	61.90	11 9 4	3486.7	-7.34	158.96
100.00	17 44 2	2532.10	-29.74	62.03	32.47	93.21	18 26 14	1932.1	-28.97	53.31
100.00	11 8 55	3867.41	-2.34	148.83	25.81	60.19	12 13 23	3267.4	-6.29	142.27
110.00	19 20 47	2229.38	-33.38	38.62	32.06	97.82	19 57 57	1629.4	-31.94	29.69
110.00	11 48 39	3742.90	.77	137.45	23.87	55.82	12 51 2	3142.9	-3.72	131.24

DIFFERENTIAL CORRECTIONS
TDE .4681 TRA-1.7513 TC3 2.9817 BAU .5777
RDE -.1525 RRA -.0419 RC3 -.0728 FAU .14220
FDE -.1580 FRA 2.6064 FC3-8.4979 BSP 12684
BDE .4923 BRA 1.7518 BC3 2.9826 FSP 2076

MID-COURSE EXECUTION ACCURACY
SGT 3683.2 SGR 245.6 SG3 666.1
RRT -.1085 RRF .0694 RTF -.9379
SGB 3691.4 R23 .0331 R13 .9379
SG1 3683.3 SG2 244.1 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 1101.7 SR 230.5 SS 690.6
CRT -.5704 CRS -.0992 CST .8712
LSA 1270.8 MSA 358.0 SSA 25.3
EL1 1109.7 EL2 187.9 ALF 172.99

LAUNCH DATE NOV 14 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 506.584 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.572 GAL -2.75 AZL 88.37 HCA 160.93 SMA 199.11 ECC .26094 INC 1.6271 V1 30.108
RP 237.98 LAP .53 LOP 212.60 VP 21.186 GAP 10.17 AZP 91.54 TAL 346.65 TAP 147.58 RCA 147.16 APO 251.07 V2 23.089
RC 182.651 GL 14.71 GP .81 ZAL 109.07 ZAP 159.05 ETS 176.43 ZAE 161.19 ETE 3.54 ZAC 91.04 ETC 255.85 CLP 159.07

PLANETOCENTRIC CONIC

C3 14.068 VHL 3.751 DLA 20.83 RAL 168.77 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.042 DPA -2.84 RAP 191.51 ECC 1.2315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 24	2847.07	-28.30	85.26	31.55	91.09	16 49 52	2247.1	-27.85	76.63
90.00	10 2 48	4064.26	-4.33	164.40	25.62	61.99	11 10 32	3464.3	-8.04	157.69
100.00	17 37 37	2540.04	-29.76	62.62	31.49	92.90	18 19 58	1940.0	-29.04	53.89
100.00	11 10 16	3846.52	-3.05	147.68	24.91	60.25	12 14 23	3246.5	-6.98	141.11
110.00	19 15 17	2234.51	-33.43	39.02	31.09	97.59	19 52 32	1634.5	-32.02	30.07
110.00	11 49 6	3724.82	.08	136.51	22.96	55.82	12 51 11	3124.8	-4.41	130.30

DIFFERENTIAL CORRECTIONS
TDE .4417 TRA-1.7178 TC3 3.0899 BAU .5813
RDE -.1435 RRA -.0402 RC3 -.0652 FAU .14774
FDE -.1251 FRA 2.6537 FC3-9.0913 BSP 12818
BDE .4644 BRA 1.7182 BC3 3.0906 FSP 2190

MID-COURSE EXECUTION ACCURACY
SGT 3702.7 SGR 234.0 SG3 698.5
RRT -.0886 RRF .0478 RTF -.9392
SGB 3710.1 R23 .0359 R13 .9392
SG1 3702.8 SG2 233.1 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 1081.4 SR 220.1 SS 694.8
CRT -.5521 CRS -.0564 CST .8609
LSA 1252.0 MSA 364.1 SSA 24.6
EL1 1088.4 EL2 182.3 ALF 173.40

LAUNCH DATE NOV 14 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 510.057 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.535 GAL -2.65 AZL 88.39 HCA 161.89 SMA 198.36 ECC .25787 INC 1.6146 V1 30.108
RP 237.65 LAP .50 LOP 213.56 VP 21.163 GAP 9.70 AZP 91.53 TAL 347.02 TAP 148.90 RCA 147.21 APO 249.51 V2 23.123
RC 184.919 GL 14.79 GP .87 ZAL 108.38 ZAP 158.29 ETS 176.35 ZAE 161.87 ETE 4.02 ZAC 91.14 ETC 255.85 CLP 158.30

PLANETOCENTRIC CONIC

C3 13.674 VHL 3.698 DLA 21.18 RAL 168.13 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 5.906 DPA -2.87 RAP 191.71 ECC 1.2250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 35	2856.39	-28.31	85.94	30.56	90.75	16 43 12	2256.4	-27.90	77.30
90.00	10 4 31	4042.48	-5.03	163.17	24.73	62.10	11 11 53	3442.5	-8.72	156.44
100.00	17 31 18	2547.76	-29.79	63.19	30.51	92.60	18 13 46	1947.8	-29.11	54.45
100.00	11 11 29	3826.34	-3.73	146.57	24.02	60.32	12 15 16	3226.3	-7.65	139.98
110.00	19 9 51	2239.44	-33.47	39.40	30.13	97.37	19 47 11	1639.4	-32.09	30.44
110.00	11 49 26	3707.42	-.59	135.60	22.06	55.82	12 51 13	3107.4	-5.07	129.38

DIFFERENTIAL CORRECTIONS
TDE .4202 TRA-1.6806 TC3 3.2083 BAU .5866
RDE -.1348 RRA -.0389 RC3 -.0562 FAU .15363
FDE -.0926 FRA 2.7000 FC3-9.7262 BSP 12865
BDE .4413 BRA 1.6810 BC3 3.2088 FSP 2306

MID-COURSE EXECUTION ACCURACY
SGT 3721.9 SGR 222.6 SG3 732.6
RRT -.0653 RRF .0206 RTF -.9408
SGB 3728.6 R23 .0412 R13 .9408
SG1 3721.9 SG2 222.1 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 1063.4 SR 209.8 SS 699.5
CRT -.5372 CRS -.0145 CST .8483
LSA 1235.0 MSA 372.1 SSA 23.6
EL1 1069.5 EL2 175.9 ALF 173.78

LAUNCH DATE NOV 14 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 513.552 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.499 GAL -2.56 AZL 88.40 HCA 162.85 SMA 197.65 ECC .25494 INC 1.6006 V1 30.108
RP 237.31 LAP .47 LOP 214.52 VP 21.143 GAP 9.24 AZP 91.53 TAL 347.37 TAP 150.22 RCA 147.26 APO 248.04 V2 23.157
RC 187.176 GL 14.85 GP .94 ZAL 107.69 ZAP 157.50 ETS 176.26 ZAE 162.58 ETE 4.56 ZAC 91.24 ETC 255.85 CLP 157.52

PLANETOCENTRIC CONIC

C3 13.303 VHL 3.647 DLA 21.52 RAL 167.49 RAD 6567.5 VEL 11.606 PTH 2.03 VHP 5.774 DPA -2.88 RAP 191.90 ECC 1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 54	2865.31	-28.31	86.60	29.57	90.42	16 36 40	2265.3	-27.96	77.95
90.00	10 6 3	4021.56	-5.69	162.00	23.86	62.21	11 13 5	3421.6	-9.37	155.25
100.00	17 25 7	2555.09	-29.81	63.73	29.53	92.32	18 7 42	1955.1	-29.17	54.99
100.00	11 12 32	3807.01	-4.38	145.51	23.13	60.40	12 15 59	3207.0	-8.29	138.90
110.00	19 4 32	2244.04	-33.51	39.75	29.17	97.17	19 41 56	1644.0	-32.16	30.78
110.00	11 49 36	3690.83	-1.22	134.74	21.17	55.84	12 51 7	3090.8	-5.70	128.51

DIFFERENTIAL CORRECTIONS
TDE .3963 TRA-1.6457 TC3 3.3166 BAU .5899
RDE -.1263 RRA -.0379 RC3 -.0452 FAU .15979
FDE -.0583 FRA 2.7473 FC-10.3989 BSP 12958
BDE .4160 BRA 1.6461 BC3 3.3169 FSP 2429

MID-COURSE EXECUTION ACCURACY
SGT 3736.7 SGR 211.1 SG3 768.3
RRT -.0325 RRF -.0152 RTF -.9420
SGB 3742.6 R23 .0459 R13 .9420
SG1 3736.7 SG2 211.0 THA 179.89

ORBIT DETERMINATION ACCURACY
ST 1043.0 SR 199.4 SS 705.0
CRT -.5176 CRS .0294 CST .8370
LSA 1216.8 MSA 378.8 SSA 22.7
EL1 1048.2 EL2 169.8 ALF 174.20

LAUNCH DATE NOV 14 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 517.069 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.464 GAL -2.46 AZL 88.41 HCA 163.81 SMA 196.97 ECC .25215 INC 1.5846 V1 30.108
RP 236.98 LAP .44 LOP 215.48 VP 21.126 GAP 8.78 AZP 91.52 TAL 347.72 TAP 151.54 RCA 147.30 APO 246.63 V2 23.191
RC 189.421 GL 14.89 GP 1.01 ZAL 107.01 ZAP 156.70 ETS 176.17 ZAE 163.33 ETE 5.19 ZAC 91.36 ETC 255.84 CLP 156.72

PLANETOCENTRIC CONIC

C3 12.952 VHL 3.599 DLA 21.82 RAL 166.84 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 5.645 DPA -2.88 RAP 192.08 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 24	2873.66	-28.32	87.21	28.59	90.11	16 30 17	2273.7	-28.00	78.56
90.00	10 7 22	4001.66	-6.32	160.87	22.98	62.34	11 14 4	3401.7	-9.98	154.10
100.00	17 19 5	2561.89	-29.83	64.24	28.55	92.05	18 1 47	1961.9	-29.22	55.49
100.00	11 13 21	3788.67	-4.99	144.49	22.25	60.49	12 16 30	3188.7	-8.89	137.87
110.00	18 59 21	2248.20	-33.55	40.07	28.21	96.98	19 36 49	1648.2	-32.22	31.09
110.00	11 49 35	3675.12	-1.82	133.92	20.28	55.86	12 50 50	3075.1	-6.29	127.68

DIFFERENTIAL CORRECTIONS
TDE .3763 TRA-1.6077 TC3 3.4322 BAU .5943
RDE -.1182 RRA -.0372 RC3 -.0321 FAU .16643
FDE -.0267 FRA 2.7916 FC-11.1247 BSP 12969
BDE .3944 BRA 1.6082 BC3 3.4324 FSP 2550

MID-COURSE EXECUTION ACCURACY
SGT 3750.2 SGR 200.0 SG3 806.1
RRT .0083 RRF -.0603 RTF -.9434
SGB 3755.5 R23 -.0525 R13 -.9434
SG1 3750.2 SG2 200.0 THA .03

ORBIT DETERMINATION ACCURACY
ST 1024.0 SR 189.1 SS 710.5
CRT -.5005 CRS .0703 CST .8254
LSA 1200.0 MSA 385.5 SSA 21.7
EL1 1028.5 EL2 163.0 ALF 174.58

LAUNCH DATE NOV 14 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 520.608 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.431 GAL -2.37 AZL 88.43 HCA 164.78 SMA 196.33 ECC .24947 INC 1.5675 V1 30.108
RP 236.64 LAP .41 LOP 216.45 VP 21.111 GAP 8.33 AZP 91.51 TAL 348.07 TAP 152.85 RCA 147.35 APO 245.30 V2 23.226
RC 191.655 GL 14.90 GP 1.10 ZAL 106.34 ZAP 155.88 ETS 176.06 ZAE 164.10 ETE 5.93 ZAC 91.47 ETC 255.84 CLP 155.90

PLANETOCENTRIC CONIC

C3 12.621 VHL 3.553 DLA 22.11 RAL 166.18 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 5.518 DPA -2.86 RAP 192.25 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 8	2881.21	-28.32	87.76	27.60	89.84	16 24 9	2281.2	-28.04	79.11
90.00	10 8 23	3983.00	-6.91	159.82	22.10	62.47	11 14 46	3383.0	-10.54	153.02
100.00	17 13 17	2567.93	-29.84	64.69	27.57	91.82	17 56 5	1967.9	-29.27	55.93
100.00	11 13 55	3771.51	-5.57	143.54	21.37	60.58	12 16 46	3171.5	-9.45	136.90
110.00	18 54 21	2251.76	-33.58	40.34	27.24	96.82	19 31 53	1651.8	-32.27	31.36
110.00	11 49 21	3660.44	-2.38	133.15	19.39	55.89	12 50 21	3060.4	-6.84	126.90

DIFFERENTIAL CORRECTIONS
TDE .3520 TRA-1.5746 TC3 3.5281 BAU .5953
RDE -.1102 RRA -.0370 RC3 -.0165 FAU .17294
FDE .0150 FRA 2.8460 FC-11.8628 BSP 13071
BDE .3688 BRA 1.5751 BC3 3.5281 FSP 2696

MID-COURSE EXECUTION ACCURACY
SGT 3757.6 SGR 189.4 SG3 844.7
RRT .0650 RRF -.1213 RTF -.9444
SGB 3762.4 R23 -.0598 R13 -.9444
SG1 3757.6 SG2 189.0 THA .19

ORBIT DETERMINATION ACCURACY
ST 1002.0 SR 178.8 SS 718.9
CRT -.4746 CRS .1222 CST .8124
LSA 1182.0 MSA 394.0 SSA 20.7
EL1 1005.7 EL2 156.8 ALF 175.04

LAUNCH DATE NOV 14 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 524.167 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.399 GAL -2.29 AZL 88.45 HCA 165.75 SMA 195.71 ECC .24692 INC 1.5468 V1 30.108
RP 236.29 LAP .38 LOP 217.42 VP 21.100 GAP 7.88 AZP 91.50 TAL 348.41 TAP 154.16 RCA 147.39 APO 244.04 V2 23.261
RC 193.877 GL 14.89 GP 1.20 ZAL 105.68 ZAP 155.03 ETS 175.93 ZAE 164.91 ETE 6.81 ZAC 91.60 ETC 255.84 CLP 155.05

PLANETOCENTRIC CONIC

C3 12.307 VHL 3.508 DLA 22.35 RAL 165.51 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 5.395 DPA -2.82 RAP 192.41 ECC 1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 11	2887.67	-28.31	88.23	26.61	89.60	16 18 18	2287.7	-28.07	79.58
90.00	10 9 2	3965.82	-7.45	158.84	21.22	62.60	11 15 8	3365.8	-11.06	152.03
100.00	17 7 46	2573.00	-29.85	65.06	26.59	91.62	17 50 39	1973.0	-29.31	56.30
100.00	11 14 8	3755.72	-6.10	142.67	20.48	60.68	12 16 43	3155.7	-9.96	136.01
110.00	18 49 34	2254.55	-33.60	40.56	26.27	96.70	19 27 8	1654.5	-32.31	31.56
110.00	11 48 49	3646.94	-2.90	132.44	18.50	55.93	12 49 36	3046.9	-7.35	126.19

DIFFERENTIAL CORRECTIONS
TDE .3351 TRA-1.5351 TC3 3.6403 BAU .5990
RDE -.1025 RRA -.0372 RC3 .0021 FAU .18036
FDE .0438 FRA 2.8872 FC-12.6874 BSP 13025
BDE .3504 BRA 1.5355 BC3 3.6403 FSP 2822

MID-COURSE EXECUTION ACCURACY
SGT 3764.5 SGR 179.8 SG3 886.4
RRT .1337 RRF -.1954 RTF -.9456
SGB 3768.8 R23 -.0694 R13 -.9456
SG1 3764.6 SG2 178.2 THA .37

ORBIT DETERMINATION ACCURACY
ST 983.2 SR 168.5 SS 724.5
CRT -.4559 CRS .1609 CST .8017
LSA 1166.2 MSA 399.4 SSA 19.7
EL1 986.3 EL2 149.5 ALF 175.43

LAUNCH DATE NOV 14 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 527.745 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.369 GAL -2.21 AZL 88.48 HCA 166.72 SMA 195.13 ECC .24449 INC 1.5240 V1 30.108
RP 235.94 LAP .35 LOP 218.39 VP 21.091 GAP 7.44 AZP 91.48 TAL 348.74 TAP 155.46 RCA 147.43 APO 242.84 V2 23.297
RC 196.086 GL 14.83 GP 1.32 ZAL 105.03 ZAP 154.16 ETS 175.79 ZAE 165.74 ETE 7.86 ZAC 91.74 ETC 255.84 CLP 154.19

PLANETOCENTRIC CONIC

C3 12.010 VHL 3.465 DLA 22.56 RAL 164.84 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 5.274 DPA -2.75 RAP 192.55 ECC 1.1976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 39	2892.68	-28.31	88.60	25.61	89.42	16 12 51	2292.7	-28.09	79.94
90.00	10 9 12	3950.46	-7.93	157.97	20.32	62.73	11 15 2	3350.5	-11.52	151.14
100.00	17 2 37	2576.77	-29.86	65.34	25.59	91.47	17 45 34	1976.8	-29.34	56.58
100.00	11 13 54	3741.60	-6.57	141.88	19.58	60.77	12 16 16	3141.6	-10.41	135.21
110.00	18 45 3	2256.32	-33.61	40.69	25.28	96.62	19 22 39	1656.3	-32.33	31.70
110.00	11 47 58	3634.82	-3.36	131.81	17.60	55.96	12 48 33	3034.8	-7.81	125.54

DIFFERENTIAL CORRECTIONS
TDE .3159 TRA-1.4987 TC3 3.7331 BAU .5994
RDE -.0950 RRA -.0380 RC3 .0244 FAU .18766
FDE .0806 FRA 2.9370 FC-13.5279 BSP 13042
BDE .3299 BRA 1.4992 BC3 3.7332 FSP 2972

MID-COURSE EXECUTION ACCURACY
SGT 3763.9 SGR 172.1 SG3 928.9
RRT .2230 RRF -.2906 RTF -.9465
SGB 3767.9 R23 -.0812 R13 -.9465
SG1 3764.1 SG2 167.7 THA .59

ORBIT DETERMINATION ACCURACY
ST 962.7 SR 158.4 SS 732.7
CRT -.4299 CRS .2092 CST .7895
LSA 1150.2 MSA 406.6 SSA 18.6
EL1 965.2 EL2 142.7 ALF 175.86

LAUNCH DATE NOV 14 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 531.342 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.340 GAL -2.13 AZL 88.50 HCA 167.70 SMA 194.58 ECC .24216 INC 1.4978 V1 30.108
RP 235.59 LAP .32 LOP 219.36 VP 21.085 GAP 7.01 AZP 91.46 TAL 349.06 TAP 156.76 RCA 147.46 APO 241.70 V2 23.333
RC 198.280 GL 14.73 GP 1.46 ZAL 104.40 ZAP 153.26 ETS 175.62 ZAE 166.60 ETE 9.15 ZAC 91.89 ETC 255.84 CLP 153.30

PLANETOCENTRIC CONIC

C3 11.727 VHL 3.424 DLA 22.73 RAL 164.16 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 5.156 DPA -2.66 RAP 192.69 ECC 1.1930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 39	2895.76	-28.31	88.82	24.59	89.30	16 7 55	2295.8	-28.11	80.17
90.00	10 8 45	3937.37	-8.34	157.23	19.41	62.84	11 14 22	3337.4	-11.91	150.37
100.00	16 57 57	2578.85	-29.86	65.50	24.58	91.39	17 40 55	1978.8	-29.35	56.73
100.00	11 13 9	3729.51	-6.97	141.21	18.67	60.86	12 15 18	3129.5	-10.80	134.52
110.00	18 40 53	2256.79	-33.62	40.73	24.28	96.60	19 18 30	1656.8	-32.34	31.73
110.00	11 46 41	3624.33	-3.76	131.26	16.69	56.00	12 47 6	3024.3	-8.20	124.99

DIFFERENTIAL CORRECTIONS
TDE .2971 TRA-1.4649 TC3 3.8193 BAU .5988
RDE -.0878 RRA -.0395 RC3 .0511 FAU .19525
FDE .1177 FRA 2.9914 FC-14.4148 BSP 13094
BDE .3098 BRA 1.4654 BC3 3.8197 FSP 3136

MID-COURSE EXECUTION ACCURACY
SGT 3761.8 SGR 167.1 SG3 973.5
RRT .3320 RRF -.4052 RTF -.9472
SGB 3765.5 R23 -.0956 R13 -.9472
SG1 3762.2 SG2 157.6 THA .85

ORBIT DETERMINATION ACCURACY
ST 942.8 SR 148.5 SS 742.4
CRT -.3989 CRS .2595 CST .7786
LSA 1136.3 MSA 413.1 SSA 17.5
EL1 944.7 EL2 135.9 ALF 176.33

LAUNCH DATE NOV 14 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 534.957 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.313 GAL -2.05 AZL 88.53 HCA 168.68 SMA 194.06 ECC .23995 INC 1.4661 V1 30.108
RP 235.24 LAP .29 LOP 220.34 VP 21.082 GAP 6.58 AZP 91.44 TAL 349.38 TAP 158.06 RCA 147.50 APO 240.62 V2 23.369
RC 200.460 GL 14.58 GP 1.62 ZAL 103.77 ZAP 152.34 ETS 175.43 ZAE 167.48 ETE 10.75 ZAC 92.06 ETC 255.83 CLP 152.38

PLANETOCENTRIC CONIC

C3 11.456 VHL 3.385 DLA 22.84 RAL 163.46 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 5.041 DPA -2.54 RAP 192.81 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 21	2896.34	-28.31	88.87	23.56	89.28	16 3 37	2296.3	-28.11	80.21
90.00	10 7 30	3927.06	-8.66	156.64	18.46	62.93	11 12 57	3327.1	-12.22	149.77
100.00	16 53 51	2578.74	-29.86	65.49	23.55	91.40	17 36 50	1978.7	-29.35	56.72
100.00	11 11 41	3719.90	-7.29	140.67	17.73	60.93	12 13 41	3119.9	-11.11	133.97
110.00	18 37 8	2255.59	-33.61	40.64	23.24	96.65	19 14 44	1655.6	-32.32	31.64
110.00	11 44 53	3615.81	-4.08	130.81	15.75	56.03	12 45 9	3015.8	-8.52	124.53

DIFFERENTIAL CORRECTIONS
TDE .2842 TRA-1.4241 TC3 3.9175 BAU .6001
RDE -.0808 RRA -.0416 RC3 .0836 FAU .20364
FDE .1431 FRA 3.0323 FC-15.3884 BSP 12980
BDE .2955 BRA 1.4247 BC3 3.9184 FSP 3283

MID-COURSE EXECUTION ACCURACY
SGT 3755.8 SGR 166.6 SG3 1020.8
RRT .4541 RRF -.5325 RTF -.9482
SGB 3759.5 R23 -.1136 R13 -.9483
SG1 3756.6 SG2 148.4 THA 1.16

ORBIT DETERMINATION ACCURACY
ST 923.9 SR 138.7 SS 747.9
CRT -.3720 CRS .3022 CST .7688
LSA 1121.6 MSA 417.1 SSA 16.4
EL1 925.4 EL2 128.5 ALF 176.74

LAUNCH DATE NOV 14 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 538.589 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.286 GAL -1.98 AZL 88.57 HCA 169.66 SMA 193.56 ECC .23783 INC 1.4295 V1 30.108
RP 234.89 LAP .26 LOP 221.32 VP 21.081 GAP 6.16 AZP 91.41 TAL 349.69 TAP 159.35 RCA 147.53 APO 239.60 V2 23.405
RC 202.623 GL 14.36 GP 1.81 ZAL 103.17 ZAP 151.39 ETS 175.19 ZAE 168.38 ETE 12.79 ZAC 92.26 ETC 255.83 CLP 151.44

PLANETOCENTRIC CONIC

C3 11.197 VHL 3.346 DLA 22.88 RAL 162.75 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 4.929 DPA -2.38 RAP 192.92 ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 56	2893.63	-28.31	88.67	22.49	89.38	16 0 9	2293.6	-28.10	80.01
90.00	10 5 14	3920.28	-8.87	156.25	17.48	63.00	11 10 34	3320.3	-12.42	149.37
100.00	16 50 31	2575.77	-29.86	65.27	22.48	91.51	17 33 27	1975.8	-29.33	56.51
100.00	11 9 20	3713.38	-7.50	140.31	16.74	60.98	12 11 13	3113.4	-11.32	133.60
110.00	18 33 56	2252.21	-33.58	40.38	22.16	96.80	19 11 28	1652.2	-32.28	31.39
110.00	11 42 24	3609.70	-4.32	130.49	14.79	56.06	12 42 34	3009.7	-8.74	124.20

DIFFERENTIAL CORRECTIONS
TDE .2686 TRA-1.3903 TC3 3.9853 BAU .5969
RDE -.0740 RRA -.0448 RC3 .1230 FAU .21176
FDE .1746 FRA 3.0870 FC-16.3725 BSP 13033
BDE .2786 BRA 1.3910 BC3 3.9872 FSP 3469

MID-COURSE EXECUTION ACCURACY
SGT 3741.9 SGR 172.6 SG3 1068.9
RRT .5828 RRF -.6640 RTF -.9485
SGB 3745.9 R23 -.1359 R13 -.9487
SG1 3743.3 SG2 140.2 THA 1.54

ORBIT DETERMINATION ACCURACY
ST 904.9 SR 129.2 SS 757.0
CRT -.3314 CRS .3556 CST .7603
LSA 1109.6 MSA 421.0 SSA 15.2
EL1 905.9 EL2 121.8 ALF 177.24

LAUNCH DATE NOV 14 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 542.238 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.261 GAL -1.91 AZL 88.62 HCA 170.64 SMA 193.09 ECC .23582 INC 1.3847 V1 30.108
RP 234.53 LAP .22 LOP 222.31 VP 21.082 GAP 5.74 AZP 91.37 TAL 349.99 TAP 160.63 RCA 147.56 APO 238.62 V2 23.442
RC 204.770 GL 14.05 GP 2.05 ZAL 102.58 ZAP 150.40 ETS 174.91 ZAE 169.28 ETE 15.43 ZAC 92.49 ETC 255.83 CLP 150.47

PLANETOCENTRIC CONIC

C3 10.946 VHL 3.309 DLA 22.83 RAL 162.01 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 4.820 DPA -2.17 RAP 193.04 ECC 1.1802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 39	2886.61	-28.31	88.16	21.38	89.64	15 57 46	2286.6	-28.06	79.50
90.00	10 1 37	3917.99	-8.94	156.12	16.43	63.02	11 6 55	3318.0	-12.49	149.24
100.00	16 48 8	2569.05	-29.84	64.77	21.36	91.77	17 30 58	1969.1	-29.28	56.01
100.00	11 5 49	3710.78	-7.59	140.17	15.71	61.80	12 7 40	3110.8	-11.40	133.45
110.00	18 31 25	2245.97	-33.53	39.90	21.02	97.08	19 8 51	1646.0	-32.19	30.92
110.00	11 39 2	3606.63	-4.43	130.33	13.77	56.07	12 39 9	3006.6	-8.86	124.04

DIFFERENTIAL CORRECTIONS
TDE .2552 TRA-1.3543 TC3 4.0560 BAU .5941
RDE -.0674 RRA -.0491 RC3 .1720 FAU .22043
FDE .1979 FRA 3.1358 FC-17.4334 BSP 13001
BDE .2640 BRA 1.3552 BC3 4.0596 FSP 3651

MID-COURSE EXECUTION ACCURACY
SGT 3724.8 SGR 187.4 SG3 1119.6
RRT .7001 RRF -.7811 RTF -.9490
SGB 3729.5 R23 -.1623 R13 -.9492
SG1 3727.1 SG2 133.7 THA 2.02

ORBIT DETERMINATION ACCURACY
ST 885.8 SR 120.1 SS 763.6
CRT -.2841 CRS .4093 CST .7548
LSA 1097.4 MSA 421.5 SSA 14.1
EL1 886.4 EL2 115.1 ALF 177.76

LAUNCH DATE NOV 14 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 545.904 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.237	GAL	-1.84	AZL	88.67	HCA	171.63	SMA	192.64	ECC	.23390	INC	1.3270
RP	234.17	LAP	.19	LOP	223.29	VP	21.085	GAP	5.34	AZP	91.31	TAL	350.28	TAP	161.91	RCA	147.58	APO	237.70
RC	206.900	GL	13.62	GP	2.34	ZAL	102.01	ZAP	149.39	ETS	174.55	ZAE	170.18	ETE	18.94	ZAC	92.77	ETC	255.82

PLANETOCENTRIC CONIC

C3	10.702	VHL	3.271	DLA	22.07	RAL	161.24	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.714	DPA	-1.90	RAP	193.15

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 51	2873.90	-28.32	87.23	20.19	90.11	15 56 45	2273.9	-28.00	78.57
90.00	9 56 15	3921.48	-8.83	156.32	15.30	62.99	11 1 37	3321.5	-12.38	149.44
100.00	16 47 1	2557.36	-29.82	63.90	20.16	92.23	17 29 38	1957.4	-29.19	55.15
100.00	11 0 46	3713.25	-7.50	140.30	14.59	60.98	12 2 40	3113.3	-11.32	133.59
110.00	18 29 46	2235.90	-33.44	39.12	19.80	97.53	19 7 2	1635.9	-32.04	30.18
110.00	11 34 31	3607.48	-4.40	130.38	12.68	56.07	12 34 38	3007.5	-8.83	124.09

DIFFERENTIAL CORRECTIONS

TDE	.2521	TRA	-1.3115	TC3	4.1433	BAU	.5938
RDE	-.0607	RRA	-.0547	RC3	.2348	FAU	.23047
FDE	.1855	FRA	3.1583	FC	-18.6434	BSP	12801
BDE	.2593	BRA	1.3127	BC3	4.1499	FSP	3793

MID-COURSE EXECUTION ACCURACY

SGT	3706.8	SGR	213.7	SG3	1174.6		
RRT	.7927	RRF	-.8711	RTF	-.9494		
SGB	3713.0	R23	-.1928	R13	-.9497		
SG1	3710.7	SG2	130.1	THA	2.62		

ORBIT DETERMINATION ACCURACY

ST	871.4	SR	110.8	SS	759.1
CRT	-.2412	CRS	.4465	CST	.7569
LSA	1084.8	MSA	413.4	SSA	13.2
EL1	871.8	EL2	107.5	ALF	178.22

LAUNCH DATE NOV 14 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 549.585 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.214	GAL	-1.77	AZL	88.74	HCA	172.62	SMA	192.22	ECC	.23208	INC	1.2587
RP	233.80	LAP	.16	LOP	224.28	VP	21.091	GAP	4.93	AZP	91.25	TAL	350.56	TAP	163.18	RCA	147.61	APO	236.83
RC	209.011	GL	13.03	GP	2.71	ZAL	101.46	ZAP	148.34	ETS	174.11	ZAE	171.03	ETE	23.70	ZAC	93.13	ETC	255.82

PLANETOCENTRIC CONIC

C3	10.461	VHL	3.234	DLA	22.34	RAL	160.41	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	4.611	DPA	-1.55	RAP	193.27

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 58	2853.52	-28.31	85.73	18.90	90.85	15 57 31	2253.5	-27.89	77.09
90.00	9 48 33	3932.61	-8.48	156.95	14.05	62.88	10 54 5	3332.6	-12.05	150.09
100.00	16 47 32	2538.90	-29.76	62.53	18.84	92.95	17 29 51	1938.9	-29.03	53.80
100.00	10 53 40	3722.45	-7.20	140.82	13.36	60.91	11 55 42	3122.5	-11.03	134.12
110.00	18 29 18	2220.54	-33.30	37.95	18.44	98.21	19 6 18	1620.5	-31.81	29.04
110.00	11 28 23	3613.58	-4.17	130.70	11.49	56.04	12 28 37	3013.6	-8.60	124.41

DIFFERENTIAL CORRECTIONS

TDE	.2437	TRA	-1.2766	TC3	4.1917	BAU	.5878
RDE	-.0543	RRA	-.0629	RC3	.3136	FAU	.23909
FDE	.1945	FRA	3.2138	FC	-19.7871	BSP	12788
BDE	.2497	BRA	1.2782	BC3	4.2034	FSP	4022

MID-COURSE EXECUTION ACCURACY

SGT	3676.6	SGR	254.8	SG3	1227.5		
RRT	.8572	RRF	-.9313	RTF	-.9497		
SGB	3685.4	R23	-.2254	R13	-.9502		
SG1	3683.1	SG2	131.0	THA	3.40		

ORBIT DETERMINATION ACCURACY

ST	855.1	SR	103.0	SS	763.8
CRT	-.1652	CRS	.5177	CST	.7546
LSA	1075.1	MSA	411.3	SSA	12.0
EL1	855.2	EL2	101.6	ALF	178.94

LAUNCH DATE NOV 14 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 553.281 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.192	GAL	-1.71	AZL	88.83	HCA	173.61	SMA	191.81	ECC	.23034	INC	1.1651
RP	233.44	LAP	.13	LOP	225.28	VP	21.099	GAP	4.54	AZP	91.16	TAL	350.83	TAP	164.45	RCA	147.63	APO	236.00
RC	211.104	GL	12.19	GP	3.20	ZAL	100.94	ZAP	147.25	ETS	173.52	ZAE	171.78	ETE	30.25	ZAC	93.59	ETC	255.81

PLANETOCENTRIC CONIC

C3	10.219	VHL	3.197	DLA	21.79	RAL	159.50	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	4.511	DPA	-1.07	RAP	193.41

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 39	2822.54	-28.25	83.47	17.43	91.99	16 0 42	2222.5	-27.68	74.85
90.00	9 37 37	3954.16	-7.81	158.18	12.63	62.70	10 43 31	3354.2	-11.41	151.35
100.00	16 50 17	2510.96	-29.64	60.46	17.35	94.03	17 32 8	1911.0	-28.77	51.77
100.00	10 43 40	3740.97	-6.59	141.85	11.97	60.78	11 46 1	3141.0	-10.43	135.17
110.00	18 30 26	2197.62	-33.06	36.20	16.88	99.22	19 7 4	1597.6	-31.44	27.35
110.00	11 20 0	3627.08	-3.66	131.41	10.15	55.99	12 20 27	3027.1	-8.10	125.13

DIFFERENTIAL CORRECTIONS

TDE	.2450	TRA	-1.2383	TC3	4.2525	BAU	.5838
RDE	-.0471	RRA	-.0737	RC3	.4206	FAU	.24912
FDE	.1500	FRA	3.2381	FC	-21.1055	BSP	12693
BDE	.2495	BRA	1.2405	BC3	4.2732	FSP	4212

MID-COURSE EXECUTION ACCURACY

SGT	3646.6	SGR	315.7	SG3	1285.0		
RRT	.8981	RRF	-.9669	RTF	-.9497		
SGB	3660.2	R23	-.2563	R13	-.9504		
SG1	3657.6	SG2	138.5	THA	4.45		

ORBIT DETERMINATION ACCURACY

ST	844.8	SR	95.0	SS	755.0
CRT	-.0729	CRS	.5759	CST	.7697
LSA	1067.0	MSA	392.6	SSA	11.1
EL1	844.8	EL2	94.8	ALF	179.52

LAUNCH DATE NOV 14 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 556.991 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.171	GAL	-1.65	AZL	88.96	HCA	174.61	SMA	191.43	ECC	.22868	INC	1.0357
RP	233.07	LAP	.10	LOP	226.27	VP	21.109	GAP	4.15	AZP	91.03	TAL	351.10	TAP	165.70	RCA	147.65	APO	235.21
RC	213.179	GL	10.97	GP	3.88	ZAL	100.44	ZAP	146.10	ETS	172.72	ZAE	172.32	ETE	39.24	ZAC	94.23	ETC	255.80

PLANETOCENTRIC CONIC

C3	9.971	VHL	3.158	DLA	20.87	RAL	158.46	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	4.416	DPA	-.42	RAP	193.61

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 54	2776.32	-28.10	80.10	15.68	93.67	16 7 10	2176.3	-27.29	71.52
90.00	9 22 5	3990.59	-6.67	160.25	10.96	62.42	10 28 36	3390.6	-10.31	153.46
100.00	16 56 9	2469.14	-29.40	57.38	15.56	95.64	17 37 18	1869.1	-28.31	48.75
100.00	10 29 30	3773.00	-5.52	143.63	10.33	60.57	11 32 23	3173.0	-9.40	136.99
110.00	18 33 54	2163.35	-32.66	33.61	15.01	100.71	19 9 57	1563.3	-30.84	24.86
110.00	11 8 15	3651.55	-2.72	132.69	8.59	55.91	12 9 7	3051.6	-7.18	126.43

DIFFERENTIAL CORRECTIONS

TDE	.2551	TRA	-1.1963	TC3	4.3147	BAU	.5802
RDE	-.0383	RRA	-.0885	RC3	.5705	FAU	.25974
FDE	.0496	FRA	3.2355	FC	-22.5512	BSP	12527
BDE	.2580	BRA	1.1996	BC3	4.3522	FSP	4384

MID-COURSE EXECUTION ACCURACY

SGT	3610.5	SGR	405.2	SG3	1345.0		
RRT	.9220	RRF	-.9857	RTF	-.9494		
SGB	3633.2	R23	-.2807	R13	-.9507		
SG1	3629.8	SG2	156.0	THA	5.92		

ORBIT DETERMINATION ACCURACY

ST	840.6	SR	87.3	SS	738.1
CRT	.0632	CRS	.6403	CST	.8035
LSA	1063.8	MSA	356.9	SSA	10.5
EL1	840.6	EL2	87.1	ALF	.38

LAUNCH DATE NOV 14 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 560.718 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.152 GAL -1.60 AZL 89.15 HCA 175.61 SMA 191.07 ECC .22711 INC .8554 V1 30.108
RP 232.70 LAP .07 LOP 227.27 VP 21.120 GAP 3.77 AZP 90.85 TAL 351.35 TAP 166.96 RCA 147.67 APO 234.46 V2 23.631
RC 215.236 GL 9.11 GP 4.87 ZAL 99.96 ZAP 144.87 ETS 171.56 ZAE 172.42 ETE 51.05 ZAC 95.17 ETC 255.79 CLP 145.17

PLANETOCENTRIC CONIC

C3 9.713 VHL 3.117 DLA 19.34 RAL 157.20 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.325 DPA .54 RAP 193.89 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 18	2706.68	-27.69	75.04	13.44	96.17	16 18 25	2106.7	-26.55	66.56
90.00	8 59 33	4049.80	-4.79	163.59	8.89	62.06	10 7 3	3449.8	-8.49	156.86
100.00	17 6 40	2405.58	-28.89	52.73	13.27	98.04	17 46 46	1805.6	-27.48	44.21
100.00	10 8 52	3826.13	-3.73	146.56	8.31	60.32	11 12 38	3226.1	-7.66	139.97
110.00	18 40 54	2110.77	-31.93	29.68	12.62	102.92	19 16 5	1510.8	-29.82	21.11
110.00	10 51 8	3693.70	-1.11	134.89	6.67	55.83	11 52 41	3093.7	-5.59	128.66

DIFFERENTIAL CORRECTIONS
TDE .2820 TRA-1.1473 TC3 4.3928 BAU .5795
RDE -.0267 RRA -.1111 RC3 .7872 FAU .26891
FDE -.1025 FRA 3.2337 FC-23.9693 BSP 12254
BDE .2833 BRA 1.1527 BC3 4.4628 FSP 4620

MID-COURSE EXECUTION ACCURACY
SGT 3572.5 SGR 538.6 SG3 1401.0
RRT .9366 RRF -.9946 RTF -.9510
SGB 3612.9 R23 -.2895 R13 -.9531
SG1 3608.1 SG2 186.9 THA 8.06

ORBIT DETERMINATION ACCURACY
ST 851.7 SR 82.8 SS 729.3
CRT .2738 CRS .7436 CST .8435
LSA 1078.5 MSA 317.7 SSA 9.5
EL1 852.0 EL2 79.6 ALF 1.54

LAUNCH DATE NOV 14 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 564.457 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.133 GAL -1.55 AZL 89.44 HCA 176.61 SMA 190.72 ECC .22562 INC .5383 V1 30.108
RP 232.32 LAP .03 LOP 228.27 VP 21.134 GAP 3.39 AZP 90.56 TAL 351.59 TAP 168.20 RCA 147.69 APO 233.76 V2 23.670
RC 217.275 GL 6.02 GP 6.44 ZAL 99.52 ZAP 143.50 ETS 169.74 ZAE 171.70 ETE 64.76 ZAC 96.66 ETC 255.75 CLP 143.99

PLANETOCENTRIC CONIC

C3 9.445 VHL 3.073 DLA 16.66 RAL 155.50 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 4.244 DPA 2.04 RAP 194.39 ECC 1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 6	2596.88	-26.64	67.18	10.34	99.98	16 37 23	1996.9	-24.99	58.90
90.00	8 25 12	4148.62	-1.62	169.12	6.22	61.73	9 34 20	3548.6	-5.39	162.46
100.00	17 24 53	2304.13	-27.70	45.42	10.11	101.70	18 3 17	1704.1	-25.81	37.13
100.00	9 37 6	3916.60	-.67	151.53	5.69	60.11	10 42 23	3316.6	-4.64	145.00
110.00	18 53 59	2025.37	-30.46	23.46	9.33	106.33	19 27 44	1425.4	-27.92	15.19
110.00	10 24 30	3768.12	1.73	138.77	4.19	55.86	11 27 18	3168.1	-2.76	132.56

DIFFERENTIAL CORRECTIONS
TDE .3461 TRA-1.0817 TC3 4.5312 BAU .5906
RDE .0013 RRA -.1399 RC3 1.1596 FAU .28320
FDE -.5422 FRA 3.0463 FC-25.9587 BSP 11689
BDE .3461 BRA 1.0907 BC3 4.6772 FSP 4584

MID-COURSE EXECUTION ACCURACY
SGT 3550.2 SGR 763.0 SG3 1473.2
RRT .9450 RRF -.9984 RTF -.9510
SGB 3631.3 R23 -.2917 R13 -.9551
SG1 3623.0 SG2 244.6 THA 11.53

ORBIT DETERMINATION ACCURACY
ST 906.7 SR 84.5 SS 770.3
CRT .7170 CRS .8899 CST .9530
LSA 1178.0 MSA 186.6 SSA 11.8
EL1 908.8 EL2 58.7 ALF 3.84

LAUNCH DATE NOV 14 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 568.208 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.115 GAL -1.50 AZL 89.99 HCA 177.62 SMA 190.40 ECC .22421 INC .0000 V1 30.108
RP 231.95 LAP .00 LOP 229.28 VP 21.150 GAP 3.02 AZP 90.01 TAL 351.82 TAP 169.44 RCA 147.71 APO 233.09 V2 23.709
RC 219.295 GL .13 GP 9.31 ZAL 99.08 ZAP 141.77 ETS 166.49 ZAE 169.33 ETE 77.71 ZAC 99.42 ETC 255.65 CLP 142.75

PLANETOCENTRIC CONIC

C3 9.218 VHL 3.036 DLA 11.34 RAL 152.84 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 4.185 DPA 4.75 RAP 195.36 ECC 1.1517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 56	2405.62	-23.70	53.96	5.55	105.97	17 11 2	1805.6	-21.28	46.12
90.00	7 27 10	4330.41	4.24	179.27	2.59	61.98	8 39 21	3730.4	.46	172.63
100.00	17 58 0	2124.85	-24.61	33.01	5.25	107.53	18 33 24	1524.8	-21.98	25.20
100.00	8 42 48	4086.41	5.07	160.87	2.13	60.50	9 50 55	3486.4	1.10	154.33
110.00	19 19 10	1870.83	-27.01	12.77	4.30	111.80	19 50 21	1270.8	-23.80	5.07
110.00	9 38 7	3913.20	7.24	146.39	.79	56.50	10 43 20	3313.2	2.79	140.13

DIFFERENTIAL CORRECTIONS
TDE .4439 TRA-1.0253 TC3 4.5622 BAU .6052
RDE .0684 RRA -.1909 RC3 1.8167 FAU .29109
FDE-1.2636 FRA 2.8017 FC-27.3372 BSP 11756
BDE .4491 BRA 1.0430 BC3 4.9107 FSP 4677

MID-COURSE EXECUTION ACCURACY
SGT 3503.0 SGR 1169.9 SG3 1522.0
RRT .9491 RRF -.9997 RTF -.9501
SGB 3693.2 R23 -.2818 R13 -.9591
SG1 3676.4 SG2 351.2 THA 17.75

ORBIT DETERMINATION ACCURACY
ST 1029.1 SR 172.9 SS 1057.3
CRT .9896 CRS .9938 CST .9957
LSA 1483.8 MSA 68.5 SSA 18.9
EL1 1043.3 EL2 24.5 ALF 9.45

LAUNCH DATE NOV 14 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 571.973 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.098 GAL -1.45 AZL 91.34 HCA 178.62 SMA 190.09 ECC .22286 INC 1.2817 V1 30.108
RP 231.57 LAP -.03 LOP 230.29 VP 21.167 GAP 2.65 AZP 88.66 TAL 352.04 TAP 170.67 RCA 147.73 APO 232.45 V2 23.748
RC 221.297 GL -14.40 GP 16.16 ZAL 98.35 ZAP 138.55 ETS 159.31 ZAE 162.65 ETE 87.05 ZAC 105.99 ETC 255.27 CLP 141.29

PLANETOCENTRIC CONIC

C3 9.640 VHL 3.105 DLA -2.13 RAL 147.34 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.222 DPA 11.16 RAP 197.85 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 53	1988.79	-13.53	27.67	357.81	115.12	18 25 2	1388.8	-10.03	20.73
90.00	5 22 18	4764.74	17.19	204.58	358.41	67.14	6 41 43	4164.7	13.94	197.40
100.00	19 12 14	1729.59	-14.32	8.21	357.41	116.52	19 41 4	1129.6	-10.65	1.35
100.00	6 44 38	4499.17	18.00	184.68	358.04	65.72	7 59 37	3899.2	14.57	177.56
110.00	20 18 13	1523.08	-16.44	351.35	356.22	120.40	20 43 36	923.1	-12.28	344.71
110.00	7 55 9	4278.45	20.16	166.80	356.91	61.79	9 6 27	3678.5	16.23	159.87

DIFFERENTIAL CORRECTIONS
TDE .8203 TRA -.8523 TC3 4.6269 BAU .7393
RDE .4284 RRA -.2107 RC3 3.3903 FAU .30719
FDE-3.5531 FRA 1.6054 FC-27.5867 BSP 10223
BDE .9254 BRA .8780 BC3 5.7360 FSP 3536

MID-COURSE EXECUTION ACCURACY
SGT 3608.9 SGR 2282.2 SG3 1605.4
RRT .9541 RRF -.9999 RTF -.9516
SGB 4269.9 R23 -.2250 R13 -.9743
SG1 4229.9 SG2 583.3 THA 31.78

ORBIT DETERMINATION ACCURACY
ST 1587.9 SR 801.6 SS 2420.7
CRT .9876 CRS .9999 CST .9858
LSA 2995.5 MSA 225.7 SSA 2.2
EL1 1775.2 EL2 112.4 ALF 26.62

LAUNCH DATE NOV 14 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 579.546 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.066 GAL -1.37 AZL 81.50 HCA 180.66 SMA 189.52 ECC .22039 INC 8.4621 V1 30.108
RP 230.82 LAP -.10 LOP 232.32 VP 21.206 GAP 1.94 AZP 98.50 TAL 352.43 TAP 173.09 RCA 147.75 APO 231.29 V2 23.827
RC 225.247 GL 61.77 GP -31.78 ZAL 94.16 ZAP 128.87 ETS 208.30 ZAE 149.22 ETE 261.42 ZAC 58.94 ETC 253.49 CLP 137.58

PLANETOCENTRIC CONIC

C3 30.732 VHL 5.544 DLA 64.29 RAL 198.38 RAD 6568.2 VEL 12.333 PTH 2.22 VHP 4.659 DPA -31.38 RAP 174.72 ECC 1.5058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.52	10 1 43	4497.19	-33.62	226.96	89.72	31.40	11 16 40	3897.2	-40.33	221.92
150.48	19 59 42	2786.57	-33.61	84.18	89.70	31.39	20 46 8	2186.6	-40.33	79.15
29.52	10 1 43	4497.19	-33.62	226.96	89.72	31.40	11 16 40	3897.2	-40.33	221.92
150.48	19 59 42	2786.57	-33.61	84.18	89.70	31.39	20 46 8	2186.6	-40.33	79.15
29.52	10 1 43	4497.19	-33.62	226.96	89.72	31.40	11 16 40	3897.2	-40.33	221.92
150.48	19 59 42	2786.57	-33.61	84.18	89.70	31.39	20 46 8	2186.6	-40.33	79.15

DIFFERENTIAL CORRECTIONS
TDE .8516 TRA -.7170 TC3 1.6245 BAU 1.3962
RDE .0487 RRA .9031 RC3-2.9849 FAU .33293
FDE .5425 FRA 2.6995 FC3-9.3790 BSP 2340
BDE .8530 BRA 1.1531 BC3 3.3984 FSP -70

MID-COURSE EXECUTION ACCURACY
SGT 2633.7 SGR 3947.7 SG3 1057.5
RRT -.9225 RRF .9992 RTF -.9065
SGB 4745.6 R23 -.1575 R13 .9875
SG1 4667.1 SG2 859.7 THA 122.87

ORBIT DETERMINATION ACCURACY
ST 1019.9 SR 655.0 SS 818.5
CRT -.4369 CRS -.9795 CST .2469
LSA 1188.0 MSA 853.0 SSA 1.0
EL1 1075.7 EL2 558.6 ALF 158.16

LAUNCH DATE NOV 14 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 583.348 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.051 GAL -1.33 AZL 85.54 HCA 181.68 SMA 189.26 ECC .21925 INC 4.4563 V1 30.108
RP 230.43 LAP -.13 LOP 233.33 VP 21.228 GAP 1.60 AZP 94.46 TAL 352.62 TAP 174.29 RCA 147.77 APO 230.75 V2 23.867
RC 227.193 GL 41.91 GP -14.28 ZAL 95.66 ZAP 135.64 ETS 193.59 ZAE 166.41 ETE 252.57 ZAC 76.16 ETC 255.45 CLP 137.54

PLANETOCENTRIC CONIC

C3 14.795 VHL 3.846 DLA 49.83 RAL 172.60 RAD 6567.6 VEL 11.670 PTH 2.05 VHP 3.922 DPA -16.20 RAP 184.35 ECC 1.2435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.12	9 6 52	4225.04	-35.73	197.35	45.22	52.62	10 17 17	3625.0	-40.31	189.43
132.88	17 28 55	2708.61	-35.72	77.82	45.21	52.61	18 14 4	2108.6	-40.30	69.90
47.12	9 6 52	4225.04	-35.73	197.35	45.22	52.62	10 17 17	3625.0	-40.31	189.43
132.88	17 28 55	2708.61	-35.72	77.82	45.21	52.61	18 14 4	2108.6	-40.30	69.90
47.12	9 6 52	4225.04	-35.73	197.35	45.22	52.62	10 17 17	3625.0	-40.31	189.43
132.88	17 28 55	2708.61	-35.72	77.82	45.21	52.61	18 14 4	2108.6	-40.30	69.90

DIFFERENTIAL CORRECTIONS
TDE -.0748 TRA-1.0075 TC3 2.4539 BAU .6333
RDE .4212 RRA .5461 RC3-2.0566 FAU .33576
FDE 4.1433 FRA 4.9110 FC-19.6468 BSP 12289
BDE .4278 BRA 1.1460 BC3 3.2018 FSP 5473

MID-COURSE EXECUTION ACCURACY
SGT 2998.1 SGR 2118.2 SG3 1717.4
RRT -.9432 RRF .9995 RTF -.9330
SGB 3670.8 R23 -.2544 R13 .9670
SG1 3624.4 SG2 581.9 THA 145.30

ORBIT DETERMINATION ACCURACY
ST 709.0 SR 734.2 SS 2393.3
CRT -.6466 CRS -.9993 CST .6166
LSA 2543.3 MSA 548.6 SSA 1.1
EL1 926.2 EL2 428.7 ALF 133.46

LAUNCH DATE NOV 14 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 587.164 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.037 GAL -1.29 AZL 86.53 HCA 182.70 SMA 189.01 ECC .21817 INC 3.4673 V1 30.108
RP 230.05 LAP -.16 LOP 234.36 VP 21.252 GAP 1.26 AZP 93.47 TAL 352.79 TAP 175.49 RCA 147.78 APO 230.25 V2 23.907
RC 229.120 GL 34.71 GP -9.20 ZAL 95.85 ZAP 135.55 ETS 188.05 ZAE 170.54 ETE 236.13 ZAC 81.06 ETC 255.70 CLP 136.32

PLANETOCENTRIC CONIC

C3 12.322 VHL 3.510 DLA 43.78 RAL 166.85 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.763 DPA -11.53 RAP 186.40 ECC 1.2028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.10	9 12 27	4113.13	-33.32	184.75	33.56	59.77	10 21 1	3513.1	-37.05	176.50
124.90	16 37 26	2740.88	-33.31	78.93	33.55	59.76	17 23 7	2140.9	-37.04	70.68
55.10	9 12 27	4113.13	-33.32	184.75	33.56	59.77	10 21 1	3513.1	-37.05	176.50
124.90	16 37 26	2740.88	-33.31	78.93	33.55	59.76	17 23 7	2140.9	-37.04	70.68
55.10	9 12 27	4113.13	-33.32	184.75	33.56	59.77	10 21 1	3513.1	-37.05	176.50
124.90	16 37 26	2740.88	-33.31	78.93	33.55	59.76	17 23 7	2140.9	-37.04	70.68

DIFFERENTIAL CORRECTIONS
TDE -.0522 TRA -.9535 TC3 2.8511 BAU .5394
RDE .2409 RRA .3391 RC3-1.6104 FAU .35899
FDE 3.7246 FRA 4.8538 FC-25.2222 BSP 10907
BDE .2464 BRA 1.0120 BC3 3.2745 FSP 6075

MID-COURSE EXECUTION ACCURACY
SGT 2942.8 SGR 1421.4 SG3 1874.9
RRT -.9440 RRF .9992 RTF -.9335
SGB 3268.1 R23 -.2999 R13 .9536
SG1 3240.3 SG2 425.8 THA 155.03

ORBIT DETERMINATION ACCURACY
ST 655.0 SR 456.7 SS 2254.5
CRT -.6158 CRS -.9995 CST .5897
LSA 2334.3 MSA 521.0 SSA 1.9
EL1 730.4 EL2 322.7 ALF 150.45

LAUNCH DATE NOV 14 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 590.991 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.024 GAL -1.26 AZL 86.98 HCA 183.72 SMA 188.78 ECC .21715 INC 3.0232 V1 30.108
RP 229.67 LAP -.20 LOP 235.38 VP 21.277 GAP .92 AZP 93.02 TAL 352.95 TAP 176.67 RCA 147.79 APO 229.77 V2 23.948
RC 231.027 GL 31.11 GP -6.85 ZAL 95.77 ZAP 134.55 ETS 185.34 ZAE 171.35 ETE 219.14 ZAC 83.28 ETC 255.78 CLP 134.96

PLANETOCENTRIC CONIC

C3 11.353 VHL 3.369 DLA 40.73 RAL 164.22 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 3.664 DPA -9.26 RAP 187.10 ECC 1.1868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.41	9 20 4	4046.59	-31.74	177.89	28.32	63.01	10 27 31	3446.6	-35.07	169.59
120.59	16 8 52	2773.06	-31.72	80.72	28.32	62.99	16 55 5	2173.1	-35.06	72.43
59.41	9 20 4	4046.59	-31.74	177.89	28.32	63.01	10 27 31	3446.6	-35.07	169.59
120.59	16 8 52	2773.06	-31.72	80.72	28.32	62.99	16 55 5	2173.1	-35.06	72.43
59.41	9 20 4	4046.59	-31.74	177.89	28.32	63.01	10 27 31	3446.6	-35.07	169.59
120.59	16 8 52	2773.06	-31.72	80.72	28.32	62.99	16 55 5	2173.1	-35.06	72.43

DIFFERENTIAL CORRECTIONS
TDE -.0369 TRA -.9222 TC3 2.9030 BAU .4827
RDE .1780 RRA .2580 RC3-1.2991 FAU .37069
FDE 3.5895 FRA 4.9634 FC-28.2665 BSP 10529
BDE .1818 BRA .9576 BC3 3.1804 FSP 6719

MID-COURSE EXECUTION ACCURACY
SGT 2848.3 SGR 1092.4 SG3 1978.1
RRT -.9416 RRF .9985 RTF -.9307
SGB 3050.6 R23 -.3235 R13 .9451
SG1 3031.0 SG2 345.7 THA 159.87

ORBIT DETERMINATION ACCURACY
ST 626.7 SR 350.0 SS 2210.1
CRT -.5851 CRS -.9998 CST .5692
LSA 2267.5 MSA 508.4 SSA 2.8
EL1 666.3 EL2 267.0 ALF 158.24

LAUNCH DATE NOV 14 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 594.827 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.012 GAL -1.23 AZL 87.23 HCA 184.75 SMA 188.56 ECC .21619 INC 2.7662 V1 30.108
RP 229.28 LAP -.23 LOP 236.41 VP 21.303 GAP .59 AZP 92.76 TAL 353.09 TAP 177.85 RCA 147.79 APO 229.32 V2 23.988
RC 232.913 GL 28.97 GP -5.49 ZAL 95.60 ZAP 133.29 ETS 183.76 ZAE 170.81 ETE 206.23 ZAC 84.51 ETC 255.83 CLP 133.53

PLANETOCENTRIC CONIC

C3 10.824 VHL 3.290 DLA 38.94 RAL 162.65 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 3.581 DPA -7.86 RAP 187.32 ECC 1.1781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.08	9 26 7	4001.96	-30.73	173.54	25.30	64.81	10 32 49	3402.0	-33.84	165.24
117.92	15 50 17	2798.06	-30.72	82.26	25.30	64.79	16 36 55	2198.1	-33.83	73.96
62.08	9 26 7	4001.96	-30.73	173.54	25.30	64.81	10 32 49	3402.0	-33.84	165.24
117.92	15 50 17	2798.06	-30.72	82.26	25.30	64.79	16 36 55	2198.1	-33.83	73.96
62.08	9 26 7	4001.96	-30.73	173.54	25.30	64.81	10 32 49	3402.0	-33.84	165.24
117.92	15 50 17	2798.06	-30.72	82.26	25.30	64.79	16 36 55	2198.1	-33.83	73.96

DIFFERENTIAL CORRECTIONS
TDE -.0153 TRA -.8831 TC3 2.8727 BAU .4457
RDE .1439 RRA .2089 RC3-1.1103 FAU .38803
FDE 3.4268 FRA 4.9569 FC-31.0345 BSP 9973
BDE .1447 BRA .9075 BC3 3.0798 FSP 6982

MID-COURSE EXECUTION ACCURACY
SGT 2735.5 SGR 902.9 SG3 2073.2
RRT -.9362 RRF .9972 RTF -.9248
SGB 2880.6 R23 -.3430 R13 .9366
SG1 2864.7 SG2 303.1 THA 162.63

ORBIT DETERMINATION ACCURACY
ST 596.4 SR 288.1 SS 2123.0
CRT -.5305 CRS -.9999 CST .5300
LSA 2167.0 MSA 500.1 SSA 3.8
EL1 619.2 EL2 235.2 ALF 163.12

LAUNCH DATE NOV 14 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 598.674 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.000 GAL -1.20 AZL 87.40 HCA 185.79 SMA 188.35 ECC .21529 INC 2.6000 V1 30.108
RP 228.89 LAP -.26 LOP 237.44 VP 21.331 GAP .27 AZP 92.59 TAL 353.23 TAP 179.01 RCA 147.80 APO 228.90 V2 24.029
RC 234.778 GL 27.56 GP -4.62 ZAL 95.40 ZAP 131.89 ETS 182.73 ZAE 169.67 ETE 197.68 ZAC 85.27 ETC 255.85 CLP 132.06

PLANETOCENTRIC CONIC

C3 10.480 VHL 3.237 DLA 37.78 RAL 161.58 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.507 DPA -6.88 RAP 187.29 ECC 1.1725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.86	9 30 36	3970.02	-30.06	170.55	23.30	65.94	10 36 46	3370.0	-33.03	162.24
116.14	15 37 12	2816.86	-30.05	83.46	23.30	65.93	16 24 9	2216.9	-33.02	75.16
63.86	9 30 36	3970.02	-30.06	170.55	23.30	65.94	10 36 46	3370.0	-33.03	162.24
116.14	15 37 12	2816.86	-30.05	83.46	23.30	65.93	16 24 9	2216.9	-33.02	75.16
63.86	9 30 36	3970.02	-30.06	170.55	23.30	65.94	10 36 46	3370.0	-33.03	162.24
116.14	15 37 12	2816.86	-30.05	83.46	23.30	65.93	16 24 9	2216.9	-33.02	75.16

DIFFERENTIAL CORRECTIONS
TDE -.0019 TRA -.8502 TC3 2.7576 BAU .4096
RDE .1274 RRA .1798 RC3 -.9707 FAU .40345
FDE 3.3799 FRA 5.0180 FC-33.3278 BSP 9600
BDE .1274 BRA .8690 BC3 2.9234 FSP 7320

MID-COURSE EXECUTION ACCURACY
SGT 2610.2 SGR 779.8 SG3 2164.7
RRT -.9284 RRF .9949 RTF -.9166
SGB 2724.1 R23 -.3607 R13 .9274
SG1 2709.8 SG2 279.0 THA 164.33

ORBIT DETERMINATION ACCURACY
ST 573.7 SR 256.5 SS 2089.8
CRT -.4810 CRS -.9996 CST .5004
LSA 2126.0 MSA 492.0 SSA 4.9
EL1 589.0 EL2 219.0 ALF 165.87

LAUNCH DATE NOV 14 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 602.536 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.989 GAL -1.17 AZL 87.51 HCA 186.82 SMA 188.16 ECC .21444 INC 2.4863 V1 30.108
RP 228.51 LAP -.30 LOP 238.48 VP 21.360 GAP -.05 AZP 92.47 TAL 353.35 TAP 180.17 RCA 147.81 APO 228.51 V2 24.070
RC 236.623 GL 26.58 GP -4.00 ZAL 95.20 ZAP 130.42 ETS 182.00 ZAE 168.23 ETE 192.15 ZAC 85.77 ETC 255.88 CLP 130.54

PLANETOCENTRIC CONIC

C3 10.231 VHL 3.199 DLA 37.00 RAL 160.77 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.438 DPA -6.12 RAP 187.10 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.13	9 33 51	3946.23	-29.60	168.38	21.85	66.72	10 39 37	3346.2	-32.48	160.08
114.87	15 27 31	2830.94	-29.59	84.37	21.84	66.70	16 14 42	2230.9	-32.47	76.08
65.13	9 33 51	3946.23	-29.60	168.38	21.85	66.72	10 39 37	3346.2	-32.48	160.08
114.87	15 27 31	2830.94	-29.59	84.37	21.84	66.70	16 14 42	2230.9	-32.47	76.08
65.13	9 33 51	3946.23	-29.60	168.38	21.85	66.72	10 39 37	3346.2	-32.48	160.08
114.87	15 27 31	2830.94	-29.59	84.37	21.84	66.70	16 14 42	2230.9	-32.47	76.08

DIFFERENTIAL CORRECTIONS
TDE .0254 TRA -.8032 TC3 2.6500 BAU .3813
RDE .1184 RRA .1602 RC3 -.8653 FAU .41806
FDE 3.3924 FRA 5.1117 FC-35.3765 BSP 8849
BDE .1211 BRA .8190 BC3 2.7877 FSP 7670

MID-COURSE EXECUTION ACCURACY
SGT 2474.1 SGR 693.2 SG3 2253.9
RRT -.9190 RRF .9918 RTF -.9101
SGB 2569.4 R23 -.3696 R13 .9204
SG1 2555.7 SG2 264.6 THA 165.40

ORBIT DETERMINATION ACCURACY
ST 544.7 SR 238.5 SS 2083.6
CRT -.3806 CRS -.9986 CST .4229
LSA 2110.5 MSA 490.8 SSA 5.8
EL1 553.6 EL2 217.0 ALF 168.80

LAUNCH DATE NOV 14 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 606.409 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.979 GAL -1.15 AZL 87.60 HCA 187.86 SMA 187.97 ECC .21364 INC 2.4020 V1 30.108
RP 228.12 LAP -.33 LOP 239.52 VP 21.390 GAP -.36 AZP 92.38 TAL 353.46 TAP 181.32 RCA 147.82 APO 228.13 V2 24.111
RC 238.446 GL 25.85 GP -3.55 ZAL 95.01 ZAP 128.89 ETS 181.46 ZAE 166.63 ETE 188.50 ZAC 86.10 ETC 255.90 CLP 128.97

PLANETOCENTRIC CONIC

C3 10.038 VHL 3.168 DLA 36.43 RAL 160.14 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.372 DPA -5.49 RAP 186.82 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.06	9 36 16	3927.87	-29.28	166.73	20.74	67.28	10 41 44	3327.9	-32.08	158.44
113.94	15 20 5	2841.69	-29.26	85.08	20.73	67.26	16 7 26	2241.7	-32.07	76.79
66.06	9 36 16	3927.87	-29.28	166.73	20.74	67.28	10 41 44	3327.9	-32.08	158.44
113.94	15 20 5	2841.69	-29.26	85.08	20.73	67.26	16 7 26	2241.7	-32.07	76.79
66.06	9 36 16	3927.87	-29.28	166.73	20.74	67.28	10 41 44	3327.9	-32.08	158.44
113.94	15 20 5	2841.69	-29.26	85.08	20.73	67.26	16 7 26	2241.7	-32.07	76.79

DIFFERENTIAL CORRECTIONS
TDE .0453 TRA -.7617 TC3 2.4854 BAU .3496
RDE .1142 RRA .1466 RC3 -.7807 FAU .43235
FDE 3.4480 FRA 5.2267 FC-37.2876 BSP 8230
BDE .1229 BRA .7757 BC3 2.6052 FSP 8045

MID-COURSE EXECUTION ACCURACY
SGT 2327.7 SGR 629.3 SG3 2342.6
RRT -.9055 RRF .9875 RTF -.9002
SGB 2411.3 R23 -.3818 R13 .9107
SG1 2397.3 SG2 259.3 THA 166.08

ORBIT DETERMINATION ACCURACY
ST 522.3 SR 229.5 SS 2097.1
CRT -.2883 CRS -.9971 CST .3545
LSA 2118.1 MSA 486.8 SSA 6.7
EL1 527.3 EL2 217.6 ALF 171.28

LAUNCH DATE NOV 14 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 610.292 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.969 GAL -1.13 AZL 87.66 HCA 188.91 SMA 187.80 ECC .21289 INC 2.3357 V1 30.108
RP 227.73 LAP -.36 LOP 240.56 VP 21.422 GAP -.66 AZP 92.31 TAL 353.55 TAP 182.46 RCA 147.82 APO 227.78 V2 24.152
RC 240.248 GL 25.30 GP -3.19 ZAL 94.84 ZAP 127.30 ETS 181.05 ZAE 164.93 ETE 186.01 ZAC 86.31 ETC 255.92 CLP 127.37

PLANETOCENTRIC CONIC

C3 9.883 VHL 3.144 DLA 36.01 RAL 159.64 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.311 DPA -4.94 RAP 186.45 ECC 1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.77	9 38 6	3913.37	-29.03	165.46	19.85	67.70	10 43 19	3313.4	-31.79	157.16
113.23	15 14 14	2849.98	-29.02	85.63	19.85	67.69	16 1 44	2250.0	-31.78	77.34
66.77	9 38 6	3913.37	-29.03	165.46	19.85	67.70	10 43 19	3313.4	-31.79	157.16
113.23	15 14 14	2849.98	-29.02	85.63	19.85	67.69	16 1 44	2250.0	-31.78	77.34
66.77	9 38 6	3913.37	-29.03	165.46	19.85	67.70	10 43 19	3313.4	-31.79	157.16
113.23	15 14 14	2849.98	-29.02	85.63	19.85	67.69	16 1 44	2250.0	-31.78	77.34

DIFFERENTIAL CORRECTIONS
TDE .0670 TRA -.7176 TC3 2.2955 BAU .3176
RDE .1117 RRA .1356 RC3 -.7144 FAU .44860
FDE 3.4789 FRA 5.3040 FC-39.2973 BSP 7532
BDE .1302 BRA .7303 BC3 2.4041 FSP 8325

MID-COURSE EXECUTION ACCURACY
SGT 2170.7 SGR 580.1 SG3 2433.8
RRT -.8874 RRF .9816 RTF -.8865
SGB 2246.9 R23 -.3977 R13 .8980
SG1 2231.8 SG2 260.2 THA 166.47

ORBIT DETERMINATION ACCURACY
ST 502.0 SR 223.6 SS 2094.4
CRT -.1798 CRS -.9950 CST .2712
LSA 2110.8 MSA 482.8 SSA 7.8
EL1 504.0 EL2 219.1 ALF 174.35

LAUNCH DATE NOV 14 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 614.185 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.960 GAL -1.11 AZL 87.72 HCA 189.95 SMA 187.64 ECC .21219 INC 2.2835 V1 30.108
RP 227.34 LAP -.39 LOP 241.61 VP 21.454 GAP -.96 AZP 92.25 TAL 353.63 TAP 183.59 RCA 147.83 APO 227.46 V2 24.193
RC 242.030 GL 24.86 GP -2.92 ZAL 94.69 ZAP 125.67 ETS 180.72 ZAE 163.15 ETE 184.27 ZAC 86.45 ETC 255.94 CLP 125.72

PLANETOCENTRIC CONIC

C3 9.753 VHL 3.123 DLA 35.68 RAL 159.22 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.253 DPA -4.43 RAP 186.02 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.32	9 39 33	3901.51	-28.85	164.42	19.14	68.03	10 44 34	3301.5	-31.56	156.13
112.68	15 9 29	2856.60	-28.84	86.07	19.13	68.02	15 57 6	2256.6	-31.55	77.78
67.32	9 39 33	3901.51	-28.85	164.42	19.14	68.03	10 44 34	3301.5	-31.56	156.13
112.68	15 9 29	2856.60	-28.84	86.07	19.13	68.02	15 57 6	2256.6	-31.55	77.78
67.32	9 39 33	3901.51	-28.85	164.42	19.14	68.03	10 44 34	3301.5	-31.56	156.13
112.68	15 9 29	2856.60	-28.84	86.07	19.13	68.02	15 57 6	2256.6	-31.55	77.78

DIFFERENTIAL CORRECTIONS
TDE .0874 TRA -.6763 TC3 2.0638 BAU .2824
RDE .1113 RRA .1277 RC3 -.6561 FAU .46371
FDE 3.5425 FRA 5.4148 FC-41.1620 BSP 6900
BDE .1415 BRA .6882 BC3 2.1656 FSP 8667

MID-COURSE EXECUTION ACCURACY
SGT 2005.1 SGR 541.1 SG3 2523.1
RRT -.8627 RRF .9739 RTF -.8672
SGB 2076.8 R23 -.4197 R13 .8805
SG1 2059.7 SG2 266.4 THA 166.67

ORBIT DETERMINATION ACCURACY
ST 487.0 SR 222.0 SS 2108.8
CRT -.0682 CRS -.9925 CST .1829
LSA 2122.2 MSA 479.2 SSA 8.8
EL1 487.3 EL2 221.4 ALF 177.76

LAUNCH DATE NOV 14 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 618.088 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.951 GAL -1.10 AZL 87.76 HCA 191.01 SMA 187.49 ECC .21154 INC 2.2403 V1 30.108
RP 226.95 LAP -.43 LOP 242.66 VP 21.488 GAP -1.26 AZP 92.20 TAL 353.70 TAP 184.70 RCA 147.83 APO 227.15 V2 24.235
RC 243.792 GL 24.51 GP -2.69 ZAL 94.56 ZAP 123.99 ETS 180.45 ZAE 161.31 ETE 183.01 ZAC 86.54 ETC 255.96 CLP 124.04

PLANETOCENTRIC CONIC

C3 9.642 VHL 3.105 DLA 35.42 RAL 158.89 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.198 DPA -3.96 RAP 185.54 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.78	9 40 44	3891.69	-28.71	163.58	18.55	68.30	10 45 35	3291.7	-31.39	155.28
112.22	15 5 37	2861.91	-28.70	86.43	18.54	68.29	15 53 19	2261.9	-31.38	78.14
67.78	9 40 44	3891.69	-28.71	163.58	18.55	68.30	10 45 35	3291.7	-31.39	155.28
112.22	15 5 37	2861.91	-28.70	86.43	18.54	68.29	15 53 19	2261.9	-31.38	78.14
67.78	9 40 44	3891.69	-28.71	163.58	18.55	68.30	10 45 35	3291.7	-31.39	155.28
112.22	15 5 37	2861.91	-28.70	86.43	18.54	68.29	15 53 19	2261.9	-31.38	78.14

DIFFERENTIAL CORRECTIONS
TDE .1106 TRA -.6322 TC3 1.8191 BAU .2472
RDE .1115 RRA .1210 RC3 -.6076 FAU .48021
FDE 3.5875 FRA 5.5019 FC-43.1169 BSP 6152
BDE .1570 BRA .6437 BC3 1.9178 FSP 8936

MID-COURSE EXECUTION ACCURACY
SGT 1834.9 SGR 509.7 SG3 2615.0
RRT -.8302 RRF .9645 RTF -.8415
SGB 1904.4 R23 -.4476 R13 .8575
SG1 1884.2 SG2 276.7 THA 166.72

ORBIT DETERMINATION ACCURACY
ST 476.6 SR 221.9 SS 2112.2
CRT .0596 CRS -.9896 CST .0773
LSA 2123.9 MSA 476.1 SSA 9.8
EL1 476.9 EL2 221.4 ALF 2.02

LAUNCH DATE NOV 14 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 622.001 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.943 GAL -1.09 AZL 87.79 HCA 192.06 SMA 187.35 ECC .21093 INC 2.2056 V1 30.108
RP 226.56 LAP -.46 LOP 243.71 VP 21.522 GAP -1.55 AZP 92.16 TAL 353.75 TAP 185.81 RCA 147.83 APO 226.87 V2 24.277
RC 245.534 GL 24.23 GP -2.50 ZAL 94.45 ZAP 122.28 ETS 180.23 ZAE 159.42 ETE 182.07 ZAC 86.57 ETC 255.99 CLP 122.31

PLANETOCENTRIC CONIC

C3 9.546 VHL 3.090 DLA 35.20 RAL 158.61 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.147 DPA -3.51 RAP 185.01 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.15	9 41 46	3883.28	-28.59	162.86	18.05	68.53	10 46 30	3283.3	-31.24	154.57
111.85	15 2 23	2866.37	-28.58	86.73	18.05	68.51	15 50 9	2266.4	-31.23	78.44
68.15	9 41 46	3883.28	-28.59	162.86	18.05	68.53	10 46 30	3283.3	-31.24	154.57
111.85	15 2 23	2866.37	-28.58	86.73	18.05	68.51	15 50 9	2266.4	-31.23	78.44
68.15	9 41 46	3883.28	-28.59	162.86	18.05	68.53	10 46 30	3283.3	-31.24	154.57
111.85	15 2 23	2866.37	-28.58	86.73	18.05	68.51	15 50 9	2266.4	-31.23	78.44

DIFFERENTIAL CORRECTIONS
TDE .1335 TRA -.5898 TC3 1.5347 BAU .2085
RDE .1132 RRA .1164 RC3 -.5612 FAU .49437
FDE 3.6770 FRA 5.6426 FC-44.8356 BSP 5407
BDE .1751 BRA .6011 BC3 1.6341 FSP 9292

MID-COURSE EXECUTION ACCURACY
SGT 1659.0 SGR 483.8 SG3 2702.1
RRT -.7854 RRF .9531 RTF -.8042
SGB 1728.1 R23 -.4864 R13 .8246
SG1 1703.3 SG2 291.7 THA 166.70

ORBIT DETERMINATION ACCURACY
ST 472.6 SR 224.6 SS 2139.9
CRT .1872 CRS -.9868 CST -.0329
LSA 2151.4 MSA 473.6 SSA 10.8
EL1 475.0 EL2 219.5 ALF 6.47

LAUNCH DATE NOV 14 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 625.925 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.936 GAL -1.08 AZL 87.82 HCA 193.12 SMA 187.22 ECC .21037 INC 2.1758 V1 30.108
RP 226.17 LAP -.49 LOP 244.77 VP 21.558 GAP -1.83 AZP 92.12 TAL 353.79 TAP 186.91 RCA 147.83 APO 226.60 V2 24.318
RC 247.256 GL 23.99 GP -2.34 ZAL 94.37 ZAP 120.52 ETS 180.05 ZAE 157.49 ETE 181.37 ZAC 86.57 ETC 256.02 CLP 120.55

PLANETOCENTRIC CONIC

C3 9.462 VHL 3.076 DLA 35.02 RAL 158.39 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.099 DPA -3.07 RAP 184.43 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.47	9 42 43	3876.02	-28.49	162.24	17.64	68.72	10 47 19	3276.0	-31.12	153.95
111.53	14 59 40	2870.16	-28.48	86.99	17.64	68.70	15 47 30	2270.2	-31.11	78.69
68.47	9 42 43	3876.02	-28.49	162.24	17.64	68.72	10 47 19	3276.0	-31.12	153.95
111.53	14 59 40	2870.16	-28.48	86.99	17.64	68.70	15 47 30	2270.2	-31.11	78.69
68.47	9 42 43	3876.02	-28.49	162.24	17.64	68.72	10 47 19	3276.0	-31.12	153.95
111.53	14 59 40	2870.16	-28.48	86.99	17.64	68.70	15 47 30	2270.2	-31.11	78.69

DIFFERENTIAL CORRECTIONS
TDE .1577 TRA -.5443 TC3 1.2270 BAU .1686
RDE .1151 RRA .1122 RC3 -.5200 FAU .50912
FDE 3.7509 FRA 5.7575 FC-46.5844 BSP 4599
BDE .1952 BRA .5557 BC3 1.3327 FSP 9592

MID-COURSE EXECUTION ACCURACY
SGT 1479.4 SGR 462.1 SG3 2788.5
RRT -.7234 RRF .9394 RTF -.7496
SGB 1549.9 R23 -.5383 R13 .7766
SG1 1518.4 SG2 310.8 THA 166.70

ORBIT DETERMINATION ACCURACY
ST 474.0 SR 228.0 SS 2158.3
CRT .3177 CRS -.9837 CST -.1500
LSA 2171.2 MSA 469.9 SSA 11.8
EL1 480.9 EL2 213.0 ALF 10.84

LAUNCH DATE NOV 14 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 629.858 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.929 GAL -1.07 AZL 87.85 HCA 194.18 SMA 187.10 ECC .20984 INC 2.1505 V1 30.108
RP 225.78 LAP -.53 LOP 245.83 VP 21.594 GAP -2.11 AZP 92.09 TAL 353.82 TAP 188.00 RCA 147.84 APO 226.36 V2 24.360
RC 248.959 GL 23.78 GP -2.20 ZAL 94.31 ZAP 118.72 ETS 179.89 ZAE 155.50 ETE 180.83 ZAC 86.55 ETC 256.05 CLP 118.75

PLANETOCENTRIC CONIC

C3 9.387 VHL 3.064 DLA 34.86 RAL 158.22 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.054 DPA -2.64 RAP 183.82 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.76	9 43 41	3869.50	-28.41	161.69	17.31	68.88	10 48 11	3269.5	-31.01	153.39
111.24	14 57 20	2873.59	-28.40	87.22	17.30	68.87	15 45 13	2273.6	-31.00	78.93
68.76	9 43 41	3869.50	-28.41	161.69	17.31	68.88	10 48 11	3269.5	-31.01	153.39
111.24	14 57 20	2873.59	-28.40	87.22	17.30	68.87	15 45 13	2273.6	-31.00	78.93
68.76	9 43 41	3869.50	-28.41	161.69	17.31	68.88	10 48 11	3269.5	-31.01	153.39
111.24	14 57 20	2873.59	-28.40	87.22	17.30	68.87	15 45 13	2273.6	-31.00	78.93

DIFFERENTIAL CORRECTIONS
TDE .1843 TRA -.4993 TC3 .9016 BAU .1283
RDE .1175 RRA .1091 RC3 -.4819 FAU .52341
FDE 3.8259 FRA 5.8924 FC-48.2726 BSP 3779
BDE .2186 BRA .5111 BC3 1.0223 FSP 9912

MID-COURSE EXECUTION ACCURACY
SGT 1311.2 SGR 444.2 SG3 2874.0
RRT -.6360 RRF .9236 RTF -.6686
SGB 1384.4 R23 -.6065 R13 .7045
SG1 1343.3 SG2 334.6 THA 167.02

ORBIT DETERMINATION ACCURACY
ST 485.4 SR 232.2 SS 2179.1
CRT .4446 CRS -.9805 CST -.2683
LSA 2195.1 MSA 468.5 SSA 12.7
EL1 498.5 EL2 202.5 ALF 14.44

LAUNCH DATE NOV 14 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 633.801 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.922 GAL -1.07 AZL 87.87 HCA 195.25 SMA 186.98 ECC .20936 INC 2.1287 V1 30.108
RP 225.38 LAP -.56 LOP 246.90 VP 21.631 GAP -2.38 AZP 92.05 TAL 353.83 TAP 189.07 RCA 147.84 APO 226.13 V2 24.402
RC 250.643 GL 23.61 GP -2.09 ZAL 94.28 ZAP 116.89 ETS 179.76 ZAE 153.48 ETE 180.41 ZAC 86.50 ETC 256.09 CLP 116.91

PLANETOCENTRIC CONIC

C3 9.321 VHL 3.053 DLA 34.72 RAL 158.09 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.012 DPA -2.21 RAP 183.17 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.02	9 44 42	3863.53	-28.33	161.18	17.03	69.04	10 49 5	3263.5	-30.91	152.89
110.98	14 55 18	2876.79	-28.32	87.44	17.02	69.02	15 43 15	2276.8	-30.90	79.14
69.02	9 44 42	3863.53	-28.33	161.18	17.03	69.04	10 49 5	3263.5	-30.91	152.89
110.98	14 55 18	2876.79	-28.32	87.44	17.02	69.02	15 43 15	2276.8	-30.90	79.14
69.02	9 44 42	3863.53	-28.33	161.18	17.03	69.04	10 49 5	3263.5	-30.91	152.89
110.98	14 55 18	2876.79	-28.32	87.44	17.02	69.02	15 43 15	2276.8	-30.90	79.14

DIFFERENTIAL CORRECTIONS
TDE .2101 TRA -.4536 TC3 .5438 BAU .0876
RDE .1203 RRA .1066 RC3 -.4454 FAU .53665
FDE 3.9115 FRA 6.0348 FC-49.8466 BSP 2954
BDE .2421 BRA .4659 BC3 .7029 FSP 10240

MID-COURSE EXECUTION ACCURACY
SGT 1156.8 SGR 429.1 SG3 2955.4
RRT -.5103 RRF .9052 RTF -.5429
SGB 1233.8 R23 -.6941 R13 .5887
SG1 1179.5 SG2 361.9 THA 168.15

ORBIT DETERMINATION ACCURACY
ST 502.1 SR 237.4 SS 2205.5
CRT .5558 CRS -.9775 CST -.3764
LSA 2226.1 MSA 465.4 SSA 13.7
EL1 521.9 EL2 189.8 ALF 17.05

LAUNCH DATE NOV 14 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 637.754 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.916 GAL -1.07 AZL 87.89 HCA 196.31 SMA 186.88 ECC .20892 INC 2.1095 V1 30.108
RP 224.99 LAP -.59 LOP 247.97 VP 21.669 GAP -2.65 AZP 92.02 TAL 353.83 TAP 190.14 RCA 147.84 APO 225.92 V2 24.444
RC 252.307 GL 23.46 GP -1.98 ZAL 94.27 ZAP 115.03 ETS 179.65 ZAE 151.41 ETE 180.08 ZAC 86.42 ETC 256.13 CLP 115.04

PLANETOCENTRIC CONIC

C3 9.261 VHL 3.043 DLA 34.58 RAL 158.01 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 2.974 DPA -1.78 RAP 182.49 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.27	9 45 46	3857.98	-28.25	160.72	16.81	69.17	10 50 4	3258.0	-30.82	152.42
110.73	14 53 32	2879.86	-28.24	87.65	16.80	69.16	15 41 32	2279.9	-30.81	79.35
69.27	9 45 46	3857.98	-28.25	160.72	16.81	69.17	10 50 4	3258.0	-30.82	152.42
110.73	14 53 32	2879.86	-28.24	87.65	16.80	69.16	15 41 32	2279.9	-30.81	79.35
69.27	9 45 46	3857.98	-28.25	160.72	16.81	69.17	10 50 4	3258.0	-30.82	152.42
110.73	14 53 32	2879.86	-28.24	87.65	16.80	69.16	15 41 32	2279.9	-30.81	79.35

DIFFERENTIAL CORRECTIONS
TDE .2398 TRA -.4050 TC3 .1695 BAU .0551
RDE .1230 RRA .1043 RC3 -.4112 FAU .54970
FDE 3.9739 FRA 6.1668 FC-51.3845 BSP 2107
BDE .2695 BRA .4182 BC3 .4448 FSP 10533

MID-COURSE EXECUTION ACCURACY
SGT 1035.4 SGR 416.2 SG3 3033.8
RRT -.3301 RRF .8845 RTF -.3550
SGB 1115.9 R23 -.7912 R13 .4010
SG1 1046.0 SG2 388.9 THA 171.22

ORBIT DETERMINATION ACCURACY
ST 530.2 SR 242.5 SS 2221.7
CRT .6584 CRS -.9741 CST -.4800
LSA 2249.5 MSA 464.3 SSA 14.6
EL1 556.4 EL2 173.9 ALF 18.65

LAUNCH DATE NOV 14 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 641.717 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.910	GAL	-1.07	AZL	87.91	HCA	197.39	SMA	186.78	ECC	.20851	INC	2.0923
RP	224.60	LAP	-.63	LOP	249.04	VP	21.708	GAP	-2.91	AZP	92.00	TAL	353.81	TAP	191.20	RCA	147.84	APO	225.73
RC	253.951	GL	23.32	GP	-1.89	ZAL	94.29	ZAP	113.13	ETS	179.55	ZAE	149.31	ETE	179.81	ZAC	86.34	ETC	256.17

V1 30.108 V2 24.486 CLP 113.14

PLANETOCENTRIC CONIC

C3	9.209	VHL	3.035	DLA	34.45	RAL	157.96	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	2.939	DPA	-1.35	RAP	181.78

ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.50	9 47 0	3852.59	-28.18	160.26	16.64	69.30	10 51 12	3252.6	-30.73	151.97
110.50	14 51 56	2883.03	-28.17	87.86	16.63	69.29	15 39 59	2283.0	-30.72	79.57
69.50	9 47 0	3852.59	-28.18	160.26	16.64	69.30	10 51 12	3252.6	-30.73	151.97
110.50	14 51 56	2883.03	-28.17	87.86	16.63	69.29	15 39 59	2283.0	-30.72	79.57
69.50	9 47 0	3852.59	-28.18	160.26	16.64	69.30	10 51 12	3252.6	-30.73	151.97
110.50	14 51 56	2883.03	-28.17	87.86	16.63	69.29	15 39 59	2283.0	-30.72	79.57

DIFFERENTIAL CORRECTIONS

TDE	.2700	TRA	-.3558	TC3	-.2244	BAU	.0542
RDE	.1258	RRA	.1025	RC3	-.3791	FAU	.56261
FDE	4.0219	FRA	6.2942	FC	-52.8932	BSP	1393
BDE	.2978	BRA	.3702	BC3	.4405	FSP	10800

MID-COURSE EXECUTION ACCURACY

SGT	970.5	SGR	405.4	SG3	3110.3		
RRT	-.0984	RRF	.8613	RTF	-.1001		
SGB	1051.8	R23	-.8533	R13	.1177		
SG1	971.5	SG2	403.1	THA	177.16		

ORBIT DETERMINATION ACCURACY

ST	565.3	SR	247.8	SS	2232.5
CRT	.7416	CRS	-.9706	CST	-.5671
LSA	2269.4	MSA	463.4	SSA	15.6
EL1	596.8	EL2	157.5	ALF	19.42

LAUNCH DATE NOV 14 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 645.689 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.905	GAL	-1.07	AZL	87.92	HCA	198.46	SMA	186.70	ECC	.20814	INC	2.0772
RP	224.21	LAP	-.66	LOP	250.12	VP	21.748	GAP	-3.17	AZP	91.97	TAL	353.78	TAP	192.25	RCA	147.84	APO	225.55
RC	255.576	GL	23.20	GP	-1.80	ZAL	94.34	ZAP	111.21	ETS	179.46	ZAE	147.18	ETE	179.60	ZAC	86.23	ETC	256.22

V1 30.108 V2 24.527 CLP 111.22

PLANETOCENTRIC CONIC

C3	9.161	VHL	3.027	DLA	34.32	RAL	157.95	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	2.908	DPA	-.92	RAP	181.04

ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.74	9 48 20	3847.40	-28.10	159.82	16.51	69.43	10 52 28	3247.4	-30.64	151.53
110.26	14 50 31	2886.23	-28.09	88.08	16.51	69.42	15 38 38	2286.2	-30.63	79.79
69.74	9 48 20	3847.40	-28.10	159.82	16.51	69.43	10 52 28	3247.4	-30.64	151.53
110.26	14 50 31	2886.23	-28.09	88.08	16.51	69.42	15 38 38	2286.2	-30.63	79.79
69.74	9 48 20	3847.40	-28.10	159.82	16.51	69.43	10 52 28	3247.4	-30.64	151.53
110.26	14 50 31	2886.23	-28.09	88.08	16.51	69.42	15 38 38	2286.2	-30.63	79.79

DIFFERENTIAL CORRECTIONS

TDE	.3005	TRA	-.3043	TC3	-.6434	BAU	.0895
RDE	.1288	RRA	.1009	RC3	-.3473	FAU	.57410
FDE	4.0739	FRA	6.4226	FC	-54.2509	BSP	1173
BDE	.3269	BRA	.3206	BC3	.7311	FSP	11058

MID-COURSE EXECUTION ACCURACY

SGT	980.7	SGR	396.4	SG3	3180.1		
RRT	.1525	RRF	.8354	RTF	.1914		
SGB	1057.8	R23	.8098	R13	.2151		
SG1	982.9	SG2	390.9	THA	4.19		

ORBIT DETERMINATION ACCURACY

ST	606.2	SR	253.6	SS	2246.3
CRT	.8083	CRS	-.9672	CST	-.6409
LSA	2294.4	MSA	461.3	SSA	16.5
EL1	641.8	EL2	141.0	ALF	19.67

LAUNCH DATE NOV 14 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 649.670 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.901	GAL	-1.08	AZL	87.94	HCA	199.54	SMA	186.61	ECC	.20781	INC	2.0634
RP	223.82	LAP	-.69	LOP	251.20	VP	21.788	GAP	-3.43	AZP	91.94	TAL	353.74	TAP	193.28	RCA	147.83	APO	225.40
RC	257.180	GL	23.09	GP	-1.73	ZAL	94.42	ZAP	109.26	ETS	179.38	ZAE	145.02	ETE	179.43	ZAC	86.12	ETC	256.27

V1 30.108 V2 24.569 CLP 109.27

PLANETOCENTRIC CONIC

C3	9.119	VHL	3.020	DLA	34.20	RAL	157.98	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	2.880	DPA	-.48	RAP	180.28

ECC 1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.97	9 49 53	3842.13	-28.02	159.38	16.43	69.55	10 53 55	3242.1	-30.54	151.09
110.03	14 49 11	2889.72	-28.01	88.32	16.43	69.53	15 37 21	2289.7	-30.53	80.03
69.97	9 49 53	3842.13	-28.02	159.38	16.43	69.55	10 53 55	3242.1	-30.54	151.09
110.03	14 49 11	2889.72	-28.01	88.32	16.43	69.53	15 37 21	2289.7	-30.53	80.03
69.97	9 49 53	3842.13	-28.02	159.38	16.43	69.55	10 53 55	3242.1	-30.54	151.09
110.03	14 49 11	2889.72	-28.01	88.32	16.43	69.53	15 37 21	2289.7	-30.53	80.03

DIFFERENTIAL CORRECTIONS

TDE	.3329	TRA	-.2520	TC3	-1.0764	BAU	.1368
RDE	.1317	RRA	.0995	RC3	-.3172	FAU	.58548
FDE	4.0942	FRA	6.5416	FC	-55.5814	BSP	1731
BDE	.3581	BRA	.2710	BC3	1.1221	FSP	11283

MID-COURSE EXECUTION ACCURACY

SGT	1075.1	SGR	388.9	SG3	3247.1		
RRT	.3598	RRF	.8072	RTF	.4468		
SGB	1143.3	R23	.6703	R13	.4799		
SG1	1085.4	SG2	359.5	THA	8.34		

ORBIT DETERMINATION ACCURACY

ST	655.4	SR	259.2	SS	2247.7
CRT	.8601	CRS	-.9632	CST	-.7002
LSA	2309.9	MSA	461.5	SSA	17.4
EL1	693.6	EL2	124.9	ALF	19.44

LAUNCH DATE NOV 14 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 653.660 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.896	GAL	-1.08	AZL	87.95	HCA	200.63	SMA	186.54	ECC	.20751	INC	2.0512
RP	223.44	LAP	-.72	LOP	252.28	VP	21.829	GAP	-3.67	AZP	91.92	TAL	353.68	TAP	194.31	RCA	147.83	APO	225.25
RC	258.763	GL	23.00	GP	-1.65	ZAL	94.52	ZAP	107.28	ETS	179.32	ZAE	142.84	ETE	179.29	ZAC	86.00	ETC	256.33

V1 30.108 V2 24.611 CLP 107.29

PLANETOCENTRIC CONIC

C3	9.082	VHL	3.014	DLA	34.07	RAL	158.04	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	2.855	DPA	-.05	RAP	179.50

ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.22	9 51 34	3836.95	-27.94	158.94	16.39	69.67	10 55 31	3237.0	-30.44	150.65
109.78	14 48 0	2893.31	-27.93	88.57	16.39	69.65	15 36 13	2293.3	-30.44	80.28
70.22	9 51 34	3836.95	-27.94	158.94	16.39	69.67	10 55 31	3237.0	-30.44	150.65
109.78	14 48 0	2893.31	-27.93	88.57	16.39	69.65	15 36 13	2293.3	-30.44	80.28
110.00	15 10 44	2823.98	-29.49	83.78	17.01	71.88	15 57 48	2224.0	-31.68	75.25
110.00	14 28 0	2954.28	-26.40	92.65	15.72	67.45	15 17 14	2354.3	-29.22	84.60

DIFFERENTIAL CORRECTIONS

TDE	.3646	TRA	-.1975	TC3	-1.5268	BAU	.1886
RDE	.1349	RRA	.0984	RC3	-.2876	FAU	.59551
FDE	4.1262	FRA	6.6633	FC	-56.7660	BSP	2673
BDE	.3887	BRA	.2207	BC3	1.5537	FSP	11488

MID-COURSE EXECUTION ACCURACY

SGT	1238.1	SGR	383.2	SG3	3308.2		
RRT	.4952	RRF	.7768	RTF	.6326		
SGB	1296.0	R23	.5057	R13	.6551		
SG1	1253.6	SG2	328.7	THA	9.36		

ORBIT DETERMINATION ACCURACY

ST	706.9	SR	265.3	SS	2255.9
CRT	.8995	CRS	-.9594	CST	-.7489
LSA	2334.0	MSA	459.4	SSA	18.3
EL1	747.0	EL2	109.7	ALF	19.08

LAUNCH DATE NOV 14 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 657.660 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.893 GAL -1.10 AZL 87.96 HCA 201.72 SMA 186.47 ECC .20725 INC 2.0401 V1 30.108
RP 223.05 LAP -.75 LOP 253.37 VP 21.870 GAP -3.92 AZP 91.90 TAL 353.61 TAP 195.32 RCA 147.83 APO 225.12 V2 24.653
RC 260.326 GL 22.90 GP -1.59 ZAL 94.65 ZAP 105.29 ETS 179.26 ZAE 140.63 ETE 179.18 ZAC 85.86 ETC 256.39 CLP 105.30

PLANETOCENTRIC CONIC

C3 9.049 VHL 3.008 DLA 33.93 RAL 158.13 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.834 DPA .39 RAP 178.71 ECC 1.1489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.47	9 53 30	3831.54	-27.85	158.48	16.40	69.79	10 57 21	3231.5	-30.34	150.19
109.53	14 46 50	2897.33	-27.84	88.84	16.39	69.77	15 35 8	2297.3	-30.33	80.56
70.47	9 53 30	3831.54	-27.85	158.48	16.40	69.79	10 57 21	3231.5	-30.34	150.19
109.53	14 46 50	2897.33	-27.84	88.84	16.39	69.77	15 35 8	2297.3	-30.33	80.56
110.00	15 21 5	2792.82	-30.13	81.58	17.27	73.04	16 7 37	2192.8	-32.16	72.95
110.00	14 18 26	2984.04	-25.61	94.60	15.39	66.54	15 8 10	2384.0	-28.55	86.66

DIFFERENTIAL CORRECTIONS
TDE .3979 TRA -.1416 TC3-1.9989 BAU .2438
RDE .1380 RRA .0975 RC3 -.2580 FAU .60385
FDE 4.1361 FRA 6.7848 FC-57.7710 BSP 3735
BDE .4212 BRA .1719 BC3 2.0155 FSP 11673

MID-COURSE EXECUTION ACCURACY
SGT 1458.2 SGR 378.5 SG3 3360.4
RRT .5674 RRF .7439 RTF .7530
SGB 1506.5 R23 .3601 R13 .7650
SG1 1474.6 SG2 308.2 THA 8.76

ORBIT DETERMINATION ACCURACY
ST 765.0 SR 271.3 SS 2256.9
CRT .9290 CRS -.9552 CST -.7874
LSA 2353.9 MSA 459.4 SSA 19.2
EL1 806.1 EL2 95.3 ALF 18.50

LAUNCH DATE NOV 14 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 661.669 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.889 GAL -1.11 AZL 87.97 HCA 202.81 SMA 186.42 ECC .20702 INC 2.0299 V1 30.108
RP 222.66 LAP -.79 LOP 254.46 VP 21.912 GAP -4.15 AZP 91.87 TAL 353.52 TAP 196.33 RCA 147.82 APO 225.01 V2 24.695
RC 261.869 GL 22.82 GP -1.53 ZAL 94.81 ZAP 103.29 ETS 179.21 ZAE 138.40 ETE 179.08 ZAC 85.73 ETC 256.45 CLP 103.29

PLANETOCENTRIC CONIC

C3 9.020 VHL 3.003 DLA 33.79 RAL 158.26 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.816 DPA .82 RAP 177.90 ECC 1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.74	9 55 38	3825.94	-27.76	158.00	16.44	69.90	10 59 24	3225.9	-30.23	149.72
109.26	14 45 43	2901.69	-27.75	89.14	16.43	69.89	15 34 5	2301.7	-30.22	80.86
70.74	9 55 38	3825.94	-27.76	158.00	16.44	69.90	10 59 24	3225.9	-30.23	149.72
109.26	14 45 43	2901.69	-27.75	89.14	16.43	69.89	15 34 5	2301.7	-30.22	80.86
110.00	15 29 19	2768.49	-30.60	79.84	17.50	73.97	16 15 28	2168.5	-32.49	71.13
110.00	14 11 13	3007.15	-24.98	96.09	15.17	65.86	15 1 20	2407.1	-28.01	88.24

DIFFERENTIAL CORRECTIONS
TDE .4324 TRA -.0828 TC3-2.4786 BAU .3002
RDE .1409 RRA .0965 RC3 -.2302 FAU .61247
FDE 4.1041 FRA 6.8722 FC-58.7817 BSP 4869
BDE .4547 BRA .1271 BC3 2.4893 FSP 11787

MID-COURSE EXECUTION ACCURACY
SGT 1712.6 SGR 374.7 SG3 3409.1
RRT .6006 RRF .7089 RTF .8291
SGB 1753.2 R23 .2444 R13 .8351
SG1 1727.8 SG2 297.0 THA 7.72

ORBIT DETERMINATION ACCURACY
ST 828.0 SR 276.9 SS 2240.4
CRT .9512 CRS -.9502 CST -.8177
LSA 2360.0 MSA 460.4 SSA 20.1
EL1 869.3 EL2 81.4 ALF 17.81

LAUNCH DATE NOV 14 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 665.685 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.886 GAL -1.13 AZL 87.98 HCA 203.90 SMA 186.36 ECC .20682 INC 2.0207 V1 30.108
RP 222.28 LAP -.82 LOP 255.55 VP 21.955 GAP -4.39 AZP 91.85 TAL 353.42 TAP 197.32 RCA 147.82 APO 224.91 V2 24.737
RC 263.392 GL 22.74 GP -1.47 ZAL 94.99 ZAP 101.28 ETS 179.17 ZAE 136.16 ETE 179.01 ZAC 85.58 ETC 256.52 CLP 101.28

PLANETOCENTRIC CONIC

C3 8.996 VHL 2.999 DLA 33.65 RAL 158.43 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.801 DPA 1.25 RAP 177.09 ECC 1.1480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.02	9 58 1	3820.14	-27.65	157.51	16.51	70.02	11 1 41	3220.1	-30.11	149.23
108.98	14 44 39	2906.43	-27.64	89.47	16.51	70.01	15 33 6	2306.4	-30.11	81.19
71.02	9 58 1	3820.14	-27.65	157.51	16.51	70.02	11 1 41	3220.1	-30.11	149.23
108.98	14 44 39	2906.43	-27.64	89.47	16.51	70.01	15 33 6	2306.4	-30.11	81.19
110.00	15 36 43	2747.20	-30.99	78.30	17.73	74.80	16 22 30	2147.2	-32.76	69.53
110.00	14 5 7	3027.37	-24.41	97.39	15.03	65.29	14 55 35	2427.4	-27.53	89.61

DIFFERENTIAL CORRECTIONS
TDE .4648 TRA -.0245 TC3-2.9864 BAU .3600
RDE .1444 RRA .0963 RC3 -.2002 FAU .61632
FDE 4.1258 FRA 7.0290 FC-59.3148 BSP 6015
BDE .4867 BRA .0993 BC3 2.9931 FSP 12007

MID-COURSE EXECUTION ACCURACY
SGT 2000.1 SGR 373.2 SG3 3443.3
RRT .5995 RRF .6730 RTF .8760
SGB 2034.6 R23 .1698 R13 .8790
SG1 2012.9 SG2 296.8 THA 6.52

ORBIT DETERMINATION ACCURACY
ST 889.6 SR 283.6 SS 2253.1
CRT .9666 CRS -.9460 CST -.8419
LSA 2395.1 MSA 460.1 SSA 21.0
EL1 931.2 EL2 69.4 ALF 17.23

LAUNCH DATE NOV 14 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 669.712 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.883 GAL -1.14 AZL 87.99 HCA 205.00 SMA 186.32 ECC .20665 INC 2.0120 V1 30.108
RP 221.89 LAP -.85 LOP 256.65 VP 21.998 GAP -4.62 AZP 91.82 TAL 353.31 TAP 198.31 RCA 147.81 APO 224.82 V2 24.779
RC 264.895 GL 22.66 GP -1.42 ZAL 95.20 ZAP 99.25 ETS 179.13 ZAE 133.91 ETE 178.95 ZAC 85.44 ETC 256.59 CLP 99.26

PLANETOCENTRIC CONIC

C3 8.975 VHL 2.996 DLA 33.49 RAL 158.62 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.790 DPA 1.69 RAP 176.27 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.32	10 0 37	3814.07	-27.54	157.00	16.62	70.14	11 4 11	3214.1	-29.99	148.72
108.68	14 43 35	2911.60	-27.53	89.82	16.62	70.13	15 32 7	2311.6	-29.98	81.55
71.32	10 0 37	3814.07	-27.54	157.00	16.62	70.14	11 4 11	3214.1	-29.99	148.72
108.68	14 43 35	2911.60	-27.53	89.82	16.62	70.13	15 32 7	2311.6	-29.98	81.55
110.00	15 43 36	2727.86	-31.33	76.89	17.96	75.57	16 29 4	2127.9	-32.99	68.06
110.00	13 59 47	3045.81	-23.88	98.56	14.93	64.78	14 50 33	2445.8	-27.07	90.85

DIFFERENTIAL CORRECTIONS
TDE .4987 TRA .0376 TC3-3.4867 BAU .4189
RDE .1472 RRA .0954 RC3 -.1741 FAU .62339
FDE 4.0467 FRA 7.0870 FC-60.1356 BSP 7214
BDE .5199 BRA .1026 BC3 3.4910 FSP 12022

MID-COURSE EXECUTION ACCURACY
SGT 2298.1 SGR 371.5 SG3 3480.0
RRT .5918 RRF .6345 RTF .9081
SGB 2327.9 R23 .1091 R13 .9095
SG1 2308.8 SG2 298.1 THA 5.56

ORBIT DETERMINATION ACCURACY
ST 956.1 SR 289.0 SS 2220.3
CRT .9782 CRS -.9397 CST -.8601
LSA 2390.3 MSA 462.3 SSA 21.8
EL1 997.2 EL2 57.6 ALF 16.53

LAUNCH DATE NOV 14 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 673.747 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.881 GAL -1.17 AZL 88.00 HCA 206.11 SMA 186.28 ECC .20652 INC 2.0042 V1 30.108
RP 221.51 LAP -.88 LOP 257.75 VP 22.041 GAP -4.84 AZP 91.80 TAL 353.18 TAP 199.28 RCA 147.81 APO 224.74 V2 24.820
RC 266.379 GL 22.59 GP -1.37 ZAL 95.44 ZAP 97.23 ETS 179.09 ZAE 131.66 ETE 178.90 ZAC 85.29 ETC 256.67 CLP 97.23

PLANETOCENTRIC CONIC

C3 8.957 VHL 2.993 DLA 33.33 RAL 158.84 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.782 DPA 2.11 RAP 175.45 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.64	10 3 31	3807.54	-27.42	156.44	16.77	70.27	11 6 58	3207.5	-29.86	148.17
108.36	14 42 29	2917.40	-27.41	90.22	16.77	70.25	15 31 6	2317.4	-29.85	81.95
71.64	10 3 31	3807.54	-27.42	156.44	16.77	70.27	11 6 58	3207.5	-29.86	148.17
108.36	14 42 29	2917.40	-27.41	90.22	16.77	70.25	15 31 6	2317.4	-29.85	81.95
110.00	15 50 15	2709.64	-31.63	75.56	18.22	76.31	16 35 25	2109.6	-33.19	66.68
110.00	13 54 55	3063.29	-23.36	99.66	14.89	64.31	14 45 59	2463.3	-26.62	92.01

DIFFERENTIAL CORRECTIONS
TDE .5319 TRA .1018 TC3-4.0023 BAU .4796
RDE .1503 RRA .0950 RC3 -.1469 FAU .62681
FDE 3.9928 FRA 7.1810 FC-60.5822 BSP 8449
BDE .5528 BRA .1392 BC3 4.0050 FSP 12089

MID-COURSE EXECUTION ACCURACY
SGT 2613.6 SGR 371.4 SG3 3503.4
RRT .5711 RRF .5956 RTF .9294
SGB 2639.8 R23 .0701 R13 .9301
SG1 2622.3 SG2 303.8 THA 4.70

ORBIT DETERMINATION ACCURACY
ST 1023.3 SR 295.0 SS 2202.8
CRT .9862 CRS -.9337 CST -.8753
LSA 2402.2 MSA 463.9 SSA 22.6
EL1 1063.9 EL2 47.0 ALF 15.91

LAUNCH DATE NOV 14 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 677.790 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.879 GAL -1.19 AZL 88.00 HCA 207.21 SMA 186.24 ECC .20641 INC 1.9968 V1 30.108
RP 221.13 LAP -.91 LOP 258.86 VP 22.085 GAP -5.06 AZP 91.78 TAL 353.03 TAP 200.25 RCA 147.80 APO 224.68 V2 24.862
RC 267.844 GL 22.52 GP -1.32 ZAL 95.71 ZAP 95.21 ETS 179.07 ZAE 129.40 ETE 178.86 ZAC 85.14 ETC 256.75 CLP 95.21

PLANETOCENTRIC CONIC

C3 8.944 VHL 2.991 DLA 33.16 RAL 159.10 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.778 DPA 2.54 RAP 174.63 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.98	10 6 41	3800.62	-27.30	155.86	16.95	70.40	11 10 2	3200.6	-29.71	147.59
108.02	14 41 21	2923.73	-27.29	90.66	16.95	70.38	15 30 5	2323.7	-29.70	82.40
71.98	10 6 41	3800.62	-27.30	155.86	16.95	70.40	11 10 2	3200.6	-29.71	147.59
108.02	14 41 21	2923.73	-27.29	90.66	16.95	70.38	15 30 5	2323.7	-29.70	82.40
110.00	15 56 47	2692.20	-31.90	74.27	18.50	77.02	16 41 39	2092.2	-33.36	65.35
110.00	13 50 26	3080.15	-22.86	100.71	14.89	63.87	14 41 46	2480.2	-26.18	93.13

DIFFERENTIAL CORRECTIONS
TDE .5633 TRA .1671 TC3-4.5279 BAU .5416
RDE .1535 RRA .0948 RC3 -.1200 FAU .62876
FDE 3.9259 FRA 7.2680 FC-60.8634 BSP 9671
BDE .5838 BRA .1921 BC3 4.5295 FSP 12135

MID-COURSE EXECUTION ACCURACY
SGT 2940.3 SGR 372.3 SG3 3518.6
RRT .5432 RRF .5561 RTF .9443
SGB 2963.8 R23 .0445 R13 .9446
SG1 2947.4 SG2 311.9 THA 3.98

ORBIT DETERMINATION ACCURACY
ST 1088.4 SR 301.1 SS 2182.0
CRT .9915 CRS -.9271 CST -.8871
LSA 2412.3 MSA 465.4 SSA 23.4
EL1 1128.6 EL2 37.8 ALF 15.36

LAUNCH DATE NOV 14 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 681.842 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.877 GAL -1.22 AZL 88.01 HCA 208.32 SMA 186.21 ECC .20633 INC 1.9900 V1 30.108
RP 220.75 LAP -.94 LOP 259.97 VP 22.129 GAP -5.28 AZP 91.75 TAL 352.88 TAP 201.20 RCA 147.79 APO 224.63 V2 24.903
RC 269.292 GL 22.45 GP -1.28 ZAL 96.01 ZAP 93.19 ETS 179.04 ZAE 127.15 ETE 178.83 ZAC 85.00 ETC 256.83 CLP 93.19

PLANETOCENTRIC CONIC

C3 8.934 VHL 2.989 DLA 32.98 RAL 159.39 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.777 DPA 2.95 RAP 173.83 ECC 1.1470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.34	10 10 9	3793.24	-27.16	155.23	17.16	70.53	11 13 22	3193.2	-29.56	146.97
107.66	14 40 11	2930.68	-27.15	91.14	17.16	70.52	15 29 1	2330.7	-29.55	82.88
72.34	10 10 9	3793.24	-27.16	155.23	17.16	70.53	11 13 22	3193.2	-29.56	146.97
107.66	14 40 11	2930.68	-27.15	91.14	17.16	70.52	15 29 1	2330.7	-29.55	82.88
110.00	16 3 16	2675.29	-32.16	73.02	18.80	77.72	16 47 51	2075.3	-33.51	64.05
110.00	13 46 14	3096.63	-22.36	101.73	14.92	63.45	14 37 51	2496.6	-25.74	94.21

DIFFERENTIAL CORRECTIONS
TDE .5938 TRA .2345 TC3-5.0595 BAU .6044
RDE .1567 RRA .0945 RC3 -.0936 FAU .62914
FDE 3.8457 FRA 7.3398 FC-60.9678 BSP 10914
BDE .6141 BRA .2529 BC3 5.0603 FSP 12128

MID-COURSE EXECUTION ACCURACY
SGT 3275.7 SGR 374.2 SG3 3524.4
RRT .5115 RRF .5161 RTF .9550
SGB 3297.0 R23 .0266 R13 .9552
SG1 3281.4 SG2 321.0 THA 3.38

ORBIT DETERMINATION ACCURACY
ST 1153.2 SR 307.3 SS 2157.2
CRT .9947 CRS -.9201 CST -.8968
LSA 2420.6 MSA 466.7 SSA 24.2
EL1 1193.0 EL2 30.5 ALF 14.85

LAUNCH DATE NOV 14 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 685.902 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.876 GAL -1.25 AZL 88.02 HCA 209.44 SMA 186.19 ECC .20629 INC 1.9837 V1 30.108
RP 220.37 LAP -.97 LOP 261.09 VP 22.173 GAP -5.49 AZP 91.73 TAL 352.70 TAP 202.14 RCA 147.78 APO 224.60 V2 24.945
RC 270.721 GL 22.38 GP -1.23 ZAL 96.33 ZAP 91.18 ETS 179.02 ZAE 124.91 ETE 178.81 ZAC 84.85 ETC 256.91 CLP 91.18

PLANETOCENTRIC CONIC

C3 8.927 VHL 2.988 DLA 32.79 RAL 159.70 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.779 DPA 3.36 RAP 173.03 ECC 1.1469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.74	10 13 58	3785.23	-27.01	154.56	17.41	70.67	11 17 3	3185.2	-29.39	146.31
107.26	14 38 54	2938.41	-27.00	91.68	17.41	70.65	15 27 52	2338.4	-29.38	83.43
72.74	10 13 58	3785.23	-27.01	154.56	17.41	70.67	11 17 3	3185.2	-29.39	146.31
107.26	14 38 54	2938.41	-27.00	91.68	17.41	70.65	15 27 52	2338.4	-29.38	83.43
110.00	16 9 45	2658.77	-32.39	71.79	19.12	78.42	16 54 3	2058.8	-33.64	62.78
110.00	13 42 17	3112.87	-21.87	102.73	15.00	63.05	14 34 10	2512.9	-25.30	95.26

DIFFERENTIAL CORRECTIONS
TDE .6238 TRA .3051 TC3-5.5911 BAU .6673
RDE .1599 RRA .0944 RC3 -.0676 FAU .62770
FDE 3.7540 FRA 7.4100 FC-60.8729 BSP 12184
BDE .6440 BRA .3194 BC3 5.5915 FSP 12104

MID-COURSE EXECUTION ACCURACY
SGT 3616.4 SGR 376.9 SG3 3520.9
RRT .4781 RRF .4764 RTF .9629
SGB 3635.9 R23 .0139 R13 .9630
SG1 3620.9 SG2 330.6 THA 2.88

ORBIT DETERMINATION ACCURACY
ST 1218.4 SR 313.4 SS 2130.2
CRT .9963 CRS -.9122 CST -.9046
LSA 2429.0 MSA 468.7 SSA 24.9
EL1 1257.8 EL2 26.0 ALF 14.38

LAUNCH DATE NOV 14 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 689.969 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.875	GAL	-1.28	AZL	88.02	HCA	210.56	SMA	186.17	ECC	.20626	INC	1.9777
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.218	GAP	-5.70	AZP	91.70	TAL	352.52	TAP	203.07	RCA	147.77	APO	224.57
RC	272.134	GL	22.31	GP	-1.19	ZAL	96.68	ZAP	89.19	ETS	179.00	ZAE	122.68	ETE	178.79	ZAC	84.71	ETC	256.99

V1	30.108	V2	24.986	CLP	89.19														

PLANETOCENTRIC CONIC

C3	8.924	VHL	2.987	DLA	32.58	RAL	160.05	RAD	6567.3	VEL	11.416	PTH	1.98	VHP	2.784	DPA	3.75	RAP	172.25
ECC	1.1469																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.17	10 18 7	3776.56	-26.85	153.83	17.69	70.81	11 21 4	3176.6	-29.21	145.59
106.83	14 37 30	2946.95	-26.84	92.27	17.69	70.79	15 26 37	2347.0	-29.21	84.03
73.17	10 18 7	3776.56	-26.85	153.83	17.69	70.81	11 21 4	3176.6	-29.21	145.59
106.83	14 37 30	2946.95	-26.84	92.27	17.69	70.79	15 26 37	2347.0	-29.21	84.03
110.00	16 16 17	2642.46	-32.60	70.56	19.47	79.11	17 0 19	2042.5	-33.76	61.52
110.00	13 38 31	3129.05	-21.36	103.72	15.11	62.66	14 30 40	2529.1	-24.85	96.30

DIFFERENTIAL CORRECTIONS

TDE	.6530	TRA	.3783	TC3	-6.1215	BAU	.7304
RDE	.1634	RRA	.0947	RC3	-.0411	FAU	.62272
FDE	3.6942	FRA	7.5267	FC	-60.4094	BSP	13474
BDE	.6731	BRA	.3900	BC3	6.1217	FSP	12156

MID-COURSE EXECUTION ACCURACY

SGT	3960.7	SGR	381.3	SG3	3505.8		
RRT	.4424	RRF	.4396	RTF	.9684		
SGB	3979.0	R23	.0089	R13	.9685		
SG1	3964.3	SG2	341.6	THA	2.46		

ORBIT DETERMINATION ACCURACY

ST	1283.5	SR	320.0	SS	2121.6		
CRT	.9965	CRS	-.9048	CST	-.9117		
LSA	2455.4	MSA	470.1	SSA	25.7		
EL1	1322.5	EL2	25.8	ALF	13.96		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 694.046 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.874	GAL	-1.31	AZL	88.03	HCA	211.68	SMA	186.16	ECC	.20627	INC	1.9721
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.263	GAP	-5.90	AZP	91.68	TAL	352.32	TAP	204.00	RCA	147.76	APO	224.56
RC	273.529	GL	22.25	GP	-1.15	ZAL	97.06	ZAP	87.21	ETS	178.98	ZAE	120.46	ETE	178.78	ZAC	84.57	ETC	257.08

V1	30.108	V2	25.027	CLP	87.21														

PLANETOCENTRIC CONIC

C3	8.925	VHL	2.987	DLA	32.37	RAL	160.42	RAD	6567.3	VEL	11.416	PTH	1.98	VHP	2.793	DPA	4.14	RAP	171.48
ECC	1.1469																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.62	10 22 36	3767.29	-26.68	153.05	18.00	70.95	11 25 23	3167.3	-29.03	144.82
106.38	14 36 0	2956.26	-26.67	92.91	18.00	70.94	15 25 17	2356.3	-29.02	84.68
73.62	10 22 36	3767.29	-26.68	153.05	18.00	70.95	11 25 23	3167.3	-29.03	144.82
106.38	14 36 0	2956.26	-26.67	92.91	18.00	70.94	15 25 17	2356.3	-29.02	84.68
110.00	16 22 51	2626.41	-32.80	69.35	19.84	79.80	17 6 37	2026.4	-33.86	60.28
110.00	13 34 56	3145.14	-20.86	104.69	15.25	62.28	14 27 21	2545.1	-24.40	97.33

DIFFERENTIAL CORRECTIONS

TDE	.6784	TRA	.4519	TC3	-6.6526	BAU	.7938
RDE	.1665	RRA	.0946	RC3	-.0172	FAU	.62004
FDE	3.5412	FRA	7.5436	FC	-60.1449	BSP	14705
BDE	.6985	BRA	.4617	BC3	6.6526	FSP	12024

MID-COURSE EXECUTION ACCURACY

SGT	4306.4	SGR	385.0	SG3	3489.3		
RRT	.4081	RRF	.3999	RTF	.9732		
SGB	4323.6	R23	.0000	R13	.9732		
SG1	4309.3	SG2	351.3	THA	2.10		

ORBIT DETERMINATION ACCURACY

ST	1342.2	SR	325.8	SS	2071.3		
CRT	.9956	CRS	-.8941	CST	-.9153		
LSA	2443.8	MSA	474.2	SSA	26.3		
EL1	1380.9	EL2	29.7	ALF	13.59		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 698.131 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.874	GAL	-1.35	AZL	88.03	HCA	212.80	SMA	186.15	ECC	.20631	INC	1.9667
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.308	GAP	-6.10	AZP	91.65	TAL	352.10	TAP	204.91	RCA	147.75	APO	224.55
RC	274.906	GL	22.18	GP	-1.12	ZAL	97.47	ZAP	85.26	ETS	178.97	ZAE	118.26	ETE	178.78	ZAC	84.44	ETC	257.16

V1	30.108	V2	25.067	CLP	85.26														

PLANETOCENTRIC CONIC

C3	8.929	VHL	2.988	DLA	32.14	RAL	160.83	RAD	6567.3	VEL	11.416	PTH	1.98	VHP	2.804	DPA	4.51	RAP	170.74
ECC	1.1470																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.12	10 27 30	3757.16	-26.50	152.21	18.34	71.11	11 30 7	3157.2	-28.83	143.98
105.88	14 34 20	2966.58	-26.49	93.63	18.34	71.09	15 23 46	2366.6	-28.82	85.41
74.12	10 27 30	3757.16	-26.50	152.21	18.34	71.11	11 30 7	3157.2	-28.83	143.98
105.88	14 34 20	2966.58	-26.49	93.63	18.34	71.09	15 23 46	2366.6	-28.82	85.41
110.00	16 29 29	2610.47	-32.99	68.15	20.23	80.49	17 13 0	2010.5	-33.95	59.04
110.00	13 31 30	3161.26	-20.34	105.66	15.43	61.92	14 24 12	2561.3	-23.94	98.36

DIFFERENTIAL CORRECTIONS

TDE	.7019	TRA	.5281	TC3	-7.1793	BAU	.8570
RDE	.1697	RRA	.0947	RC3	.0064	FAU	.61559
FDE	3.3937	FRA	7.5672	FC	-59.6841	BSP	15939
BDE	.7221	BRA	.5365	BC3	7.1793	FSP	11884

MID-COURSE EXECUTION ACCURACY

SGT	4653.0	SGR	389.8	SG3	3465.0		
RRT	.3739	RRF	.3619	RTF	.9769		
SGB	4669.3	R23	-.0060	R13	.9769		
SG1	4655.3	SG2	361.3	THA	1.80		

ORBIT DETERMINATION ACCURACY

ST	1398.7	SR	331.7	SS	2025.8		
CRT	.9936	CRS	-.8826	CST	-.9182		
LSA	2437.5	MSA	478.0	SSA	27.0		
EL1	1437.0	EL2	36.5	ALF	13.27		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 702.224 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.873	GAL	-1.39	AZL	88.04	HCA	213.93	SMA	186.15	ECC	.20637	INC	1.9618
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.354	GAP	-6.30	AZP	91.63	TAL	351.87	TAP	205.81	RCA	147.73	APO	224.56
RC	276.266	GL	22.11	GP	-1.08	ZAL	97.90	ZAP	83.33	ETS	178.96	ZAE	116.08	ETE	178.77	ZAC	84.31	ETC	257.25

V1	30.108	V2	25.108	CLP	83.33														

PLANETOCENTRIC CONIC

C3	8.938	VHL	2.990	DLA	31.90	RAL	161.26	RAD	6567.3	VEL	11.416	PTH	1.98	VHP	2.819	DPA	4.87	RAP	170.02
ECC	1.1471																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.65	10 32 49	3746.09	-26.30	151.29	18.71	71.26	11 35 15	3146.1	-28.61	143.08
105.35	14 32 26	2978.00	-26.29	94.43	18.71	71.25	15 22 4	2378.0	-28.61	86.21
74.65	10 32 49	3746.09	-26.30	151.29	18.71	71.26	11 35 15	3146.1	-28.61	143.08
105.35	14 32 26	2978.00	-26.29	94.43	18.71	71.25	15 22 4	2378.0	-28.61	86.21
110.00	16 36 13	2594.60	-33.16	66.94	20.65	81.19	17 19 28	1994.6	-34.02	57.81
110.00	13 28 12	3177.48	-19.82	106.63	15.64	61.56	14 21 10	2577.5	-23.46	99.38

DIFFERENTIAL CORRECTIONS

TDE	.7232	TRA	.6064	TC3	-7.7010	BAU	.9202
RDE	.1730	RRA	.0949	RC3	.0296	FAU	.60917
FDE	3.2390	FRA	7.5888	FC	-59.0074	BSP	17165
BDE	.7437	BRA	.6138	BC3	7.7011	FSP	11732

MID-COURSE EXECUTION ACCURACY

SGT	4999.7	SGR	395.1	SG3	3430.9		
RRT	.3399	RRF	.3253	RTF	.9797		
SGB	5015.3	R23	-.0101	R13	.9797		
SG1	5001.5	SG2	371.5	THA	1.55		

ORBIT DETERMINATION ACCURACY

ST	1452.3	SR	337.7	SS	1979.6		
CRT	.9907	CRS	-.8698	CST	-.9201		
LSA	2430.7	MSA	482.7	SSA	27.6		
EL1	1490.4	EL2	44.8	ALF	12.99		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 26 1965

DISTANCE 706.324

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.874 GAL -1.43 AZL 88.04 HCA 215.07 SMA 186.15 ECC .20646 INC 1.9571 V1 30.108
RP 218.52 LAP -1.12 LOP 266.71 VP 22.399 GAP -6.49 AZP 91.60 TAL 351.63 TAP 206.70 RCA 147.72 APO 224.58 V2 25.148
RC 277.609 GL 22.03 GP -1.04 ZAL 98.36 ZAP 81.43 ETS 178.95 ZAE 113.93 ETE 178.78 ZAC 84.19 ETC 257.33 CLP 81.42

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 8.950 VHL 2.992 DLA 31.65 RAL 161.71 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.836 DPA 5.22 RAP 169.33 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.23	10 38 36	3733.95	-26.10	150.30	19.11	71.42	11 40 50	3133.9	-28.39	142.09
104.77	14 30 18	2990.66	-26.09	95.31	19.11	71.41	15 20 9	2390.7	-28.38	87.11
75.23	10 38 36	3733.95	-26.10	150.30	19.11	71.42	11 40 50	3133.9	-28.39	142.09
104.77	14 30 18	2990.66	-26.09	95.31	19.11	71.41	15 20 9	2390.7	-28.38	87.11
110.00	16 43 2	2578.78	-33.32	65.73	21.08	81.89	17 26 1	1978.8	-34.08	56.57
110.00	13 25 2	3193.82	-19.29	107.60	15.88	61.22	14 18 16	2593.8	-22.98	100.40

DIFFERENTIAL CORRECTIONS

TDE .7429 TRA .6881 TC3-8.2109 BAU .9824
RDE .1764 RRA .0952 RC3 .0522 FAU .60110
FDE 3.0906 FRA 7.6138 FC-58.1477 BSP 18400
BDE .7636 BRA .6947 BC3 8.2111 FSP 11577

MID-COURSE EXECUTION ACCURACY

SGT 5343.8 SGR 401.3 SG3 3389.3
RRT .3073 RRF .2911 RTF .9820
SGB 5358.8 R23 -.0128 R13 .9820
SG1 5345.2 SG2 381.7 THA 1.33

ORBIT DETERMINATION ACCURACY

ST 1504.0 SR 343.9 SS 1938.0
CRT .9868 CRS -.8564 CST -.9218
LSA 2428.6 MSA 486.8 SSA 28.1
EL1 1541.8 EL2 54.3 ALF 12.73

LAUNCH DATE NOV 14 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 28 1965

DISTANCE 710.432

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.874 GAL -1.47 AZL 88.05 HCA 216.21 SMA 186.15 ECC .20658 INC 1.9526 V1 30.108
RP 218.16 LAP -1.15 LOP 267.85 VP 22.445 GAP -6.68 AZP 91.58 TAL 351.37 TAP 207.57 RCA 147.70 APO 224.61 V2 25.188
RC 278.933 GL 21.96 GP -1.01 ZAL 98.85 ZAP 79.55 ETS 178.94 ZAE 111.80 ETE 178.78 ZAC 84.07 ETC 257.42 CLP 79.55

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 8.966 VHL 2.994 DLA 31.39 RAL 162.20 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.857 DPA 5.55 RAP 168.67 ECC 1.1476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.86	10 44 55	3720.53	-25.88	149.20	19.54	71.59	11 46 55	3120.5	-28.15	141.00
104.14	14 27 51	3004.76	-25.87	96.30	19.54	71.58	15 17 56	2404.8	-28.14	88.10
75.86	10 44 55	3720.53	-25.88	149.20	19.54	71.59	11 46 55	3120.5	-28.15	141.00
104.14	14 27 51	3004.76	-25.87	96.30	19.54	71.58	15 17 56	2404.8	-28.14	88.10
110.00	16 49 58	2562.98	-33.47	64.52	21.54	82.59	17 32 41	1963.0	-34.13	55.34
110.00	13 21 58	3210.31	-18.75	108.57	16.15	60.88	14 15 29	2610.3	-22.48	101.42

DIFFERENTIAL CORRECTIONS

TDE .7587 TRA .7713 TC3-8.7141 BAU 1.0445
RDE .1798 RRA .0956 RC3 .0740 FAU .59240
FDE 2.9263 FRA 7.6207 FC-57.2030 BSP 19600
BDE .7798 BRA .7772 BC3 8.7144 FSP 11385

MID-COURSE EXECUTION ACCURACY

SGT 5685.9 SGR 407.7 SG3 3342.5
RRT .2755 RRF .2579 RTF .9839
SGB 5700.5 R23 -.0151 R13 .9839
SG1 5687.0 SG2 391.9 THA 1.14

ORBIT DETERMINATION ACCURACY

ST 1549.7 SR 350.0 SS 1890.7
CRT .9820 CRS -.8409 CST -.9224
LSA 2420.0 MSA 491.5 SSA 28.7
EL1 1587.4 EL2 64.5 ALF 12.53

LAUNCH DATE NOV 14 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 30 1965

DISTANCE 714.548

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.875 GAL -1.52 AZL 88.05 HCA 217.35 SMA 186.16 ECC .20672 INC 1.9484 V1 30.108
RP 217.80 LAP -1.18 LOP 268.99 VP 22.490 GAP -6.86 AZP 91.55 TAL 351.10 TAP 208.44 RCA 147.68 APO 224.65 V2 25.228
RC 280.240 GL 21.88 GP -.98 ZAL 99.37 ZAP 77.71 ETS 178.94 ZAE 109.71 ETE 178.79 ZAC 83.96 ETC 257.50 CLP 77.71

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 8.986 VHL 2.998 DLA 31.11 RAL 162.71 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.880 DPA 5.86 RAP 168.04 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.55	10 51 48	3705.70	-25.65	148.00	20.00	71.77	11 53 33	3105.7	-27.90	139.81
103.45	14 25 2	3020.45	-25.64	97.40	20.00	71.75	15 15 23	2420.5	-27.89	89.21
76.55	10 51 48	3705.70	-25.65	148.00	20.00	71.77	11 53 33	3105.7	-27.90	139.81
103.45	14 25 2	3020.45	-25.64	97.40	20.00	71.75	15 15 23	2420.5	-27.89	89.21
110.00	16 56 59	2547.19	-33.60	63.31	22.02	83.30	17 39 26	1947.2	-34.16	54.11
110.00	13 19 1	3226.97	-18.19	109.54	16.45	60.55	14 12 48	2627.0	-21.97	102.45

DIFFERENTIAL CORRECTIONS

TDE .7727 TRA .8577 TC3-9.2028 BAU 1.1056
RDE .1833 RRA .0960 RC3 .0951 FAU .58225
FDE 2.7569 FRA 7.6238 FC-56.0965 BSP 20800
BDE .7942 BRA .8630 BC3 9.2033 FSP 11187

MID-COURSE EXECUTION ACCURACY

SGT 6023.9 SGR 414.6 SG3 3288.3
RRT .2455 RRF .2266 RTF .9854
SGB 6038.2 R23 -.0169 R13 .9854
SG1 6024.8 SG2 401.8 THA .97

ORBIT DETERMINATION ACCURACY

ST 1593.3 SR 356.2 SS 1843.1
CRT .9763 CRS -.8236 CST -.9222
LSA 2411.3 MSA 497.4 SSA 29.1
EL1 1630.9 EL2 75.3 ALF 12.34

LAUNCH DATE NOV 14 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 2 1965

DISTANCE 718.671

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.875 GAL -1.57 AZL 88.06 HCA 218.49 SMA 186.18 ECC .20689 INC 1.9443 V1 30.108
RP 217.44 LAP -1.21 LOP 270.14 VP 22.536 GAP -7.04 AZP 91.52 TAL 350.81 TAP 209.30 RCA 147.66 APO 224.70 V2 25.268
RC 281.529 GL 21.81 GP -.94 ZAL 99.91 ZAP 75.91 ETS 178.93 ZAE 107.65 ETE 178.79 ZAC 83.86 ETC 257.57 CLP 75.91

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.010 VHL 3.002 DLA 30.81 RAL 163.24 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.906 DPA 6.15 RAP 167.44 ECC 1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.31	10 59 20	3689.18	-25.40	146.66	20.49	71.95	12 0 49	3089.2	-27.63	138.49
102.69	14 21 47	3038.02	-25.39	98.63	20.49	71.93	15 12 25	2438.0	-27.62	90.46
77.31	10 59 20	3689.18	-25.40	146.66	20.49	71.95	12 0 49	3089.2	-27.63	138.49
102.69	14 21 47	3038.02	-25.39	98.63	20.49	71.93	15 12 25	2438.0	-27.62	90.46
110.00	17 4 7	2531.38	-33.72	62.09	22.52	84.01	17 46 18	1931.4	-34.18	52.88
110.00	13 16 10	3243.82	-17.62	110.52	16.78	60.23	14 10 14	2643.8	-21.45	103.48

DIFFERENTIAL CORRECTIONS

TDE .7828 TRA .9460 TC3-9.6794 BAU 1.1660
RDE .1868 RRA .0965 RC3 .1153 FAU .57141
FDE 2.5806 FRA 7.6195 FC-54.9030 BSP 21964
BDE .8048 BRA .9509 BC3 9.6801 FSP 10970

MID-COURSE EXECUTION ACCURACY

SGT 6357.7 SGR 421.8 SG3 3229.8
RRT .2168 RRF .1970 RTF .9867
SGB 6371.7 R23 -.0182 R13 .9867
SG1 6358.4 SG2 411.7 THA .83

ORBIT DETERMINATION ACCURACY

ST 1631.3 SR 362.3 SS 1794.1
CRT .9695 CRS -.8039 CST -.9212
LSA 2399.3 MSA 503.9 SSA 29.6
EL1 1668.8 EL2 86.8 ALF 12.19

LAUNCH DATE NOV 14 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 722.801 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.876 GAL -1.62 AZL 88.06 HCA 219.64 SMA 186.20 ECC .20709 INC 1.9405 V1 30.108
RP 217.09 LAP -1.24 LOP 271.29 VP 22.581 GAP -7.22 AZP 91.49 TAL 350.51 TAP 210.15 RCA 147.64 APO 224.76 V2 25.307
RC 282.801 GL 21.72 GP -.91 ZAL 100.48 ZAP 74.14 ETS 178.93 ZAE 105.62 ETE 178.80 ZAC 83.76 ETC 257.65 CLP 74.14

PLANETOCENTRIC CONIC

C3 9.039 VHL 3.007 DLA 30.51 RAL 163.80 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.935 DPA 6.43 RAP 166.89 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.15	11 7 39	3670.48	-25.15	145.17	21.01	72.13	12 8 50	3070.5	-27.35	137.01
101.85	14 17 55	3057.96	-25.14	100.03	21.00	72.12	15 8 53	2458.0	-27.34	91.87
78.15	11 7 39	3670.48	-25.15	145.17	21.01	72.13	12 8 50	3070.5	-27.35	137.01
101.85	14 17 55	3057.96	-25.14	100.03	21.00	72.12	15 8 53	2458.0	-27.34	91.87
110.00	17 11 20	2515.55	-33.82	60.86	23.04	84.73	17 53 16	1915.5	-34.18	51.64
110.00	13 13 24	3260.89	-17.04	111.50	17.15	59.91	14 7 45	2660.9	-20.91	104.51

DIFFERENTIAL CORRECTIONS
TDE .7907 TRA 1.0375 TC-10.1381 BAU 1.2253
RDE .1904 RRA .0971 RC3 .1349 FAU .55928
FDE 2.4064 FRA 7.6048 FC-53.5651 BSP 23119
BDE .8133 BRA 1.0421 BC310.1390 FSP 10732

MID-COURSE EXECUTION ACCURACY
SGT 6685.8 SGR 429.3 SG3 3164.4
RRT .1898 RRF .1693 RTF .9877
SGB 6699.6 R23 -.0193 R13 .9877
SG1 6686.3 SG2 421.5 THA .70

ORBIT DETERMINATION ACCURACY
ST 1666.8 SR 368.5 SS 1746.3
CRT .9616 CRS -.7828 CST -.9201
LSA 2388.0 MSA 510.1 SSA 30.0
EL1 1704.2 EL2 98.9 ALF 12.04

LAUNCH DATE NOV 14 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 726.938 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.878 GAL -1.68 AZL 88.06 HCA 220.79 SMA 186.22 ECC .20732 INC 1.9369 V1 30.108
RP 216.74 LAP -1.27 LOP 272.44 VP 22.627 GAP -7.39 AZP 91.47 TAL 350.19 TAP 210.98 RCA 147.61 APO 224.83 V2 25.346
RC 284.057 GL 21.64 GP -.88 ZAL 101.07 ZAP 72.41 ETS 178.92 ZAE 103.63 ETE 178.82 ZAC 83.68 ETC 257.72 CLP 72.41

PLANETOCENTRIC CONIC

C3 9.073 VHL 3.012 DLA 30.19 RAL 164.39 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.966 DPA 6.69 RAP 166.36 ECC 1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.08	11 16 53	3649.27	-24.88	143.49	21.55	72.32	12 17 43	3049.3	-27.06	135.34
100.92	14 13 20	3080.61	-24.87	101.63	21.55	72.31	15 4 41	2480.6	-27.05	93.48
79.08	11 16 53	3649.27	-24.88	143.49	21.55	72.32	12 17 43	3049.3	-27.06	135.34
100.92	14 13 20	3080.61	-24.87	101.63	21.55	72.31	15 4 41	2480.6	-27.05	93.48
110.00	17 18 40	2499.68	-33.92	59.63	23.59	85.45	18 0 20	1899.7	-34.17	50.40
110.00	13 10 44	3278.19	-16.45	112.49	17.54	59.61	14 5 22	2678.2	-20.36	105.55

DIFFERENTIAL CORRECTIONS
TDE .7954 TRA 1.1322 TC-10.5789 BAU 1.2833
RDE .1940 RRA .0977 RC3 .1536 FAU .54670
FDE 2.2292 FRA 7.5851 FC-52.1663 BSP 24258
BDE .8187 BRA 1.1364 BC310.5800 FSP 10495

MID-COURSE EXECUTION ACCURACY
SGT 7008.0 SGR 437.0 SG3 3096.2
RRT .1646 RRF .1434 RTF .9886
SGB 7021.6 R23 -.0203 R13 .9886
SG1 7008.3 SG2 431.0 THA .59

ORBIT DETERMINATION ACCURACY
ST 1698.4 SR 324.7 SS 1698.9
CRT .9525 CRS -.7591 CST -.9183
LSA 2375.4 MSA 517.1 SSA 30.3
EL1 1735.6 EL2 111.7 ALF 11.92

LAUNCH DATE NOV 14 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 731.083 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.879 GAL -1.74 AZL 88.07 HCA 221.95 SMA 186.25 ECC .20757 INC 1.9333 V1 30.108
RP 216.39 LAP -1.29 LOP 273.59 VP 22.672 GAP -7.57 AZP 91.44 TAL 349.86 TAP 211.81 RCA 147.59 APO 224.90 V2 25.385
RC 285.296 GL 21.55 GP -.86 ZAL 101.70 ZAP 70.72 ETS 178.92 ZAE 101.68 ETE 178.83 ZAC 83.60 ETC 257.79 CLP 70.71

PLANETOCENTRIC CONIC

C3 9.111 VHL 3.019 DLA 29.85 RAL 164.99 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.000 DPA 6.93 RAP 165.88 ECC 1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.14	11 27 21	3624.47	-24.59	141.54	22.12	72.53	12 27 45	3024.5	-26.75	133.41
99.86	14 7 44	3107.04	-24.58	103.50	22.12	72.51	14 59 31	2507.0	-26.74	95.37
100.00	14 22 14	3060.74	-25.46	100.35	22.41	73.79	15 13 14	2460.7	-27.44	92.11
100.00	13 55 32	3146.00	-23.72	106.08	21.81	71.25	14 47 58	2546.0	-26.06	98.06
110.00	17 26 6	2483.79	-33.99	58.40	24.15	86.17	18 7 30	1883.8	-34.15	49.16
110.00	13 8 9	3295.72	-15.84	113.49	17.96	59.31	14 3 4	2695.7	-19.80	106.60

DIFFERENTIAL CORRECTIONS
TDE .7957 TRA 1.2286 TC-11.0052 BAU 1.3407
RDE .1977 RRA .0984 RC3 .1714 FAU .53369
FDE 2.0479 FRA 7.5556 FC-50.7093 BSP 25353
BDE .8199 BRA 1.2326 BC311.0065 FSP 10237

MID-COURSE EXECUTION ACCURACY
SGT 7324.8 SGR 444.9 SG3 3024.9
RRT .1406 RRF .1188 RTF .9894
SGB 7338.3 R23 -.0210 R13 .9894
SG1 7325.0 SG2 440.4 THA .49

ORBIT DETERMINATION ACCURACY
ST 1723.9 SR 380.8 SS 1650.7
CRT .9419 CRS -.7324 CST -.9159
LSA 2359.2 MSA 524.5 SSA 30.6
EL1 1761.0 EL2 125.3 ALF 11.81

LAUNCH DATE NOV 14 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 735.234 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.881 GAL -1.80 AZL 88.07 HCA 223.11 SMA 186.28 ECC .20784 INC 1.9299 V1 30.108
RP 216.05 LAP -1.32 LOP 274.75 VP 22.718 GAP -7.73 AZP 91.41 TAL 349.51 TAP 212.62 RCA 147.56 APO 224.99 V2 25.423
RC 286.520 GL 21.46 GP -.83 ZAL 102.35 ZAP 69.06 ETS 178.91 ZAE 99.76 ETE 178.84 ZAC 83.53 ETC 257.85 CLP 69.06

PLANETOCENTRIC CONIC

C3 9.155 VHL 3.026 DLA 29.50 RAL 165.62 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.036 DPA 7.15 RAP 165.44 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.37	11 39 19	3595.10	-24.29	139.26	22.72	72.73	12 39 15	2995.1	-26.43	131.15
98.63	14 0 46	3138.27	-24.28	105.71	22.72	72.72	14 53 5	2538.3	-26.42	97.59
100.00	14 52 6	2974.01	-26.97	94.35	23.54	76.60	15 41 40	2374.0	-28.55	85.90
100.00	13 30 41	3234.59	-21.66	111.86	21.73	68.88	14 24 36	2634.6	-24.34	104.08
110.00	17 33 38	2467.86	-34.06	57.16	24.73	86.91	18 14 46	1867.9	-34.11	47.92
110.00	13 5 38	3313.51	-15.22	114.49	18.41	59.02	14 0 52	2713.5	-19.22	107.65

DIFFERENTIAL CORRECTIONS
TDE .7929 TRA 1.3282 TC-11.4104 BAU 1.3968
RDE .2015 RRA .0991 RC3 .1885 FAU .51998
FDE 1.8640 FRA 7.5194 FC-49.1704 BSP 26425
BDE .8181 BRA 1.3319 BC311.4120 FSP 9972

MID-COURSE EXECUTION ACCURACY
SGT 7634.4 SGR 452.8 SG3 2949.6
RRT .1180 RRF .0957 RTF .9900
SGB 7647.8 R23 -.0218 R13 .9900
SG1 7634.6 SG2 449.6 THA .40

ORBIT DETERMINATION ACCURACY
ST 1746.1 SR 387.0 SS 1602.9
CRT .9297 CRS -.7024 CST -.9127
LSA 2341.6 MSA 533.2 SSA 30.8
EL1 1783.0 EL2 139.6 ALF 11.72

LAUNCH DATE NOV 14 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 12 1965

DISTANCE 739.392

EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.99 LAL .00 LOL 51.66 VL 32.883 GAL -1.86 AZL 88.07 HCA 224.27 SMA 186.31 ECC .20815 INC 1.9266 V1 30.108
RP 215.71 LAP -1.34 LOP 275.92 VP 22.763 GAP -7.90 AZP 91.38 TAL 349.15 TAP 213.42 RCA 147.53 APO 225.09 V2 25.461
RC 287.729 GL 21.36 GP -.80 ZAL 103.02 ZAP 67.45 ETS 178.91 ZAE 97.88 ETE 178.86 ZAC 83.47 ETC 257.91 CLP 67.45

PLANETOCENTRIC CONIC
C3 9.204 VHL 3.034 DLA 29.13 RAL 166.28 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.074 DPA 7.35 RAP 165.03 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.85	11 53 38	3558.52	-23.98	136.45	23.35	72.94	12 52 57	2958.5	-26.09	128.35
97.15	13 51 39	3176.92	-23.97	108.46	23.34	72.93	14 44 36	2576.9	-26.08	100.36
100.00	15 10 31	2923.97	-27.71	90.81	24.41	78.32	15 59 15	2324.0	-29.04	82.26
100.00	13 17 28	3286.71	-20.34	115.17	21.94	67.61	14 12 14	2686.7	-23.20	107.54
110.00	17 41 15	2451.88	-34.11	55.92	25.33	87.64	18 22 7	1851.9	-34.06	46.67
110.00	13 3 13	3331.56	-14.59	115.51	18.89	58.74	13 58 44	2731.6	-18.62	108.71

DIFFERENTIAL CORRECTIONS
TDE .7866 TRA 1.4306 TC-11.7963 BAU 1.4518
RDE .2053 RRA .0998 RC3 .2047 FAU .50608
FDE 1.6838 FRA 7.4763 FC-47.6001 BSP 27467
BDE .8129 BRA 1.4341 BC311.7981 FSP 9693

MID-COURSE EXECUTION ACCURACY
SGT 7937.7 SGR 460.9 SG3 2872.8
RRT .0969 RRF .0741 RTF .9906
SGB 7951.0 R23 -.0224 R13 .9906
SG1 7937.8 SG2 458.7 THA .32

ORBIT DETERMINATION ACCURACY
ST 1764.6 SR 393.2 SS 1557.5
CRT .9157 CRS -.6697 CST -.9095
LSA 2323.7 MSA 541.8 SSA 31.0
EL1 1801.2 EL2 154.7 ALF 11.62

LAUNCH DATE NOV 14 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 14 1965

DISTANCE 743.553

EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.99 LAL .00 LOL 51.66 VL 32.885 GAL -1.93 AZL 88.08 HCA 225.44 SMA 186.35 ECC .20848 INC 1.9235 V1 30.108
RP 215.38 LAP -1.37 LOP 277.08 VP 22.808 GAP -8.06 AZP 91.35 TAL 348.78 TAP 214.22 RCA 147.50 APO 225.20 V2 25.498
RC 288.924 GL 21.26 GP -.78 ZAL 103.72 ZAP 65.88 ETS 178.91 ZAE 96.05 ETE 178.88 ZAC 83.41 ETC 257.96 CLP 65.88

PLANETOCENTRIC CONIC
C3 9.259 VHL 3.043 DLA 28.75 RAL 166.95 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.115 DPA 7.53 RAP 164.67 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.80	12 12 7	3508.78	-23.65	132.68	24.00	73.16	13 10 36	2908.8	-25.74	124.60
95.20	13 38 33	3228.98	-23.64	112.18	24.00	73.14	14 32 22	2629.0	-25.73	104.10
100.00	15 25 57	2883.67	-28.23	87.93	25.23	79.75	16 14 1	2283.7	-29.36	79.31
100.00	13 7 24	3329.32	-19.22	117.83	22.26	66.65	14 2 54	2729.3	-22.21	110.32
110.00	17 49 0	2435.83	-34.15	54.66	25.95	88.38	18 29 36	1835.8	-34.00	45.42
110.00	13 0 51	3349.93	-13.94	116.53	19.40	58.47	13 56 41	2749.9	-18.01	109.78

DIFFERENTIAL CORRECTIONS
TDE .7924 TRA 1.5531 TC-12.0976 BAU 1.4978
RDE .2095 RRA .1008 RC3 .2211 FAU .48703
FDE 1.5959 FRA 7.5175 FC-45.5363 BSP 28886
BDE .8196 BRA 1.5563 BC312.0996 FSP 9612

MID-COURSE EXECUTION ACCURACY
SGT 8219.3 SGR 469.6 SG3 2783.2
RRT .0829 RRF .0630 RTF .9909
SGB 8232.7 R23 -.0195 R13 .9909
SG1 8219.4 SG2 468.0 THA .27

ORBIT DETERMINATION ACCURACY
ST 1810.0 SR 399.8 SS 1550.4
CRT .9019 CRS -.6499 CST -.9125
LSA 2354.6 MSA 542.5 SSA 31.3
EL1 1845.9 EL2 169.3 ALF 11.36

LAUNCH DATE NOV 14 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 16 1965

DISTANCE 747.726

EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.99 LAL .00 LOL 51.66 VL 32.887 GAL -2.00 AZL 88.08 HCA 226.61 SMA 186.39 ECC .20884 INC 1.9205 V1 30.108
RP 215.05 LAP -1.40 LOP 278.25 VP 22.853 GAP -8.22 AZP 91.32 TAL 348.39 TAP 215.00 RCA 147.46 APO 225.31 V2 25.535
RC 290.105 GL 21.15 GP -.75 ZAL 104.45 ZAP 64.35 ETS 178.91 ZAE 94.25 ETE 178.89 ZAC 83.37 ETC 258.01 CLP 64.35

PLANETOCENTRIC CONIC
C3 9.320 VHL 3.053 DLA 28.36 RAL 167.64 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.158 DPA 7.70 RAP 164.34 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.46	12 45 13	3411.91	-23.31	125.47	24.68	73.38	13 42 5	2811.9	-25.37	117.40
91.54	13 10 58	3328.41	-23.30	119.36	24.68	73.37	14 6 27	2728.4	-25.36	111.29
100.00	15 39 47	2848.67	-28.63	85.41	26.03	81.02	16 27 16	2248.7	-29.58	76.73
100.00	12 59 5	3366.88	-18.19	120.15	22.65	65.86	13 55 12	2766.9	-21.29	112.73
110.00	17 56 47	2419.81	-34.17	53.41	26.58	89.12	18 37 7	1819.8	-33.92	44.18
110.00	12 58 34	3368.50	-13.27	117.56	19.94	58.21	13 54 43	2768.5	-17.38	110.86

DIFFERENTIAL CORRECTIONS
TDE .7722 TRA 1.6549 TC-12.4646 BAU 1.5534
RDE .2134 RRA .1016 RC3 .2352 FAU .47456
FDE 1.3754 FRA 7.4247 FC-44.0793 BSP 29725
BDE .8011 BRA 1.6580 BC312.4668 FSP 9246

MID-COURSE EXECUTION ACCURACY
SGT 8513.4 SGR 477.3 SG3 2707.2
RRT .0619 RRF .0399 RTF .9914
SGB 8526.8 R23 -.0217 R13 .9914
SG1 8513.5 SG2 476.4 THA .20

ORBIT DETERMINATION ACCURACY
ST 1809.3 SR 405.7 SS 1491.5
CRT .8830 CRS -.6037 CST -.9054
LSA 2313.4 MSA 556.6 SSA 31.3
EL1 1844.7 EL2 186.7 ALF 11.32

LAUNCH DATE NOV 14 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 18 1965

DISTANCE 751.904

EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.99 LAL .00 LOL 51.66 VL 32.890 GAL -2.07 AZL 88.08 HCA 227.78 SMA 186.43 ECC .20923 INC 1.9176 V1 30.108
RP 214.72 LAP -1.42 LOP 279.43 VP 22.897 GAP -8.38 AZP 91.29 TAL 347.98 TAP 215.77 RCA 147.42 APO 225.44 V2 25.572
RC 291.272 GL 21.04 GP -.73 ZAL 105.19 ZAP 62.86 ETS 178.90 ZAE 92.49 ETE 178.91 ZAC 83.33 ETC 258.05 CLP 62.86

PLANETOCENTRIC CONIC
C3 9.388 VHL 3.064 DLA 27.94 RAL 168.35 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.203 DPA 7.85 RAP 164.06 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 15	3240.53	-25.51	113.57	26.11	77.28	14 35 16	2640.5	-27.01	105.22
90.00	12 20 36	3502.59	-20.44	131.07	24.49	69.96	13 18 59	2902.6	-22.98	123.33
100.00	15 52 41	2816.85	-28.95	83.09	26.81	82.20	16 39 38	2216.9	-29.73	74.38
100.00	12 51 52	3401.50	-17.21	122.25	23.09	65.17	13 48 33	2801.5	-20.41	114.92
110.00	18 4 40	2403.75	-34.18	52.16	27.24	89.86	18 44 44	1803.8	-33.82	42.93
110.00	12 56 22	3387.37	-12.59	118.60	20.50	57.96	13 52 49	2787.4	-16.74	111.94

DIFFERENTIAL CORRECTIONS
TDE .7509 TRA 1.7629 TC-12.7987 BAU 1.6066
RDE .2174 RRA .1024 RC3 .2488 FAU .46108
FDE 1.1764 FRA 7.3440 FC-42.5198 BSP 30599
BDE .7817 BRA 1.7659 BC312.8011 FSP 8913

MID-COURSE EXECUTION ACCURACY
SGT 8798.2 SGR 485.2 SG3 2628.3
RRT .0430 RRF .0197 RTF .9918
SGB 8811.6 R23 -.0232 R13 .9918
SG1 8798.3 SG2 484.7 THA .14

ORBIT DETERMINATION ACCURACY
ST 1811.2 SR 411.7 SS 1443.4
CRT .8617 CRS -.5560 CST -.8992
LSA 2282.0 MSA 569.6 SSA 31.2
EL1 1846.0 EL2 205.0 ALF 11.22

LAUNCH DATE NOV 14 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 756.088 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.893 GAL -2.15 AZL 88.09 HCA 228.96 SMA 186.48 ECC .20964 INC 1.9148 V1 30.108
RP 214.40 LAP -1.44 LOP 280.61 VP 22.942 GAP -8.53 AZP 91.26 TAL 347.57 TAP 216.53 RCA 147.38 APO 225.57 V2 25.608
RC 292.426 GL 20.92 GP -.71 ZAL 105.97 ZAP 61.41 ETS 178.90 ZAE 90.77 ETE 178.93 ZAC 83.30 ETC 258.08 CLP 61.41

PLANETOCENTRIC CONIC

C3 9.462 VHL 3.076 DLA 27.52 RAL 169.08 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.250 DPA 7.97 RAP 163.82 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 2 52	3180.78	-26.34	109.39	27.11	79.22	14 55 53	2580.8	-27.56	100.94
90.00	12 4 48	3565.42	-18.92	135.06	24.78	68.53	13 4 14	2965.4	-21.67	127.47
100.00	16 4 57	2787.26	-29.20	80.93	27.60	83.31	16 51 24	2187.3	-29.82	72.18
100.00	12 45 25	3434.17	-16.26	124.22	23.57	64.57	13 42 39	2834.2	-19.56	116.97
110.00	18 12 38	2387.67	-34.18	50.90	27.91	90.61	18 52 26	1787.7	-33.72	41.69
110.00	12 54 13	3406.53	-11.90	119.65	21.10	57.72	13 51 0	2806.5	-16.08	113.03

DIFFERENTIAL CORRECTIONS
TDE .7271 TRA 1.8756 TC-13.1020 BAU 1.6577
RDE .2215 RRA .1032 RC3 .2618 FAU .44670
FDE .9933 FRA 7.2690 FC-40.8708 BSP 31484
BDE .7601 BRA 1.8785 BC313.1046 FSP 8610

MID-COURSE EXECUTION ACCURACY
SGT 9073.2 SGR 493.1 SG3 2546.6
RRT .0256 RRF .0016 RTF .9921
SGB 9086.6 R23 -.0239 R13 .9921
SG1 9073.2 SG2 492.9 THA .08

ORBIT DETERMINATION ACCURACY
ST 1813.6 SR 417.7 SS 1403.2
CRT .8375 CRS -.5066 CST -.8939
LSA 2256.9 MSA 581.7 SSA 31.2
EL1 1847.6 EL2 224.1 ALF 11.08

LAUNCH DATE NOV 14 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 760.278 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.896 GAL -2.22 AZL 88.09 HCA 230.14 SMA 186.53 ECC .21009 INC 1.9120 V1 30.108
RP 214.08 LAP -1.47 LOP 281.79 VP 22.986 GAP -8.69 AZP 91.23 TAL 347.13 TAP 217.27 RCA 147.34 APO 225.71 V2 25.644
RC 293.566 GL 20.80 GP -.68 ZAL 106.76 ZAP 60.01 ETS 178.90 ZAE 89.09 ETE 178.95 ZAC 83.27 ETC 258.11 CLP 60.00

PLANETOCENTRIC CONIC

C3 9.543 VHL 3.089 DLA 27.08 RAL 169.83 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.299 DPA 8.08 RAP 163.62 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 21	3134.58	-26.89	106.12	28.02	80.77	15 12 36	2534.6	-27.89	97.60
90.00	11 53 17	3614.98	-17.66	138.15	25.19	67.50	12 53 32	3015.0	-20.55	130.67
100.00	16 16 45	2759.34	-29.41	78.88	28.39	84.37	17 2 44	2159.3	-29.87	70.11
100.00	12 39 34	3465.45	-15.34	126.08	24.10	64.03	13 37 20	2865.5	-18.71	118.91
110.00	18 20 40	2371.56	-34.16	49.64	28.60	91.35	19 0 12	1771.6	-33.60	40.45
110.00	12 52 8	3425.99	-11.19	120.71	21.72	57.49	13 49 14	2826.0	-15.40	114.14

DIFFERENTIAL CORRECTIONS
TDE .7007 TRA 1.9927 TC-13.3797 BAU 1.7074
RDE .2258 RRA .1041 RC3 .2740 FAU .43231
FDE .8214 FRA 7.1940 FC-39.2178 BSP 32354
BDE .7361 BRA 1.9954 BC313.3825 FSP 8309

MID-COURSE EXECUTION ACCURACY
SGT 9340.9 SGR 501.0 SG3 2465.0
RRT .0095 RRF -.0151 RTF .9924
SGB 9354.4 R23 -.0246 R13 .9924
SG1 9340.9 SG2 501.0 THA .03

ORBIT DETERMINATION ACCURACY
ST 1816.8 SR 423.8 SS 1368.8
CRT .8103 CRS -.4553 CST -.8892
LSA 2236.4 MSA 593.1 SSA 31.1
EL1 1849.6 EL2 244.0 ALF 10.90

LAUNCH DATE NOV 14 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 764.473 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.899 GAL -2.30 AZL 88.09 HCA 231.33 SMA 186.58 ECC .21056 INC 1.9094 V1 30.108
RP 213.77 LAP -1.49 LOP 282.97 VP 23.029 GAP -8.84 AZP 91.19 TAL 346.68 TAP 218.01 RCA 147.29 APO 225.87 V2 25.679
RC 294.693 GL 20.67 GP -.66 ZAL 107.59 ZAP 58.64 ETS 178.89 ZAE 87.44 ETE 178.96 ZAC 83.26 ETC 258.14 CLP 58.63

PLANETOCENTRIC CONIC

C3 9.632 VHL 3.104 DLA 26.62 RAL 170.59 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.350 DPA 8.17 RAP 163.45 ECC 1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 50	3094.97	-27.29	103.29	28.91	82.14	15 27 25	2495.0	-28.10	94.72
90.00	11 43 53	3658.23	-16.51	140.80	25.67	66.66	12 44 52	3058.2	-19.53	133.43
100.00	16 28 13	2732.70	-29.57	76.92	29.19	85.40	17 13 46	2132.7	-29.89	68.13
100.00	12 34 12	3495.73	-14.43	127.87	24.67	63.53	13 32 28	2895.7	-17.87	120.77
110.00	18 28 47	2355.45	-34.13	48.39	29.31	92.09	19 8 2	1755.4	-33.46	39.21
110.00	12 50 8	3445.75	-10.46	121.78	22.36	57.27	13 47 33	2845.8	-14.71	115.25

DIFFERENTIAL CORRECTIONS
TDE .6709 TRA 2.1146 TC-13.6299 BAU 1.7556
RDE .2301 RRA .1049 RC3 .2854 FAU .41781
FDE .6530 FRA 7.1232 FC-37.5527 BSP 33233
BDE .7092 BRA 2.1172 BC313.6329 FSP 8027

MID-COURSE EXECUTION ACCURACY
SGT 9600.9 SGR 508.8 SG3 2383.7
RRT -.0054 RRF -.0307 RTF .9926
SGB 9614.4 R23 .0253 R13 -.9926
SG1 9600.9 SG2 508.8 THA 179.98

ORBIT DETERMINATION ACCURACY
ST 1820.5 SR 429.8 SS 1339.5
CRT .7795 CRS -.3998 CST -.8844
LSA 2219.3 MSA 606.0 SSA 30.9
EL1 1851.7 EL2 264.7 ALF 10.65

LAUNCH DATE NOV 14 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 768.674 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.902 GAL -2.39 AZL 88.09 HCA 232.51 SMA 186.64 ECC .21106 INC 1.9068 V1 30.108
RP 213.46 LAP -1.51 LOP 284.16 VP 23.073 GAP -8.98 AZP 91.16 TAL 346.22 TAP 218.74 RCA 147.24 APO 226.03 V2 25.714
RC 295.805 GL 20.53 GP -.64 ZAL 108.43 ZAP 57.31 ETS 178.89 ZAE 85.84 ETE 178.98 ZAC 83.25 ETC 258.16 CLP 57.31

PLANETOCENTRIC CONIC

C3 9.729 VHL 3.119 DLA 26.15 RAL 171.37 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 3.403 DPA 8.25 RAP 163.33 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 8	3059.41	-27.60	100.73	29.79	83.38	15 41 7	2459.4	-28.22	92.12
90.00	11 35 49	3697.73	-15.43	143.20	26.21	65.96	12 37 27	3097.7	-18.55	135.91
100.00	16 39 25	2707.10	-29.69	75.02	30.00	86.38	17 24 32	2107.1	-29.88	66.22
100.00	12 29 13	3525.28	-13.53	129.60	25.27	63.09	13 27 59	2925.3	-17.03	122.56
110.00	18 36 57	2339.33	-34.08	47.13	30.04	92.84	19 15 57	1739.3	-33.31	37.97
110.00	12 48 10	3465.81	-9.72	122.86	23.04	57.07	13 45 56	2865.8	-14.00	116.37

DIFFERENTIAL CORRECTIONS
TDE .6378 TRA 2.2399 TC-13.8533 BAU 1.8023
RDE .2346 RRA .1058 RC3 .2962 FAU .40321
FDE .4965 FRA 7.0478 FC-35.8788 BSP 34090
BDE .6796 BRA 2.2424 BC313.8564 FSP 7748

MID-COURSE EXECUTION ACCURACY
SGT 9852.3 SGR 516.5 SG3 2301.9
RRT -.0196 RRF -.0451 RTF .9928
SGB 9865.8 R23 .0256 R13 -.9928
SG1 9852.3 SG2 516.4 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 1825.0 SR 435.9 SS 1315.0
CRT .7452 CRS -.3439 CST -.8811
LSA 2206.4 MSA 617.1 SSA 30.8
EL1 1854.4 EL2 286.1 ALF 10.34

LAUNCH DATE NOV 14 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 772.879 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.905	GAL	-2.48	AZL	88.10	HCA	233.71	SMA	186.69	ECC	.21160	INC	1.9044
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.116	GAP	-9.13	AZP	91.13	TAL	345.74	TAP	219.45	RCA	147.19	APO	226.20
RC	296.904	GL	20.39	GP	-.62	ZAL	109.29	ZAP	56.02	ETS	178.88	ZAE	84.27	ETE	179.00	ZAC	83.25	ETC	258.17

V1	30.108	V2	25.748	CLP	56.01														

PLANETOCENTRIC CONIC

C3	9.834	VHL	3.136	DLA	25.66	RAL	172.17	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.458	DPA	8.30	RAP	163.25

ECC	1.1619	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 3 36	3026.66	-27.83	98.37	30.66	84.55	15 54 3	2426.7	-28.29	89.73							
		90.00	11 28 41	3734.75	-14.39	145.42	26.80	65.35	12 30 56	3134.8	-17.60	138.21							
		100.00	16 50 24	2682.36	-29.79	73.19	30.82	87.35	17 35 6	2082.4	-29.84	64.39							
		100.00	12 24 34	3554.28	-12.63	131.28	25.91	62.68	13 23 49	2954.3	-16.19	124.30							
		110.00	18 45 11	2323.22	-34.02	45.88	30.78	93.58	19 23 54	1723.2	-33.15	36.74							
		110.00	12 46 17	3486.18	-8.97	123.96	23.74	56.88	13 44 23	2886.2	-13.27	117.50							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6008	TRA	2.3697	TC-14.0514	BAU	1.8479	SGT10096.8	SGR	524.1	SG3	2220.6	ST	1830.6	SR	441.9	SS	1294.7		
RDE	.2392	RRA	.1066	RC3 .3062	FAU	.38867	RRT -.0330	RRF	-.0588	RTF	.9930	CRT	.7067	CRS	-.2852	CST	-.8785		
FDE	.3444	FRA	6.9713	FC-34.2148	BSP	34924	SGB10110.4	R23	.0260	R13	-.9930	LSA	2197.0	MSA	628.4	SSA	30.5		
BDE	.6467	BRA	2.3721	BC314.0548	FSP	7477	SG110096.8	SG2	523.8	THA	179.90	EL1	1857.9	EL2	308.1	ALF	9.96		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 777.090 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.909	GAL	-2.57	AZL	88.10	HCA	234.90	SMA	186.75	ECC	.21216	INC	1.9020
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.158	GAP	-9.27	AZP	91.09	TAL	345.25	TAP	220.15	RCA	147.13	APO	226.38
RC	297.989	GL	20.24	GP	-.61	ZAL	110.18	ZAP	54.76	ETS	178.88	ZAE	82.73	ETE	179.02	ZAC	83.26	ETC	258.18

V1	30.108	V2	25.782	CLP	54.76														

PLANETOCENTRIC CONIC

C3	9.949	VHL	3.154	DLA	25.16	RAL	172.97	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	3.514	DPA	8.34	RAP	163.20

ECC	1.1637	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 16 30	2995.98	-28.01	96.14	31.54	85.65	16 6 26	2396.0	-28.32	87.49							
		90.00	11 22 14	3770.02	-13.38	147.52	27.42	64.81	12 25 4	3170.0	-16.66	140.38							
		100.00	17 1 13	2658.36	-29.85	71.41	31.65	88.28	17 45 31	2058.4	-29.77	62.61							
		100.00	12 20 12	3582.87	-11.73	132.93	26.58	62.31	13 19 55	2982.9	-15.34	126.00							
		110.00	18 53 28	2307.14	-33.94	44.63	31.54	94.31	19 31 55	1707.1	-32.97	35.52							
		110.00	12 44 26	3506.86	-8.20	125.06	24.47	56.70	13 42 53	2906.9	-12.52	118.63							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5609	TRA	2.5043	TC-14.2227	BAU	1.8922	SGT10334.2	SGR	531.5	SG3	2140.7	ST	1839.5	SR	447.9	SS	1278.9		
RDE	.2440	RRA	.1075	RC3 .3155	FAU	.37435	RRT -.0455	RRF	-.0717	RTF	.9931	CRT	.6645	CRS	-.2258	CST	-.8769		
FDE	.2001	FRA	6.8946	FC-32.5755	BSP	35752	SGB10347.8	R23	.0264	R13	-.9931	LSA	2193.3	MSA	639.0	SSA	30.2		
BDE	.6117	BRA	2.5066	BC314.2262	FSP	7212	SG110334.2	SG2	531.0	THA	179.87	EL1	1864.2	EL2	330.3	ALF	9.49		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 781.304 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.912	GAL	-2.66	AZL	88.10	HCA	236.10	SMA	186.82	ECC	.21276	INC	1.8996
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.200	GAP	-9.42	AZP	91.06	TAL	344.74	TAP	220.84	RCA	147.07	APO	226.56
RC	299.061	GL	20.08	GP	-.59	ZAL	111.08	ZAP	53.55	ETS	178.87	ZAE	81.24	ETE	179.04	ZAC	83.27	ETC	258.18

V1	30.108	V2	25.815	CLP	53.54														

PLANETOCENTRIC CONIC

C3	10.073	VHL	3.174	DLA	24.64	RAL	173.80	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	3.572	DPA	8.37	RAP	163.19

ECC	1.1658	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 28 57	2966.88	-28.14	94.02	32.42	86.71	16 18 24	2366.9	-28.30	85.36							
		90.00	11 16 21	3804.05	-12.38	149.52	28.09	64.33	12 19 45	3204.1	-15.74	142.45							
		100.00	17 11 53	2634.98	-29.88	69.67	32.49	89.20	17 55 48	2035.0	-29.67	60.87							
		100.00	12 16 5	3611.19	-10.83	134.55	27.29	61.97	13 16 17	3011.2	-14.49	127.68							
		110.00	19 1 49	2291.08	-33.85	43.38	32.31	95.05	19 40 0	1691.1	-32.78	34.31							
		110.00	12 42 40	3527.85	-7.41	126.18	25.23	56.53	13 41 27	2927.9	-11.76	119.78							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5276	TRA	2.6536	TC-14.3268	BAU	1.9298	SGT10553.8	SGR	538.9	SG3	2058.5	ST	1865.8	SR	453.9	SS	1273.1		
RDE	.2489	RRA	.1083	RC3 .3240	FAU	.35860	RRT -.0543	RRF	-.0798	RTF	.9932	CRT	.6236	CRS	-.1791	CST	-.8797		
FDE	.0934	FRA	6.8462	FC-30.8215	BSP	36810	SGB10567.6	R23	.0257	R13	-.9932	LSA	2211.7	MSA	644.6	SSA	30.0		
BDE	.5833	BRA	2.6558	BC314.3304	FSP	7019	SG110553.8	SG2	538.1	THA	179.84	EL1	1888.0	EL2	350.7	ALF	8.94		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 785.526 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	32.916	GAL	-2.76	AZL	88.10	HCA	237.30	SMA	186.88	ECC	.21339	INC	1.8973
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.242	GAP	-9.56	AZP	91.03	TAL	344.22	TAP	221.52	RCA	147.01	APO	226.76
RC	300.120	GL	19.92	GP	-.57	ZAL	112.01	ZAP	52.36	ETS	178.87	ZAE	79.77	ETE	179.06	ZAC	83.29	ETC	258.18

V1	30.108	V2	25.847	CLP	52.36														

PLANETOCENTRIC CONIC

C3	10.207	VHL	3.195	DLA	24.11	RAL	174.63	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	3.632	DPA	8.38	RAP	163.21

ECC	1.1680	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 41 1	2939.16	-28.23	92.00	33.30	87.72	16 30 0	2339.2	-28.25	83.33							
		90.00	11 10 55	3837.06	-11.40	151.45	28.80	63.90	12 14 52	3237.1	-14.82	144.44							
		100.00	17 22 25	2612.20	-29.89	67.98	33.34	90.09	18 5 57	2012.2	-29.56	59.19							
		100.00	12 12 12	3639.25	-9.92	136.14	28.02	61.66	13 12 51	3039.2	-13.64	129.32							
		110.00	19 10 10	2275.10	-33.75	42.14	33.11	95.77	19 48 5	1675.1	-32.58	33.10							
		110.00	12 40 56	3549.12	-6.61	127.30	26.02	56.39	13 40 5	2949.1	-10.98	120.94							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4682	TRA	2.7842	TC-14.4910	BAU	1.9779	SGT10787.0	SGR	546.0	SG3	1984.3	ST	1864.3	SR	459.9	SS	1258.1		
RDE	.2539	RRA	.1090	RC3 .3318	FAU	.34647	RRT -.0695	RRF	-.0964	RTF	.9933	CRT	.5669	CRS	-.1039	CST	-.8773		
FDE	-.0730	FRA	6.7301	FC-29.3880	BSP	37310	SGB10800.8	R23	.0273	R13	-.9933	LSA	2199.1	MSA	657.8	SSA	29.5		
BDE	.5326	BRA	2.7863	BC314.4948	FSP	6690	SG110787.1	SG2	544.7	THA	179.80	EL1	1883.2	EL2	375.0	ALF	8.29		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 789.751 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.920 GAL -2.86 AZL 88.10 HCA 238.51 SMA 186.95 ECC .21405 INC 1.8951 V1 30.108
RP 212.01 LAP -1.62 LOP 290.15 VP 23.283 GAP -9.70 AZP 90.99 TAL 343.69 TAP 222.19 RCA 146.94 APO 226.97 V2 25.879
RC 301.167 GL 19.75 GP -.56 ZAL 112.95 ZAP 51.22 ETS 178.86 ZAE 78.34 ETE 179.08 ZAC 83.32 ETC 258.17 CLP 51.22

PLANETOCENTRIC CONIC

C3 10.351 VHL 3.217 DLA 23.56 RAL 175.47 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.694 DPA 8.37 RAP 163.27 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 48	2912.50	-28.29	90.05	34.20	88.69	16 41 21	2312.5	-28.17	81.39
90.00	11 5 51	3869.38	-10.43	153.32	29.54	63.52	12 10 21	3269.4	-13.90	146.37
100.00	17 32 51	2589.92	-29.88	66.32	34.20	90.96	18 16 1	1989.9	-29.43	57.55
100.00	12 8 30	3667.19	-9.02	137.72	28.79	61.38	13 9 37	3067.2	-12.77	130.94
110.00	19 18 34	2259.17	-33.64	40.91	33.92	96.49	19 56 13	1659.2	-32.37	31.91
110.00	12 39 16	3570.71	-5.80	128.44	26.83	56.25	13 38 46	2970.7	-10.19	122.11

DIFFERENTIAL CORRECTIONS
TDE .4160 TRA 2.9302 TC-14.5894 BAU 2.0195
RDE .2591 RRA .1097 RC3 .3389 FAU .33297
FDE -.2010 FRA 6.6441 FC-27.8484 BSP 38051
BDE .4901 BRA 2.9323 BC314.5933 FSP 6440

MID-COURSE EXECUTION ACCURACY
SGT11004.1 SGR 553.0 SG3 1908.4
RRT -.0809 RRF -.1083 RTF .9934
SGB11017.9 R23 .0278 R13 -.9934
SG111004.1 SG2 551.2 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 1882.8 SR 465.8 SS 1253.0
CRT .5121 CRS -.0431 CST -.8793
LSA 2210.9 MSA 665.5 SSA 29.1
EL1 1898.6 EL2 396.8 ALF 7.55

LAUNCH DATE NOV 14 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 793.979 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.924 GAL -2.96 AZL 88.11 HCA 239.71 SMA 187.02 ECC .21475 INC 1.8929 V1 30.108
RP 211.73 LAP -1.63 LOP 291.36 VP 23.323 GAP -9.83 AZP 90.95 TAL 343.13 TAP 222.85 RCA 146.86 APO 227.19 V2 25.911
RC 302.203 GL 19.58 GP -.54 ZAL 113.92 ZAP 50.11 ETS 178.85 ZAE 76.95 ETE 179.10 ZAC 83.35 ETC 258.16 CLP 50.10

PLANETOCENTRIC CONIC

C3 10.507 VHL 3.241 DLA 23.00 RAL 176.33 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 3.757 DPA 8.34 RAP 163.37 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 21	2886.77	-28.31	88.17	35.11	89.63	16 52 28	2286.8	-28.07	79.51
90.00	11 1 7	3901.15	-9.46	155.15	30.31	63.18	12 6 8	3301.1	-12.98	148.25
100.00	17 43 11	2568.11	-29.84	64.70	35.08	91.81	18 25 59	1968.1	-29.27	55.94
100.00	12 4 58	3695.04	-8.10	139.28	29.59	61.13	13 6 33	3095.0	-11.90	132.55
110.00	19 27 0	2243.31	-33.51	39.69	34.74	97.20	20 4 23	1643.3	-32.15	30.73
110.00	12 37 38	3592.60	-4.97	129.60	27.66	56.14	13 37 31	2992.6	-9.38	123.29

DIFFERENTIAL CORRECTIONS
TDE .3603 TRA 3.0816 TC-14.6616 BAU 2.0601
RDE .2644 RRA .1103 RC3 .3454 FAU .31966
FDE -.3218 FRA 6.5588 FC-26.3381 BSP 38778
BDE .4469 BRA 3.0835 BC314.6657 FSP 6195

MID-COURSE EXECUTION ACCURACY
SGT11214.7 SGR 559.9 SG3 1833.8
RRT -.0919 RRF -.1196 RTF .9934
SGB11228.6 R23 .0282 R13 -.9934
SG111214.8 SG2 557.5 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 1907.5 SR 471.7 SS 1251.4
CRT .4541 CRS .0160 CST -.8827
LSA 2230.5 MSA 671.7 SSA 28.7
EL1 1920.1 EL2 417.5 ALF 6.73

LAUNCH DATE NOV 14 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 798.211 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.928 GAL -3.07 AZL 88.11 HCA 240.92 SMA 187.10 ECC .21548 INC 1.8907 V1 30.108
RP 211.47 LAP -1.65 LOP 292.57 VP 23.363 GAP -9.97 AZP 90.92 TAL 342.57 TAP 223.49 RCA 146.78 APO 227.41 V2 25.941
RC 303.228 GL 19.39 GP -.53 ZAL 114.89 ZAP 49.03 ETS 178.84 ZAE 75.58 ETE 179.11 ZAC 83.39 ETC 258.14 CLP 49.02

PLANETOCENTRIC CONIC

C3 10.675 VHL 3.267 DLA 22.43 RAL 177.19 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 3.822 DPA 8.31 RAP 163.50 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 42	2861.87	-28.31	86.35	36.02	90.55	17 3 24	2261.9	-27.94	77.70
90.00	10 56 39	3932.48	-8.49	156.95	31.12	62.88	12 2 12	3332.5	-12.06	150.09
100.00	17 53 26	2546.75	-29.79	63.12	35.98	92.64	18 35 52	1946.7	-29.10	54.38
100.00	12 1 36	3722.84	-7.19	140.84	30.42	60.91	13 3 39	3122.8	-11.01	134.14
110.00	19 35 27	2227.56	-33.37	38.49	35.59	97.90	20 12 35	1627.6	-31.91	29.56
110.00	12 36 4	3614.80	-4.12	130.76	28.53	56.04	13 36 19	3014.8	-8.55	124.48

DIFFERENTIAL CORRECTIONS
TDE .3014 TRA 3.2374 TC-14.7093 BAU 2.0999
RDE .2699 RRA .1109 RC3 .3511 FAU .30671
FDE -.4344 FRA 6.4698 FC-24.8737 BSP 39490
BDE .4046 BRA 3.2393 BC314.7135 FSP 5954

MID-COURSE EXECUTION ACCURACY
SGT11418.9 SGR 566.5 SG3 1761.0
RRT -.1025 RRF -.1306 RTF .9934
SGB11433.0 R23 .0287 R13 -.9935
SG111419.1 SG2 563.5 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 1938.5 SR 477.6 SS 1252.0
CRT .3937 CRS .0727 CST -.8874
LSA 2257.4 MSA 675.7 SSA 28.3
EL1 1948.1 EL2 436.9 ALF 5.83

LAUNCH DATE NOV 14 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 802.447 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.933 GAL -3.17 AZL 88.11 HCA 242.14 SMA 187.17 ECC .21625 INC 1.8887 V1 30.108
RP 211.20 LAP -1.67 LOP 293.79 VP 23.403 GAP -10.11 AZP 90.88 TAL 341.99 TAP 224.12 RCA 146.70 APO 227.65 V2 25.971
RC 304.242 GL 19.20 GP -.51 ZAL 115.89 ZAP 47.98 ETS 178.83 ZAE 74.25 ETE 179.13 ZAC 83.44 ETC 258.12 CLP 47.97

PLANETOCENTRIC CONIC

C3 10.856 VHL 3.295 DLA 21.85 RAL 178.06 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.888 DPA 8.25 RAP 163.66 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 51	2837.70	-28.28	84.58	36.95	91.43	17 14 9	2237.7	-27.79	75.95
90.00	10 52 26	3963.50	-7.52	158.71	31.96	62.62	11 58 30	3363.5	-11.13	151.89
100.00	18 3 35	2525.80	-29.71	61.56	36.88	93.46	18 45 41	1925.8	-28.91	52.85
100.00	11 58 23	3750.63	-6.26	142.39	31.27	60.71	13 0 54	3150.6	-10.12	135.72
110.00	19 43 55	2211.91	-33.21	37.29	36.45	98.60	20 20 47	1611.9	-31.67	28.40
110.00	12 34 33	3637.29	-3.27	131.94	29.42	55.95	13 35 10	3037.3	-7.71	125.67

DIFFERENTIAL CORRECTIONS
TDE .2383 TRA 3.3982 TC-14.7328 BAU 2.1389
RDE .2756 RRA .1113 RC3 .3561 FAU .29405
FDE -.5435 FRA 6.3802 FC-23.4500 BSP 40183
BDE .3644 BRA 3.4000 BC314.7371 FSP 5724

MID-COURSE EXECUTION ACCURACY
SGT11617.2 SGR 573.0 SG3 1689.9
RRT -.1129 RRF -.1415 RTF .9934
SGB11631.4 R23 .0293 R13 -.9934
SG111617.4 SG2 569.3 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 1976.0 SR 483.5 SS 1255.5
CRT .3309 CRS .1284 CST -.8927
LSA 2292.0 MSA 678.8 SSA 27.8
EL1 1982.9 EL2 454.6 ALF 4.89

LAUNCH DATE NOV 14 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 806.686 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.937 GAL -3.29 AZL 88.11 HCA 243.35 SMA 187.25 ECC .21706 INC 1.8866 V1 30.108
RP 210.95 LAP -1.69 LOP 295.00 VP 23.442 GAP -10.24 AZP 90.85 TAL 341.39 TAP 224.74 RCA 146.61 APO 227.89 V2 26.001
RC 305.247 GL 19.01 GP -.50 ZAL 116.90 ZAP 46.96 ETS 178.82 ZAE 72.94 ETE 179.15 ZAC 83.49 ETC 258.10 CLP 46.96

PLANETOCENTRIC CONIC

C3 11.050 VHL 3.324 DLA 21.25 RAL 178.94 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 3.956 DPA 8.19 RAP 163.85 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 51	2814.21	-28.23	82.86	37.89	92.29	17 24 45	2214.2	-27.62	74.25
90.00	10 48 26	3994.26	-6.55	160.46	32.83	62.39	11 55 1	3394.3	-10.20	153.68
100.00	18 13 40	2505.26	-29.62	60.04	37.80	94.25	18 55 25	1905.3	-28.71	51.36
100.00	11 55 19	3778.44	-5.34	143.93	32.16	60.54	12 58 17	3178.4	-9.22	137.29
110.00	19 52 24	2196.39	-33.05	36.11	37.33	99.28	20 29 0	1596.4	-31.42	27.26
110.00	12 33 5	3660.07	-2.40	133.13	30.34	55.89	13 34 5	3060.1	-6.86	126.88

DIFFERENTIAL CORRECTIONS
TDE .1722 TRA 3.5644 TC-14.7314 BAU 2.1769
RDE .2816 RRA .1117 RC3 .3605 FAU .28175
FDE -.6433 FRA 6.2890 FC-22.0740 BSP 40864
BDE .3301 BRA 3.5661 BC314.7358 FSP 5498

MID-COURSE EXECUTION ACCURACY
SGT11809.4 SGR 579.3 SG3 1620.7
RRT -.1230 RRF -.1521 RTF .9934
SGB11823.6 R23 .0298 R13 -.9934
SG111809.6 SG2 574.9 THA 179.65

ORBIT DETERMINATION ACCURACY
ST 2021.2 SR 489.3 SS 1260.4
CRT .2675 CRS .1802 CST -.8990
LSA 2334.7 MSA 679.5 SSA 27.3
EL1 2025.7 EL2 470.4 ALF 3.92

LAUNCH DATE NOV 14 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 810.928 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.942 GAL -3.41 AZL 88.12 HCA 244.57 SMA 187.33 ECC .21790 INC 1.8846 V1 30.108
RP 210.70 LAP -1.70 LOP 296.23 VP 23.480 GAP -10.37 AZP 90.81 TAL 340.78 TAP 225.35 RCA 146.51 APO 228.15 V2 26.029
RC 306.243 GL 18.80 GP -.48 ZAL 117.92 ZAP 45.97 ETS 178.81 ZAE 71.67 ETE 179.17 ZAC 83.55 ETC 258.07 CLP 45.97

PLANETOCENTRIC CONIC

C3 11.259 VHL 3.355 DLA 20.65 RAL 179.82 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 4.025 DPA 8.11 RAP 164.07 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 42	2791.33	-28.16	81.19	38.85	93.13	17 35 14	2191.3	-27.43	72.60
90.00	10 44 38	4024.85	-5.59	162.18	33.73	62.19	11 51 43	3424.8	-9.27	155.43
100.00	18 23 40	2485.12	-29.51	58.56	38.74	95.03	19 5 5	1885.1	-28.50	49.90
100.00	11 52 22	3806.29	-4.40	145.47	33.08	60.40	12 55 48	3206.3	-8.31	138.86
110.00	20 0 52	2181.02	-32.87	34.94	38.22	99.95	20 37 13	1581.0	-31.15	26.14
110.00	12 31 39	3683.15	-1.52	134.34	31.28	55.85	13 33 2	3083.1	-5.99	128.10

DIFFERENTIAL CORRECTIONS
TDE .1019 TRA 3.7350 TC-14.7061 BAU 2.2142
RDE .2877 RRA .1120 RC3 .3641 FAU .26968
FDE -.7389 FRA 6.1967 FC-20.7376 BSP 41516
BDE .3052 BRA 3.7367 BC314.7106 FSP 5279

MID-COURSE EXECUTION ACCURACY
SGT11994.9 SGR 585.4 SG3 1553.1
RRT -.1330 RRF -.1625 RTF .9934
SGB12009.2 R23 .0304 R13 -.9934
SG111995.1 SG2 580.2 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 2073.3 SR 495.1 SS 1267.1
CRT .2032 CRS .2300 CST -.9056
LSA 2384.9 MSA 678.8 SSA 26.8
EL1 2075.9 EL2 484.2 ALF 2.94

LAUNCH DATE NOV 14 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 815.172 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.946 GAL -3.53 AZL 88.12 HCA 245.80 SMA 187.41 ECC .21879 INC 1.8826 V1 30.108
RP 210.46 LAP -1.72 LOP 297.45 VP 23.517 GAP -10.51 AZP 90.77 TAL 340.15 TAP 225.95 RCA 146.41 APO 228.41 V2 26.057
RC 307.229 GL 18.59 GP -.47 ZAL 118.96 ZAP 45.01 ETS 178.80 ZAE 70.42 ETE 179.19 ZAC 83.61 ETC 258.03 CLP 45.01

PLANETOCENTRIC CONIC

C3 11.482 VHL 3.389 DLA 20.03 RAL 180.71 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 4.096 DPA 8.02 RAP 164.32 ECC 1.1890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 25	2769.04	-28.06	79.57	39.82	93.94	17 45 34	2169.0	-27.22	71.00
90.00	10 41 1	4055.29	-4.62	163.89	34.66	62.03	11 48 36	3455.3	-8.32	157.18
100.00	18 33 36	2465.36	-29.38	57.10	39.69	95.78	19 14 41	1865.4	-28.27	48.47
100.00	11 49 31	3834.20	-3.46	147.01	34.02	60.29	12 53 26	3234.2	-7.39	140.42
110.00	20 9 20	2165.82	-32.69	33.80	39.14	100.60	20 45 26	1565.8	-30.88	25.04
110.00	12 30 16	3706.51	-.62	135.55	32.25	55.82	13 32 3	3106.5	-5.10	129.33

DIFFERENTIAL CORRECTIONS
TDE .0281 TRA 3.9118 TC-14.6587 BAU 2.2509
RDE .2940 RRA .1121 RC3 .3672 FAU .25800
FDE -.8273 FRA 6.1051 FC-19.4530 BSP 42173
BDE .2954 BRA 3.9134 BC314.6633 FSP 5068

MID-COURSE EXECUTION ACCURACY
SGT12175.9 SGR 591.4 SG3 1487.7
RRT -.1428 RRF -.1727 RTF .9933
SGB12190.3 R23 .0309 R13 -.9933
SG112176.2 SG2 585.3 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 2133.4 SR 500.9 SS 1275.0
CRT .1397 CRS .2765 CST -.9124
LSA 2443.4 MSA 676.3 SSA 26.3
EL1 2134.7 EL2 495.7 ALF 1.99

LAUNCH DATE NOV 14 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 819.418 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.951 GAL -3.65 AZL 88.12 HCA 247.02 SMA 187.49 ECC .21971 INC 1.8806 V1 30.108
RP 210.22 LAP -1.73 LOP 298.67 VP 23.554 GAP -10.64 AZP 90.73 TAL 339.51 TAP 226.53 RCA 146.30 APO 228.69 V2 26.085
RC 308.206 GL 18.37 GP -.46 ZAL 120.01 ZAP 44.08 ETS 178.79 ZAE 69.20 ETE 179.21 ZAC 83.68 ETC 257.99 CLP 44.08

PLANETOCENTRIC CONIC

C3 11.722 VHL 3.424 DLA 19.40 RAL 181.60 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 4.169 DPA 7.91 RAP 164.60 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 1	2747.31	-27.95	77.99	40.80	94.72	17 55 48	2147.3	-27.00	69.45
90.00	10 37 33	4085.65	-3.65	165.60	35.62	61.90	11 45 39	3485.6	-7.38	158.90
100.00	18 43 27	2446.00	-29.24	55.68	40.66	96.52	19 24 13	1846.0	-28.03	47.08
100.00	11 46 48	3862.19	-2.52	148.54	34.99	60.20	12 51 10	3262.2	-6.46	141.98
110.00	20 17 48	2150.80	-32.50	32.67	40.07	101.24	20 53 39	1550.8	-30.61	23.96
110.00	12 28 56	3730.15	.28	136.79	33.25	55.82	13 31 6	3130.1	-4.21	130.58

DIFFERENTIAL CORRECTIONS
TDE -.0483 TRA 4.0940 TC-14.5863 BAU 2.2866
RDE .3006 RRA .1121 RC3 .3695 FAU .24652
FDE -.9080 FRA 6.0105 FC-18.2075 BSP 42809
BDE .3044 BRA 4.0955 BC314.5910 FSP 4864

MID-COURSE EXECUTION ACCURACY
SGT12350.1 SGR 597.2 SG3 1423.5
RRT -.1523 RRF -.1827 RTF .9932
SGB12364.5 R23 .0315 R13 -.9932
SG112350.5 SG2 590.2 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 2201.1 SR 506.6 SS 1282.8
CRT .0781 CRS .3194 CST -.9193
LSA 2508.8 MSA 672.4 SSA 25.8
EL1 2201.5 EL2 505.0 ALF 1.09

LAUNCH DATE NOV 14 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 823.666 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.956 GAL -3.78 AZL 88.12 HCA 248.25 SMA 187.58 ECC .22068 INC 1.8787 V1 30.108
RP 209.99 LAP -1.75 LOP 299.90 VP 23.590 GAP -10.77 AZP 90.70 TAL 338.85 TAP 227.10 RCA 146.18 APO 228.97 V2 26.111
RC 309.174 GL 18.15 GP -.45 ZAL 121.07 ZAP 43.18 ETS 178.78 ZAE 68.00 ETE 179.22 ZAC 83.76 ETC 257.95 CLP 43.18

PLANETOCENTRIC CONIC

C3 11.979 VHL 3.461 DLA 18.76 RAL 182.50 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 4.243 DPA 7.79 RAP 164.90 ECC 1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 29	2726.11	-27.82	76.45	41.80	95.48	18 5 55	2126.1	-26.77	67.94
90.00	10 34 14	4115.94	-2.67	167.29	36.61	61.80	11 42 50	3515.9	-6.42	160.62
100.00	18 53 14	2427.03	-29.08	54.29	41.64	97.23	19 33 41	1827.0	-27.78	45.73
100.00	11 44 10	3890.26	-1.57	150.09	35.99	60.14	12 49 1	3290.3	-5.53	143.54
110.00	20 26 15	2135.98	-32.29	31.56	41.01	101.87	21 1 51	1536.0	-30.32	22.90
110.00	12 27 38	3754.06	1.20	138.03	34.27	55.84	13 30 12	3154.1	-3.30	131.83

DIFFERENTIAL CORRECTIONS

TDE -.1280 TRA 4.2822 TC-14.4948 BAU 2.3220
RDE .3074 RRA .1120 RC3 .3712 FAU .23546
FDE -.9830 FRA 5.9154 FC-17.0180 BSP 43438
BDE .3330 BRA 4.2837 BC314.4996 FSP 4668

MID-COURSE EXECUTION ACCURACY

SGT12520.6 SGR 602.7 SG3 1361.7
RRT -.1617 RRF -.1927 RTF .9931
SGB12535.1 R23 .0322 R13 -.9931
SG112521.0 SG2 594.8 THA 179.55

ORBIT DETERMINATION ACCURACY

ST 2276.0 SR 512.3 SS 1290.9
CRT .0187 CRS .3595 CST -.9258
LSA 2581.3 MSA 667.5 SSA 25.3
EL1 2276.1 EL2 512.2 ALF .25

LAUNCH DATE NOV 14 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 827.915 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.961 GAL -3.91 AZL 88.12 HCA 249.48 SMA 187.67 ECC .22170 INC 1.8768 V1 30.108
RP 209.77 LAP -1.76 LOP 301.13 VP 23.626 GAP -10.90 AZP 90.66 TAL 338.18 TAP 227.66 RCA 146.06 APO 229.27 V2 26.137
RC 310.132 GL 17.92 GP -.44 ZAL 122.14 ZAP 42.30 ETS 178.76 ZAE 66.83 ETE 179.24 ZAC 83.84 ETC 257.91 CLP 42.30

PLANETOCENTRIC CONIC

C3 12.253 VHL 3.500 DLA 18.12 RAL 183.40 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 4.319 DPA 7.66 RAP 165.23 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 50	2705.43	-27.68	74.95	42.81	96.22	18 15 56	2105.4	-26.53	66.48
90.00	10 31 4	4146.20	-1.70	168.98	37.63	61.73	11 40 10	3546.2	-5.46	162.32
100.00	19 2 56	2408.44	-28.92	52.93	42.64	97.93	19 43 4	1808.4	-27.52	44.41
100.00	11 41 39	3918.42	-.61	151.63	37.02	60.11	12 46 57	3318.4	-4.58	145.10
110.00	20 34 41	2121.39	-32.08	30.47	41.98	102.48	21 10 2	1521.4	-30.03	21.86
110.00	12 26 23	3778.24	2.12	139.30	35.32	55.87	13 29 21	3178.2	-2.37	133.09

DIFFERENTIAL CORRECTIONS

TDE -.2116 TRA 4.4760 TC-14.3819 BAU 2.3568
RDE .3144 RRA .1117 RC3 .3723 FAU .22470
FDE-1.0521 FRA 5.8197 FC-15.8758 BSP 44050
BDE .3790 BRA 4.4773 BC314.3868 FSP 4476

MID-COURSE EXECUTION ACCURACY

SGT12685.3 SGR 608.1 SG3 1301.6
RRT -.1711 RRF -.2026 RTF .9930
SGB12699.9 R23 .0327 R13 -.9930
SG112685.7 SG2 599.1 THA 179.53

ORBIT DETERMINATION ACCURACY

ST 2357.7 SR 517.9 SS 1298.9
CRT -.0386 CRS .3968 CST -.9321
LSA 2660.1 MSA 661.4 SSA 24.8
EL1 2357.8 EL2 517.5 ALF 179.49

LAUNCH DATE NOV 14 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 832.165 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.966 GAL -4.05 AZL 88.12 HCA 250.72 SMA 187.76 ECC .22276 INC 1.8750 V1 30.108
RP 209.55 LAP -1.77 LOP 302.37 VP 23.661 GAP -11.04 AZP 90.62 TAL 337.49 TAP 228.20 RCA 145.93 APO 229.58 V2 26.162
RC 311.080 GL 17.68 GP -.43 ZAL 123.22 ZAP 41.45 ETS 178.75 ZAE 65.69 ETE 179.26 ZAC 83.92 ETC 257.86 CLP 41.45

PLANETOCENTRIC CONIC

C3 12.547 VHL 3.542 DLA 17.46 RAL 184.30 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 4.396 DPA 7.52 RAP 165.59 ECC 1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 4	2685.27	-27.52	73.50	43.84	96.93	18 25 50	2085.3	-26.28	65.05
90.00	10 28 1	4176.44	-.72	170.67	38.68	61.69	11 37 37	3576.4	-4.50	164.02
100.00	19 12 33	2390.26	-28.74	51.61	43.65	98.60	19 52 24	1790.3	-27.25	43.12
100.00	11 39 13	3946.68	.35	153.18	38.08	60.11	12 44 59	3346.7	-3.63	146.66
110.00	20 43 5	2107.04	-31.87	29.41	42.96	103.08	21 18 12	1507.0	-29.74	20.84
110.00	12 25 11	3802.67	3.05	140.57	36.39	55.94	13 28 33	3202.7	-1.44	134.37

DIFFERENTIAL CORRECTIONS

TDE -.2978 TRA 4.6760 TC-14.2492 BAU 2.3910
RDE .3217 RRA .1112 RC3 .3728 FAU .21429
FDE-1.1157 FRA 5.7214 FC-14.7856 BSP 44660
BDE .4384 BRA 4.6773 BC314.2541 FSP 4290

MID-COURSE EXECUTION ACCURACY

SGT12845.4 SGR 613.3 SG3 1243.4
RRT -.1804 RRF -.2126 RTF .9928
SGB12860.0 R23 .0336 R13 -.9929
SG112845.9 SG2 603.2 THA 179.51

ORBIT DETERMINATION ACCURACY

ST 2445.8 SR 523.5 SS 1306.1
CRT -.0926 CRS .4316 CST -.9378
LSA 2744.5 MSA 655.0 SSA 24.3
EL1 2446.3 EL2 521.2 ALF 178.81

LAUNCH DATE NOV 14 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 836.416 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.971 GAL -4.19 AZL 88.13 HCA 251.95 SMA 187.85 ECC .22387 INC 1.8732 V1 30.108
RP 209.34 LAP -1.78 LOP 303.60 VP 23.695 GAP -11.17 AZP 90.58 TAL 336.79 TAP 228.74 RCA 145.79 APO 229.90 V2 26.186
RC 312.019 GL 17.44 GP -.42 ZAL 124.31 ZAP 40.62 ETS 178.73 ZAE 64.57 ETE 179.28 ZAC 84.01 ETC 257.81 CLP 40.62

PLANETOCENTRIC CONIC

C3 12.861 VHL 3.586 DLA 16.80 RAL 185.20 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 4.474 DPA 7.37 RAP 165.97 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 12	2665.62	-27.35	72.09	44.89	97.62	18 35 38	2065.6	-26.02	63.67
90.00	10 25 5	4206.69	.25	172.35	39.75	61.68	11 35 11	3606.7	-3.53	165.72
100.00	19 22 6	2372.48	-28.55	50.32	44.69	99.26	20 1 39	1772.5	-26.98	41.87
100.00	11 36 52	3975.06	1.31	154.74	39.17	60.13	12 43 7	3375.1	-2.67	148.22
110.00	20 51 27	2092.94	-31.65	28.37	43.96	103.65	21 26 20	1492.9	-29.45	19.85
110.00	12 24 0	3827.36	3.99	141.86	37.50	56.02	13 27 48	3227.4	-.50	135.65

DIFFERENTIAL CORRECTIONS

TDE -.3867 TRA 4.8823 TC-14.0947 BAU 2.4243
RDE .3293 RRA .1106 RC3 .3726 FAU .20407
FDE-1.1723 FRA 5.6230 FC-13.7368 BSP 45264
BDE .5079 BRA 4.8836 BC314.0996 FSP 4113

MID-COURSE EXECUTION ACCURACY

SGT12999.0 SGR 618.3 SG3 1186.7
RRT -.1895 RRF -.2222 RTF .9926
SGB13013.6 R23 .0343 R13 -.9927
SG112999.5 SG2 607.1 THA 179.48

ORBIT DETERMINATION ACCURACY

ST 2539.4 SR 529.1 SS 1312.2
CRT -.1430 CRS .4632 CST -.9430
LSA 2833.7 MSA 648.0 SSA 23.8
EL1 2540.6 EL2 523.4 ALF 178.22

LAUNCH DATE NOV 14 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 29 1965

DISTANCE 840.666

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.977 GAL -4.33 AZL 88.13 HCA 253.19 SMA 187.94 ECC .22502 INC 1.8713 V1 30.108
RP 209.14 LAP -1.79 LOP 304.84 VP 23.728 GAP -11.30 AZP 90.54 TAL 336.07 TAP 229.26 RCA 145.65 APO 230.23 V2 26.209
RC 312.950 GL 17.19 GP -.41 ZAL 125.40 ZAP 39.82 ETS 178.72 ZAE 63.47 ETE 179.29 ZAC 84.11 ETC 257.75 CLP 39.82

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.197 VHL 3.633 DLA 16.13 RAL 186.10 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 4.555 DPA 7.20 RAP 166.38 ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 14	2646.47	-27.17	70.71	45.95	98.29	18 45 20	2046.5	-25.75	62.34
90.00	10 22 15	4236.95	1.23	174.04	40.86	61.71	11 32 52	3636.9	-2.56	167.41
100.00	19 31 35	2355.11	-28.35	49.07	45.73	99.89	20 10 50	1755.1	-26.70	40.66
100.00	11 34 36	4003.53	2.28	156.30	40.28	60.19	12 41 19	3403.5	-1.71	149.78
110.00	20 59 47	2079.13	-31.42	27.36	44.98	104.21	21 34 26	1479.1	-29.15	18.89
110.00	12 22 53	3852.28	4.94	143.17	38.62	56.13	13 27 5	3252.3	.46	136.95

DIFFERENTIAL CORRECTIONS

TDE -.4799 TRA 5.0951 TC-13.9267 BAU 2.4580
RDE .3372 RRA .1097 RC3 .3719 FAU .19429
FDE-1.2252 FRA 5.5228 FC-12.7452 BSP 45844
BDE .5865 BRA 5.0962 BC313.9316 FSP 3939

MID-COURSE EXECUTION ACCURACY

SGT13150.5 SGR 623.1 SG3 1132.2
RRT -.1989 RRF -.2322 RTF .9924
SGB13165.3 R23 .0352 R13 -.9924
SG113151.1 SG2 610.6 THA 179.46

ORBIT DETERMINATION ACCURACY

ST 2638.8 SR 534.6 SS 1317.7
CRT -.1909 CRS .4932 CST -.9477
LSA 2928.2 MSA 640.6 SSA 23.4
EL1 2640.8 EL2 524.4 ALF 177.69

LAUNCH DATE NOV 14 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 1 1965

DISTANCE 844.916

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.982 GAL -4.48 AZL 88.13 HCA 254.43 SMA 188.03 ECC .22623 INC 1.8695 V1 30.108
RP 208.94 LAP -1.80 LOP 306.08 VP 23.760 GAP -11.43 AZP 90.50 TAL 335.33 TAP 229.76 RCA 145.49 APO 230.57 V2 26.232
RC 313.871 GL 16.94 GP -.40 ZAL 126.50 ZAP 39.04 ETS 178.70 ZAE 62.39 ETE 179.31 ZAC 84.21 ETC 257.70 CLP 39.03

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.556 VHL 3.682 DLA 15.46 RAL 187.01 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 4.637 DPA 7.03 RAP 166.80 ECC 1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 9	2627.83	-26.98	69.38	47.02	98.93	18 54 57	2027.8	-25.47	61.04
90.00	10 19 32	4267.24	2.21	175.73	42.00	61.76	11 30 39	3667.2	-1.58	169.10
100.00	19 40 58	2338.17	-28.15	47.85	46.80	100.50	20 19 56	1738.2	-26.41	39.48
100.00	11 32 24	4032.12	3.24	157.87	41.42	60.27	12 39 36	3432.1	-.74	151.35
110.00	21 8 4	2065.62	-31.19	26.37	46.01	104.76	21 42 30	1465.6	-28.85	17.95
110.00	12 21 47	3877.44	5.89	144.50	39.78	56.27	13 26 24	3277.4	1.42	138.27

DIFFERENTIAL CORRECTIONS

TDE -.5758 TRA 5.3142 TC-13.7395 BAU 2.4908
RDE .3453 RRA .1087 RC3 .3706 FAU .18477
FDE-1.2717 FRA 5.4211 FC-11.8004 BSP 46422
BDE .6714 BRA 5.3153 BC313.7445 FSP 3770

MID-COURSE EXECUTION ACCURACY

SGT13296.1 SGR 627.7 SG3 1079.3
RRT -.2081 RRF -.2422 RTF .9922
SGB13310.9 R23 .0360 R13 -.9922
SG113296.7 SG2 614.0 THA 179.44

ORBIT DETERMINATION ACCURACY

ST 2742.5 SR 540.0 SS 1321.4
CRT -.2354 CRS .5207 CST -.9520
LSA 3026.2 MSA 632.9 SSA 22.9
EL1 2745.6 EL2 524.3 ALF 177.25

LAUNCH DATE NOV 14 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 3 1965

DISTANCE 849.165

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.988 GAL -4.63 AZL 88.13 HCA 255.67 SMA 188.13 ECC .22750 INC 1.8677 V1 30.108
RP 208.76 LAP -1.81 LOP 307.33 VP 23.792 GAP -11.57 AZP 90.46 TAL 334.58 TAP 230.26 RCA 145.33 APO 230.93 V2 26.254
RC 314.784 GL 16.68 GP -.39 ZAL 127.60 ZAP 38.28 ETS 178.69 ZAE 61.33 ETE 179.33 ZAC 84.31 ETC 257.64 CLP 38.27

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.938 VHL 3.733 DLA 14.78 RAL 187.91 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 4.720 DPA 6.84 RAP 167.25 ECC 1.2294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 57	2609.69	-26.79	68.09	48.12	99.55	19 4 27	2009.7	-25.19	59.79
90.00	10 16 55	4297.56	3.18	177.43	43.16	61.85	11 28 32	3697.6	-.61	170.79
100.00	19 50 16	2321.65	-27.94	46.67	47.88	101.09	20 28 58	1721.7	-26.12	38.34
100.00	11 30 17	4060.82	4.21	159.45	42.59	60.38	12 37 58	3460.8	.23	152.92
110.00	21 16 19	2052.42	-30.96	25.41	47.07	105.28	21 50 32	1452.4	-28.55	17.04
110.00	12 20 44	3902.82	6.85	145.84	40.96	56.43	13 25 47	3302.8	2.39	139.59

DIFFERENTIAL CORRECTIONS

TDE -.6750 TRA 5.5402 TC-13.5382 BAU 2.5237
RDE .3538 RRA .1074 RC3 .3687 FAU .17555
FDE-1.3128 FRA 5.3185 FC-10.9038 BSP 46981
BDE .7621 BRA 5.5413 BC313.5432 FSP 3607

MID-COURSE EXECUTION ACCURACY

SGT13438.3 SGR 632.2 SG3 1028.1
RRT -.2174 RRF -.2521 RTF .9919
SGB13453.1 R23 .0369 R13 -.9919
SG113439.0 SG2 617.0 THA 179.41

ORBIT DETERMINATION ACCURACY

ST 2850.4 SR 545.4 SS 1323.5
CRT -.2766 CRS .5460 CST -.9559
LSA 3127.7 MSA 625.0 SSA 22.5
EL1 2854.5 EL2 523.4 ALF 176.86

LAUNCH DATE NOV 14 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 5 1965

DISTANCE 853.413

HELIOCENTRIC CONIC

RL 147.99 LAL .00 LOL 51.66 VL 32.993 GAL -4.79 AZL 88.13 HCA 256.92 SMA 188.23 ECC .22881 INC 1.8660 V1 30.108
RP 208.58 LAP -1.82 LOP 308.57 VP 23.822 GAP -11.70 AZP 90.42 TAL 333.82 TAP 230.74 RCA 145.16 APO 231.30 V2 26.274
RC 315.690 GL 16.42 GP -.38 ZAL 128.71 ZAP 37.54 ETS 178.67 ZAE 60.30 ETE 179.34 ZAC 84.42 ETC 257.58 CLP 37.54

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.347 VHL 3.788 DLA 14.10 RAL 188.81 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 4.805 DPA 6.65 RAP 167.73 ECC 1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 40	2592.05	-26.58	66.84	49.23	100.14	19 13 52	1992.1	-24.91	58.57
90.00	10 14 23	4327.92	4.16	179.13	44.35	61.96	11 26 31	3727.9	.37	172.49
100.00	19 59 30	2305.58	-27.72	45.52	48.98	101.65	20 37 55	1705.6	-25.84	37.23
100.00	11 28 15	4089.63	5.18	161.05	43.79	60.52	12 36 24	3489.6	1.21	154.50
110.00	21 24 31	2039.55	-30.72	24.48	48.14	105.78	21 58 30	1439.6	-28.25	16.16
110.00	12 19 43	3928.42	7.81	147.20	42.17	56.62	13 25 11	3328.4	3.37	140.93

DIFFERENTIAL CORRECTIONS

TDE -.7764 TRA 5.7735 TC-13.3211 BAU 2.5560
RDE .3626 RRA .1058 RC3 .3663 FAU .16660
FDE-1.3482 FRA 5.2142 FC-10.0535 BSP 47542
BDE .8569 BRA 5.7744 BC313.3261 FSP 3451

MID-COURSE EXECUTION ACCURACY

SGT13575.7 SGR 636.4 SG3 978.7
RRT -.2266 RRF -.2621 RTF .9916
SGB13590.6 R23 .0379 R13 -.9916
SG113576.5 SG2 619.8 THA 179.39

ORBIT DETERMINATION ACCURACY

ST 2961.2 SR 550.7 SS 1323.6
CRT -.3145 CRS .5693 CST -.9592
LSA 3231.5 MSA 617.3 SSA 22.0
EL1 2966.4 EL2 521.9 ALF 176.55

LAUNCH DATE NOV 14 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 857.658 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 32.999 GAL -4.95 AZL 88.14 HCA 258.17 SMA 188.33 ECC .23019 INC 1.8642 V1 30.108
RP 208.40 LAP -1.82 LOP 309.82 VP 23.852 GAP -11.84 AZP 90.38 TAL 333.04 TAP 231.20 RCA 144.98 APO 231.68 V2 26.294
RC 316.588 GL 16.15 GP -.37 ZAL 129.81 ZAP 36.82 ETS 178.65 ZAE 59.28 ETE 179.36 ZAC 84.54 ETC 257.52 CLP 36.82

PLANETOCENTRIC CONIC

C3 14.782 VHL 3.845 DLA 13.42 RAL 189.70 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 4.892 DPA 6.44 RAP 168.22 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 16	2574.93	-26.37	65.63	50.35	100.71	19 23 11	1974.9	-24.62	57.40
90.00	10 11 57	4358.33	5.13	180.83	45.58	62.11	11 24 35	3758.3	1.36	174.18
100.00	20 8 38	2289.95	-27.50	44.41	50.09	102.20	20 46 48	1690.0	-25.54	36.16
100.00	11 26 16	4118.54	6.14	162.65	45.02	60.69	12 34 54	3518.5	2.19	156.09
110.00	21 32 39	2027.03	-30.49	23.58	49.23	106.27	22 6 26	1427.0	-27.96	15.30
110.00	12 18 44	3954.22	8.77	148.57	43.41	56.83	13 24 38	3354.2	4.35	142.28

DIFFERENTIAL CORRECTIONS
TDE -.8820 TRA 6.0131 TC-13.0937 BAU 2.5886
RDE .3716 RRA .1041 RC3 .3634 FAU .15801
FDE-1.3803 FRA 5.1082 FC3-9.2540 BSP 48078
BDE .9571 BRA 6.0140 BC313.0988 FSP 3297

MID-COURSE EXECUTION ACCURACY
SGT13710.2 SGR 640.5 SG3 931.0
RRT -.2360 RRF -.2724 RTF .9913
SGB13725.2 R23 .0390 R13 -.9913
SG113711.1 SG2 622.4 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 3075.2 SR 556.0 SS 1322.4
CRT -.3499 CRS .5914 CST -.9621
LSA 3338.1 MSA 609.6 SSA 21.6
EL1 3081.6 EL2 519.7 ALF 176.27

LAUNCH DATE NOV 14 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 861.901 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.004 GAL -5.12 AZL 88.14 HCA 259.42 SMA 188.43 ECC .23162 INC 1.8625 V1 30.108
RP 208.24 LAP -1.83 LOP 311.07 VP 23.881 GAP -11.98 AZP 90.34 TAL 332.24 TAP 231.66 RCA 144.78 APO 232.07 V2 26.314
RC 317.480 GL 15.88 GP -.36 ZAL 130.92 ZAP 36.12 ETS 178.64 ZAE 58.28 ETE 179.37 ZAC 84.66 ETC 257.45 CLP 36.12

PLANETOCENTRIC CONIC

C3 15.247 VHL 3.905 DLA 12.74 RAL 190.60 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 4.980 DPA 6.23 RAP 168.73 ECC 1.2509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 46	2558.33	-26.15	64.46	51.50	101.26	19 32 24	1958.3	-24.34	56.27
90.00	10 9 35	4388.78	6.09	182.55	46.83	62.29	11 22 44	3788.8	2.34	175.88
100.00	20 17 41	2274.79	-27.28	43.34	51.23	102.72	20 55 36	1674.8	-25.25	35.13
100.00	11 24 21	4147.55	7.11	164.26	46.28	60.89	12 33 29	3547.5	3.17	157.69
110.00	21 40 44	2014.88	-30.25	22.71	50.34	106.73	22 14 19	1414.9	-27.66	14.48
110.00	12 17 47	3980.22	9.74	149.97	44.68	57.07	13 24 7	3380.2	5.33	143.65

DIFFERENTIAL CORRECTIONS
TDE -.9907 TRA 6.2596 TC-12.8528 BAU 2.6209
RDE .3811 RRA .1020 RC3 .3601 FAU .14962
FDE-1.4070 FRA 5.0003 FC3-8.4959 BSP 48615
BDE 1.0615 BRA 6.2604 BC312.8579 FSP 3149

MID-COURSE EXECUTION ACCURACY
SGT13839.6 SGR 644.4 SG3 884.8
RRT -.2455 RRF -.2827 RTF .9909
SGB13854.6 R23 .0401 R13 -.9909
SG113840.5 SG2 624.7 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 3191.3 SR 561.1 SS 1318.9
CRT -.3827 CRS .6118 CST -.9647
LSA 3446.2 MSA 601.9 SSA 21.2
EL1 3198.8 EL2 517.2 ALF 176.05

LAUNCH DATE NOV 14 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 866.140 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.010 GAL -5.29 AZL 88.14 HCA 260.67 SMA 188.53 ECC .23312 INC 1.8608 V1 30.108
RP 208.08 LAP -1.84 LOP 312.32 VP 23.909 GAP -12.12 AZP 90.30 TAL 331.43 TAP 232.10 RCA 144.58 APO 232.48 V2 26.332
RC 318.367 GL 15.61 GP -.36 ZAL 132.03 ZAP 35.45 ETS 178.62 ZAE 57.31 ETE 179.39 ZAC 84.78 ETC 257.39 CLP 35.44

PLANETOCENTRIC CONIC

C3 15.742 VHL 3.968 DLA 12.05 RAL 191.49 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 5.070 DPA 6.00 RAP 169.26 ECC 1.2591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 9	2542.24	-25.94	63.34	52.66	101.78	19 41 32	1942.2	-24.05	55.17
90.00	10 7 18	4419.27	7.06	184.27	48.11	62.51	11 20 57	3819.3	3.32	177.59
100.00	20 26 39	2260.09	-27.06	42.31	52.38	103.22	21 4 19	1660.1	-24.97	34.13
100.00	11 22 30	4176.66	8.07	165.89	47.56	61.12	12 32 7	3576.7	4.15	159.29
110.00	21 48 46	2003.11	-30.02	21.88	51.46	107.18	22 22 9	1403.1	-27.38	13.68
110.00	12 16 52	4006.40	10.71	151.38	45.97	57.34	13 23 38	3406.4	6.32	145.03

DIFFERENTIAL CORRECTIONS
TDE-1.1012 TRA 6.5141 TC-12.6015 BAU 2.6531
RDE .3908 RRA .0997 RC3 .3563 FAU .14155
FDE-1.4287 FRA 4.8905 FC3-7.7846 BSP 49144
BDE 1.1685 BRA 6.5148 BC312.6065 FSP 3005

MID-COURSE EXECUTION ACCURACY
SGT13965.7 SGR 648.1 SG3 840.2
RRT -.2550 RRF -.2931 RTF .9905
SGB13980.7 R23 .0414 R13 -.9905
SG113966.7 SG2 626.7 THA 179.32

ORBIT DETERMINATION ACCURACY
ST 3308.5 SR 566.1 SS 1313.1
CRT -.4124 CRS .6307 CST -.9669
LSA 3554.8 MSA 594.7 SSA 20.8
EL1 3316.9 EL2 514.4 ALF 175.86

LAUNCH DATE NOV 14 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 870.375 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.016 GAL -5.46 AZL 88.14 HCA 261.92 SMA 188.63 ECC .23468 INC 1.8591 V1 30.108
RP 207.93 LAP -1.84 LOP 313.58 VP 23.936 GAP -12.26 AZP 90.26 TAL 330.60 TAP 232.52 RCA 144.36 APO 232.90 V2 26.349
RC 319.247 GL 15.33 GP -.35 ZAL 133.14 ZAP 34.79 ETS 178.60 ZAE 56.35 ETE 179.40 ZAC 84.91 ETC 257.32 CLP 34.79

PLANETOCENTRIC CONIC

C3 16.269 VHL 4.034 DLA 11.36 RAL 192.38 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 5.162 DPA 5.77 RAP 169.81 ECC 1.2678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 27	2526.68	-25.71	62.25	53.83	102.28	19 50 33	1926.7	-23.77	54.12
90.00	10 5 6	4449.82	8.01	186.01	49.42	62.75	11 19 15	3849.8	4.30	179.30
100.00	20 35 31	2245.87	-26.83	41.31	53.55	103.70	21 12 57	1645.9	-24.68	33.17
100.00	11 20 42	4205.86	9.02	167.53	48.87	61.38	12 30 48	3605.9	5.13	160.90
110.00	21 56 44	1991.74	-29.79	21.07	52.61	107.60	22 29 55	1391.7	-27.09	12.92
110.00	12 15 59	4032.76	11.67	152.81	47.29	57.64	13 23 12	3432.8	7.32	146.42

DIFFERENTIAL CORRECTIONS
TDE-1.2161 TRA 6.7755 TC-12.3430 BAU 2.6858
RDE .4009 RRA .0971 RC3 .3520 FAU .13373
FDE-1.4469 FRA 4.7789 FC3-7.1161 BSP 49640
BDE 1.2805 BRA 6.7762 BC312.3480 FSP 2865

MID-COURSE EXECUTION ACCURACY
SGT14089.0 SGR 651.7 SG3 797.1
RRT -.2647 RRF -.3038 RTF .9900
SGB14104.1 R23 .0428 R13 -.9900
SG114090.1 SG2 628.4 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 3427.3 SR 571.1 SS 1305.6
CRT -.4404 CRS .6486 CST -.9688
LSA 3665.0 MSA 587.5 SSA 20.5
EL1 3436.8 EL2 511.3 ALF 175.71

LAUNCH DATE NOV 14 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 15 1965

DISTANCE 874.606

HELIOCENTRIC CONIC — EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.022 GAL -5.64 AZL 88.14 HCA 263.17 SMA 188.74 ECC .23631 INC 1.8574 V1 30.108
RP 207.79 LAP -1.84 LOP 314.83 VP 23.963 GAP -12.40 AZP 90.22 TAL 329.76 TAP 232.94 RCA 144.14 APO 233.34 V2 26.366
RC 320.122 GL 15.05 GP -.34 ZAL 134.24 ZAP 34.15 ETS 178.58 ZAE 55.41 ETE 179.42 ZAC 85.04 ETC 257.26 CLP 34.14

PLANETOCENTRIC CONIC

C3 16.831 VHL 4.103 DLA 10.67 RAL 193.26 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 5.256 DPA 5.52 RAP 170.37 ECC 1.2770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 38	2511.65	-25.49	61.21	55.03	102.76	19 59 29	1911.6	-23.48	53.11
90.00	10 2 57	4480.41	8.96	187.76	50.75	63.03	11 17 38	3880.4	5.27	181.02
100.00	20 44 18	2232.13	-26.61	40.35	54.73	104.16	21 21 30	1632.1	-24.40	32.25
100.00	11 18 58	4235.16	9.97	169.19	50.22	61.67	12 29 34	3635.2	6.11	162.53
110.00	22 4 37	1980.77	-29.56	20.30	53.77	108.01	22 37 38	1380.8	-26.81	12.19
110.00	12 15 8	4059.28	12.63	154.27	48.64	57.97	13 22 48	3459.3	8.31	147.83

DIFFERENTIAL CORRECTIONS
TDE-1.3333 TRA 7.0448 TC-12.0751 BAU 2.7183
RDE .4113 RRA .0942 RC3 .3474 FAU .12618
FDE-1.4607 FRA 4.6652 FC3-6.4902 BSP 50120
BDE 1.3954 BRA 7.0454 BC312.0801 FSP 2728

MID-COURSE EXECUTION ACCURACY
SGT14208.1 SGR 655.1 SG3 755.6
RRT -.2744 RRF -.3146 RTF .9894
SGB14223.2 R23 .0443 R13 -.9895
SG114209.2 SG2 629.9 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 3546.4 SR 575.9 SS 1295.9
CRT -.4659 CRS .6653 CST -.9704
LSA 3775.0 MSA 580.6 SSA 20.1
EL1 3556.8 EL2 508.1 ALF 175.58

LAUNCH DATE NOV 14 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 17 1965

DISTANCE 878.832

HELIOCENTRIC CONIC — EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.028 GAL -5.83 AZL 88.14 HCA 264.43 SMA 188.84 ECC .23801 INC 1.8557 V1 30.108
RP 207.66 LAP -1.85 LOP 316.09 VP 23.988 GAP -12.55 AZP 90.18 TAL 328.90 TAP 233.33 RCA 143.90 APO 233.79 V2 26.381
RC 320.992 GL 14.76 GP -.33 ZAL 135.35 ZAP 33.52 ETS 178.56 ZAE 54.48 ETE 179.43 ZAC 85.18 ETC 257.19 CLP 33.52

PLANETOCENTRIC CONIC

C3 17.430 VHL 4.175 DLA 9.99 RAL 194.14 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 5.352 DPA 5.27 RAP 170.96 ECC 1.2869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 42	2497.15	-25.27	60.20	56.24	103.22	20 8 20	1897.1	-23.20	52.14
90.00	10 0 53	4511.04	9.90	189.51	52.12	63.34	11 16 4	3911.0	6.24	182.74
100.00	20 52 59	2218.88	-26.38	39.43	55.93	104.59	21 29 58	1618.9	-24.12	31.36
100.00	11 17 18	4264.54	10.92	170.86	51.59	62.00	12 28 22	3664.5	7.09	164.16
110.00	22 12 27	1970.23	-29.33	19.56	54.94	108.39	22 45 17	1370.2	-26.54	11.49
110.00	12 14 19	4085.96	13.59	155.74	50.02	58.33	13 22 25	3486.0	9.30	149.26

DIFFERENTIAL CORRECTIONS
TDE-1.4553 TRA 7.3204 TC-11.8045 BAU 2.7519
RDE .4222 RRA .0909 RC3 .3425 FAU .11892
FDE-1.4715 FRA 4.5487 FC3-5.9066 BSP 50572
BDE 1.5153 BRA 7.3210 BC311.8094 FSP 2594

MID-COURSE EXECUTION ACCURACY
SGT14324.9 SGR 658.4 SG3 715.5
RRT -.2844 RRF -.3259 RTF .9888
SGB14340.0 R23 .0460 R13 -.9889
SG114326.1 SG2 631.1 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 3666.3 SR 580.7 SS 1284.4
CRT -.4901 CRS .6813 CST -.9717
LSA 3885.7 MSA 573.8 SSA 19.8
EL1 3677.5 EL2 504.6 ALF 175.48

LAUNCH DATE NOV 14 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 19 1965

DISTANCE 883.051

HELIOCENTRIC CONIC — EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.034 GAL -6.02 AZL 88.15 HCA 265.69 SMA 188.95 ECC .23978 INC 1.8540 V1 30.108
RP 207.54 LAP -1.85 LOP 317.35 VP 24.012 GAP -12.69 AZP 90.14 TAL 328.03 TAP 233.72 RCA 143.64 APO 234.26 V2 26.396
RC 321.856 GL 14.48 GP -.33 ZAL 136.45 ZAP 32.92 ETS 178.54 ZAE 53.57 ETE 179.45 ZAC 85.32 ETC 257.12 CLP 32.92

PLANETOCENTRIC CONIC

C3 18.068 VHL 4.251 DLA 9.30 RAL 195.01 RAD 6567.7 VEL 11.809 PTH 2.09 VHP 5.449 DPA 5.01 RAP 171.56 ECC 1.2974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 41	2483.18	-25.05	59.24	57.47	103.65	20 17 4	1883.2	-22.93	51.21
90.00	9 58 53	4541.71	10.83	191.29	53.52	63.68	11 14 35	3941.7	7.21	184.48
100.00	21 1 35	2206.14	-26.16	38.55	57.15	105.01	21 38 21	1606.1	-23.84	30.51
100.00	11 15 40	4294.00	11.85	172.54	52.99	62.36	12 27 14	3694.0	8.06	165.81
110.00	22 20 12	1960.12	-29.12	18.86	56.14	108.76	22 52 52	1360.1	-26.28	10.82
110.00	12 13 32	4112.78	14.54	157.23	51.43	58.72	13 22 5	3512.8	10.30	150.71

DIFFERENTIAL CORRECTIONS
TDE-1.5788 TRA 7.6061 TC-11.5255 BAU 2.7852
RDE .4333 RRA .0873 RC3 .3371 FAU .11186
FDE-1.4772 FRA 4.4317 FC3-5.3597 BSP 51020
BDE 1.6372 BRA 7.6066 BC311.5304 FSP 2465

MID-COURSE EXECUTION ACCURACY
SGT14438.5 SGR 661.5 SG3 676.8
RRT -.2944 RRF -.3371 RTF .9882
SGB14453.6 R23 .0477 R13 -.9882
SG114439.8 SG2 632.1 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 3785.4 SR 585.2 SS 1270.4
CRT -.5119 CRS .6960 CST -.9729
LSA 3995.5 MSA 567.3 SSA 19.4
EL1 3797.5 EL2 501.2 ALF 175.39

LAUNCH DATE NOV 14 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 21 1965

DISTANCE 887.263

HELIOCENTRIC CONIC — EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.040 GAL -6.22 AZL 88.15 HCA 266.95 SMA 189.06 ECC .24163 INC 1.8523 V1 30.108
RP 207.42 LAP -1.85 LOP 318.61 VP 24.036 GAP -12.85 AZP 90.10 TAL 327.14 TAP 234.09 RCA 143.38 APO 234.74 V2 26.409
RC 322.714 GL 14.19 GP -.32 ZAL 137.54 ZAP 32.33 ETS 178.52 ZAE 52.68 ETE 179.46 ZAC 85.46 ETC 257.06 CLP 32.33

PLANETOCENTRIC CONIC

C3 18.747 VHL 4.330 DLA 8.62 RAL 195.88 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 5.549 DPA 4.74 RAP 172.18 ECC 1.3085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 33	2469.76	-24.83	58.32	58.71	104.07	20 25 43	1869.8	-22.65	50.32
90.00	9 56 56	4572.42	11.76	193.07	54.95	64.05	11 13 9	3972.4	8.17	186.23
100.00	21 10 5	2193.89	-25.94	37.70	58.39	105.40	21 46 39	1593.9	-23.58	29.70
100.00	11 14 6	4323.52	12.78	174.24	54.42	62.75	12 26 9	3723.5	9.03	167.47
110.00	22 27 53	1950.44	-28.90	18.18	57.35	109.10	23 0 23	1350.4	-26.02	10.19
110.00	12 12 47	4139.74	15.49	158.75	52.87	59.14	13 21 47	3539.7	11.29	152.17

DIFFERENTIAL CORRECTIONS
TDE-1.7066 TRA 7.8975 TC-11.2464 BAU 2.8199
RDE .4449 RRA .0834 RC3 .3316 FAU .10508
FDE-1.4799 FRA 4.3106 FC3-4.8525 BSP 51432
BDE 1.7636 BRA 7.8980 BC311.2513 FSP 2338

MID-COURSE EXECUTION ACCURACY
SGT14549.1 SGR 664.4 SG3 639.5
RRT -.3047 RRF -.3488 RTF .9874
SGB14564.3 R23 .0497 R13 -.9875
SG114550.5 SG2 632.8 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 3904.0 SR 589.7 SS 1254.4
CRT -.5324 CRS .7103 CST -.9738
LSA 4104.6 MSA 561.0 SSA 19.1
EL1 3916.8 EL2 497.5 ALF 175.33

LAUNCH DATE NOV 14 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 891.467 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.046	GAL	-6.42	AZL	88.15	HCA	268.21	SMA	189.17	ECC	.24356	INC	1.8506	V1	30.108
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.058	GAP	-13.00	AZP	90.06	TAL	326.23	TAP	234.44	RCA	143.10	APO	235.25	V2	26.422
RC	323.566	GL	13.91	GP	-.32	ZAL	138.63	ZAP	31.75	ETS	178.50	ZAE	51.80	ETE	179.47	ZAC	85.61	ETC	256.99	CLP	31.75

PLANETOCENTRIC CONIC

C3	19.470	VHL	4.412	DLA	7.95	RAL	196.74	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	5.650	DPA	4.47	RAP	172.81	ECC	1.3204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 19	2456.88	-24.62	57.43	59.98	104.46	20 34 16	1856.9	-22.39	49.47
90.00	9 55 3	4603.17	12.66	194.87	56.40	64.46	11 11 47	4003.2	9.12	187.98
100.00	21 18 30	2182.16	-25.73	36.90	59.64	105.77	21 54 52	1582.2	-23.31	28.93
100.00	11 12 34	4353.12	13.70	175.96	55.88	63.17	12 25 7	3753.1	9.99	169.14
110.00	22 35 29	1941.22	-28.69	17.55	58.59	109.43	23 7 51	1341.2	-25.78	9.58
110.00	12 12 4	4166.82	16.43	160.28	54.34	59.59	13 21 31	3566.8	12.27	153.64

DIFFERENTIAL CORRECTIONS

TDE	-1.8379	TRA	8.1981	TC	-10.9614	BAU	2.8545
RDE	.4568	RRA	.0791	RC3	.3257	FAU	.09850
FDE	-1.4792	FRA	4.1879	FC3	-4.3799	BSP	51820
BDE	1.8938	BRA	8.1985	BC3	10.9662	FSP	2215

MID-COURSE EXECUTION ACCURACY

SGT	14655.9	SGR	667.3	SG3	603.4		
RRT	-.3151	RRF	-.3607	RTF	.9866		
SGB	14671.1	R23	.0519	R13	-.9867		
SG1	14657.5	SG2	633.2	THA	179.18		

ORBIT DETERMINATION ACCURACY

ST	4022.0	SR	594.0	SS	1236.5		
CRT	-.5515	CRS	.7238	CST	-.9746		
LSA	4213.1	MSA	554.8	SSA	18.8		
EL1	4035.6	EL2	493.9	ALF	175.27		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 895.663 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.053	GAL	-6.63	AZL	88.15	HCA	269.47	SMA	189.28	ECC	.24557	INC	1.8489	V1	30.108
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.079	GAP	-13.16	AZP	90.02	TAL	325.31	TAP	234.79	RCA	142.80	APO	235.77	V2	26.434
RC	324.413	GL	13.62	GP	-.31	ZAL	139.72	ZAP	31.20	ETS	178.48	ZAE	50.94	ETE	179.49	ZAC	85.77	ETC	256.92	CLP	31.20

PLANETOCENTRIC CONIC

C3	20.240	VHL	4.499	DLA	7.27	RAL	197.60	RAD	6567.8	VEL	11.900	PTH	2.11	VHP	5.754	DPA	4.18	RAP	173.45	ECC	1.3331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 59	2444.53	-24.40	56.59	61.25	104.83	20 42 44	1844.5	-22.13	48.66
90.00	9 53 14	4633.94	13.56	196.69	57.89	64.90	11 10 28	4033.9	10.07	189.75
100.00	21 26 49	2170.94	-25.52	36.13	60.91	106.12	22 3 0	1570.9	-23.06	28.19
100.00	11 11 5	4382.77	14.60	177.70	57.37	63.62	12 24 8	3782.8	10.94	170.82
110.00	22 43 1	1932.45	-28.49	16.94	59.83	109.73	23 15 14	1332.5	-25.54	9.01
110.00	12 11 22	4194.02	17.36	161.84	55.84	60.08	13 21 16	3594.0	13.25	155.14

DIFFERENTIAL CORRECTIONS

TDE	-1.9715	TRA	8.5076	TC	-10.6753	BAU	2.8899
RDE	.4691	RRA	.0744	RC3	.3196	FAU	.09214
FDE	-1.4743	FRA	4.0629	FC3	-3.9410	BSP	52198
BDE	2.0266	BRA	8.5080	BC3	10.6801	FSP	2095

MID-COURSE EXECUTION ACCURACY

SGT	14760.6	SGR	669.9	SG3	568.6		
RRT	-.3255	RRF	-.3727	RTF	.9857		
SGB	14775.8	R23	.0542	R13	-.9858		
SG1	14762.2	SG2	633.4	THA	179.15		

ORBIT DETERMINATION ACCURACY

ST	4138.3	SR	598.2	SS	1216.2		
CRT	-.5691	CRS	.7365	CST	-.9752		
LSA	4319.8	MSA	548.9	SSA	18.5		
EL1	4152.5	EL2	490.2	ALF	175.23		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 899.849 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.059	GAL	-6.85	AZL	88.15	HCA	270.73	SMA	189.40	ECC	.24767	INC	1.8472	V1	30.108
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.100	GAP	-13.32	AZP	89.98	TAL	324.38	TAP	235.11	RCA	142.49	APO	236.30	V2	26.444
RC	325.253	GL	13.33	GP	-.30	ZAL	140.80	ZAP	30.66	ETS	178.46	ZAE	50.10	ETE	179.50	ZAC	85.92	ETC	256.85	CLP	30.66

PLANETOCENTRIC CONIC

C3	21.059	VHL	4.589	DLA	6.60	RAL	198.45	RAD	6567.9	VEL	11.935	PTH	2.12	VHP	5.859	DPA	3.89	RAP	174.12	ECC	1.3466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 33	2432.73	-24.19	55.79	62.55	105.18	20 51 6	1832.7	-21.88	47.89
90.00	9 51 28	4664.74	14.44	198.52	59.41	65.38	11 9 12	4064.7	11.00	191.53
100.00	21 35 3	2160.23	-25.31	35.40	62.20	106.46	22 11 3	1560.2	-22.81	27.49
100.00	11 9 40	4412.48	15.49	179.46	58.89	64.11	12 23 12	3812.5	11.89	172.52
110.00	22 50 29	1924.15	-28.30	16.37	61.10	110.02	23 22 33	1324.1	-25.31	8.47
110.00	12 10 43	4221.33	18.28	163.43	57.37	60.60	13 21 4	3621.3	14.23	156.66

DIFFERENTIAL CORRECTIONS

TDE	-2.1090	TRA	8.8245	TC	-10.3893	BAU	2.9263
RDE	.4818	RRA	.0693	RC3	.3133	FAU	.08598
FDE	-1.4662	FRA	3.9352	FC3	-3.5348	BSP	52549
BDE	2.1633	BRA	8.8248	BC3	10.3940	FSP	1979

MID-COURSE EXECUTION ACCURACY

SGT	14861.8	SGR	672.5	SG3	535.0		
RRT	-.3362	RRF	-.3851	RTF	.9847		
SGB	14877.0	R23	.0567	R13	-.9847		
SG1	14863.5	SG2	633.3	THA	179.13		

ORBIT DETERMINATION ACCURACY

ST	4252.9	SR	602.2	SS	1193.9		
CRT	-.5855	CRS	.7487	CST	-.9756		
LSA	4424.9	MSA	543.1	SSA	18.2		
EL1	4267.7	EL2	486.5	ALF	175.20		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 904.024 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.065	GAL	-7.07	AZL	88.15	HCA	272.00	SMA	189.51	ECC	.24986	INC	1.8456	V1	30.108
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.119	GAP	-13.48	AZP	89.94	TAL	323.43	TAP	235.42	RCA	142.16	APO	236.86	V2	26.454
RC	326.088	GL	13.04	GP	-.30	ZAL	141.87	ZAP	30.13	ETS	178.44	ZAE	49.26	ETE	179.51	ZAC	86.08	ETC	256.79	CLP	30.13

PLANETOCENTRIC CONIC

C3	21.931	VHL	4.683	DLA	5.94	RAL	199.30	RAD	6567.9	VEL	11.971	PTH	2.13	VHP	5.967	DPA	3.59	RAP	174.79	ECC	1.3609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 1	2421.47	-23.99	55.03	63.86	105.51	20 59 23	1821.5	-21.63	47.15
90.00	9 49 45	4695.56	15.31	200.37	60.95	65.88	11 8 0	4095.6	11.92	193.33
100.00	21 43 10	2150.04	-25.11	34.71	63.51	106.77	22 19 1	1550.0	-22.58	26.83
100.00	11 8 16	4442.23	16.37	181.23	60.45	64.63	12 22 19	3842.2	12.82	174.24
110.00	22 57 52	1916.30	-28.12	15.84	62.38	110.29	23 29 48	1316.3	-25.10	7.97
110.00	12 10 5	4248.72	19.19	165.03	58.93	61.15	13 20 53	3648.7	15.19	158.19

DIFFERENTIAL CORRECTIONS

TDE	-2.2510	TRA	9.1500	TC	-10.1044	BAU	2.9640
RDE	.4950	RRA	.0638	RC3	.3069	FAU	.08005
FDE	-1.4557	FRA	3.8049	FC3	-3.1600	BSP	52852
BDE	2.3048	BRA	9.1502	BC3	10.1091	FSP	1863

MID-COURSE EXECUTION ACCURACY

SGT	14960.8	SGR	674.9	SG3	502.6		
RRT	-.3471	RRF	-.3978	RTF	.9835		
SGB	14976.1	R23	.0596	R13	-.9836		
SG1	14962.7	SG2	632.9	THA	179.10		

ORBIT DETERMINATION ACCURACY

ST	4366.5	SR	606.1	SS	1170.1		
CRT	-.6011	CRS	.7606	CST	-.9759		
LSA	4529.2	MSA	537.4	SSA	17.9		
EL1	4381.8	EL2	482.7	ALF	175.17		

LAUNCH DATE NOV 14 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 908.187 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.072 GAL -7.30 AZL 88.16 HCA 273.26 SMA 189.63 ECC .25214 INC 1.8438 V1 30.108
RP 206.96 LAP -1.84 LOP 324.93 VP 24.138 GAP -13.65 AZP 89.89 TAL 322.46 TAP 235.72 RCA 141.81 APO 237.44 V2 26.463
RC 326.917 GL 12.75 GP -.29 ZAL 142.93 ZAP 29.62 ETS 178.41 ZAE 48.45 ETE 179.52 ZAC 86.25 ETC 256.72 CLP 29.62

PLANETOCENTRIC CONIC

C3 22.859 VHL 4.781 DLA 5.28 RAL 200.14 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 6.077 DPA 3.28 RAP 175.48 ECC 1.3762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 23	2410.75	-23.79	54.30	65.19	105.82	21 7 34	1810.8	-21.40	46.45
90.00	9 48 5	4726.39	16.16	202.23	62.53	66.42	11 6 51	4126.4	12.83	195.13
100.00	21 51 13	2140.36	-24.92	34.05	64.83	107.06	22 26 53	1540.4	-22.35	26.20
100.00	11 6 56	4472.02	17.23	183.03	62.03	65.19	12 21 28	3872.0	13.74	175.97
110.00	23 5 10	1908.93	-27.94	15.33	63.68	110.54	23 36 59	1308.9	-24.89	7.49
110.00	12 9 28	4276.22	20.08	166.66	60.52	61.74	13 20 45	3676.2	16.15	159.75

DIFFERENTIAL CORRECTIONS
TDE-2.3958 TRA 9.4843 TC3-9.8205 BAU 3.0026
RDE .5085 RRA .0579 RC3 .3003 FAU .07432
FDE-1.4415 FRA 3.6721 FC3-2.8145 BSP 53118
BDE 2.4491 BRA 9.4845 BC3 9.8251 FSP 1751

MID-COURSE EXECUTION ACCURACY
SGT15056.8 SGR 677.2 SG3 471.3
RRT -.3580 RRF -.4108 RTF .9822
SGB15072.0 R23 .0627 R13 -.9823
SG115058.7 SG2 632.2 THA 179.08

ORBIT DETERMINATION ACCURACY
ST 4477.4 SR 609.8 SS 1144.2
CRT -.6155 CRS .7719 CST -.9760
LSA 4630.9 MSA 531.9 SSA 17.6
EL1 4493.3 EL2 478.9 ALF 175.15

LAUNCH DATE NOV 14 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 912.337 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.078 GAL -7.53 AZL 88.16 HCA 274.53 SMA 189.74 ECC .25452 INC 1.8422 V1 30.108
RP 206.89 LAP -1.84 LOP 326.20 VP 24.155 GAP -13.82 AZP 89.85 TAL 321.47 TAP 236.00 RCA 141.45 APO 238.04 V2 26.471
RC 327.742 GL 12.47 GP -.29 ZAL 143.99 ZAP 29.12 ETS 178.39 ZAE 47.64 ETE 179.53 ZAC 86.41 ETC 256.66 CLP 29.12

PLANETOCENTRIC CONIC

C3 23.848 VHL 4.883 DLA 4.62 RAL 200.97 RAD 6568.0 VEL 12.051 PTH 2.15 VHP 6.190 DPA 2.97 RAP 176.19 ECC 1.3925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 39	2400.57	-23.60	53.62	66.53	106.11	21 15 40	1800.6	-21.17	45.79
90.00	9 46 28	4757.24	16.99	204.12	64.14	67.00	11 5 45	4157.2	13.73	196.96
100.00	21 59 10	2131.20	-24.74	33.43	66.16	107.34	22 34 41	1531.2	-22.13	25.61
100.00	11 5 38	4501.84	18.07	184.84	63.64	65.78	12 20 40	3901.8	14.65	177.72
110.00	23 12 23	1902.02	-27.78	14.87	64.99	110.77	23 44 5	1302.0	-24.70	7.05
110.00	12 8 54	4303.78	20.96	168.32	62.15	62.36	13 20 38	3703.8	17.10	161.32

DIFFERENTIAL CORRECTIONS
TDE-2.5434 TRA 9.8293 TC3-9.5369 BAU 3.0420
RDE .5224 RRA .0515 RC3 .2935 FAU .06873
FDE-1.4236 FRA 3.5370 FC3-2.4950 BSP 53387
BDE 2.5965 BRA 9.8294 BC3 9.5415 FSP 1643

MID-COURSE EXECUTION ACCURACY
SGT15150.3 SGR 679.4 SG3 441.1
RRT -.3690 RRF -.4239 RTF .9807
SGB15165.5 R23 .0660 R13 -.9808
SG115152.4 SG2 631.3 THA 179.05

ORBIT DETERMINATION ACCURACY
ST 4585.9 SR 613.3 SS 1116.1
CRT -.6288 CRS .7827 CST -.9759
LSA 4730.2 MSA 526.5 SSA 17.3
EL1 4602.3 EL2 475.2 ALF 175.14

LAUNCH DATE NOV 14 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 916.473 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.085 GAL -7.77 AZL 88.16 HCA 275.80 SMA 189.86 ECC .25700 INC 1.8404 V1 30.108
RP 206.84 LAP -1.83 LOP 327.46 VP 24.172 GAP -14.00 AZP 89.81 TAL 320.47 TAP 236.27 RCA 141.07 APO 238.65 V2 26.477
RC 328.562 GL 12.18 GP -.28 ZAL 145.04 ZAP 28.64 ETS 178.37 ZAE 46.85 ETE 179.54 ZAC 86.59 ETC 256.60 CLP 28.64

PLANETOCENTRIC CONIC

C3 24.899 VHL 4.990 DLA 3.97 RAL 201.80 RAD 6568.0 VEL 12.094 PTH 2.16 VHP 6.305 DPA 2.65 RAP 176.90 ECC 1.4098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 49	2390.92	-23.42	52.97	67.89	106.39	21 23 40	1790.9	-20.95	45.17
90.00	9 44 54	4788.08	17.80	206.02	65.78	67.61	11 4 42	4188.1	14.61	198.79
100.00	22 7 1	2122.54	-24.56	32.85	67.51	107.60	22 42 24	1522.5	-21.92	25.05
100.00	11 4 23	4531.69	18.89	186.67	65.28	66.40	12 19 54	3931.7	15.54	179.49
110.00	23 19 32	1895.59	-27.62	14.43	66.32	110.99	23 51 8	1295.6	-24.52	6.64
110.00	12 8 21	4331.41	21.83	170.00	63.81	63.02	13 20 32	3731.4	18.03	162.92

DIFFERENTIAL CORRECTIONS
TDE-2.6949 TRA10.1822 TC3-9.2569 BAU 3.0829
RDE .5368 RRA .0446 RC3 .2867 FAU .06334
FDE-1.4030 FRA 3.3988 FC3-2.2022 BSP 53607
BDE 2.7478 BRA10.1823 BC3 9.2614 FSP 1537

MID-COURSE EXECUTION ACCURACY
SGT15240.5 SGR 681.4 SG3 411.9
RRT -.3802 RRF -.4374 RTF .9790
SGB15255.7 R23 .0697 R13 -.9791
SG115242.7 SG2 630.2 THA 179.02

ORBIT DETERMINATION ACCURACY
ST 4691.8 SR 616.6 SS 1086.3
CRT -.6413 CRS .7932 CST -.9757
LSA 4827.2 MSA 521.3 SSA 17.1
EL1 4708.6 EL2 471.4 ALF 175.13

LAUNCH DATE NOV 14 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 920.594 EARTH TO MARS

RL 147.99 LAL .00 LOL 51.66 VL 33.092 GAL -8.02 AZL 88.16 HCA 277.07 SMA 189.98 ECC .25959 INC 1.8387 V1 30.108
RP 206.79 LAP -1.82 LOP 328.73 VP 24.187 GAP -14.18 AZP 89.77 TAL 319.46 TAP 236.52 RCA 140.66 APO 239.30 V2 26.483
RC 329.378 GL 11.90 GP -.28 ZAL 146.08 ZAP 28.17 ETS 178.35 ZAE 46.08 ETE 179.55 ZAC 86.76 ETC 256.53 CLP 28.17

PLANETOCENTRIC CONIC

C3 26.019 VHL 5.101 DLA 3.33 RAL 202.62 RAD 6568.1 VEL 12.141 PTH 2.18 VHP 6.422 DPA 2.32 RAP 177.63 ECC 1.4282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 53	2381.79	-23.24	52.36	69.27	106.64	21 31 35	1781.8	-20.74	44.58
90.00	9 43 22	4818.93	18.59	207.94	67.44	68.25	11 3 41	4218.9	15.47	200.65
100.00	22 14 47	2114.39	-24.39	32.31	68.88	107.84	22 50 2	1514.4	-21.72	24.52
100.00	11 3 10	4561.55	19.70	188.53	66.96	67.05	12 19 11	3961.6	16.42	181.27
110.00	23 26 37	1889.61	-27.47	14.03	67.67	111.19	23 58 6	1289.6	-24.35	6.26
110.00	12 7 50	4359.10	22.67	171.70	65.50	63.70	13 20 29	3759.1	18.95	164.54

DIFFERENTIAL CORRECTIONS
TDE-2.8507 TRA10.5457 TC3-8.9806 BAU 3.1254
RDE .5515 RRA .0373 RC3 .2799 FAU .05809
FDE-1.3797 FRA 3.2579 FC3-1.9330 BSP 53790
BDE 2.9035 BRA10.5458 BC3 8.9849 FSP 1434

MID-COURSE EXECUTION ACCURACY
SGT15329.1 SGR 683.4 SG3 383.8
RRT -.3915 RRF -.4511 RTF .9771
SGB15344.4 R23 .0738 R13 -.9771
SG115331.5 SG2 628.8 THA 179.00

ORBIT DETERMINATION ACCURACY
ST 4795.8 SR 619.7 SS 1055.0
CRT -.6532 CRS .8036 CST -.9754
LSA 4922.4 MSA 516.1 SSA 16.8
EL1 4813.0 EL2 467.5 ALF 175.13

LAUNCH DATE NOV 14 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 924.697 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.098	GAL	-8.28	AZL	88.16	HCA	278.33	SMA	190.10	ECC	.26228	INC	1.8370
RP	206.75	LAP	-1.82	LOP	330.00	VP	24.201	GAP	-14.37	AZP	89.73	TAL	318.43	TAP	236.76	RCA	140.24	APO	239.96
RC	330.190	GL	11.61	GP	-.28	ZAL	147.11	ZAP	27.72	ETS	178.33	ZAE	45.32	ETE	179.56	ZAC	86.94	ETC	256.47

V1	30.108	V2	26.488	CLP	27.71														

PLANETOCENTRIC CONIC

C3	27.211	VHL	5.216	DLA	2.70	RAL	203.44	RAD	6568.1	VEL	12.190	PTH	2.19	VHP	6.543	DPA	1.98	RAP	178.37
ECC	1.4478																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 52	2373.18	-23.07	51.79	70.66	106.88	21 39 25	1773.2	-20.54	44.03
90.00	9 41 54	4849.76	19.35	209.88	69.14	68.92	11 2 44	4249.8	16.32	202.52
100.00	22 22 28	2106.74	-24.23	31.79	70.26	108.06	22 57 35	1506.7	-21.54	24.03
100.00	11 1 59	4591.42	20.48	190.40	68.66	67.74	12 18 30	3991.4	17.28	183.07
110.00	23 33 36	1884.10	-27.34	13.66	69.03	111.37	24 5 0	1284.1	-24.19	5.91
110.00	12 7 20	4386.83	23.50	173.43	67.22	64.43	13 20 27	3786.8	19.86	166.18

DIFFERENTIAL CORRECTIONS

TDE	-3.0101	TRA	10.9188	TC3	-8.7073	BAU	3.1692												
RDE	.5667	RRA	.0294	RC3	.2729	FAU	.05301												
FDE	-1.3532	FRA	3.1141	FC3	-1.6866	BSP	53938												
BDE	3.0630	BRA	10.9188	BC3	8.7116	FSP	1334												

MID-COURSE EXECUTION ACCURACY

SGT	15414.4	SGR	685.3	SG3	356.6														
RRT	-.4030	RRF	-.4651	RTF	.9748														
SGB	15429.6	R23	.0783	R13	-.9749														
SG1	15416.9	SG2	627.1	THA	178.97														

ORBIT DETERMINATION ACCURACY

ST	4896.8	SR	622.6	SS	1021.8														
CRT	-.6643	CRS	.8136	CST	-.9748														
LSA	5014.9	MSA	511.0	SSA	16.5														
EL1	4914.4	EL2	463.7	ALF	175.13														

LAUNCH DATE NOV 14 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 928.782 EARTH TO MARS

RL	147.99	LAL	.00	LOL	51.66	VL	33.105	GAL	-8.54	AZL	88.16	HCA	279.60	SMA	190.22	ECC	.26510	INC	1.8353
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.215	GAP	-14.56	AZP	89.69	TAL	317.38	TAP	236.98	RCA	139.79	APO	240.65
RC	331.000	GL	11.33	GP	-.27	ZAL	148.13	ZAP	27.27	ETS	178.30	ZAE	44.57	ETE	179.57	ZAC	87.12	ETC	256.41

V1	30.108	V2	26.492	CLP	27.27														

PLANETOCENTRIC CONIC

C3	28.480	VHL	5.337	DLA	2.07	RAL	204.25	RAD	6568.1	VEL	12.242	PTH	2.20	VHP	6.666	DPA	1.64	RAP	179.13
ECC	1.4687																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 46	2365.07	-22.91	51.25	72.06	107.11	21 47 11	1765.1	-20.36	43.51
90.00	9 40 28	4880.58	20.10	211.83	70.86	69.62	11 1 48	4280.6	17.14	204.40
100.00	22 30 4	2099.59	-24.08	31.32	71.66	108.27	23 5 4	1499.6	-21.36	23.58
100.00	11 0 51	4621.30	21.24	192.30	70.40	68.46	12 17 52	4021.3	18.13	184.89
110.00	23 40 32	1879.05	-27.21	13.32	70.40	111.53	24 11 51	1279.1	-24.04	5.59
110.00	12 6 52	4414.60	24.30	175.19	68.97	65.19	13 20 27	3814.6	20.75	167.84

DIFFERENTIAL CORRECTIONS

TDE	-3.1727	TRA	11.3011	TC3	-8.4387	BAU	3.2147												
RDE	.5823	RRA	.0211	RC3	.2660	FAU	.04806												
FDE	-1.3238	FRA	2.9672	FC3	-1.4611	BSP	54052												
BDE	3.2257	BRA	11.3011	BC3	8.4429	FSP	1237												

MID-COURSE EXECUTION ACCURACY

SGT	15496.3	SGR	687.0	SG3	330.3														
RRT	-.4144	RRF	-.4794	RTF	.9722														
SGB	15511.5	R23	.0834	R13	-.9722														
SG1	15498.9	SG2	625.1	THA	178.95														

ORBIT DETERMINATION ACCURACY

ST	4994.2	SR	625.3	SS	986.9														
CRT	-.6748	CRS	.8235	CST	-.9741														
LSA	5104.0	MSA	505.9	SSA	16.3														
EL1	5012.2	EL2	459.8	ALF	175.13														

LAUNCH DATE NOV 15 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 429.790 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 35.376 GAL -6.32 AZL 88.27 HCA 136.26 SMA 244.60 ECC .40787 INC 1.7329 V1 30.115
RP 245.01 LAP 1.20 LOP 188.94 VP 23.254 GAP 24.07 AZP 91.25 TAL 338.03 TAP 114.29 RCA 144.84 APO 344.37 V2 22.385
RC 125.213 GL 9.83 GP .31 ZAL 124.34 ZAP 174.04 ETS 175.75 ZAE 155.82 ETE 357.94 ZAC 88.65 ETC 256.15 CLP 174.05

PLANETOCENTRIC CONIC

C3 38.805 VHL 6.229 DLA 9.97 RAL 181.74 RAD 6568.5 VEL 12.656 PTH 2.30 VHP 10.792 DPA .32 RAP 183.41 ECC 1.6386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 29	2693.06	-27.59	74.06	58.56	96.66	19 18 22	2093.1	-26.38	65.60
90.00	9 7 19	4708.38	15.66	201.14	52.13	66.10	10 25 47	4108.4	12.30	194.08
100.00	19 59 45	2414.83	-28.97	53.40	58.36	97.69	20 40 0	1814.8	-27.61	44.86
100.00	10 23 44	4461.84	16.94	182.41	51.53	64.99	11 38 6	3861.8	13.43	175.38
110.00	21 19 11	2166.27	-32.69	33.83	57.67	100.58	21 55 17	1566.3	-30.89	25.07
110.00	11 20 47	4283.17	20.31	167.08	49.75	61.89	12 32 11	3683.2	16.39	160.14

DIFFERENTIAL CORRECTIONS
TDE 1.0193 TRA-2.5020 TC3 .6445 BAU .3359
RDE -.4887 RRA -.1727 RC3 -.0619 FAU .06248
FDE -.4508 FRA 1.6163 FC3-1.3940 BSP 8876
BDE 1.1304 BRA 2.5080 BC3 .6475 FSP 548

MID-COURSE EXECUTION ACCURACY
SGT 2642.6 SGR 483.7 SG3 202.0
RRT -.0833 RRF .0680 RTF -.8595
SGB 2686.5 R23 .0061 R13 .8594
SG1 2642.9 SG2 482.0 THA 179.10

ORBIT DETERMINATION ACCURACY
ST 1170.8 SR 452.1 SS 574.5
CRT -.7321 CRS -.5908 CST .9805
LSA 1341.3 MSA 324.8 SSA 29.3
EL1 1219.8 EL2 295.6 ALF 163.20

LAUNCH DATE NOV 15 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 431.763 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 35.264 GAL -6.12 AZL 88.27 HCA 137.16 SMA 241.07 ECC .39862 INC 1.7292 V1 30.115
RP 244.80 LAP 1.18 LOP 189.85 VP 23.104 GAP 23.48 AZP 91.27 TAL 338.35 TAP 115.51 RCA 144.98 APO 337.17 V2 22.407
RC 127.239 GL 10.03 GP .32 ZAL 123.84 ZAP 173.57 ETS 175.86 ZAE 155.51 ETE 358.16 ZAC 88.76 ETC 256.13 CLP 173.58

PLANETOCENTRIC CONIC

C3 36.907 VHL 6.075 DLA 10.35 RAL 181.38 RAD 6568.4 VEL 12.581 PTH 2.28 VHP 10.549 DPA .15 RAP 183.81 ECC 1.6074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 59	2692.80	-27.58	74.04	57.41	96.67	19 13 52	2092.8	-26.37	65.58
90.00	9 8 56	4683.29	14.97	199.63	50.92	65.68	10 26 59	4083.3	11.56	192.61
100.00	19 55 28	2413.89	-28.97	53.33	57.21	97.73	20 35 41	1813.9	-27.59	44.80
100.00	10 25 8	4437.44	16.23	180.95	50.31	64.55	11 39 6	3837.4	12.67	173.96
110.00	21 15 22	2163.84	-32.66	33.65	56.52	100.69	21 51 26	1563.8	-30.85	24.90
110.00	11 21 43	4260.25	19.57	165.71	48.52	61.40	12 32 44	3660.3	15.60	158.84

DIFFERENTIAL CORRECTIONS
TDE .9993 TRA-2.4748 TC3 .7026 BAU .3481
RDE -.4698 RRA -.1645 RC3 -.0643 FAU .06422
FDE -.4505 FRA 1.6481 FC3-1.5063 BSP 9070
BDE 1.1042 BRA 2.4803 BC3 .7055 FSP 580

MID-COURSE EXECUTION ACCURACY
SGT 2691.9 SGR 476.7 SG3 212.1
RRT -.0857 RRF .0700 RTF -.8643
SGB 2733.8 R23 .0064 R13 .8643
SG1 2692.2 SG2 474.9 THA 179.10

ORBIT DETERMINATION ACCURACY
ST 1181.3 SR 445.6 SS 582.3
CRT -.7294 CRS -.5828 CST .9794
LSA 1351.8 MSA 323.9 SSA 29.6
EL1 1228.1 EL2 293.2 ALF 163.66

LAUNCH DATE NOV 15 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 433.865 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 35.156 GAL -5.94 AZL 88.27 HCA 138.07 SMA 237.79 ECC .38976 INC 1.7254 V1 30.115
RP 244.57 LAP 1.15 LOP 190.75 VP 22.960 GAP 22.88 AZP 91.28 TAL 338.68 TAP 116.75 RCA 145.11 APO 330.48 V2 22.429
RC 129.306 GL 10.23 GP .33 ZAL 123.32 ZAP 173.10 ETS 175.94 ZAE 155.25 ETE 358.37 ZAC 88.86 ETC 256.11 CLP 173.11

PLANETOCENTRIC CONIC

C3 35.124 VHL 5.927 DLA 10.73 RAL 181.00 RAD 6568.4 VEL 12.510 PTH 2.26 VHP 10.311 DPA -.02 RAP 184.20 ECC 1.5781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 19	2693.04	-27.59	74.06	56.26	96.66	19 9 12	2093.0	-26.38	65.60
90.00	9 10 35	4658.05	14.25	198.12	49.72	65.27	10 28 13	4058.0	10.80	191.14
100.00	19 51 1	2413.41	-28.96	53.30	56.06	97.74	20 31 15	1813.4	-27.59	44.76
100.00	10 26 34	4412.90	15.50	179.48	49.10	64.12	11 40 7	3812.9	11.90	172.55
110.00	21 11 25	2161.83	-32.64	33.49	55.37	100.77	21 47 27	1561.8	-30.81	24.75
110.00	11 22 39	4237.25	18.81	164.36	47.30	60.92	12 33 17	3637.2	14.79	157.55

DIFFERENTIAL CORRECTIONS
TDE .9796 TRA-2.4463 TC3 .7650 BAU .3606
RDE -.4514 RRA -.1567 RC3 -.0667 FAU .06605
FDE -.4499 FRA 1.6800 FC3-1.6281 BSP 9241
BDE 1.0785 BRA 2.4513 BC3 .7679 FSP 614

MID-COURSE EXECUTION ACCURACY
SGT 2741.0 SGR 469.5 SG3 222.7
RRT -.0884 RRF .0723 RTF -.8690
SGB 2780.9 R23 .0069 R13 .8690
SG1 2741.3 SG2 467.6 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 1191.2 SR 438.8 SS 589.9
CRT -.7268 CRS -.5747 CST .9782
LSA 1361.8 MSA 322.9 SSA 29.8
EL1 1235.8 EL2 290.5 ALF 164.11

LAUNCH DATE NOV 15 1964 FLIGHT TIME 166.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 436.087 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 35.052 GAL -5.75 AZL 88.28 HCA 138.98 SMA 234.74 ECC .38127 INC 1.7215 V1 30.115
RP 244.34 LAP 1.13 LOP 191.66 VP 22.824 GAP 22.30 AZP 91.30 TAL 339.02 TAP 117.99 RCA 145.24 APO 324.24 V2 22.451
RC 131.411 GL 10.44 GP .35 ZAL 122.79 ZAP 172.62 ETS 176.01 ZAE 155.04 ETE 358.58 ZAC 88.97 ETC 256.09 CLP 172.62

PLANETOCENTRIC CONIC

C3 33.450 VHL 5.784 DLA 11.13 RAL 180.61 RAD 6568.3 VEL 12.443 PTH 2.25 VHP 10.080 DPA -.19 RAP 184.59 ECC 1.5505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 31	2693.78	-27.59	74.11	55.11	96.63	19 4 24	2093.8	-26.39	65.65
90.00	9 12 15	4632.66	13.52	196.61	48.52	64.88	10 29 28	4032.7	10.03	189.68
100.00	19 46 27	2413.41	-28.96	53.30	54.92	97.74	20 26 40	1813.4	-27.59	44.76
100.00	10 28 0	4388.25	14.77	178.02	47.90	63.71	11 41 8	3788.3	11.12	171.14
110.00	21 7 21	2160.25	-32.62	33.38	54.22	100.84	21 43 21	1560.2	-30.78	24.64
110.00	11 23 35	4214.18	18.04	163.01	46.10	60.46	12 33 50	3614.2	13.97	156.26

DIFFERENTIAL CORRECTIONS
TDE .9588 TRA-2.4180 TC3 .8300 BAU .3725
RDE -.4335 RRA -.1492 RC3 -.0691 FAU .06795
FDE -.4482 FRA 1.7124 FC3-1.7586 BSP 9429
BDE 1.0523 BRA 2.4226 BC3 .8329 FSP 649

MID-COURSE EXECUTION ACCURACY
SGT 2789.9 SGR 462.0 SG3 233.8
RRT -.0908 RRF .0742 RTF -.8735
SGB 2827.9 R23 .0073 R13 .8735
SG1 2790.2 SG2 460.1 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 1199.8 SR 431.8 SS 597.0
CRT -.7236 CRS -.5655 CST .9768
LSA 1370.3 MSA 322.1 SSA 30.0
EL1 1242.2 EL2 287.9 ALF 164.55

LAUNCH DATE NOV 15 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 438.416 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	34.953	GAL	-5.57	AZL	88.28	HCA	139.88	SMA	231.90	ECC	.37313	INC	1.7175
RP	244.11	LAP	1.11	LOP	192.57	VP	22.695	GAP	21.71	AZP	91.31	TAL	339.36	TAP	119.24	RCA	145.37	APO	318.43
RC	133.550	GL	10.64	GP	.36	ZAL	122.24	ZAP	172.13	ETS	176.07	ZAE	154.88	ETE	358.78	ZAC	89.07	ETC	256.07

V1 30.115 V2 22.475 CLP 172.14

PLANETOCENTRIC CONIC

C3	31.878	VHL	5.646	DLA	11.53	RAL	180.20	RAD	6568.3	VEL	12.379	PTH	2.23	VHP	9.854	DPA	-.35	RAP	184.98

ECC 1.5246

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 33	2695.03	-27.60	74.20	53.96	96.59	18 59 28	2095.0	-26.40	65.74
90.00	9 13 57	4607.14	12.78	195.11	47.33	64.52	10 30 44	4007.1	9.25	188.21
100.00	19 41 43	2413.90	-28.97	53.33	53.77	97.73	20 21 57	1813.9	-27.59	44.80
100.00	10 29 28	4363.51	14.02	176.57	46.71	63.32	11 42 11	3763.5	10.32	169.73
110.00	21 3 9	2159.09	-32.60	33.29	53.08	100.89	21 39 8	1559.1	-30.76	24.56
110.00	11 24 31	4191.07	17.26	161.67	44.90	60.03	12 34 22	3591.1	13.15	154.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9378	TRA	-2.3886	TC3	.8998	BAU	.3847	SGT	2838.6	SGR	454.4	SG3	245.5	ST	1207.2	SR	424.6	SS	603.5
RDE	-.4162	RRA	-.1419	RC3	-.0714	FAU	.06995	RRT	-.0932	RRF	.0761	RTF	-.8780	CRT	-.7203	CRS	-.5554	CST	.9753
FDE	-.4455	FRA	1.7451	FC3	-1.8996	BSP	9603	SGB	2874.8	R23	.0079	R13	.8780	LSA	1377.6	MSA	321.3	SSA	30.2
BDE	1.0260	BRA	2.3928	BC3	.9026	FSP	686	SG1	2838.9	SG2	452.4	THA	179.12	EL1	1247.6	EL2	285.0	ALF	164.98

LAUNCH DATE NOV 15 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 440.845 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	34.858	GAL	-5.39	AZL	88.29	HCA	140.80	SMA	229.24	ECC	.36532	INC	1.7132
RP	243.87	LAP	1.08	LOP	193.48	VP	22.572	GAP	21.13	AZP	91.33	TAL	339.71	TAP	120.50	RCA	145.49	APO	312.99
RC	135.719	GL	10.85	GP	.38	ZAL	121.67	ZAP	171.63	ETS	176.11	ZAE	154.76	ETE	358.97	ZAC	89.18	ETC	256.05

V1 30.115 V2 22.498 CLP 171.64

PLANETOCENTRIC CONIC

C3	30.401	VHL	5.514	DLA	11.93	RAL	179.77	RAD	6568.2	VEL	12.320	PTH	2.22	VHP	9.633	DPA	-.51	RAP	185.36

ECC 1.5003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 27	2696.80	-27.62	74.33	52.82	96.52	18 54 23	2096.8	-26.42	65.87
90.00	9 15 40	4581.53	12.03	193.60	46.16	64.17	10 32 1	3981.5	8.45	186.74
100.00	19 36 51	2414.87	-28.98	53.40	52.63	97.69	20 17 6	1814.9	-27.61	44.87
100.00	10 30 56	4338.69	13.25	175.12	45.53	62.96	11 43 15	3738.7	9.52	168.32
110.00	20 58 50	2158.38	-32.59	33.23	51.94	100.92	21 34 48	1558.4	-30.75	24.50
110.00	11 25 27	4167.95	16.47	160.35	43.71	59.61	12 34 55	3567.9	12.31	153.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9161	TRA	-2.3589	TC3	.9727	BAU	.3965	SGT	2886.9	SGR	446.5	SG3	257.7	ST	1213.3	SR	417.2	SS	609.8
RDE	-.3994	RRA	-.1350	RC3	-.0737	FAU	.07204	RRT	-.0955	RRF	.0779	RTF	-.8821	CRT	-.7167	CRS	-.5448	CST	.9736
FDE	-.4422	FRA	1.7780	FC3	-2.0517	BSP	9789	SGB	2921.2	R23	.0084	R13	.8821	LSA	1383.6	MSA	320.6	SSA	30.4
BDE	.9993	BRA	2.3628	BC3	.9755	FSP	726	SG1	2887.2	SG2	444.4	THA	179.13	EL1	1251.7	EL2	282.1	ALF	165.40

LAUNCH DATE NOV 15 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 443.366 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	34.767	GAL	-5.22	AZL	88.29	HCA	141.71	SMA	226.76	ECC	.35784	INC	1.7088
RP	243.63	LAP	1.06	LOP	194.39	VP	22.455	GAP	20.55	AZP	91.34	TAL	340.06	TAP	121.77	RCA	145.62	APO	307.90
RC	137.915	GL	11.05	GP	.39	ZAL	121.09	ZAP	171.13	ETS	176.15	ZAE	154.69	ETE	359.16	ZAC	89.28	ETC	256.03

V1 30.115 V2 22.522 CLP 171.13

PLANETOCENTRIC CONIC

C3	29.012	VHL	5.386	DLA	12.35	RAL	179.33	RAD	6568.2	VEL	12.263	PTH	2.21	VHP	9.417	DPA	-.66	RAP	185.74

ECC 1.4775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 11	2699.10	-27.63	74.50	51.67	96.44	18 49 10	2099.1	-26.45	66.03
90.00	9 17 25	4555.80	11.26	192.10	44.99	63.85	10 33 20	3955.8	7.65	185.28
100.00	19 31 51	2416.35	-28.99	53.51	51.48	97.63	20 12 7	1816.3	-27.63	44.97
100.00	10 32 25	4313.78	12.48	173.68	44.36	62.61	11 44 19	3713.8	8.71	166.92
110.00	20 54 23	2158.10	-32.59	33.21	50.80	100.93	21 30 21	1558.1	-30.74	24.48
110.00	11 26 23	4144.79	15.67	159.03	42.53	59.22	12 35 28	3544.8	11.47	152.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9025	TRA	-2.3201	TC3	1.0609	BAU	.4126	SGT	2934.4	SGR	438.7	SG3	270.4	ST	1223.6	SR	409.8	SS	614.7
RDE	-.3832	RRA	-.1285	RC3	-.0761	FAU	.07414	RRT	-.1022	RRF	.0787	RTF	-.8883	CRT	-.7172	CRS	-.5305	CST	.9696
FDE	-.4357	FRA	1.8133	FC3	-2.2125	BSP	9765	SGB	2967.0	R23	.0143	R13	.8883	LSA	1392.5	MSA	321.0	SSA	30.1
BDE	.9805	BRA	2.3236	BC3	1.0637	FSP	771	SG1	2934.7	SG2	436.4	THA	179.10	EL1	1260.3	EL2	277.3	ALF	165.79

LAUNCH DATE NOV 15 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 445.971 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	34.680	GAL	-5.05	AZL	88.30	HCA	142.62	SMA	224.44	ECC	.35068	INC	1.7041
RP	243.38	LAP	1.03	LOP	195.30	VP	22.345	GAP	19.97	AZP	91.35	TAL	340.42	TAP	123.05	RCA	145.73	APO	303.14
RC	140.134	GL	11.25	GP	.41	ZAL	120.49	ZAP	170.61	ETS	176.18	ZAE	154.66	ETE	359.35	ZAC	89.39	ETC	256.02

V1 30.115 V2 22.547 CLP 170.62

PLANETOCENTRIC CONIC

C3	27.709	VHL	5.264	DLA	12.77	RAL	178.88	RAD	6568.1	VEL	12.210	PTH	2.19	VHP	9.206	DPA	-.82	RAP	186.12

ECC 1.4560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 47	2701.90	-27.65	74.70	50.54	96.34	18 43 49	2101.9	-26.49	66.23
90.00	9 19 11	4530.06	10.48	190.61	43.83	63.54	10 34 41	3930.1	6.84	183.82
100.00	19 26 43	2418.29	-29.01	53.65	50.35	97.56	20 7 1	1818.3	-27.66	45.11
100.00	10 33 55	4288.90	11.69	172.25	43.20	62.29	11 45 24	3688.9	7.89	165.52
110.00	20 49 50	2158.25	-32.59	33.23	49.67	100.93	21 25 48	1558.2	-30.74	24.49
110.00	11 27 18	4121.71	14.86	157.73	41.36	58.86	12 36 0	3521.7	10.62	151.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8758	TRA	-2.2938	TC3	1.1359	BAU	.4218	SGT	2982.1	SGR	430.3	SG3	283.9	ST	1224.7	SR	401.9	SS	620.5
RDE	-.3673	RRA	-.1220	RC3	-.0780	FAU	.07652	RRT	-.1019	RRF	.0809	RTF	-.8910	CRT	-.7108	CRS	-.5199	CST	.9687
FDE	-.4321	FRA	1.8452	FC3	-2.3906	BSP	10047	SGB	3012.9	R23	.0119	R13	.8909	LSA	1393.9	MSA	319.9	SSA	30.6
BDE	.9497	BRA	2.2971	BC3	1.1386	FSP	812	SG1	2982.4	SG2	428.0	THA	179.14	EL1	1259.3	EL2	274.9	ALF	166.20

LAUNCH DATE NOV 15 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 448.653 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 34.596 GAL -4.88 AZL 88.30 HCA 143.54 SMA 222.26 ECC .34381 INC 1.6993 V1 30.115
RP 243.12 LAP 1.01 LOP 196.22 VP 22.240 GAP 19.40 AZP 91.37 TAL 340.79 TAP 124.33 RCA 145.84 APO 298.67 V2 22.572
RC 142.373 GL 11.46 GP .43 ZAL 119.88 ZAP 170.09 ETS 176.20 ZAE 154.68 ETE 359.53 ZAC 89.49 ETC 256.00 CLP 170.10

PLANETOCENTRIC CONIC

C3 26.485 VHL 5.146 DLA 13.19 RAL 178.41 RAD 6568.1 VEL 12.160 PTH 2.18 VHP 9.001 DPA -.97 RAP 186.48 ECC 1.4359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 14	2705.23	-27.68	74.94	49.40	96.23	18 38 20	2105.2	-26.53	66.46
90.00	9 20 58	4504.27	9.70	189.12	42.68	63.26	10 36 2	3904.3	6.03	182.36
100.00	19 21 27	2420.74	-29.03	53.83	49.22	97.47	20 1 48	1820.7	-27.69	45.28
100.00	10 35 26	4264.00	10.90	170.82	42.05	61.99	11 46 30	3664.0	7.07	164.13
110.00	20 45 9	2158.83	-32.60	33.27	48.54	100.90	21 21 8	1558.8	-30.75	24.54
110.00	11 28 13	4098.67	14.04	156.44	40.21	58.51	12 36 32	3498.7	9.77	149.95

DIFFERENTIAL CORRECTIONS
TDE .8505 TRA-2.2645 TC3 1.2170 BAU .4318
RDE -.3520 RRA -.1158 RC3 -.0798 FAU .07896
FDE -.4266 FRA 1.8782 FC3-2.5811 BSP 10274
BDE .9205 BRA 2.2675 BC3 1.2196 FSP 856

MID-COURSE EXECUTION ACCURACY
SGT 3028.4 SGR 421.7 SG3 298.0
RRT -.1026 RRF .0824 RTF -.8941
SGB 3057.6 R23 .0111 R13 .8941
SG1 3028.7 SG2 419.4 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 1225.4 SR 393.9 SS 625.5
CRT -.7050 CRS -.5072 CST .9671
LSA 1394.6 MSA 319.3 SSA 30.8
EL1 1258.0 EL2 272.1 ALF 166.59

LAUNCH DATE NOV 15 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 451.408 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 34.516 GAL -4.72 AZL 88.31 HCA 144.46 SMA 220.21 ECC .33722 INC 1.6942 V1 30.115
RP 242.87 LAP .98 LOP 197.14 VP 22.141 GAP 18.84 AZP 91.38 TAL 341.16 TAP 125.62 RCA 145.95 APO 294.47 V2 22.598
RC 144.629 GL 11.66 GP .45 ZAL 119.26 ZAP 169.56 ETS 176.22 ZAE 154.74 ETE 359.72 ZAC 89.60 ETC 255.99 CLP 169.57

PLANETOCENTRIC CONIC

C3 25.334 VHL 5.033 DLA 13.62 RAL 177.92 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 8.800 DPA -1.11 RAP 186.85 ECC 1.4169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 33	2709.08	-27.71	75.22	48.27	96.09	18 32 43	2109.1	-26.57	66.73
90.00	9 22 47	4478.46	8.90	187.64	41.55	63.01	10 37 25	3878.5	5.21	180.91
100.00	19 16 3	2423.66	-29.05	54.04	48.09	97.36	19 56 27	1823.7	-27.73	45.49
100.00	10 36 58	4239.11	10.10	169.41	40.91	61.72	11 47 37	3639.1	6.24	162.75
110.00	20 40 22	2159.83	-32.61	33.34	47.43	100.86	21 16 22	1559.8	-30.77	24.61
110.00	11 29 8	4075.70	13.22	155.17	39.07	58.19	12 37 4	3475.7	8.92	148.71

DIFFERENTIAL CORRECTIONS
TDE .8262 TRA-2.2342 TC3 1.3040 BAU .4425
RDE -.3371 RRA -.1100 RC3 -.0815 FAU .08151
FDE -.4192 FRA 1.9121 FC3-2.7853 BSP 10473
BDE .8923 BRA 2.2369 BC3 1.3066 FSP 904

MID-COURSE EXECUTION ACCURACY
SGT 3075.0 SGR 413.0 SG3 312.8
RRT -.1036 RRF .0834 RTF -.8974
SGB 3102.6 R23 .0113 R13 .8974
SG1 3075.3 SG2 410.7 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 1225.7 SR 385.6 SS 629.8
CRT -.6994 CRS -.4925 CST .9648
LSA 1394.6 MSA 319.2 SSA 31.0
EL1 1256.5 EL2 268.9 ALF 166.98

LAUNCH DATE NOV 15 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 454.229 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 34.439 GAL -4.56 AZL 88.31 HCA 145.38 SMA 218.29 ECC .33091 INC 1.6890 V1 30.115
RP 242.60 LAP .96 LOP 198.06 VP 22.048 GAP 18.27 AZP 91.39 TAL 341.53 TAP 126.91 RCA 146.06 APO 290.53 V2 22.624
RC 146.900 GL 11.86 GP .47 ZAL 118.62 ZAP 169.03 ETS 176.22 ZAE 154.83 ETE 359.91 ZAC 89.70 ETC 255.97 CLP 169.04

PLANETOCENTRIC CONIC

C3 24.254 VHL 4.925 DLA 14.06 RAL 177.42 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 8.603 DPA -1.25 RAP 187.20 ECC 1.3992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 44	2713.43	-27.74	75.53	47.14	95.93	18 26 58	2113.4	-26.63	67.04
90.00	9 24 36	4452.66	8.10	186.17	40.43	62.77	10 38 49	3852.7	4.39	179.46
100.00	19 10 32	2427.06	-29.08	54.29	46.97	97.23	19 50 59	1827.1	-27.78	45.73
100.00	10 38 30	4214.25	9.30	168.00	39.79	61.46	11 48 44	3614.3	5.41	161.37
110.00	20 35 29	2161.26	-32.63	33.45	46.31	100.80	21 11 30	1561.3	-30.80	24.71
110.00	11 30 2	4052.83	12.40	153.91	37.94	57.89	12 37 35	3452.8	8.07	147.49

DIFFERENTIAL CORRECTIONS
TDE .8019 TRA-2.2022 TC3 1.3948 BAU .4531
RDE -.3227 RRA -.1044 RC3 -.0830 FAU .08415
FDE -.4107 FRA 1.9463 FC3-3.0038 BSP 10649
BDE .8644 BRA 2.2047 BC3 1.3973 FSP 954

MID-COURSE EXECUTION ACCURACY
SGT 3119.9 SGR 404.1 SG3 328.2
RRT -.1046 RRF .0841 RTF -.9008
SGB 3146.0 R23 .0118 R13 .9007
SG1 3120.2 SG2 401.8 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 1224.7 SR 377.3 SS 633.6
CRT -.6938 CRS -.4766 CST .9620
LSA 1393.1 MSA 319.2 SSA 31.1
EL1 1253.8 EL2 265.4 ALF 167.36

LAUNCH DATE NOV 15 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 457.112 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 34.366 GAL -4.41 AZL 88.32 HCA 146.30 SMA 216.49 ECC .32486 INC 1.6834 V1 30.115
RP 242.34 LAP .93 LOP 198.98 VP 21.960 GAP 17.72 AZP 91.40 TAL 341.91 TAP 128.21 RCA 146.16 APO 286.81 V2 22.651
RC 149.184 GL 12.05 GP .49 ZAL 117.97 ZAP 168.48 ETS 176.23 ZAE 154.97 ETE .10 ZAC 89.80 ETC 255.96 CLP 168.49

PLANETOCENTRIC CONIC

C3 23.238 VHL 4.821 DLA 14.49 RAL 176.91 RAD 6567.9 VEL 12.026 PTH 2.15 VHP 8.411 DPA -1.39 RAP 187.55 ECC 1.3824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 47	2718.28	-27.77	75.88	46.02	95.76	18 21 6	2118.3	-26.68	67.39
90.00	9 26 27	4426.88	7.29	184.70	39.32	62.56	10 40 14	3826.9	3.56	178.01
100.00	19 4 54	2430.93	-29.12	54.58	45.85	97.09	19 45 24	1830.9	-27.83	46.01
100.00	10 40 2	4189.46	8.49	166.61	38.67	61.23	11 49 52	3589.5	4.58	160.00
110.00	20 30 30	2163.09	-32.65	33.59	45.21	100.72	21 6 33	1563.1	-30.83	24.84
110.00	11 30 55	4030.07	11.57	152.67	36.82	57.61	12 38 6	3430.1	7.22	146.28

DIFFERENTIAL CORRECTIONS
TDE .7786 TRA-2.1691 TC3 1.4916 BAU .4641
RDE -.3087 RRA -.0991 RC3 -.0843 FAU .08697
FDE -.4015 FRA 1.9803 FC3-3.2400 BSP 10804
BDE .8375 BRA 2.1713 BC3 1.4940 FSP 1006

MID-COURSE EXECUTION ACCURACY
SGT 3164.6 SGR 395.0 SG3 344.5
RRT -.1060 RRF .0846 RTF -.9041
SGB 3189.2 R23 .0128 R13 .9041
SG1 3164.9 SG2 392.7 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 1223.2 SR 368.7 SS 637.0
CRT -.6884 CRS -.4600 CST .9589
LSA 1391.1 MSA 319.4 SSA 31.2
EL1 1250.5 EL2 261.6 ALF 167.73

LAUNCH DATE NOV 15 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 460.052 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 34.295 GAL -4.26 AZL 88.32 HCA 147.22 SMA 214.79 ECC .31906 INC 1.6775 V1 30.115
RP 242.06 LAP .91 LOP 199.90 VP 21.878 GAP 17.16 AZP 91.41 TAL 342.29 TAP 129.52 RCA 146.26 APO 283.32 V2 22.678
RC 151.478 GL 12.25 GP .51 ZAL 117.31 ZAP 167.92 ETS 176.22 ZAE 155.15 ETE .30 ZAC 89.91 ETC 255.95 CLP 167.93
PLANETOCENTRIC CONIC
C3 22.284 VHL 4.721 DLA 14.93 RAL 176.38 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 8.223 DPA -1.52 RAP 187.89 ECC 1.3667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 43	2723.62	-27.81	76.27	44.91	95.57	18 15 7	2123.6	-26.75	67.76
90.00	9 28 19	4401.16	6.49	183.25	38.22	62.38	10 41 40	3801.2	2.74	176.57
100.00	18 59 8	2435.25	-29.15	54.89	44.74	96.92	19 39 43	1835.2	-27.89	46.32
100.00	10 41 35	4164.76	7.68	165.22	37.57	61.02	11 51 0	3564.8	3.75	158.63
110.00	20 25 24	2165.31	-32.68	33.76	44.11	100.62	21 1 30	1565.3	-30.87	25.00
110.00	11 31 48	4007.46	10.74	151.44	35.72	57.35	12 38 35	3407.5	6.36	145.08

DIFFERENTIAL CORRECTIONS
TDE .7546 TRA-2.1363 TC3 1.5910 BAU .4747
RDE -.2952 RRA -.0941 RC3 -.0853 FAU .08991
FDE -.3909 FRA 2.0151 FC3-3.4929 BSP 10967
BDE .8103 BRA 2.1383 BC3 1.5933 FSP 1062

MID-COURSE EXECUTION ACCURACY
SGT 3208.7 SGR 385.7 SG3 361.5
RRT -.1067 RRF .0845 RTF -.9072
SGB 3231.8 R23 .0137 R13 .9072
SG1 3209.0 SG2 383.5 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 1220.2 SR 360.0 SS 640.0
CRT -.6822 CRS -.4419 CST .9555
LSA 1387.4 MSA 319.9 SSA 31.2
EL1 1245.8 EL2 257.8 ALF 168.10

LAUNCH DATE NOV 15 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 463.047 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 34.227 GAL -4.11 AZL 88.33 HCA 148.15 SMA 213.18 ECC .31350 INC 1.6713 V1 30.115
RP 241.79 LAP .88 LOP 200.83 VP 21.800 GAP 16.61 AZP 91.42 TAL 342.68 TAP 130.83 RCA 146.35 APO 280.02 V2 22.706
RC 153.781 GL 12.43 GP .54 ZAL 116.63 ZAP 167.35 ETS 176.22 ZAE 155.37 ETE .49 ZAC 90.01 ETC 255.94 CLP 167.36
PLANETOCENTRIC CONIC
C3 21.388 VHL 4.625 DLA 15.37 RAL 175.84 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 8.039 DPA -1.65 RAP 188.23 ECC 1.3520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 31	2729.43	-27.85	76.69	43.80	95.36	18 9 0	2129.4	-26.81	68.18
90.00	9 30 12	4375.49	5.67	181.80	37.13	62.21	10 43 7	3775.5	1.91	175.14
100.00	18 53 16	2440.00	-29.19	55.24	43.64	96.75	19 33 56	1840.0	-27.95	46.66
100.00	10 43 8	4140.15	6.86	163.85	36.48	60.83	11 52 8	3540.2	2.92	157.28
110.00	20 20 13	2167.91	-32.72	33.95	43.02	100.51	20 56 21	1567.9	-30.92	25.19
110.00	11 32 39	3985.01	9.92	150.23	34.63	57.12	12 39 4	3385.0	5.52	143.90

DIFFERENTIAL CORRECTIONS
TDE .7355 TRA-2.0975 TC3 1.7037 BAU .4878
RDE -.2822 RRA -.0894 RC3 -.0862 FAU .09295
FDE -.3779 FRA 2.0509 FC3-3.7623 BSP 10998
BDE .7877 BRA 2.0994 BC3 1.7058 FSP 1122

MID-COURSE EXECUTION ACCURACY
SGT 3252.1 SGR 376.5 SG3 379.3
RRT -.1099 RRF .0837 RTF -.9114
SGB 3273.8 R23 .0179 R13 .9114
SG1 3252.4 SG2 374.2 THA 179.26

ORBIT DETERMINATION ACCURACY
ST 1219.1 SR 351.3 SS 642.3
CRT -.6790 CRS -.4208 CST .9498
LSA 1384.7 MSA 322.0 SSA 30.8
EL1 1243.2 EL2 252.9 ALF 168.44

LAUNCH DATE NOV 15 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 466.091 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 34.162 GAL -3.97 AZL 88.34 HCA 149.08 SMA 211.67 ECC .30818 INC 1.6648 V1 30.115
RP 241.51 LAP .86 LOP 201.76 VP 21.727 GAP 16.07 AZP 91.43 TAL 343.06 TAP 132.14 RCA 146.44 APO 276.91 V2 22.734
RC 156.092 GL 12.62 GP .56 ZAL 115.95 ZAP 166.77 ETS 176.20 ZAE 155.62 ETE .70 ZAC 90.11 ETC 255.93 CLP 166.79
PLANETOCENTRIC CONIC
C3 20.546 VHL 4.533 DLA 15.81 RAL 175.28 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 7.860 DPA -1.77 RAP 188.56 ECC 1.3381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 13	2735.68	-27.88	77.14	42.70	95.14	18 2 48	2135.7	-26.88	68.62
90.00	9 32 4	4349.98	4.86	180.36	36.06	62.07	10 44 34	3750.0	1.09	173.72
100.00	18 47 18	2445.16	-29.23	55.62	42.54	96.55	19 28 3	1845.2	-28.02	47.02
100.00	10 44 40	4115.73	6.05	162.49	35.41	60.67	11 53 16	3515.7	2.10	155.94
110.00	20 14 58	2170.85	-32.75	34.17	41.93	100.38	20 51 9	1570.9	-30.97	25.41
110.00	11 33 30	3962.80	9.09	149.03	33.55	56.91	12 39 32	3362.8	4.67	142.73

DIFFERENTIAL CORRECTIONS
TDE .7056 TRA-2.0692 TC3 1.8001 BAU .4950
RDE -.2694 RRA -.0848 RC3 -.0862 FAU .09620
FDE -.3651 FRA 2.0859 FC3-4.0537 BSP 11285
BDE .7552 BRA 2.0709 BC3 1.8022 FSP 1183

MID-COURSE EXECUTION ACCURACY
SGT 3293.6 SGR 366.7 SG3 398.1
RRT -.1064 RRF .0824 RTF -.9132
SGB 3313.9 R23 .0160 R13 .9132
SG1 3293.8 SG2 364.5 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 1209.5 SR 342.1 SS 644.6
CRT -.6683 CRS -.4001 CST .9472
LSA 1375.0 MSA 322.1 SSA 31.1
EL1 1231.9 EL2 249.9 ALF 168.83

LAUNCH DATE NOV 15 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 469.182 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 34.100 GAL -3.83 AZL 88.34 HCA 150.01 SMA 210.25 ECC .30308 INC 1.6580 V1 30.115
RP 241.22 LAP .83 LOP 202.69 VP 21.659 GAP 15.53 AZP 91.44 TAL 343.45 TAP 133.46 RCA 146.53 APO 273.97 V2 22.762
RC 158.408 GL 12.80 GP .59 ZAL 115.26 ZAP 166.18 ETS 176.19 ZAE 155.91 ETE .91 ZAC 90.21 ETC 255.92 CLP 166.20
PLANETOCENTRIC CONIC
C3 19.755 VHL 4.445 DLA 16.25 RAL 174.71 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 7.684 DPA -1.88 RAP 188.88 ECC 1.3251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 48	2742.35	-27.92	77.63	41.60	94.90	17 56 30	2142.4	-26.95	69.10
90.00	9 33 58	4324.59	4.05	178.94	35.00	61.95	10 46 2	3724.6	.27	172.30
100.00	18 41 14	2450.70	-29.27	56.02	41.45	96.34	19 22 5	1850.7	-28.09	47.42
100.00	10 46 12	4091.47	5.24	161.15	34.35	60.53	11 54 24	3491.5	1.27	154.60
110.00	20 9 38	2174.13	-32.79	34.42	40.86	100.24	20 45 52	1574.1	-31.03	25.64
110.00	11 34 18	3940.80	8.27	147.86	32.49	56.71	12 39 59	3340.8	3.84	141.58

DIFFERENTIAL CORRECTIONS
TDE .6803 TRA-2.0356 TC3 1.9075 BAU .5043
RDE -.2570 RRA -.0805 RC3 -.0860 FAU .09957
FDE -.3500 FRA 2.1219 FC3-4.3633 BSP 11446
BDE .7272 BRA 2.0372 BC3 1.9095 FSP 1248

MID-COURSE EXECUTION ACCURACY
SGT 3333.9 SGR 356.8 SG3 417.6
RRT -.1048 RRF .0800 RTF -.9159
SGB 3352.9 R23 .0172 R13 .9159
SG1 3334.1 SG2 354.8 THA 179.35

ORBIT DETERMINATION ACCURACY
ST 1201.6 SR 332.9 SS 646.4
CRT -.6601 CRS -.3766 CST .9424
LSA 1366.3 MSA 323.7 SSA 31.0
EL1 1222.4 EL2 245.8 ALF 169.19

LAUNCH DATE NOV 15 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 472.317 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 34.040 GAL -3.69 AZL 88.35 HCA 150.94 SMA 208.90 ECC .29819 INC 1.6507 V1 30.115
RP 240.93 LAP .80 LOP 203.62 VP 21.596 GAP 15.00 AZP 91.44 TAL 343.84 TAP 134.78 RCA 146.61 APO 271.20 V2 22.791
RC 160.729 GL 12.97 GP .62 ZAL 114.56 ZAP 165.58 ETS 176.16 ZAE 156.24 ETE 1.14 ZAC 90.32 ETC 255.91 CLP 165.59

PLANETOCENTRIC CONIC

C3 19.012 VHL 4.360 DLA 16.68 RAL 174.13 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 7.513 DPA -1.99 RAP 189.20 ECC 1.3129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 17	2749.42	-27.96	78.14	40.52	94.64	17 50 7	2149.4	-27.03	69.60
90.00	9 35 51	4299.36	3.24	177.53	33.96	61.85	10 47 30	3699.4	-.55	170.90
100.00	18 35 5	2456.61	-29.32	56.46	40.37	96.12	19 16 2	1856.6	-28.16	47.85
100.00	10 47 44	4067.41	4.43	159.82	33.30	60.41	11 55 31	3467.4	.46	153.28
110.00	20 4 13	2177.72	-32.83	34.69	39.79	100.09	20 40 31	1577.7	-31.10	25.90
110.00	11 35 5	3919.06	7.46	146.70	31.43	56.54	12 40 24	3319.1	3.01	140.44

DIFFERENTIAL CORRECTIONS
TDE .6565 TRA-1.9997 TC3 2.0219 BAU .5144
RDE -.2451 RRA -.0766 RC3 -.0854 FAU .10310
FDE -.3333 FRA 2.1583 FC3-4.6949 BSP 11551
BDE .7008 BRA 2.0011 BC3 2.0238 FSP 1317

MID-COURSE EXECUTION ACCURACY
SGT 3373.1 SGR 346.9 SG3 438.2
RRT -.1035 RRF .0767 RTF -.9188
SGB 3390.9 R23 .0194 R13 .9188
SG1 3373.3 SG2 345.0 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 1193.4 SR 323.6 SS 647.8
CRT -.6526 CRS -.3510 CST .9365
LSA 1357.0 MSA 326.1 SSA 30.7
EL1 1212.8 EL2 241.3 ALF 169.55

LAUNCH DATE NOV 15 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 475.493 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.983 GAL -3.56 AZL 88.36 HCA 151.88 SMA 207.63 ECC .29352 INC 1.6429 V1 30.115
RP 240.64 LAP .77 LOP 204.56 VP 21.537 GAP 14.47 AZP 91.45 TAL 344.23 TAP 136.10 RCA 146.69 APO 268.57 V2 22.821
RC 163.052 GL 13.13 GP .66 ZAL 113.85 ZAP 164.97 ETS 176.14 ZAE 156.60 ETE 1.37 ZAC 90.42 ETC 255.90 CLP 164.98

PLANETOCENTRIC CONIC

C3 18.313 VHL 4.279 DLA 17.11 RAL 173.54 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 7.345 DPA -2.10 RAP 189.50 ECC 1.3014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 42	2756.85	-28.00	78.68	39.43	94.38	17 43 38	2156.9	-27.10	70.13
90.00	9 37 43	4274.36	2.44	176.13	32.93	61.78	10 48 58	3674.4	-1.35	169.50
100.00	18 28 52	2462.84	-29.36	56.92	39.29	95.88	19 9 55	1862.8	-28.24	48.29
100.00	10 49 14	4043.60	3.63	158.51	32.27	60.31	11 56 38	3443.6	-.35	151.98
110.00	19 58 46	2181.57	-32.88	34.98	38.72	99.92	20 35 7	1581.6	-31.16	26.18
110.00	11 35 50	3897.63	6.65	145.56	30.39	56.39	12 40 47	3297.6	2.19	139.32

DIFFERENTIAL CORRECTIONS
TDE .6306 TRA-1.9666 TC3 2.1341 BAU .5229
RDE -.2335 RRA -.0728 RC3 -.0841 FAU .10688
FDE -.3167 FRA 2.1941 FC3-5.0525 BSP 11717
BDE .6724 BRA 1.9679 BC3 2.1357 FSP 1386

MID-COURSE EXECUTION ACCURACY
SGT 3411.6 SGR 336.6 SG3 459.8
RRT -.0996 RRF .0727 RTF -.9211
SGB 3428.2 R23 .0200 R13 .9211
SG1 3411.8 SG2 335.0 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 1182.7 SR 314.2 SS 649.3
CRT -.6427 CRS -.3255 CST .9314
LSA 1345.7 MSA 327.8 SSA 30.6
EL1 1200.6 EL2 237.1 ALF 169.92

LAUNCH DATE NOV 15 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 478.709 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.928 GAL -3.43 AZL 88.37 HCA 152.81 SMA 206.43 ECC .28903 INC 1.6347 V1 30.115
RP 240.34 LAP .75 LOP 205.49 VP 21.482 GAP 13.95 AZP 91.45 TAL 344.61 TAP 137.43 RCA 146.76 APO 266.09 V2 22.851
RC 165.375 GL 13.29 GP .69 ZAL 113.14 ZAP 164.34 ETS 176.10 ZAE 157.00 ETE 1.62 ZAC 90.52 ETC 255.89 CLP 164.35

PLANETOCENTRIC CONIC

C3 17.657 VHL 4.202 DLA 17.54 RAL 172.94 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 7.181 DPA -2.19 RAP 189.80 ECC 1.2906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 1	2764.60	-28.04	79.24	38.36	94.10	17 37 6	2164.6	-27.18	70.68
90.00	9 39 35	4249.59	1.64	174.75	31.91	61.73	10 50 24	3649.6	-2.15	168.12
100.00	18 22 35	2469.35	-29.41	57.39	38.23	95.63	19 3 44	1869.3	-28.31	48.76
100.00	10 50 43	4020.07	2.83	157.21	31.24	60.23	11 57 43	3420.1	-1.15	150.69
110.00	19 53 15	2185.66	-32.93	35.29	37.67	99.74	20 29 41	1585.7	-31.23	26.48
110.00	11 36 32	3876.52	5.86	144.45	29.37	56.26	12 41 8	3276.5	1.38	138.22

DIFFERENTIAL CORRECTIONS
TDE .6045 TRA-1.9328 TC3 2.2477 BAU .5309
RDE -.2223 RRA -.0693 RC3 -.0821 FAU .11073
FDE -.2967 FRA 2.2319 FC3-5.4293 BSP 11887
BDE .6440 BRA 1.9341 BC3 2.2492 FSP 1464

MID-COURSE EXECUTION ACCURACY
SGT 3447.8 SGR 326.3 SG3 482.4
RRT -.0944 RRF .0666 RTF -.9234
SGB 3463.2 R23 .0215 R13 .9234
SG1 3447.9 SG2 324.8 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 1170.5 SR 304.6 SS 650.4
CRT -.6319 CRS -.2957 CST .9250
LSA 1332.6 MSA 330.6 SSA 30.4
EL1 1186.9 EL2 232.8 ALF 170.29

LAUNCH DATE NOV 15 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 481.960 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.876 GAL -3.31 AZL 88.37 HCA 153.75 SMA 205.29 ECC .28474 INC 1.6257 V1 30.115
RP 240.04 LAP .72 LOP 206.43 VP 21.432 GAP 13.43 AZP 91.46 TAL 345.00 TAP 138.76 RCA 146.83 APO 263.74 V2 22.881
RC 167.697 GL 13.44 GP .73 ZAL 112.42 ZAP 163.70 ETS 176.06 ZAE 157.43 ETE 1.89 ZAC 90.63 ETC 255.88 CLP 163.71

PLANETOCENTRIC CONIC

C3 17.040 VHL 4.128 DLA 17.96 RAL 172.33 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 7.020 DPA -2.28 RAP 190.09 ECC 1.2804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 18	2772.62	-28.08	79.83	37.29	93.81	17 30 30	2172.6	-27.26	71.26
90.00	9 41 25	4225.11	.85	173.38	30.90	61.69	10 51 50	3625.1	-2.94	166.75
100.00	18 16 15	2476.10	-29.45	57.89	37.16	95.37	18 57 31	1876.1	-28.39	49.25
100.00	10 52 9	3996.87	2.05	155.94	30.23	60.17	11 58 46	3396.9	-1.94	149.41
110.00	19 47 42	2189.95	-32.98	35.62	36.62	99.56	20 24 12	1589.9	-31.31	26.79
110.00	11 37 11	3855.78	5.07	143.36	28.35	56.15	12 41 27	3255.8	.59	137.14

DIFFERENTIAL CORRECTIONS
TDE .5804 TRA-1.8966 TC3 2.3683 BAU .5398
RDE -.2114 RRA -.0661 RC3 -.0795 FAU .11488
FDE -.2765 FRA 2.2682 FC3-5.8365 BSP 11992
BDE .6177 BRA 1.8978 BC3 2.3696 FSP 1542

MID-COURSE EXECUTION ACCURACY
SGT 3482.9 SGR 315.8 SG3 506.2
RRT -.0889 RRF .0593 RTF -.9258
SGB 3497.2 R23 .0238 R13 .9258
SG1 3483.0 SG2 314.6 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 1158.3 SR 294.9 SS 651.6
CRT -.6221 CRS -.2657 CST .9177
LSA 1319.4 MSA 333.8 SSA 30.0
EL1 1173.4 EL2 227.9 ALF 170.64

LAUNCH DATE NOV 15 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 485.247 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.825	GAL	-3.19	AZL	88.38	HCA	154.70	SMA	204.21	ECC	.28063	INC	1.6163
RP	239.73	LAP	.69	LOP	207.37	VP	21.385	GAP	12.92	AZP	91.46	TAL	345.39	TAP	140.09	RCA	146.90	APO	261.52
RC	170.016	GL	13.58	GP	.77	ZAL	111.70	ZAP	163.04	ETS	176.02	ZAE	157.90	ETE	2.18	ZAC	90.73	ETC	255.88

PLANETOCENTRIC CONIC

C3	16.461	VHL	4.057	DLA	18.38	RAL	171.70	RAD	6567.7	VEL	11.741	PTH	2.07	VHP	6.863	DPA	-2.36	RAP	190.37

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 31	2780.87	-28.12	80.43	36.22	93.51	17 23 52	2180.9	-27.33	71.85
90.00	9 43 13	4200.97	.07	172.03	29.90	61.68	10 53 14	3601.0	-3.72	165.40
100.00	18 9 52	2483.05	-29.49	58.40	36.11	95.11	18 51 15	1883.0	-28.47	49.75
100.00	10 53 33	3974.03	1.28	154.68	29.23	60.13	11 59 47	3374.0	-2.71	148.16
110.00	19 42 8	2194.39	-33.03	35.96	35.58	99.36	20 18 42	1594.4	-31.38	27.12
110.00	11 37 46	3835.45	4.30	142.29	27.35	56.06	12 41 42	3235.5	-.19	136.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5569	TRA	-1.8596	TC3	2.4919	BAU	.5486	SGT	3516.4	SGR	305.3	SG3	531.0	ST	1145.2	SR	285.2	SS	652.7
RDE	-.2009	RRA	-.0632	RC3	-.0761	FAU	.11921	RRT	-.0818	RRF	.0499	RTF	-.9282	CRT	-.6120	CRS	-.2333	CST	.9094
FDE	-.2545	FRA	2.3053	FC3	-6.2695	BSP	12078	SGB	3529.6	R23	.0267	R13	.9282	LSA	1305.3	MSA	337.9	SSA	29.5
BDE	.5921	BRA	1.8607	BC3	2.4930	FSP	1624	SG1	3516.5	SG2	304.2	THA	179.59	EL1	1159.0	EL2	222.8	ALF	171.00

LAUNCH DATE NOV 15 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 488.566 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.777	GAL	-3.07	AZL	88.39	HCA	155.64	SMA	203.19	ECC	.27670	INC	1.6062
RP	239.42	LAP	.66	LOP	208.32	VP	21.342	GAP	12.42	AZP	91.46	TAL	345.78	TAP	141.42	RCA	146.97	APO	259.42
RC	172.331	GL	13.71	GP	.82	ZAL	110.98	ZAP	162.37	ETS	175.97	ZAE	158.40	ETE	2.49	ZAC	90.84	ETC	255.87

PLANETOCENTRIC CONIC

C3	15.916	VHL	3.989	DLA	18.79	RAL	171.07	RAD	6567.6	VEL	11.717	PTH	2.06	VHP	6.709	DPA	-2.43	RAP	190.64

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 42	2789.29	-28.15	81.04	35.17	93.20	17 17 12	2189.3	-27.41	72.46
90.00	9 44 58	4177.21	-.70	170.71	28.92	61.69	10 54 35	3577.2	-4.48	164.07
100.00	18 3 29	2490.13	-29.53	58.93	35.05	94.83	18 44 59	1890.1	-28.55	50.26
100.00	10 54 53	3951.60	.52	153.45	28.24	60.11	12 0 44	3351.6	-3.47	146.93
110.00	19 36 33	2198.93	-33.08	36.30	34.55	99.17	20 13 12	1598.9	-31.46	27.45
110.00	11 38 18	3815.56	3.54	141.25	26.35	55.98	12 41 53	3215.6	-.95	135.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5368	TRA	-1.8202	TC3	2.6225	BAU	.5582	SGT	3549.3	SGR	294.7	SG3	557.1	ST	1133.4	SR	275.4	SS	654.1
RDE	-.1908	RRA	-.0606	RC3	-.0719	FAU	.12369	RRT	-.0741	RRF	.0379	RTF	-.9311	CRT	-.6040	CRS	-.1983	CST	.8985
FDE	-.2307	FRA	2.3439	FC3	-6.7283	BSP	12084	SGB	3561.5	R23	.0317	R13	.9310	LSA	1292.0	MSA	344.1	SSA	28.7
BDE	.5697	BRA	1.8212	BC3	2.6235	FSP	1712	SG1	3549.3	SG2	293.9	THA	179.65	EL1	1146.0	EL2	217.1	ALF	171.34

LAUNCH DATE NOV 15 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 491.915 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.731	GAL	-2.95	AZL	88.40	HCA	156.59	SMA	202.23	ECC	.27294	INC	1.5952
RP	239.11	LAP	.63	LOP	209.27	VP	21.303	GAP	11.92	AZP	91.46	TAL	346.16	TAP	142.75	RCA	147.03	APO	257.42
RC	174.639	GL	13.82	GP	.87	ZAL	110.26	ZAP	161.68	ETS	175.92	ZAE	158.93	ETE	2.83	ZAC	90.94	ETC	255.87

PLANETOCENTRIC CONIC

C3	15.404	VHL	3.925	DLA	19.18	RAL	170.43	RAD	6567.6	VEL	11.696	PTH	2.06	VHP	6.559	DPA	-2.50	RAP	190.90

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 54	2797.76	-28.18	81.66	34.11	92.89	17 10 32	2197.8	-27.48	73.06
90.00	9 46 39	4153.96	-1.45	169.41	27.95	61.72	10 55 53	3554.0	-5.22	162.76
100.00	17 57 6	2497.24	-29.57	59.45	34.01	94.56	18 38 43	1897.2	-28.63	50.77
100.00	10 56 9	3929.71	-.23	152.25	27.27	60.11	12 1 38	3329.7	-4.20	145.72
110.00	19 30 59	2203.50	-33.13	36.65	33.52	98.97	20 7 43	1603.5	-31.53	27.78
110.00	11 38 45	3796.22	2.81	140.23	25.37	55.92	12 42 1	3196.2	-1.69	134.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5059	TRA	-1.7909	TC3	2.7277	BAU	.5619	SGT	3576.6	SGR	283.6	SG3	584.4	ST	1113.2	SR	265.3	SS	655.7
RDE	-.1808	RRA	-.0581	RC3	-.0661	FAU	.12842	RRT	-.0567	RRF	.0220	RTF	-.9320	CRT	-.5846	CRS	-.1612	CST	.8923
FDE	-.2050	FRA	2.3825	FC3	-7.2177	BSP	12350	SGB	3587.8	R23	.0311	R13	.9319	LSA	1272.3	MSA	346.2	SSA	28.6
BDE	.5372	BRA	1.7918	BC3	2.7285	FSP	1805	SG1	3576.6	SG2	283.1	THA	179.74	EL1	1124.3	EL2	213.1	ALF	171.77

LAUNCH DATE NOV 15 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 495.293 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.686	GAL	-2.84	AZL	88.42	HCA	157.54	SMA	201.31	ECC	.26934	INC	1.5833
RP	238.79	LAP	.60	LOP	210.21	VP	21.268	GAP	11.43	AZP	91.46	TAL	346.54	TAP	144.08	RCA	147.09	APO	255.53
RC	176.939	GL	13.93	GP	.93	ZAL	109.54	ZAP	160.98	ETS	175.85	ZAE	159.50	ETE	3.20	ZAC	91.05	ETC	255.86

PLANETOCENTRIC CONIC

C3	14.922	VHL	3.863	DLA	19.56	RAL	169.78	RAD	6567.6	VEL	11.675	PTH	2.05	VHP	6.412	DPA	-2.55	RAP	191.15

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 7	2806.25	-28.21	82.28	33.07	92.58	17 3 53	2206.3	-27.55	73.68
90.00	9 48 15	4131.21	-2.18	168.14	26.98	61.76	10 57 6	3531.2	-5.94	161.48
100.00	17 50 44	2504.35	-29.61	59.98	32.97	94.29	18 32 29	1904.4	-28.70	51.29
100.00	10 57 19	3908.34	-.95	151.08	26.30	60.12	12 2 27	3308.3	-4.92	144.54
110.00	19 25 27	2208.05	-33.17	37.00	32.49	98.77	20 2 15	1608.0	-31.61	28.12
110.00	11 39 6	3777.41	2.09	139.25	24.40	55.87	12 42 3	3177.4	-2.40	133.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4820	TRA	-1.7550	TC3	2.8511	BAU	.5689	SGT	3604.8	SGR	272.7	SG3	613.1	ST	1096.5	SR	255.3	SS	657.7
RDE	-.1712	RRA	-.0560	RC3	-.0594	FAU	.13342	RRT	-.0399	RRF	.0030	RTF	-.9339	CRT	-.5706	CRS	-.1228	CST	.8823
FDE	-.1784	FRA	2.4211	FC3	-7.7407	BSP	12463	SGB	3615.1	R23	.0345	R13	.9339	LSA	1255.3	MSA	351.3	SSA	28.0
BDE	.5115	BRA	1.7559	BC3	2.8517	FSP	1902	SG1	3604.8	SG2	272.5	THA	179.83	EL1	1106.5	EL2	207.8	ALF	172.15

LAUNCH DATE NOV 15 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 498.699 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.644 GAL -2.74 AZL 88.43 HCA 158.49 SMA 200.44 ECC .26590 INC 1.5703 V1 30.115
RP 238.47 LAP .58 LOP 211.17 VP 21.236 GAP 10.94 AZP 91.46 TAL 346.92 TAP 145.41 RCA 147.15 APO 253.74 V2 23.040
RC 179.231 GL 14.01 GP .99 ZAL 108.82 ZAP 160.26 ETS 175.78 ZAE 160.10 ETE 3.62 ZAC 91.16 ETC 255.86 CLP 160.28

PLANETOCENTRIC CONIC

C3 14.469 VHL 3.804 DLA 19.93 RAL 169.12 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 6.268 DPA -2.59 RAP 191.39 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 22	2814.65	-28.23	82.89	32.02	92.28	16 57 17	2214.7	-27.62	74.28
90.00	9 49 44	4109.08	-2.89	166.91	26.03	61.82	10 58 14	3509.1	-6.64	160.23
100.00	17 44 25	2511.36	-28.65	60.49	31.93	94.02	18 26 17	1911.4	-28.77	51.80
100.00	10 58 22	3887.61	-1.66	149.94	25.34	60.15	12 3 10	3287.6	-5.62	143.39
110.00	19 19 57	2212.51	-33.22	37.34	31.47	98.57	19 56 49	1612.5	-31.68	28.45
110.00	11 39 20	3759.23	1.39	138.30	23.44	55.84	12 41 59	3159.2	-3.10	132.10

DIFFERENTIAL CORRECTIONS
TDE .4584 TRA-1.7192 TC3 2.9707 BAU .5747
RDE -.1619 RRA -.0542 RC3 -.0513 FAU .13863
FDE -.1507 FRA 2.4602 FC3-8.2949 BSP 12547
BDE .4861 BRA 1.7201 BC3 2.9712 FSP 2003

MID-COURSE EXECUTION ACCURACY
SGT 3629.4 SGR 261.8 SG3 643.1
RRT -.0184 RRF -.0208 RTF -.9356
SGB 3638.8 R23 .0382 R13 .9356
SG1 3629.4 SG2 261.7 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 1079.0 SR 245.3 SS 660.1
CRT -.5553 CRS -.0829 CST .8719
LSA 1237.8 MSA 356.6 SSA 27.4
EL1 1087.8 EL2 202.3 ALF 172.55

LAUNCH DATE NOV 15 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 502.132 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.603 GAL -2.63 AZL 88.44 HCA 159.44 SMA 199.62 ECC .26260 INC 1.5560 V1 30.115
RP 238.14 LAP .55 LOP 212.12 VP 21.207 GAP 10.46 AZP 91.46 TAL 347.29 TAP 146.74 RCA 147.20 APO 252.04 V2 23.073
RC 181.513 GL 14.08 GP 1.06 ZAL 108.10 ZAP 159.52 ETS 175.71 ZAE 160.73 ETE 4.08 ZAC 91.28 ETC 255.85 CLP 159.55

PLANETOCENTRIC CONIC

C3 14.042 VHL 3.747 DLA 20.28 RAL 168.45 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 6.127 DPA -2.62 RAP 191.61 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 41	2822.85	-28.25	83.49	30.98	91.98	16 50 44	2222.9	-27.68	74.87
90.00	9 51 6	4087.66	-3.58	165.71	25.08	61.89	10 59 13	3487.7	-7.31	159.02
100.00	17 38 11	2518.16	-29.68	61.00	30.90	93.75	18 20 9	1918.2	-28.84	52.29
100.00	10 59 17	3867.58	-2.33	148.84	24.39	60.19	12 3 45	3267.6	-6.28	142.28
110.00	19 14 30	2216.79	-33.26	37.66	30.45	98.38	19 51 27	1616.8	-31.75	28.76
110.00	11 39 27	3741.72	.72	137.39	22.48	55.82	12 41 49	3141.7	-3.77	131.18

DIFFERENTIAL CORRECTIONS
TDE .4387 TRA-1.6792 TC3 3.1028 BAU .5826
RDE -.1529 RRA -.0527 RC3 -.0417 FAU .14421
FDE -.1231 FRA 2.4972 FC3-8.8909 BSP 12538
BDE .4646 BRA 1.6800 BC3 3.1031 FSP 2105

MID-COURSE EXECUTION ACCURACY
SGT 3653.8 SGR 251.1 SG3 674.8
RRT .0060 RRF -.0496 RTF -.9378
SGB 3662.4 R23 -.0439 R13 -.9378
SG1 3653.8 SG2 251.1 THA .02

ORBIT DETERMINATION ACCURACY
ST 1062.6 SR 235.3 SS 662.6
CRT -.5431 CRS -.0433 CST .8594
LSA 1221.0 MSA 363.3 SSA 26.5
EL1 1070.6 EL2 196.1 ALF 172.90

LAUNCH DATE NOV 15 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 505.590 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.565 GAL -2.53 AZL 88.46 HCA 160.40 SMA 198.84 ECC .25946 INC 1.5408 V1 30.115
RP 237.81 LAP .52 LOP 213.08 VP 21.182 GAP 9.98 AZP 91.45 TAL 347.66 TAP 148.06 RCA 147.25 APO 250.43 V2 23.106
RC 183.786 GL 14.13 GP 1.13 ZAL 107.39 ZAP 158.77 ETS 175.62 ZAE 161.39 ETE 4.61 ZAC 91.40 ETC 255.85 CLP 158.80

PLANETOCENTRIC CONIC

C3 13.641 VHL 3.693 DLA 20.61 RAL 167.78 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 5.990 DPA -2.63 RAP 191.83 ECC 1.2245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 8	2830.68	-28.27	84.07	29.95	91.69	16 44 19	2230.7	-27.74	75.44
90.00	9 52 16	4067.11	-4.24	164.56	24.14	61.98	11 0 3	3467.1	-7.96	157.85
100.00	17 32 3	2524.62	-29.71	61.48	29.87	93.50	18 14 8	1924.6	-28.90	52.76
100.00	11 0 2	3848.41	-2.98	147.79	23.44	60.24	12 4 11	3248.4	-6.92	141.21
110.00	19 9 10	2220.78	-33.30	37.97	29.44	98.20	19 46 11	1620.8	-31.81	29.06
110.00	11 39 25	3725.01	.08	136.52	21.53	55.82	12 41 30	3125.0	-4.40	130.31

DIFFERENTIAL CORRECTIONS
TDE .4120 TRA-1.6476 TC3 3.2096 BAU .5853
RDE -.1442 RRA -.0515 RC3 -.0300 FAU .14983
FDE -.0904 FRA 2.5397 FC3-9.5096 BSP 12717
BDE .4365 BRA 1.6484 BC3 3.2097 FSP 2223

MID-COURSE EXECUTION ACCURACY
SGT 3672.3 SGR 240.4 SG3 707.6
RRT .0423 RRF -.0873 RTF -.9388
SGB 3680.2 R23 -.0474 R13 -.9388
SG1 3672.3 SG2 240.1 THA .16

ORBIT DETERMINATION ACCURACY
ST 1041.4 SR 225.1 SS 666.5
CRT -.5205 CRS .0028 CST .8492
LSA 1201.3 MSA 368.4 SSA 25.9
EL1 1048.2 EL2 191.0 ALF 173.36

LAUNCH DATE NOV 15 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 509.072 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.527 GAL -2.44 AZL 88.48 HCA 161.36 SMA 198.10 ECC .25645 INC 1.5238 V1 30.115
RP 237.48 LAP .49 LOP 214.04 VP 21.160 GAP 9.51 AZP 91.44 TAL 348.03 TAP 149.39 RCA 147.29 APO 248.90 V2 23.140
RC 186.049 GL 14.16 GP 1.21 ZAL 106.68 ZAP 157.99 ETS 175.52 ZAE 162.08 ETE 5.21 ZAC 91.52 ETC 255.85 CLP 158.02

PLANETOCENTRIC CONIC

C3 13.262 VHL 3.642 DLA 20.92 RAL 167.10 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 5.855 DPA -2.63 RAP 192.04 ECC 1.2183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 44	2838.04	-28.28	84.60	28.91	91.42	16 38 2	2238.0	-27.79	75.97
90.00	9 53 14	4047.50	-4.87	163.46	23.20	62.07	11 0 42	3447.5	-8.57	156.73
100.00	17 26 4	2530.62	-29.73	61.92	28.84	93.27	18 8 15	1930.6	-28.96	53.20
100.00	11 0 35	3830.16	-3.60	146.78	22.50	60.31	12 4 25	3230.2	-7.52	140.20
110.00	19 3 57	2224.40	-33.34	38.24	28.42	98.04	19 41 1	1624.4	-31.87	29.32
110.00	11 39 12	3709.14	-.52	135.69	20.58	55.82	12 41 1	3109.1	-5.00	129.47

DIFFERENTIAL CORRECTIONS
TDE .3952 TRA-1.6066 TC3 3.3390 BAU .5920
RDE -.1358 RRA -.0507 RC3 -.0166 FAU .15589
FDE -.0607 FRA 2.5784 FC-10.1765 BSP 12669
BDE .4179 BRA 1.6074 BC3 3.3390 FSP 2338

MID-COURSE EXECUTION ACCURACY
SGT 3691.0 SGR 230.4 SG3 742.3
RRT .0809 RRF -.1318 RTF -.9409
SGB 3698.2 R23 -.0555 R13 -.9409
SG1 3691.1 SG2 229.6 THA .29

ORBIT DETERMINATION ACCURACY
ST 1025.2 SR 215.2 SS 670.4
CRT -.5081 CRS .0452 CST .8342
LSA 1184.9 MSA 377.0 SSA 24.8
EL1 1031.2 EL2 184.2 ALF 173.71

LAUNCH DATE NOV 15 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 512.575 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.492 GAL -2.34 AZL 88.50 HCA 162.32 SMA 197.39 ECC .25357 INC 1.5050 V1 30.115
RP 237.15 LAP .46 LOP 215.00 VP 21.141 GAP 9.05 AZP 91.43 TAL 348.38 TAP 150.71 RCA 147.34 APO 247.45 V2 23.174
RC 188.300 GL 14.16 GP 1.31 ZAL 105.98 ZAP 157.20 ETS 175.41 ZAE 162.81 ETE 5.90 ZAC 91.65 ETC 255.84 CLP 157.23

PLANETOCENTRIC CONIC

C3 12.905 VHL 3.592 DLA 21.20 RAL 166.41 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 5.724 DPA -2.62 RAP 192.23 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 33	2844.66	-28.29	85.09	27.87	91.18	16 31 58	2244.7	-27.83	76.45
90.00	9 53 56	4029.10	-5.45	162.42	22.26	62.17	11 1 5	3429.1	-9.13	155.68
100.00	17 20 18	2535.95	-29.75	62.31	27.81	93.06	18 2 33	1935.9	-29.01	53.59
100.00	11 0 53	3813.05	-4.17	145.84	21.56	60.37	12 4 26	3213.0	-8.09	139.24
110.00	18 58 53	2227.48	-33.36	38.48	27.40	97.91	19 36 1	1627.5	-31.91	29.55
110.00	11 38 46	3694.28	-1.09	134.92	19.64	55.83	12 40 20	3094.3	-5.57	128.69

DIFFERENTIAL CORRECTIONS
TDE .3683 TRA-1.5758 TC3 3.4349 BAU .5926
RDE -.1275 RRA -.0502 RC3 -.0003 FAU .16205
FDE -.0258 FRA 2.6210 FC-10.8710 BSP 12856
BDE .3897 BRA 1.5766 BC3 3.4349 FSP 2466

MID-COURSE EXECUTION ACCURACY
SGT 3701.7 SGR 220.7 SG3 778.1
RRT .1363 RRF -.1886 RTF -.9415
SGB 3708.3 R23 -.0603 R13 -.9415
SG1 3701.8 SG2 218.7 THA .47

ORBIT DETERMINATION ACCURACY
ST 1002.3 SR 205.0 SS 675.6
CRT -.4801 CRS .0938 CST .8249
LSA 1165.0 MSA 381.1 SSA 24.2
EL1 1007.3 EL2 178.9 ALF 174.21

LAUNCH DATE NOV 15 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 516.101 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.458 GAL -2.25 AZL 88.52 HCA 163.29 SMA 196.72 ECC .25083 INC 1.4836 V1 30.115
RP 236.81 LAP .43 LOP 215.96 VP 21.125 GAP 8.59 AZP 91.42 TAL 348.74 TAP 152.03 RCA 147.38 APO 246.07 V2 23.209
RC 190.540 GL 14.14 GP 1.41 ZAL 105.29 ZAP 156.38 ETS 175.28 ZAE 163.56 ETE 6.70 ZAC 91.79 ETC 255.84 CLP 156.42

PLANETOCENTRIC CONIC

C3 12.568 VHL 3.545 DLA 21.46 RAL 165.71 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 5.596 DPA -2.59 RAP 192.42 ECC 1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 38	2850.38	-28.30	85.51	26.83	90.97	16 26 9	2250.4	-27.87	76.87
90.00	9 54 18	4012.03	-5.99	161.46	21.32	62.27	11 1 10	3412.0	-9.66	154.70
100.00	17 14 45	2540.45	-29.77	62.65	26.77	92.89	17 57 6	1940.5	-29.05	53.92
100.00	11 0 52	3797.19	-4.71	144.96	20.61	60.45	12 4 9	3197.2	-8.61	138.35
110.00	18 54 1	2229.90	-33.39	38.67	26.38	97.80	19 31 11	1629.9	-31.95	29.73
110.00	11 38 5	3680.51	-1.62	134.20	18.69	55.85	12 39 26	3080.5	-6.09	127.96

DIFFERENTIAL CORRECTIONS
TDE .3490 TRA-1.5385 TC3 3.5485 BAU .5962
RDE -.1195 RRA -.0501 RC3 .0187 FAU .16876
FDE .0039 FRA 2.6590 FC-11.6253 BSP 12877
BDE .3689 BRA 1.5393 BC3 3.5486 FSP 2591

MID-COURSE EXECUTION ACCURACY
SGT 3713.0 SGR 212.3 SG3 816.3
RRT .1990 RRF -.2554 RTF -.9427
SGB 3719.0 R23 -.0686 R13 -.9428
SG1 3713.2 SG2 208.1 THA .65

ORBIT DETERMINATION ACCURACY
ST 983.0 SR 195.0 SS 680.3
CRT -.4593 CRS .1366 CST .8136
LSA 1147.7 MSA 386.3 SSA 23.4
EL1 987.2 EL2 172.5 ALF 174.63

LAUNCH DATE NOV 15 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 519.648 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.425 GAL -2.16 AZL 88.54 HCA 164.26 SMA 196.09 ECC .24821 INC 1.4603 V1 30.115
RP 236.46 LAP .40 LOP 216.93 VP 21.111 GAP 8.14 AZP 91.41 TAL 349.09 TAP 153.34 RCA 147.42 APO 244.76 V2 23.244
RC 192.768 GL 14.08 GP 1.53 ZAL 104.60 ZAP 155.54 ETS 175.14 ZAE 164.34 ETE 7.65 ZAC 91.93 ETC 255.84 CLP 155.59

PLANETOCENTRIC CONIC

C3 12.249 VHL 3.500 DLA 21.68 RAL 165.01 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 5.470 DPA -2.53 RAP 192.59 ECC 1.2016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 4	2854.89	-28.31	85.84	25.78	90.80	16 20 39	2254.9	-27.90	77.19
90.00	9 54 15	3996.58	-6.48	160.59	20.37	62.37	11 0 51	3396.6	-10.13	153.81
100.00	17 9 32	2543.88	-29.78	62.90	25.73	92.76	17 51 55	1943.9	-29.08	54.17
100.00	11 0 29	3782.83	-5.19	144.17	19.66	60.52	12 3 31	3182.8	-9.08	137.54
110.00	18 49 23	2231.48	-33.40	38.79	25.34	97.73	19 26 34	1631.5	-31.97	29.85
110.00	11 37 7	3667.99	-2.10	133.54	17.74	55.87	12 38 15	3068.0	-6.56	127.30

DIFFERENTIAL CORRECTIONS
TDE .3298 TRA-1.5021 TC3 3.6567 BAU .5988
RDE -.1119 RRA -.0506 RC3 .0410 FAU .17562
FDE .0376 FRA 2.7006 FC-12.4130 BSP 12907
BDE .3483 BRA 1.5029 BC3 3.6570 FSP 2730

MID-COURSE EXECUTION ACCURACY
SGT 3720.9 SGR 205.7 SG3 855.9
RRT .2747 RRF -.3358 RTF -.9440
SGB 3726.6 R23 -.0788 R13 -.9441
SG1 3721.4 SG2 197.7 THA .87

ORBIT DETERMINATION ACCURACY
ST 963.1 SR 185.1 SS 686.3
CRT -.4354 CRS .1846 CST .8007
LSA 1130.5 MSA 393.1 SSA 22.3
EL1 966.6 EL2 166.0 ALF 175.07

LAUNCH DATE NOV 15 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 523.215 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.394 GAL -2.08 AZL 88.57 HCA 165.23 SMA 195.49 ECC .24571 INC 1.4331 V1 30.115
RP 236.12 LAP .37 LOP 217.90 VP 21.101 GAP 7.70 AZP 91.39 TAL 349.43 TAP 154.65 RCA 147.46 APO 243.52 V2 23.279
RC 194.983 GL 13.98 GP 1.67 ZAL 103.93 ZAP 154.68 ETS 174.98 ZAE 165.15 ETE 8.77 ZAC 92.09 ETC 255.83 CLP 154.73

PLANETOCENTRIC CONIC

C3 11.946 VHL 3.456 DLA 21.85 RAL 164.30 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 5.348 DPA -2.46 RAP 192.75 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 57	2857.85	-28.31	86.05	24.73	90.69	16 15 35	2257.9	-27.91	77.41
90.00	9 53 41	3983.06	-6.91	159.82	19.41	62.47	11 0 4	3383.1	-10.54	153.03
100.00	17 4 41	2545.92	-29.78	63.05	24.68	92.68	17 47 7	1945.9	-29.09	54.32
100.00	10 59 38	3770.23	-5.61	143.47	18.70	60.59	12 2 28	3170.2	-9.49	136.83
110.00	18 45 2	2231.97	-33.41	38.82	24.29	97.71	19 22 14	1632.0	-31.98	29.88
110.00	11 35 46	3656.94	-2.52	132.97	16.78	55.90	12 36 43	3056.9	-6.98	126.72

DIFFERENTIAL CORRECTIONS
TDE .3123 TRA-1.4671 TC3 3.7583 BAU .6003
RDE -.1044 RRA -.0515 RC3 .0675 FAU .18296
FDE .0650 FRA 2.7397 FC-13.2589 BSP 12948
BDE .3292 BRA 1.4680 BC3 3.7589 FSP 2869

MID-COURSE EXECUTION ACCURACY
SGT 3726.1 SGR 201.4 SG3 897.7
RRT .3631 RRF -.4281 RTF -.9448
SGB 3731.5 R23 -.0904 R13 -.9449
SG1 3726.8 SG2 187.6 THA 1.13

ORBIT DETERMINATION ACCURACY
ST 944.5 SR 175.2 SS 691.9
CRT -.4096 CRS .2268 CST .7917
LSA 1115.3 MSA 396.4 SSA 21.5
EL1 947.3 EL2 159.4 ALF 175.53

LAUNCH DATE NOV 15 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 526.801 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.364 GAL -2.00 AZL 88.60 HCA 166.20 SMA 194.92 ECC .24332 INC 1.4029 V1 30.115
RP 235.77 LAP .33 LOP 218.88 VP 21.093 GAP 7.26 AZP 91.36 TAL 349.76 TAP 155.96 RCA 147.49 APO 242.35 V2 23.315
RC 197.185 GL 13.84 GP 1.83 ZAL 103.27 ZAP 153.79 ETS 174.80 ZAE 165.98 ETE 10.14 ZAC 92.26 ETC 255.83 CLP 153.85

PLANETOCENTRIC CONIC

C3 11.659 VHL 3.415 DLA 21.99 RAL 163.57 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 5.228 DPA -2.35 RAP 192.90 ECC 1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 22	2858.86	-28.31	86.13	23.66	90.66	16 11 1	2258.9	-27.92	77.48
90.00	9 52 30	3971.85	-7.26	159.19	18.43	62.55	10 58 42	3371.8	-10.88	152.38
100.00	17 0 19	2546.23	-29.78	63.08	23.61	92.66	17 42 45	1946.2	-29.10	54.34
100.00	10 58 14	3759.71	-5.96	142.89	17.72	60.65	12 0 53	3159.7	-9.83	136.24
110.00	18 41 2	2231.13	-33.40	38.76	23.22	97.74	19 18 13	1631.1	-31.97	29.82
110.00	11 34 0	3647.58	-2.87	132.48	15.81	55.92	12 34 48	3047.6	-7.33	126.22

DIFFERENTIAL CORRECTIONS
TDE .2949 TRA-1.4311 TC3 3.8515 BAU .6005
RDE -.0972 RRA -.0531 RC3 .0987 FAU .19036
FDE .0968 FRA 2.7816 FC-14.1353 BSP 12943
BDE .3105 BRA 1.4320 BC3 3.8527 FSP 3021

MID-COURSE EXECUTION ACCURACY
SGT 3724.1 SGR 200.9 SG3 940.7
RRT .4614 RRF -.5305 RTF -.9457
SGB 3729.5 R23 -.1050 R13 -.9458
SG1 3725.3 SG2 178.2 THA 1.43

ORBIT DETERMINATION ACCURACY
ST 924.5 SR 165.6 SS 698.4
CRT -.3799 CRS .2756 CST .7805
LSA 1099.2 MSA 401.5 SSA 20.5
EL1 926.7 EL2 152.8 ALF 176.00

LAUNCH DATE NOV 15 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 530.406 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.336 GAL -1.92 AZL 88.63 HCA 167.18 SMA 194.38 ECC .24104 INC 1.3681 V1 30.115
RP 235.42 LAP .30 LOP 219.85 VP 21.088 GAP 6.83 AZP 91.33 TAL 350.08 TAP 157.26 RCA 147.52 APO 241.23 V2 23.351
RC 199.372 GL 13.64 GP 2.01 ZAL 102.63 ZAP 152.88 ETS 174.58 ZAE 166.83 ETE 11.81 ZAC 92.46 ETC 255.83 CLP 152.94

PLANETOCENTRIC CONIC

C3 11.385 VHL 3.374 DLA 22.06 RAL 162.84 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 5.112 DPA -2.21 RAP 193.04 ECC 1.1874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 27	2857.39	-28.31	86.02	22.56	90.71	16 7 5	2257.4	-27.91	77.38
90.00	9 50 32	3963.41	-7.52	158.71	17.42	62.62	10 56 35	3363.4	-11.14	151.89
100.00	16 56 32	2544.36	-29.78	62.94	22.51	92.74	17 38 57	1944.4	-29.08	54.20
100.00	10 56 8	3751.68	-6.23	142.44	16.72	60.71	11 58 40	3151.7	-10.09	135.78
110.00	18 37 28	2228.60	-33.38	38.57	22.12	97.86	19 14 37	1628.6	-31.93	29.63
110.00	11 31 42	3640.21	-3.16	132.09	14.81	55.95	12 32 22	3040.2	-7.60	125.83

DIFFERENTIAL CORRECTIONS
TDE .2804 TRA-1.3942 TC3 3.9442 BAU .6007
RDE -.0902 RRA -.0553 RC3 .1359 FAU .19820
FDE .1236 FRA 2.8212 FC-15.0717 BSP 12949
BDE .2945 BRA 1.3953 BC3 3.9465 FSP 3182

MID-COURSE EXECUTION ACCURACY
SGT 3719.7 SGR 205.3 SG3 985.9
RRT .5633 RRF -.6356 RTF -.9465
SGB 3725.4 R23 -.1226 R13 -.9467
SG1 3721.5 SG2 169.5 THA 1.78

ORBIT DETERMINATION ACCURACY
ST 905.7 SR 156.1 SS 704.1
CRT -.3491 CRS .3219 CST .7707
LSA 1084.4 MSA 405.2 SSA 19.4
EL1 907.4 EL2 146.0 ALF 176.46

LAUNCH DATE NOV 15 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 534.028 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.308 GAL -1.85 AZL 88.67 HCA 168.16 SMA 193.86 ECC .23887 INC 1.3270 V1 30.115
RP 235.06 LAP .27 LOP 220.83 VP 21.085 GAP 6.41 AZP 91.30 TAL 350.40 TAP 158.56 RCA 147.55 APO 240.17 V2 23.387
RC 201.544 GL 13.37 GP 2.23 ZAL 102.00 ZAP 151.93 ETS 174.33 ZAE 167.70 ETE 13.90 ZAC 92.68 ETC 255.83 CLP 152.01

PLANETOCENTRIC CONIC

C3 11.123 VHL 3.335 DLA 22.07 RAL 162.08 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 4.998 DPA -2.04 RAP 193.17 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 23	2852.82	-28.30	85.68	21.44	90.88	16 3 56	2252.8	-27.88	77.04
90.00	9 47 36	3958.36	-7.68	158.42	16.37	62.66	10 53 34	3358.4	-11.29	151.60
100.00	16 53 28	2539.76	-29.76	62.60	21.38	92.92	17 35 48	1939.8	-29.04	53.87
100.00	10 53 11	3746.65	-6.40	142.16	15.68	60.74	11 55 38	3146.7	-10.25	135.49
110.00	18 34 25	2223.95	-33.33	38.21	20.98	98.06	19 11 29	1623.9	-31.86	29.29
110.00	11 28 44	3635.23	-3.35	131.83	13.79	55.96	12 29 19	3035.2	-7.79	125.57

DIFFERENTIAL CORRECTIONS
TDE .2695 TRA-1.3564 TC3 4.0342 BAU .6005
RDE -.0833 RRA -.0584 RC3 .1807 FAU .20652
FDE .1410 FRA 2.8564 FC-16.0741 BSP 12895
BDE .2820 BRA 1.3577 BC3 4.0383 FSP 3340

MID-COURSE EXECUTION ACCURACY
SGT 3711.9 SGR 216.2 SG3 1033.4
RRT .6610 RRF -.7349 RTF -.9472
SGB 3718.1 R23 -.1434 R13 -.9475
SG1 3714.6 SG2 162.1 THA 2.21

ORBIT DETERMINATION ACCURACY
ST 888.7 SR 146.8 SS 707.6
CRT -.3177 CRS .3635 CST .7636
LSA 1070.9 MSA 406.0 SSA 18.4
EL1 890.0 EL2 139.0 ALF 176.92

LAUNCH DATE NOV 15 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 537.667 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.282 GAL -1.77 AZL 88.72 HCA 169.14 SMA 193.37 ECC .23680 INC 1.2786 V1 30.115
RP 234.71 LAP .24 LOP 221.81 VP 21.085 GAP 5.99 AZP 91.26 TAL 350.71 TAP 159.85 RCA 147.58 APO 239.16 V2 23.424
RC 203.699 GL 13.01 GP 2.48 ZAL 101.39 ZAP 150.96 ETS 174.03 ZAE 168.57 ETE 16.55 ZAC 92.93 ETC 255.82 CLP 151.06

PLANETOCENTRIC CONIC

C3 10.871 VHL 3.297 DLA 21.98 RAL 161.31 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.887 DPA -1.82 RAP 193.30 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 21	2844.30	-28.29	85.06	20.27	91.19	16 1 45	2244.3	-27.83	76.43
90.00	9 43 26	3957.47	-7.71	158.37	15.28	62.67	10 49 24	3357.5	-11.31	151.54
100.00	16 51 18	2531.68	-29.73	62.00	20.21	93.23	17 33 30	1931.7	-28.97	53.28
100.00	10 49 10	3745.32	-6.44	142.09	14.59	60.75	11 51 35	3145.3	-10.29	135.42
110.00	18 32 1	2216.60	-33.26	37.65	19.79	98.39	19 8 57	1616.6	-31.74	28.75
110.00	11 24 57	3633.17	-3.42	131.72	12.72	55.97	12 25 30	3033.2	-7.87	125.46

DIFFERENTIAL CORRECTIONS
TDE .2568 TRA-1.3215 TC3 4.1096 BAU .5982
RDE -.0766 RRA -.0626 RC3 .2350 FAU .21504
FDE .1571 FRA 2.8941 FC-17.1250 BSP 12904
BDE .2679 BRA 1.3230 BC3 4.1163 FSP 3517

MID-COURSE EXECUTION ACCURACY
SGT 3698.1 SGR 235.5 SG3 1082.6
RRT .7474 RRF -.8207 RTF -.9476
SGB 3705.6 R23 -.1674 R13 -.9480
SG1 3702.3 SG2 156.3 THA 2.73

ORBIT DETERMINATION ACCURACY
ST 870.4 SR 137.7 SS 711.2
CRT -.2741 CRS .4102 CST .7603
LSA 1057.8 MSA 404.0 SSA 17.5
EL1 871.3 EL2 132.3 ALF 177.46

LAUNCH DATE NOV 15 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 541.323 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.258 GAL -1.71 AZL 88.78 HCA 170.13 SMA 192.91 ECC .23483 INC 1.2208 V1 30.115
RP 234.35 LAP .21 LOP 222.80 VP 21.087 GAP 5.57 AZP 91.20 TAL 351.01 TAP 161.14 RCA 147.61 APO 238.21 V2 23.461
RC 205.837 GL 12.55 GP 2.79 ZAL 100.79 ZAP 149.96 ETS 173.67 ZAE 169.43 ETE 19.96 ZAC 93.24 ETC 255.82 CLP 150.07

PLANETOCENTRIC CONIC

C3 10.627 VHL 3.260 DLA 21.79 RAL 160.50 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 4.779 DPA -1.54 RAP 193.43 ECC 1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 35	2830.80	-28.27	84.07	19.04	91.69	16 0 46	2230.8	-27.74	75.45
90.00	9 37 45	3961.71	-7.58	158.61	14.11	62.63	10 43 47	3361.7	-11.19	151.79
100.00	16 50 14	2519.19	-29.68	61.07	18.96	93.71	17 32 13	1919.2	-28.85	52.37
100.00	10 43 48	3748.55	-6.33	142.27	13.44	60.73	11 46 16	3148.6	-10.19	135.60
110.00	18 30 25	2205.78	-33.15	36.82	18.51	98.86	19 7 10	1605.8	-31.57	27.95
110.00	11 20 7	3634.73	-3.36	131.81	11.60	55.96	12 20 41	3034.7	-7.81	125.54

DIFFERENTIAL CORRECTIONS

TDE .2483 TRA-1.2847 TC3 4.1831 BAU .5958
RDE -.0699 RRA -.0681 RC3 .3015 FAU .22388
FDE .1622 FRA 2.9279 FC-18.2383 BSP 12840
BDE .2580 BRA 1.2865 BC3 4.1940 FSP 3697

MID-COURSE EXECUTION ACCURACY

SGT 3680.0 SGR 265.2 SG3 1133.8
RRT .8154 RRF -.8869 RTF -.9481
SGB 3689.5 R23 -.1943 R13 -.9486
SG1 3686.3 SG2 153.3 THA 3.37

ORBIT DETERMINATION ACCURACY

ST 854.0 SR 128.9 SS 712.0
CRT -.2265 CRS .4560 CST .7590
LSA 1045.4 MSA 399.6 SSA 16.5
EL1 854.5 EL2 125.5 ALF 178.00

LAUNCH DATE NOV 15 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 544.995 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.234 GAL -1.64 AZL 88.85 HCA 171.12 SMA 192.47 ECC .23296 INC 1.1480 V1 30.115
RP 233.98 LAP .18 LOP 223.79 VP 21.091 GAP 5.17 AZP 91.14 TAL 351.30 TAP 162.42 RCA 147.63 APO 237.30 V2 23.498
RC 207.958 GL 11.94 GP 3.17 ZAL 100.21 ZAP 148.92 ETS 173.24 ZAE 170.25 ETE 24.43 ZAC 93.60 ETC 255.81 CLP 149.06

PLANETOCENTRIC CONIC

C3 10.389 VHL 3.223 DLA 21.46 RAL 159.65 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 4.675 DPA -1.18 RAP 193.57 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 26	2810.91	-28.22	82.62	17.71	92.41	16 1 17	2210.9	-27.59	74.01
90.00	9 30 8	3972.43	-7.24	159.22	12.85	62.55	10 36 20	3372.4	-10.86	152.41
100.00	16 50 33	2500.98	-29.59	59.73	17.62	94.42	17 32 14	1901.0	-28.67	51.05
100.00	10 36 42	3757.60	-6.03	142.77	12.19	60.67	11 39 19	3157.6	-9.90	136.12
110.00	18 29 49	2190.41	-32.98	35.65	17.13	99.54	19 6 20	1590.4	-31.31	26.83
110.00	11 13 55	3640.92	-3.13	132.13	10.40	55.94	12 14 36	3040.9	-7.58	125.87

DIFFERENTIAL CORRECTIONS

TDE .2485 TRA-1.2435 TC3 4.2635 BAU .5946
RDE -.0627 RRA -.0748 RC3 .3859 FAU .23373
FDE .1332 FRA 2.9400 FC-19.4775 BSP 12670
BDE .2562 BRA 1.2458 BC3 4.2809 FSP 3850

MID-COURSE EXECUTION ACCURACY

SGT 3659.3 SGR 307.8 SG3 1188.6
RRT .8647 RRF -.9334 RTF -.9484
SGB 3672.2 R23 -.2228 R13 -.9491
SG1 3669.0 SG2 154.2 THA 4.17

ORBIT DETERMINATION ACCURACY

ST 842.4 SR 119.7 SS 703.7
CRT -.1793 CRS .4864 CST .7678
LSA 1034.5 MSA 385.7 SSA 15.8
EL1 842.6 EL2 117.7 ALF 178.51

LAUNCH DATE NOV 15 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 548.683 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.211 GAL -1.58 AZL 88.94 HCA 172.11 SMA 192.05 ECC .23117 INC 1.0602 V1 30.115
RP 233.62 LAP .15 LOP 224.78 VP 21.098 GAP 4.77 AZP 91.05 TAL 351.58 TAP 163.69 RCA 147.65 APO 236.45 V2 23.536
RC 210.060 GL 11.12 GP 3.65 ZAL 99.68 ZAP 147.83 ETS 172.69 ZAE 170.98 ETE 30.35 ZAC 94.06 ETC 255.80 CLP 148.02

PLANETOCENTRIC CONIC

C3 10.154 VHL 3.187 DLA 20.93 RAL 158.74 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.574 DPA -.72 RAP 193.72 ECC 1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 18	2782.66	-28.12	80.56	16.25	93.44	16 3 40	2182.7	-27.35	71.98
90.00	9 19 59	3991.50	-6.64	160.30	11.47	62.41	10 26 30	3391.5	-10.29	153.52
100.00	16 52 39	2475.21	-29.44	57.83	16.14	95.41	17 33 54	1875.2	-28.38	49.18
100.00	10 27 19	3774.19	-5.48	143.69	10.83	60.57	11 30 13	3174.2	-9.36	137.05
110.00	18 30 32	2168.93	-32.73	34.03	15.60	100.47	19 6 41	1568.9	-30.94	25.27
110.00	11 5 54	3653.23	-2.66	132.77	9.08	55.91	12 6 48	3053.2	-7.12	126.52

DIFFERENTIAL CORRECTIONS

TDE .2480 TRA-1.2069 TC3 4.3190 BAU .5901
RDE -.0555 RRA -.0842 RC3 .4917 FAU .24289
FDE .1030 FRA 2.9672 FC-20.7083 BSP 12631
BDE .2541 BRA 1.2099 BC3 4.3469 FSP 4061

MID-COURSE EXECUTION ACCURACY

SGT 3629.6 SGR 366.7 SG3 1242.6
RRT .8978 RRF -.9634 RTF -.9486
SGB 3648.0 R23 -.2500 R13 -.9496
SG1 3644.5 SG2 160.8 THA 5.19

ORBIT DETERMINATION ACCURACY

ST 831.5 SR 111.4 SS 698.8
CRT -.1057 CRS .5360 CST .7783
LSA 1026.5 MSA 371.8 SSA 14.9
EL1 831.6 EL2 110.7 ALF 179.17

LAUNCH DATE NOV 15 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 552.385 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.190 GAL -1.52 AZL 89.05 HCA 173.10 SMA 191.65 ECC .22948 INC .9444 V1 30.115
RP 233.25 LAP .11 LOP 225.77 VP 21.106 GAP 4.38 AZP 90.94 TAL 351.86 TAP 164.96 RCA 147.67 APO 235.63 V2 23.574
RC 212.144 GL 10.02 GP 4.27 ZAL 99.12 ZAP 146.70 ETS 171.99 ZAE 171.55 ETE 38.13 ZAC 94.64 ETC 255.79 CLP 146.94

PLANETOCENTRIC CONIC

C3 9.921 VHL 3.150 DLA 20.12 RAL 157.73 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.476 DPA -.13 RAP 193.90 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 47	2743.18	-27.93	77.69	14.59	94.87	16 8 30	2143.2	-26.96	69.16
90.00	9 6 28	4021.71	-5.69	162.01	9.91	62.21	10 13 29	3421.7	-9.36	155.25
100.00	16 57 4	2439.14	-29.18	55.18	14.44	96.78	17 37 43	1839.1	-27.94	46.59
100.00	10 14 52	3800.98	-4.58	145.17	9.30	60.43	11 18 13	3201.0	-8.48	138.56
110.00	18 33 1	2138.94	-32.33	31.78	13.85	101.75	19 8 40	1538.9	-30.38	23.11
110.00	10 55 24	3673.95	-1.87	133.86	7.62	55.86	11 56 38	3073.9	-6.33	127.62

DIFFERENTIAL CORRECTIONS

TDE .2548 TRA-1.1674 TC3 4.3709 BAU .5858
RDE -.0467 RRA -.0962 RC3 .6317 FAU .25279
FDE .0241 FRA 2.9679 FC-22.0587 BSP 12509
BDE .2590 BRA 1.1714 BC3 4.4163 FSP 4245

MID-COURSE EXECUTION ACCURACY

SGT 3593.2 SGR 447.6 SG3 1299.3
RRT .9190 RRF -.9814 RTF -.9483
SGB 3621.0 R23 -.2733 R13 -.9499
SG1 3616.7 SG2 175.3 THA 6.55

ORBIT DETERMINATION ACCURACY

ST 825.8 SR 102.4 SS 686.5
CRT -.0049 CRS .5788 CST .8080
LSA 1023.3 MSA 341.0 SSA 14.4
EL1 825.8 EL2 102.4 ALF 179.96

LAUNCH DATE NOV 15 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 556.102 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.169 GAL -1.46 AZL 89.21 HCA 174.10 SMA 191.28 ECC .22786 INC .7889 V1 30.115
RP 232.88 LAP .08 LOP 226.77 VP 21.117 GAP 3.99 AZP 90.79 TAL 352.12 TAP 166.22 RCA 147.69 APO 234.86 V2 23.612
RC 214.210 GL 8.48 GP 5.10 ZAL 98.61 ZAP 145.50 ETS 171.05 ZAE 171.81 ETE 48.04 ZAC 95.43 ETC 255.78 CLP 145.83

PLANETOCENTRIC CONIC

C3 9.687 VHL 3.112 DLA 18.89 RAL 156.58 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.384 DPA .68 RAP 194.14 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 46	2687.98	-27.55	73.69	12.62	96.84	16 16 34	2088.0	-26.31	65.24
90.00	8 48 17	4067.47	-4.23	164.58	8.12	61.97	9 56 4	3467.5	-7.94	157.87
100.00	17 4 39	2388.46	-28.72	51.48	12.44	98.67	17 44 27	1788.5	-27.22	43.00
100.00	9 58 5	3842.22	-3.19	147.45	7.54	60.26	11 2 7	3242.2	-7.13	140.87
110.00	18 37 56	2096.59	-31.70	28.64	11.76	103.51	19 12 53	1496.6	-29.52	20.11
110.00	10 41 17	3706.85	-.61	135.57	5.93	55.82	11 43 4	3106.9	-5.09	129.35

DIFFERENTIAL CORRECTIONS
TDE .2737 TRA-1.1239 TC3 4.4340 BAU .5841
RDE -.0348 RRA -.1120 RC3 .8232 FAU .26316
FDE -.1200 FRA 2.9421 FC-23.5184 BSP 12330
BDE .2759 BRA 1.1294 BC3 4.5097 FSP 4421

MID-COURSE EXECUTION ACCURACY
SGT 3557.2 SGR 560.5 SG3 1358.3
RRT .9322 RRF -.9913 RTF -.9484
SGB 3601.0 R23 -.2884 R13 -.9508
SG1 3595.5 SG2 200.7 THA 8.38

ORBIT DETERMINATION ACCURACY
ST 831.2 SR 92.8 SS 676.6
CRT .1544 CRS .6328 CST .8581
LSA 1035.3 MSA 291.9 SSA 14.5
EL1 831.4 EL2 91.7 ALF 1.00

LAUNCH DATE NOV 15 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 559.836 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.150 GAL -1.41 AZL 89.42 HCA 175.10 SMA 190.92 ECC .22633 INC .5720 V1 30.115
RP 232.51 LAP .05 LOP 227.77 VP 21.129 GAP 3.61 AZP 90.57 TAL 352.37 TAP 167.47 RCA 147.71 APO 234.13 V2 23.650
RC 216.258 GL 6.22 GP 6.27 ZAL 98.11 ZAP 144.20 ETS 169.74 ZAE 171.53 ETE 59.72 ZAC 96.54 ETC 255.75 CLP 144.68

PLANETOCENTRIC CONIC

C3 9.454 VHL 3.075 DLA 16.99 RAL 155.18 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 4.297 DPA 1.81 RAP 194.48 ECC 1.1556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 42	2609.41	-26.78	68.07	10.16	99.55	16 29 11	2009.4	-25.19	59.77
90.00	8 23 13	4136.48	-2.01	168.44	5.98	61.75	9 32 10	3536.5	-5.77	161.78
100.00	17 16 45	2315.75	-27.86	46.25	9.94	101.30	17 55 21	1715.8	-26.02	37.93
100.00	9 34 51	3905.36	-1.05	150.92	5.45	60.12	10 39 56	3305.4	-5.02	144.38
110.00	18 46 26	2035.19	-30.64	24.17	9.16	105.95	19 20 21	1435.2	-28.15	15.86
110.00	10 21 40	3758.69	1.37	138.28	3.93	55.84	11 24 18	3158.7	-3.12	132.07

DIFFERENTIAL CORRECTIONS
TDE .3176 TRA-1.0678 TC3 4.5411 BAU .5905
RDE -.0160 RRA -.1334 RC3 1.0977 FAU .27382
FDE -.3686 FRA 2.8738 FC-25.0732 BSP 11917
BDE .3180 BRA 1.0760 BC3 4.6719 FSP 4577

MID-COURSE EXECUTION ACCURACY
SGT 3532.3 SGR 724.0 SG3 1418.6
RRT .9417 RRF -.9964 RTF -.9503
SGB 3605.7 R23 -.2893 R13 -.9541
SG1 3597.8 SG2 239.1 THA 10.97

ORBIT DETERMINATION ACCURACY
ST 864.2 SR 85.9 SS 695.4
CRT .4415 CRS .7456 CST .9229
LSA 1089.8 MSA 223.4 SSA 15.0
EL1 865.0 EL2 77.0 ALF 2.53

LAUNCH DATE NOV 15 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 563.579 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.131 GAL -1.36 AZL 89.75 HCA 176.11 SMA 190.58 ECC .22487 INC .2364 V1 30.115
RP 232.14 LAP .02 LOP 228.78 VP 21.144 GAP 3.23 AZP 90.25 TAL 352.61 TAP 168.71 RCA 147.73 APO 233.44 V2 23.689
RC 218.287 GL 2.69 GP 8.04 ZAL 97.64 ZAP 142.73 ETS 167.80 ZAE 170.39 ETE 71.70 ZAC 98.22 ETC 255.70 CLP 143.48

PLANETOCENTRIC CONIC

C3 9.239 VHL 3.040 DLA 13.88 RAL 153.37 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 4.222 DPA 3.50 RAP 195.04 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 22	2492.63	-25.20	59.89	6.92	103.36	16 48 54	1892.6	-23.11	51.84
90.00	7 47 5	4244.27	1.47	174.45	3.39	61.72	8 57 49	3644.3	-2.32	167.82
100.00	17 36 2	2206.66	-26.17	38.58	6.65	104.99	18 12 49	1606.7	-23.85	30.55
100.00	9 1 5	4005.48	2.34	156.41	2.90	60.19	10 7 51	3405.5	-1.64	149.89
110.00	19 0 43	1941.67	-28.70	17.58	5.77	109.41	19 33 5	1341.7	-25.79	9.61
110.00	9 52 53	3843.23	4.60	142.70	1.50	56.09	10 56 57	3243.2	.11	136.48

DIFFERENTIAL CORRECTIONS
TDE .3643 TRA-1.0284 TC3 4.5307 BAU .5898
RDE .0183 RRA -.1647 RC3 1.5064 FAU .28199
FDE -.7602 FRA 2.7701 FC-26.4234 BSP 12056
BDE .3647 BRA 1.0415 BC3 4.7746 FSP 4776

MID-COURSE EXECUTION ACCURACY
SGT 3470.6 SGR 970.6 SG3 1468.8
RRT .9454 RRF -.9987 RTF -.9486
SGB 3603.7 R23 -.2912 R13 -.9554
SG1 3590.7 SG2 305.9 THA 14.92

ORBIT DETERMINATION ACCURACY
ST 914.9 SR 105.6 SS 806.7
CRT .8633 CRS .9313 CST .9838
LSA 1218.6 MSA 116.6 SSA 21.0
EL1 919.5 EL2 53.0 ALF 5.71

LAUNCH DATE NOV 15 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 567.337 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.113 GAL -1.31 AZL 90.31 HCA 177.11 SMA 190.26 ECC .22349 INC .2954 V1 30.115
RP 231.76 LAP -.02 LOP 229.78 VP 21.160 GAP 2.86 AZP 89.69 TAL 352.84 TAP 169.95 RCA 147.74 APO 232.79 V2 23.728
RC 220.299 GL -3.43 GP 11.02 ZAL 97.14 ZAP 140.86 ETS 164.65 ZAE 167.73 ETE 81.95 ZAC 101.07 ETC 255.57 CLP 142.20

PLANETOCENTRIC CONIC

C3 9.126 VHL 3.021 DLA 8.32 RAL 150.70 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 4.172 DPA 6.32 RAP 196.04 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 49	2304.88	-21.65	47.28	2.42	108.71	17 21 14	1704.9	-18.90	39.69
90.00	6 50 23	4427.27	7.31	184.73	.21	62.57	8 4 10	3827.3	3.57	178.04
100.00	18 8 11	2029.54	-22.51	26.71	2.09	110.21	18 42 1	1429.5	-19.55	19.16
100.00	8 7 42	4177.84	8.11	165.96	359.78	61.13	9 17 19	3577.8	4.19	159.35
110.00	19 25 37	1787.22	-24.77	7.30	1.08	114.34	19 55 24	1187.2	-21.28	359.89
110.00	9 6 45	3992.92	10.21	150.65	358.51	57.20	10 13 18	3392.9	5.82	144.32

DIFFERENTIAL CORRECTIONS
TDE .4729 TRA -.9717 TC3 4.5007 BAU .6103
RDE .1043 RRA -.2068 RC3 2.1817 FAU .28870
FDE-1.5376 FRA 2.4958 FC-27.3860 BSP 12211
BDE .4842 BRA .9935 BC3 5.0016 FSP 4854

MID-COURSE EXECUTION ACCURACY
SGT 3415.9 SGR 1390.6 SG3 1509.4
RRT .9474 RRF -.9996 RTF -.9472
SGB 3688.1 R23 -.2773 R13 -.9604
SG1 3664.7 SG2 414.9 THA 21.38

ORBIT DETERMINATION ACCURACY
ST 1059.8 SR 234.2 SS 1185.2
CRT .9956 CRS .9964 CST .9923
LSA 1604.0 MSA 97.9 SSA 14.9
EL1 1085.2 EL2 21.5 ALF 12.41

LAUNCH DATE NOV 15 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 571.108 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.097	GAL	-1.26	AZL	91.48	HCA	178.12	SMA	189.96	ECC	.22218	INC	1.4502
RP	231.38	LAP	-.05	LOP	230.79	VP	21.178	GAP	2.50	AZP	88.52	TAL	353.05	TAP	171.18	RCA	147.75	APO	232.17
RC	222.292	GL	-15.95	GP	16.98	ZAL	96.45	ZAP	137.78	ETS	158.80	ZAE	161.84	ETE	89.07	ZAC	106.77	ETC	255.21

V1	30.115	V2	23.768	CLP	140.74														

PLANETOCENTRIC CONIC

C3	9.646	VHL	3.106	DLA	-3.28	RAL	145.97	RAD	6567.3	VEL	11.447	PTH	1.99	VHP	4.204	DPA	11.92	RAP	198.16

ECC	1.1587																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 7	1952.97	-12.48	25.56	356.34	115.62	18 23 40	1353.0	-8.93	18.68
90.00	5 4 18	4800.78	18.12	206.81	357.26	67.86	6 24 19	4200.8	14.96	199.56
100.00	19 10 55	1695.52	-13.28	6.22	355.94	117.03	19 39 11	1095.5	-9.55	359.42
100.00	6 27 11	4533.46	18.94	186.78	356.90	66.43	7 42 44	3933.5	15.60	179.59
110.00	20 15 39	1492.90	-15.39	349.63	354.73	120.90	20 40 32	892.9	-11.18	343.06
110.00	7 38 57	4308.85	21.12	168.62	355.79	62.48	8 50 46	3708.9	17.27	161.61

DIFFERENTIAL CORRECTIONS

TDE	.7871	TRA	-.8331	TC3	4.4110	BAU	.7227
RDE	.4334	RRA	-.2167	RC3	3.4568	FAU	.29783
FDE	-3.4405	FRA	1.5578	FC	-26.7306	BSP	11451
BDE	.8985	BRA	.8609	BC3	5.6041	FSP	4093

MID-COURSE EXECUTION ACCURACY

SGT	3462.0	SGR	2326.0	SG3	1555.8		
RRT	.9513	RRF	-.9999	RTF	-.9487		
SGB	4170.8	R23	-.2239	R13	-.9745		
SG1	4127.3	SG2	601.2	THA	33.39		

ORBIT DETERMINATION ACCURACY

ST	1525.9	SR	811.1	SS	2333.7
CRT	.9871	CRS	.9999	CST	.9849
LSA	2895.3	MSA	223.8	SSA	2.9
EL1	1724.3	EL2	114.7	ALF	27.82

LAUNCH DATE NOV 15 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 574.883 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.081	GAL	-1.22	AZL	95.37	HCA	179.13	SMA	189.67	ECC	.22094	INC	5.3631
RP	231.01	LAP	-.08	LOP	231.81	VP	21.197	GAP	2.14	AZP	84.63	TAL	353.26	TAP	172.40	RCA	147.77	APO	231.58
RC	224.266	GL	-47.54	GP	33.50	ZAL	94.42	ZAP	128.32	ETS	146.73	ZAE	145.21	ETE	93.55	ZAC	122.43	ETC	253.19

V1	30.115	V2	23.807	CLP	138.04														

PLANETOCENTRIC CONIC

C3	17.633	VHL	4.199	DLA	-32.64	RAL	133.53	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	4.826	DPA	27.41	RAP	204.48

ECC	1.2902																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.04	20 25 26	1280.67	23.27	354.67	1.34	113.56	20 46 47	680.7	26.26	346.91
106.96	0 50 45	5732.89	23.29	270.55	1.34	113.55	2 26 18	5132.9	26.27	262.79
73.04	20 25 26	1280.67	23.27	354.67	1.34	113.56	20 46 47	680.7	26.26	346.91
106.96	0 50 45	5732.89	23.29	270.55	1.34	113.55	2 26 18	5132.9	26.27	262.79
110.00	23 48 20	625.29	16.76	303.03	357.82	120.24	23 58 46	25.3	20.65	296.07
110.00	2 27 1	5436.27	30.14	250.49	4.17	106.94	3 57 37	4836.3	32.16	241.86

DIFFERENTIAL CORRECTIONS

TDE	1.7599	TRA	-.6180	TC3	2.3476	BAU	1.0834
RDE	2.3728	RRA	.0291	RC3	3.9510	FAU	.23206
FDE	-6.8431	FRA	-.2635	FC	-11.3937	BSP	14421
BDE	2.9542	BRA	.6187	BC3	4.5959	FSP	2774

MID-COURSE EXECUTION ACCURACY

SGT	3264.4	SGR	4636.2	SG3	1155.7		
RRT	.9428	RRF	-.9998	RTF	-.9357		
SGB	5670.2	R23	-.1308	R13	-.9914		
SG1	5598.2	SG2	901.0	THA	55.40		

ORBIT DETERMINATION ACCURACY

ST	2420.8	SR	3239.1	SS	3895.0
CRT	.9917	CRS	1.0000	CST	.9905
LSA	5606.9	MSA	294.1	SSA	1.2
EL1	4036.0	EL2	249.8	ALF	53.29

LAUNCH DATE NOV 15 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 582.506 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.051	GAL	-1.14	AZL	82.88	HCA	181.18	SMA	189.15	ECC	.21867	INC	7.1189
RP	230.24	LAP	-.15	LOP	233.84	VP	21.241	GAP	1.45	AZP	97.12	TAL	353.61	TAP	174.80	RCA	147.79	APO	230.51
RC	228.159	GL	56.69	GP	-27.10	ZAL	93.28	ZAP	130.00	ETS	203.83	ZAE	153.63	ETE	256.90	ZAC	63.52	ETC	254.21

V1	30.115	V2	23.887	CLP	136.22														

PLANETOCENTRIC CONIC

C3	24.027	VHL	4.902	DLA	61.69	RAL	188.52	RAD	6568.0	VEL	12.058	PTH	2.16	VHP	4.286	DPA	-27.34	RAP	177.44

ECC	1.3954																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.60	9 25 49	4423.76	-36.16	220.91	75.35	35.98	10 39 33	3823.8	-42.47	214.97
147.40	19 9 7	2737.72	-36.15	81.72	75.33	35.97	19 54 45	2137.7	-42.46	75.77
32.60	9 25 49	4423.76	-36.16	220.91	75.35	35.98	10 39 33	3823.8	-42.47	214.97
147.40	19 9 7	2737.72	-36.15	81.72	75.33	35.97	19 54 45	2137.7	-42.46	75.77
32.60	9 25 49	4423.76	-36.16	220.91	75.35	35.98	10 39 33	3823.8	-42.47	214.97
147.40	19 9 7	2737.72	-36.15	81.72	75.33	35.97	19 54 45	2137.7	-42.46	75.77

DIFFERENTIAL CORRECTIONS

TDE	.1762	TRA	-.9504	TC3	1.4541	BAU	.9126
RDE	.8848	RRA	1.1606	RC3	-2.4406	FAU	.28898
FDE	4.0359	FRA	4.7641	FC	-10.4123	BSP	15722
BDE	.9022	BRA	1.5001	BC3	2.8410	FSP	4503

MID-COURSE EXECUTION ACCURACY

SGT	2749.7	SGR	3869.8	SG3	1404.7		
RRT	-.9301	RRF	.9995	RTF	-.9190		
SGB	4747.2	R23	-.1521	R13	.9883		
SG1	4673.0	SG2	836.3	THA	124.73		

ORBIT DETERMINATION ACCURACY

ST	733.5	SR	1345.8	SS	2183.1
CRT	-.3981	CRS	-.9987	CST	.3507
LSA	2578.8	MSA	681.8	SSA	.8
EL1	1386.6	EL2	653.1	ALF	105.84

LAUNCH DATE NOV 15 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 586.323 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	33.038	GAL	-1.11	AZL	85.33	HCA	182.21	SMA	188.91	ECC	.21762	INC	4.6770
RP	229.86	LAP	-.18	LOP	234.87	VP	21.265	GAP	1.11	AZP	94.67	TAL	353.79	TAP	175.99	RCA	147.80	APO	230.01
RC	230.076	GL	43.65	GP	-15.85	ZAL	93.82	ZAP	133.36	ETS	194.07	ZAE	164.22	ETE	246.27	ZAC	74.52	ETC	255.34

V1	30.115	V2	23.927	CLP	135.54														

PLANETOCENTRIC CONIC

C3	15.203	VHL	3.899	DLA	51.82	RAL	172.79	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	3.842	DPA	-17.43	RAP	183.21

ECC	1.2502																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.61	8 55 46	4249.53	-36.66	200.80	46.98	50.41	10 6 36	3649.5	-41.48	192.99
135.39	17 33 39	2696.29	-36.65	77.46	46.97	50.40	18 18 35	2096.3	-41.47	69.65
44.61	8 55 46	4249.53	-36.66	200.80	46.98	50.41	10 6 36	3649.5	-41.48	192.99
135.39	17 33 39	2696.29	-36.65	77.46	46.97	50.40	18 18 35	2096.3	-41.47	69.65
44.61	8 55 46	4249.53	-36.66	200.80	46.98	50.41	10 6 36	3649.5	-41.48	192.99
135.39	17 33 39	2696.29	-36.65	77.46	46.97	50.40	18 18 35	2096.3	-41.47	69.65

DIFFERENTIAL CORRECTIONS

TDE	-.1141	TRA	-.9471	TC3	2.1558	BAU	.6216
RDE	.5689	RRA	.6206	RC3	-2.1690	FAU	.33651
FDE	5.1008	FRA	5.1819	FC	-19.1620	BSP	13299
BDE	.5802	BRA	1.1323	BC3	3.0581	FSP	6325

MID-COURSE EXECUTION ACCURACY

SGT	2814.6	SGR	2395.1	SG3	1794.1		
RRT	-.9353	RRF	.9996	RTF	-.9258		
SGB	3695.8	R23	-.2347	R13	.9720		
SG1	3637.1	SG2	656.0	THA	139.92		

ORBIT DETERMINATION ACCURACY

ST	697.7	SR	947.3	SS	2777.8
CRT	-.6682	CRS	-.9996	CST	.6465
LSA	2970.6	MSA	525.1	SSA	1.3
EL1	1085.8	EL2	452.8	ALF	122.53

LAUNCH DATE NOV 15 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 590.155 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.025 GAL -1.08 AZL 86.23 HCA 183.23 SMA 188.68 ECC .21663 INC 3.7714 V1 30.115
RP 229.47 LAP -.21 LOP 235.90 VP 21.291 GAP .78 AZP 93.77 TAL 353.94 TAP 177.18 RCA 147.80 APO 229.55 V2 23.968
RC 231.973 GL 37.38 GP -11.23 ZAL 93.86 ZAP 133.21 ETS 189.29 ZAE 167.60 ETE 232.12 ZAC 78.97 ETC 255.62 CLP 134.27

PLANETOCENTRIC CONIC

C3 12.821 VHL 3.581 DLA 46.61 RAL 167.40 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 3.683 DPA -13.15 RAP 185.05 ECC 1.2110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.30	8 56 25	4158.71	-34.92	190.15	36.11	56.92	10 5 44	3558.7	-38.99	181.94
128.70	16 49 59	2712.24	-34.91	77.47	36.10	56.90	17 35 11	2112.2	-38.98	69.26
51.30	8 56 25	4158.71	-34.92	190.15	36.11	56.92	10 5 44	3558.7	-38.99	181.94
128.70	16 49 59	2712.24	-34.91	77.47	36.10	56.90	17 35 11	2112.2	-38.98	69.26
51.30	8 56 25	4158.71	-34.92	190.15	36.11	56.92	10 5 44	3558.7	-38.99	181.94
128.70	16 49 59	2712.24	-34.91	77.47	36.10	56.90	17 35 11	2112.2	-38.98	69.26

DIFFERENTIAL CORRECTIONS
TDE -.0746 TRA -.8720 TC3 2.5414 BAU .5449
RDE .3468 RRA .3968 RC3-1.9096 FAU .37537
FDE 4.5184 FRA 4.8443 FC-25.3469 BSP 10839
BDE .3548 BRA .9580 BC3 3.1789 FSP 6322

MID-COURSE EXECUTION ACCURACY
SGT 2729.8 SGR 1741.3 SG3 1949.4
RRT -.9324 RRF .9993 RTF -.9225
SGB 3237.9 R23 -.2875 R13 .9574
SG1 3192.8 SG2 538.1 THA 148.25

ORBIT DETERMINATION ACCURACY
ST 623.3 SR 621.7 SS 2546.4
CRT -.6126 CRS -.9997 CST .5925
LSA 2648.1 MSA 496.7 SSA 2.1
EL1 790.5 EL2 387.4 ALF 135.12

LAUNCH DATE NOV 15 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 593.997 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.013 GAL -1.05 AZL 86.69 HCA 184.26 SMA 188.46 ECC .21570 INC 3.3067 V1 30.115
RP 229.09 LAP -.25 LOP 236.93 VP 21.318 GAP .45 AZP 93.30 TAL 354.08 TAP 178.35 RCA 147.81 APO 229.11 V2 24.009
RC 233.848 GL 33.76 GP -8.75 ZAL 93.75 ZAP 132.24 ETS 186.60 ZAE 168.36 ETE 218.63 ZAC 81.30 ETC 255.73 CLP 132.86

PLANETOCENTRIC CONIC

C3 11.741 VHL 3.426 DLA 43.56 RAL 164.62 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 3.580 DPA -10.75 RAP 185.78 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.41	9 0 51	4099.63	-33.51	183.67	30.49	60.36	10 9 10	3499.6	-37.17	175.36
124.59	16 23 21	2734.00	-33.50	78.44	30.48	60.35	17 8 55	2134.0	-37.16	70.13
55.41	9 0 51	4099.63	-33.51	183.67	30.49	60.36	10 9 10	3499.6	-37.17	175.36
124.59	16 23 21	2734.00	-33.50	78.44	30.48	60.35	17 8 55	2134.0	-37.16	70.13
55.41	9 0 51	4099.63	-33.51	183.67	30.49	60.36	10 9 10	3499.6	-37.17	175.36
124.59	16 23 21	2734.00	-33.50	78.44	30.48	60.35	17 8 55	2134.0	-37.16	70.13

DIFFERENTIAL CORRECTIONS
TDE -.0618 TRA -.8453 TC3 2.5692 BAU .4766
RDE .2658 RRA .3122 RC3-1.6177 FAU .38901
FDE 4.4125 FRA 4.9574 FC-28.6844 BSP 10327
BDE .2729 BRA .9011 BC3 3.0361 FSP 6997

MID-COURSE EXECUTION ACCURACY
SGT 2629.5 SGR 1394.8 SG3 2065.8
RRT -.9277 RRF .9989 RTF -.9174
SGB 2976.6 R23 -.3209 R13 .9462
SG1 2939.9 SG2 465.6 THA 153.07

ORBIT DETERMINATION ACCURACY
ST 596.5 SR 495.4 SS 2523.7
CRT -.5893 CRS -.9998 CST .5756
LSA 2595.6 MSA 483.2 SSA 3.0
EL1 695.2 EL2 343.4 ALF 143.80

LAUNCH DATE NOV 15 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 597.852 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.001 GAL -1.02 AZL 86.98 HCA 185.30 SMA 188.26 ECC .21482 INC 3.0184 V1 30.115
RP 228.70 LAP -.28 LOP 237.96 VP 21.346 GAP .13 AZP 93.01 TAL 354.21 TAP 179.51 RCA 147.82 APO 228.70 V2 24.049
RC 235.703 GL 31.43 GP -7.22 ZAL 93.59 ZAP 130.98 ETS 184.89 ZAE 167.90 ETE 208.02 ZAC 82.70 ETC 255.79 CLP 131.38

PLANETOCENTRIC CONIC

C3 11.121 VHL 3.335 DLA 41.60 RAL 162.87 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.497 DPA -9.18 RAP 186.04 ECC 1.1830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.16	9 5 14	4057.52	-32.49	179.29	27.04	62.45	10 12 52	3457.5	-35.89	170.95
121.84	16 5 0	2753.57	-32.48	79.50	27.03	62.44	16 50 54	2153.6	-35.88	71.16
58.16	9 5 14	4057.52	-32.49	179.29	27.04	62.45	10 12 52	3457.5	-35.89	170.95
121.84	16 5 0	2753.57	-32.48	79.50	27.03	62.44	16 50 54	2153.6	-35.88	71.16
58.16	9 5 14	4057.52	-32.49	179.29	27.04	62.45	10 12 52	3457.5	-35.89	170.95
121.84	16 5 0	2753.57	-32.48	79.50	27.03	62.44	16 50 54	2153.6	-35.88	71.16

DIFFERENTIAL CORRECTIONS
TDE -.0235 TRA -.7930 TC3 2.5733 BAU .4380
RDE .2133 RRA .2530 RC3-1.4348 FAU .40978
FDE 4.1906 FRA 4.8843 FC-31.9010 BSP 9314
BDE .2146 BRA .8324 BC3 2.9463 FSP 7182

MID-COURSE EXECUTION ACCURACY
SGT 2503.3 SGR 1178.1 SG3 2169.4
RRT -.9210 RRF .9980 RTF -.9108
SGB 2766.7 R23 -.3452 R13 .9366
SG1 2734.6 SG2 420.2 THA 155.96

ORBIT DETERMINATION ACCURACY
ST 550.5 SR 406.9 SS 2409.1
CRT -.4981 CRS -.9999 CST .4929
LSA 2458.8 MSA 475.9 SSA 4.0
EL1 604.4 EL2 321.3 ALF 150.82

LAUNCH DATE NOV 15 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 601.718 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.990 GAL -1.00 AZL 87.17 HCA 186.34 SMA 188.07 ECC .21399 INC 2.8276 V1 30.115
RP 228.31 LAP -.31 LOP 239.00 VP 21.375 GAP -.18 AZP 92.81 TAL 354.33 TAP 180.67 RCA 147.82 APO 228.32 V2 24.090
RC 237.537 GL 29.81 GP -6.17 ZAL 93.42 ZAP 129.57 ETS 183.71 ZAE 166.83 ETE 200.40 ZAC 83.61 ETC 255.83 CLP 129.85

PLANETOCENTRIC CONIC

C3 10.710 VHL 3.273 DLA 40.25 RAL 161.65 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.423 DPA -8.02 RAP 186.03 ECC 1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.12	9 9 2	4025.75	-31.75	176.12	24.68	63.85	10 16 7	3425.8	-34.98	167.77
119.88	15 51 29	2769.94	-31.74	80.47	24.68	63.83	16 37 39	2169.9	-34.97	72.12
60.12	9 9 2	4025.75	-31.75	176.12	24.68	63.85	10 16 7	3425.8	-34.98	167.77
119.88	15 51 29	2769.94	-31.74	80.47	24.68	63.83	16 37 39	2169.9	-34.97	72.12
60.12	9 9 2	4025.75	-31.75	176.12	24.68	63.85	10 16 7	3425.8	-34.98	167.77
119.88	15 51 29	2769.94	-31.74	80.47	24.68	63.83	16 37 39	2169.9	-34.97	72.12

DIFFERENTIAL CORRECTIONS
TDE -.0035 TRA -.7609 TC3 2.4475 BAU .3947
RDE .1899 RRA .2226 RC3-1.2683 FAU .42151
FDE 4.2283 FRA 5.0382 FC-34.0713 BSP 8845
BDE .1899 BRA .7928 BC3 2.7566 FSP 7751

MID-COURSE EXECUTION ACCURACY
SGT 2369.1 SGR 1029.7 SG3 2262.4
RRT -.9112 RRF .9967 RTF -.9017
SGB 2583.2 R23 -.3675 R13 .9266
SG1 2553.1 SG2 393.6 THA 157.84

ORBIT DETERMINATION ACCURACY
ST 525.8 SR 366.9 SS 2425.8
CRT -.4323 CRS -.9999 CST .4388
LSA 2464.6 MSA 470.4 SSA 4.8
EL1 561.3 EL2 309.9 ALF 155.19

LAUNCH DATE NOV 15 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 605.594 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.980	GAL	-.98	AZL	87.31	HCA	187.38	SMA	187.89	ECC	.21322	INC	2.6871
RP	227.92	LAP	-.35	LOP	240.04	VP	21.406	GAP	-.49	AZP	92.67	TAL	354.43	TAP	181.81	RCA	147.83	APO	227.95
RC	239.350	GL	28.63	GP	-5.42	ZAL	93.25	ZAP	128.07	ETS	182.86	ZAE	165.43	ETE	195.06	ZAC	84.23	ETC	255.86

V1	30.115	V2	24.132	CLP	128.27														

PLANETOCENTRIC CONIC

C3	10.415	VHL	3.227	DLA	39.27	RAL	160.74	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	3.356	DPA	-7.11	RAP	185.86

ECC	1.1714																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.57	9 12 9	4000.97	-31.20	173.72	22.96	64.84	10 18 50	3401.0	-34.30	165.36
118.43	15 41 7	2783.39	-31.19	81.29	22.96	64.82	16 27 30	2183.4	-34.30	72.94
61.57	9 12 9	4000.97	-31.20	173.72	22.96	64.84	10 18 50	3401.0	-34.30	165.36
118.43	15 41 7	2783.39	-31.19	81.29	22.96	64.82	16 27 30	2183.4	-34.30	72.94
61.57	9 12 9	4000.97	-31.20	173.72	22.96	64.84	10 18 50	3401.0	-34.30	165.36
118.43	15 41 7	2783.39	-31.19	81.29	22.96	64.82	16 27 30	2183.4	-34.30	72.94

DIFFERENTIAL CORRECTIONS

TDE	.0239	TRA	-.7197	TC3	2.2997	BAU	.3581
RDE	.1717	RRA	.1971	RC3	-1.1519	FAU	.43836
FDE	4.1813	FRA	5.0739	FC	-36.4370	BSP	8163
BDE	.1733	BRA	.7462	BC3	2.5721	FSP	8045

MID-COURSE EXECUTION ACCURACY

SGT	2220.0	SGR	922.0	SG3	2356.0		
RRT	-.8973	RRF	.9947	RTF	-.8886		
SGB	2403.9	R23	-.3916	R13	.9144		
SG1	2373.6	SG2	380.6	THA	158.99		

ORBIT DETERMINATION ACCURACY

ST	498.9	SR	334.4	SS	2387.4		
CRT	-.3308	CRS	-.9996	CST	.3515		
LSA	2417.3	MSA	465.9	SSA	5.8		
EL1	518.0	EL2	303.9	ALF	160.58		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 609.482 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.971	GAL	-.96	AZL	87.42	HCA	188.42	SMA	187.72	ECC	.21250	INC	2.5819
RP	227.53	LAP	-.38	LOP	241.09	VP	21.438	GAP	-.79	AZP	92.55	TAL	354.52	TAP	182.95	RCA	147.83	APO	227.61
RC	241.142	GL	27.73	GP	-4.84	ZAL	93.09	ZAP	126.50	ETS	182.21	ZAE	163.85	ETE	191.28	ZAC	84.66	ETC	255.89

V1	30.115	V2	24.173	CLP	126.65														

PLANETOCENTRIC CONIC

C3	10.189	VHL	3.192	DLA	38.53	RAL	160.03	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	3.294	DPA	-6.35	RAP	185.58

ECC	1.1677																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.70	9 14 44	3981.08	-30.78	171.83	21.64	65.58	10 21 5	3381.1	-33.79	163.48
117.30	15 32 54	2794.45	-30.77	81.98	21.64	65.56	16 19 28	2194.4	-33.78	73.63
62.70	9 14 44	3981.08	-30.78	171.83	21.64	65.58	10 21 5	3381.1	-33.79	163.48
117.30	15 32 54	2794.45	-30.77	81.98	21.64	65.56	16 19 28	2194.4	-33.78	73.63
62.70	9 14 44	3981.08	-30.78	171.83	21.64	65.58	10 21 5	3381.1	-33.79	163.48
117.30	15 32 54	2794.45	-30.77	81.98	21.64	65.56	16 19 28	2194.4	-33.78	73.63

DIFFERENTIAL CORRECTIONS

TDE	.0504	TRA	-.6792	TC3	2.1167	BAU	.3221
RDE	.1612	RRA	.1798	RC3	-1.0541	FAU	.45369
FDE	4.2047	FRA	5.1636	FC	-38.5489	BSP	7470
BDE	.1689	BRA	.7026	BC3	2.3647	FSP	8405

MID-COURSE EXECUTION ACCURACY

SGT	2064.7	SGR	840.6	SG3	2448.3		
RRT	-.8792	RRF	.9920	RTF	-.8723		
SGB	2229.3	R23	-.4162	R13	.9005		
SG1	2197.3	SG2	376.3	THA	159.68		

ORBIT DETERMINATION ACCURACY

ST	477.9	SR	315.3	SS	2383.4		
CRT	-.2158	CRS	-.9991	CST	.2522		
LSA	2407.2	MSA	462.1	SSA	6.8		
EL1	485.9	EL2	302.8	ALF	166.62		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 613.380 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.962	GAL	-.94	AZL	87.50	HCA	189.47	SMA	187.57	ECC	.21182	INC	2.4990
RP	227.14	LAP	-.41	LOP	242.13	VP	21.471	GAP	-1.09	AZP	92.47	TAL	354.60	TAP	184.07	RCA	147.84	APO	227.30
RC	242.914	GL	27.02	GP	-4.39	ZAL	92.95	ZAP	124.87	ETS	181.70	ZAE	162.14	ETE	188.56	ZAC	84.97	ETC	255.92

V1	30.115	V2	24.214	CLP	124.99														

PLANETOCENTRIC CONIC

C3	10.008	VHL	3.164	DLA	37.96	RAL	159.47	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	3.236	DPA	-5.69	RAP	185.21

ECC	1.1647																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.59	9 16 54	3964.75	-30.44	170.31	20.60	66.15	10 22 59	3364.7	-33.39	161.96
116.41	15 26 15	2803.62	-30.43	82.57	20.59	66.13	16 12 59	2203.6	-33.38	74.22
63.59	9 16 54	3964.75	-30.44	170.31	20.60	66.15	10 22 59	3364.7	-33.39	161.96
116.41	15 26 15	2803.62	-30.43	82.57	20.59	66.13	16 12 59	2203.6	-33.38	74.22
63.59	9 16 54	3964.75	-30.44	170.31	20.60	66.15	10 22 59	3364.7	-33.39	161.96
116.41	15 26 15	2803.62	-30.43	82.57	20.59	66.13	16 12 59	2203.6	-33.38	74.22

DIFFERENTIAL CORRECTIONS

TDE	.0778	TRA	-.6373	TC3	1.9021	BAU	.2859
RDE	.1540	RRA	.1660	RC3	-.9740	FAU	.46976
FDE	4.2253	FRA	5.2382	FC	-40.6358	BSP	6725
BDE	.1725	BRA	.6586	BC3	2.1370	FSP	8707

MID-COURSE EXECUTION ACCURACY

SGT	1900.3	SGR	776.5	SG3	2540.2		
RRT	-.8543	RRF	.9885	RTF	-.8498		
SGB	2052.8	R23	-.4458	R13	.8823		
SG1	2017.3	SG2	380.2	THA	160.02		

ORBIT DETERMINATION ACCURACY

ST	462.6	SR	302.0	SS	2375.1		
CRT	-.0830	CRS	-.9982	CST	.1360		
LSA	2395.0	MSA	458.5	SSA	7.8		
EL1	463.8	EL2	300.2	ALF	174.65		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 617.288 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.953	GAL	-.93	AZL	87.57	HCA	190.53	SMA	187.42	ECC	.21119	INC	2.4324
RP	226.75	LAP	-.44	LOP	243.19	VP	21.505	GAP	-1.38	AZP	92.39	TAL	354.66	TAP	185.19	RCA	147.84	APO	227.00
RC	244.666	GL	26.45	GP	-4.03	ZAL	92.84	ZAP	123.19	ETS	181.28	ZAE	160.33	ETE	186.55	ZAC	85.18	ETC	255.95

V1	30.115	V2	24.256	CLP	123.28														

PLANETOCENTRIC CONIC

C3	9.859	VHL	3.140	DLA	37.49	RAL	159.02	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	3.181	DPA	-5.09	RAP	184.77

ECC	1.1623																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.33	9 18 48	3950.99	-30.18	169.05	19.75	66.61	10 24 39	3351.0	-33.06	160.70
115.67	15 20 45	2811.41	-30.17	83.07	19.75	66.59	16 7 36	2211.4	-33.05	74.72
64.33	9 18 48	3950.99	-30.18	169.05	19.75	66.61	10 24 39	3351.0	-33.06	160.70
115.67	15 20 45	2811.41	-30.17	83.07	19.75	66.59	16 7 36	2211.4	-33.05	74.72
64.33	9 18 48	3950.99	-30.18	169.05	19.75	66.61	10 24 39	3351.0	-33.06	160.70
115.67	15 20 45	2811.41	-30.17	83.07	19.75	66.59	16 7 36	2211.4	-33.05	74.72

DIFFERENTIAL CORRECTIONS

TDE	.1048	TRA	-.5966	TC3	1.6482	BAU	.2478
RDE	.1497	RRA	.1556	RC3	-.9036	FAU	.48502
FDE	4.2690	FRA	5.3322	FC	-42.5899	BSP	6017
BDE	.1828	BRA	.6166	BC3	1.8797	FSP	9041

MID-COURSE EXECUTION ACCURACY

SGT	1729.3	SGR	724.4	SG3	2629.8		
RRT	-.8192	RRF	.9839	RTF	-.8173		
SGB	1874.9	R23	-.4836	R13	.8571		
SG1	1833.5	SG2	391.8	THA	160.11		

ORBIT DETERMINATION ACCURACY

ST	454.9	SR	294.0	SS	2378.0		
CRT	.0562	CRS	-.9972	CST	.0126		
LSA	2396.0	MSA	455.3	SSA	8.8		
EL1	455.5	EL2	293.2	ALF	3.55		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 621.207 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.945 GAL -.92 AZL 87.62 HCA 191.58 SMA 187.28 ECC .21060 INC 2.3778 V1 30.115
RP 226.36 LAP -.48 LOP 244.24 VP 21.540 GAP -1.67 AZP 92.33 TAL 354.71 TAP 186.29 RCA 147.84 APO 226.73 V2 24.297
RC 246.398 GL 25.98 GP -3.73 ZAL 92.74 ZAP 121.47 ETS 180.95 ZAE 158.46 ETE 185.04 ZAC 85.32 ETC 255.98 CLP 121.54

PLANETOCENTRIC CONIC

C3 9.733 VHL 3.120 DLA 37.11 RAL 158.66 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 3.130 DPA -4.53 RAP 184.27 ECC 1.1602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.94	9 20 31	3939.16	-29.96	167.98	19.06	66.99	10 26 10	3339.2	-32.79	159.63
115.06	15 16 8	2818.16	-29.94	83.51	19.06	66.97	16 3 6	2218.2	-32.78	75.16
64.94	9 20 31	3939.16	-29.96	167.98	19.06	66.99	10 26 10	3339.2	-32.79	159.63
115.06	15 16 8	2818.16	-29.94	83.51	19.06	66.97	16 3 6	2218.2	-32.78	75.16
64.94	9 20 31	3939.16	-29.96	167.98	19.06	66.99	10 26 10	3339.2	-32.79	159.63
115.06	15 16 8	2818.16	-29.94	83.51	19.06	66.97	16 3 6	2218.2	-32.78	75.16

DIFFERENTIAL CORRECTIONS
TDE .1335 TRA -.5550 TC3 1.3670 BAU .2089
RDE .1473 RRA .1475 RC3 -.8414 FAU .49980
FDE 4.3229 FRA 5.4378 FC-44.4545 BSP 5240
BDE .1988 BRA .5743 BC3 1.6051 FSP 9363

MID-COURSE EXECUTION ACCURACY
SGT 1556.1 SGR 681.3 SG3 2717.5
RRT -.7694 RRF .9783 RTF -.7707
SGB 1698.7 R23 -.5316 R13 .8218
SG1 1648.3 SG2 410.9 THA 160.09

ORBIT DETERMINATION ACCURACY
ST 455.9 SR 289.5 SS 2386.0
CRT .2034 CRS -.9959 CST -.1206
LSA 2404.1 MSA 453.0 SSA 9.8
EL1 462.0 EL2 279.7 ALF 11.70

LAUNCH DATE NOV 15 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 625.135 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.938 GAL -.91 AZL 87.67 HCA 192.64 SMA 187.16 ECC .21005 INC 2.3319 V1 30.115
RP 225.97 LAP -.51 LOP 245.30 VP 21.576 GAP -1.95 AZP 92.28 TAL 354.74 TAP 187.38 RCA 147.84 APO 226.47 V2 24.339
RC 248.110 GL 25.59 GP -3.48 ZAL 92.67 ZAP 119.70 ETS 180.66 ZAE 156.53 ETE 183.88 ZAC 85.41 ETC 256.01 CLP 119.76

PLANETOCENTRIC CONIC

C3 9.626 VHL 3.103 DLA 36.79 RAL 158.36 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.083 DPA -4.00 RAP 183.72 ECC 1.1584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.46	9 22 7	3928.82	-29.77	167.05	18.49	67.31	10 27 36	3328.8	-32.57	158.70
114.54	15 12 12	2824.10	-29.76	83.90	18.48	67.29	15 59 16	2224.1	-32.56	75.56
65.46	9 22 7	3928.82	-29.77	167.05	18.49	67.31	10 27 36	3328.8	-32.57	158.70
114.54	15 12 12	2824.10	-29.76	83.90	18.48	67.29	15 59 16	2224.1	-32.56	75.56
65.46	9 22 7	3928.82	-29.77	167.05	18.49	67.31	10 27 36	3328.8	-32.57	158.70
114.54	15 12 12	2824.10	-29.76	83.90	18.48	67.29	15 59 16	2224.1	-32.56	75.56

DIFFERENTIAL CORRECTIONS
TDE .1632 TRA -.5129 TC3 1.0621 BAU .1700
RDE .1460 RRA .1410 RC3 -.7862 FAU .51458
FDE 4.3766 FRA 5.5459 FC-46.2817 BSP 4442
BDE .2190 BRA .5319 BC3 1.3214 FSP 9670

MID-COURSE EXECUTION ACCURACY
SGT 1387.1 SGR 645.2 SG3 2804.5
RRT -.6980 RRF .9714 RTF -.7022
SGB 1529.8 R23 -.5932 R13 .7700
SG1 1466.0 SG2 437.2 THA 160.18

ORBIT DETERMINATION ACCURACY
ST 465.9 SR 287.1 SS 2394.1
CRT .3466 CRS -.9944 CST -.2525
LSA 2414.1 MSA 451.0 SSA 10.8
EL1 481.2 EL2 260.8 ALF 17.27

LAUNCH DATE NOV 15 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 629.074 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.931 GAL -.91 AZL 87.71 HCA 193.71 SMA 187.04 ECC .20955 INC 2.2932 V1 30.115
RP 225.58 LAP -.54 LOP 246.36 VP 21.612 GAP -2.23 AZP 92.23 TAL 354.76 TAP 188.47 RCA 147.84 APO 226.23 V2 24.381
RC 249.803 GL 25.26 GP -3.27 ZAL 92.62 ZAP 117.90 ETS 180.42 ZAE 154.55 ETE 182.98 ZAC 85.45 ETC 256.05 CLP 117.95

PLANETOCENTRIC CONIC

C3 9.532 VHL 3.087 DLA 36.51 RAL 158.14 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.039 DPA -3.49 RAP 183.13 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.93	9 23 39	3919.65	-29.60	166.23	18.02	67.58	10 28 59	3319.7	-32.37	157.89
114.07	15 8 50	2829.43	-29.59	84.25	18.01	67.57	15 55 59	2229.4	-32.36	75.91
65.93	9 23 39	3919.65	-29.60	166.23	18.02	67.58	10 28 59	3319.7	-32.37	157.89
114.07	15 8 50	2829.43	-29.59	84.25	18.01	67.57	15 55 59	2229.4	-32.36	75.91
65.93	9 23 39	3919.65	-29.60	166.23	18.02	67.58	10 28 59	3319.7	-32.37	157.89
114.07	15 8 50	2829.43	-29.59	84.25	18.01	67.57	15 55 59	2229.4	-32.36	75.91

DIFFERENTIAL CORRECTIONS
TDE .1922 TRA -.4687 TC3 .7303 BAU .1320
RDE .1460 RRA .1356 RC3 -.7351 FAU .52841
FDE 4.4521 FRA 5.6614 FC-47.9935 BSP 3659
BDE .2414 BRA .4880 BC3 1.0361 FSP 10004

MID-COURSE EXECUTION ACCURACY
SGT 1225.5 SGR 614.4 SG3 2888.1
RRT -.5935 RRF .9632 RTF -.5996
SGB 1370.9 R23 -.6727 R13 .6903
SG1 1287.5 SG2 470.7 THA 160.76

ORBIT DETERMINATION ACCURACY
ST 482.5 SR 287.2 SS 2412.7
CRT .4762 CRS -.9928 CST -.3748
LSA 2436.5 MSA 446.9 SSA 11.7
EL1 507.6 EL2 240.0 ALF 20.64

LAUNCH DATE NOV 15 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 633.022 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.925 GAL -.90 AZL 87.74 HCA 194.77 SMA 186.93 ECC .20908 INC 2.2595 V1 30.115
RP 225.19 LAP -.58 LOP 247.43 VP 21.650 GAP -2.50 AZP 92.18 TAL 354.77 TAP 189.54 RCA 147.85 APO 226.01 V2 24.423
RC 251.477 GL 24.98 GP -3.08 ZAL 92.60 ZAP 116.06 ETS 180.22 ZAE 152.52 ETE 182.26 ZAC 85.46 ETC 256.08 CLP 116.10

PLANETOCENTRIC CONIC

C3 9.450 VHL 3.074 DLA 36.26 RAL 157.96 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 2.998 DPA -3.00 RAP 182.50 ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.34	9 25 12	3911.33	-29.46	165.49	17.63	67.83	10 30 23	3311.3	-32.19	157.15
113.66	15 5 54	2834.35	-29.44	84.58	17.63	67.81	15 53 8	2234.4	-32.18	76.24
66.34	9 25 12	3911.33	-29.46	165.49	17.63	67.83	10 30 23	3311.3	-32.19	157.15
113.66	15 5 54	2834.35	-29.44	84.58	17.63	67.81	15 53 8	2234.4	-32.18	76.24
66.34	9 25 12	3911.33	-29.46	165.49	17.63	67.83	10 30 23	3311.3	-32.19	157.15
113.66	15 5 54	2834.35	-29.44	84.58	17.63	67.81	15 53 8	2234.4	-32.18	76.24

DIFFERENTIAL CORRECTIONS
TDE .2252 TRA -.4242 TC3 .3754 BAU .0991
RDE .1461 RRA .1311 RC3 -.6885 FAU .54222
FDE 4.4946 FRA 5.7721 FC-49.6762 BSP 2876
BDE .2685 BRA .4440 BC3 .7842 FSP 10294

MID-COURSE EXECUTION ACCURACY
SGT 1091.4 SGR 587.6 SG3 2969.1
RRT -.4375 RRF .9535 RTF -.4431
SGB 1239.5 R23 -.7773 R13 .5531
SG1 1129.5 SG2 510.5 THA 163.22

ORBIT DETERMINATION ACCURACY
ST 512.6 SR 287.4 SS 2417.0
CRT .5938 CRS -.9910 CST -.4877
LSA 2447.0 MSA 446.1 SSA 12.7
EL1 546.2 EL2 217.1 ALF 22.08

LAUNCH DATE NOV 15 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 636.980 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.919	GAL	-.90	AZL	87.77	HCA	195.84	SMA	186.83	ECC	.20866	INC	2.2303
RP	224.80	LAP	-.61	LOP	248.50	VP	21.688	GAP	-2.77	AZP	92.15	TAL	354.76	TAP	190.61	RCA	147.85	APO	225.81
RC	253.132	GL	24.73	GP	-2.92	ZAL	92.61	ZAP	114.18	ETS	180.04	ZAE	150.45	ETE	181.68	ZAC	85.44	ETC	256.13

V1 30.115 V2 24.465 CLP 114.21

PLANETOCENTRIC CONIC

C3	9.377	VHL	3.062	DLA	36.03	RAL	157.84	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	2.961	DPA	-2.51	RAP	181.83

ECC 1.1543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.72	9 26 45	3903.73	-29.32	164.82	17.32	68.04	10 31 49	3303.7	-32.02	156.48
113.28	15 3 21	2838.94	-29.31	84.88	17.31	68.03	15 50 40	2238.9	-32.02	76.54
66.72	9 26 45	3903.73	-29.32	164.82	17.32	68.04	10 31 49	3303.7	-32.02	156.48
113.28	15 3 21	2838.94	-29.31	84.88	17.31	68.03	15 50 40	2238.9	-32.02	76.54
66.72	9 26 45	3903.73	-29.32	164.82	17.32	68.04	10 31 49	3303.7	-32.02	156.48
113.28	15 3 21	2838.94	-29.31	84.88	17.31	68.03	15 50 40	2238.9	-32.02	76.54

DIFFERENTIAL CORRECTIONS

TDE	.2581	TRA	-.3788	TC3	-.0017	BAU	.0808
RDE	.1470	RRA	.1274	RC3	-.6448	FAU	.55531
FDE	4.5444	FRA	5.8888	FC	-51.2692	BSP	2174
BDE	.2970	BRA	.3996	BC3	.6448	FSP	10570

MID-COURSE EXECUTION ACCURACY

SGT	1000.6	SGR	564.3	SG3	3047.2		
RRT	-.2217	RRF	.9423	RTF	-.2211		
SGB	1148.7	R23	-.8909	R13	.3072		
SG1	1011.6	SG2	544.3	THA	169.93		

ORBIT DETERMINATION ACCURACY

ST	549.8	SR	289.1	SS	2425.9		
CRT	.6891	CRS	-.9890	CST	-.5815		
LSA	2464.3	MSA	444.6	SSA	13.7		
EL1	589.7	EL2	195.3	ALF	22.52		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 640.947 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.914	GAL	-.91	AZL	87.80	HCA	196.92	SMA	186.74	ECC	.20827	INC	2.2046
RP	224.41	LAP	-.64	LOP	249.58	VP	21.728	GAP	-3.03	AZP	92.11	TAL	354.74	TAP	191.66	RCA	147.84	APO	225.63
RC	254.766	GL	24.51	GP	-2.77	ZAL	92.64	ZAP	112.28	ETS	179.88	ZAE	148.34	ETE	181.21	ZAC	85.40	ETC	256.17

V1 30.115 V2 24.506 CLP 112.30

PLANETOCENTRIC CONIC

C3	9.313	VHL	3.052	DLA	35.82	RAL	157.76	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	2.928	DPA	-2.03	RAP	181.13

ECC 1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.08	9 28 26	3896.48	-29.19	164.18	17.07	68.25	10 33 22	3296.5	-31.87	155.84
112.92	15 1 4	2843.51	-29.18	85.19	17.06	68.23	15 48 27	2243.5	-31.86	76.85
67.08	9 28 26	3896.48	-29.19	164.18	17.07	68.25	10 33 22	3296.5	-31.87	155.84
112.92	15 1 4	2843.51	-29.18	85.19	17.06	68.23	15 48 27	2243.5	-31.86	76.85
67.08	9 28 26	3896.48	-29.19	164.18	17.07	68.25	10 33 22	3296.5	-31.87	155.84
112.92	15 1 4	2843.51	-29.18	85.19	17.06	68.23	15 48 27	2243.5	-31.86	76.85

DIFFERENTIAL CORRECTIONS

TDE	.2934	TRA	-.3315	TC3	-.3995	BAU	.0901
RDE	.1479	RRA	.1243	RC3	-.6035	FAU	.56781
FDE	4.5740	FRA	6.0026	FC	-52.7861	BSP	1741
BDE	.3286	BRA	.3540	BC3	.7238	FSP	10826

MID-COURSE EXECUTION ACCURACY

SGT	975.8	SGR	543.7	SG3	3121.0		
RRT	.0414	RRF	.9293	RTF	.0544		
SGB	1117.0	R23	.9267	R13	.0717		
SG1	976.2	SG2	543.0	THA	1.92		

ORBIT DETERMINATION ACCURACY

ST	597.2	SR	291.1	SS	2427.2		
CRT	.7665	CRS	-.9868	CST	-.6594		
LSA	2476.8	MSA	444.4	SSA	14.6		
EL1	641.1	EL2	174.1	ALF	22.21		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 644.924 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.909	GAL	-.91	AZL	87.82	HCA	198.00	SMA	186.65	ECC	.20791	INC	2.1818
RP	224.02	LAP	-.67	LOP	250.65	VP	21.767	GAP	-3.28	AZP	92.08	TAL	354.70	TAP	192.70	RCA	147.84	APO	225.46
RC	256.380	GL	24.32	GP	-2.64	ZAL	92.70	ZAP	110.34	ETS	179.75	ZAE	146.21	ETE	180.83	ZAC	85.34	ETC	256.22

V1 30.115 V2 24.548 CLP 110.37

PLANETOCENTRIC CONIC

C3	9.255	VHL	3.042	DLA	35.62	RAL	157.73	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	2.897	DPA	-1.55	RAP	180.40

ECC 1.1523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.42	9 30 12	3889.59	-29.06	163.57	16.88	68.43	10 35 1	3289.6	-31.72	155.24
112.58	14 59 2	2847.99	-29.05	85.49	16.87	68.42	15 46 30	2248.0	-31.71	77.15
67.42	9 30 12	3889.59	-29.06	163.57	16.88	68.43	10 35 1	3289.6	-31.72	155.24
112.58	14 59 2	2847.99	-29.05	85.49	16.87	68.42	15 46 30	2248.0	-31.71	77.15
67.42	9 30 12	3889.59	-29.06	163.57	16.88	68.43	10 35 1	3289.6	-31.72	155.24
112.58	14 59 2	2847.99	-29.05	85.49	16.87	68.42	15 46 30	2248.0	-31.71	77.15

DIFFERENTIAL CORRECTIONS

TDE	.3281	TRA	-.2826	TC3	-.8193	BAU	.1231
RDE	.1494	RRA	.1216	RC3	-.5637	FAU	.57918
FDE	4.6097	FRA	6.1169	FC	-54.1762	BSP	1854
BDE	.3605	BRA	.3076	BC3	.9945	FSP	11084

MID-COURSE EXECUTION ACCURACY

SGT	1029.0	SGR	525.5	SG3	3189.6		
RRT	.2967	RRF	.9145	RTF	.3296		
SGB	1155.5	R23	.8209	R13	.4076		
SG1	1044.3	SG2	494.5	THA	11.15		

ORBIT DETERMINATION ACCURACY

ST	648.6	SR	294.0	SS	2432.6		
CRT	.8257	CRS	-.9845	CST	-.7211		
LSA	2495.7	MSA	442.7	SSA	15.6		
EL1	695.1	EL2	154.7	ALF	21.65		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 648.910 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.904	GAL	-.92	AZL	87.84	HCA	199.08	SMA	186.57	ECC	.20760	INC	2.1614
RP	223.63	LAP	-.71	LOP	251.74	VP	21.808	GAP	-3.53	AZP	92.04	TAL	354.65	TAP	193.73	RCA	147.84	APO	225.31
RC	257.974	GL	24.14	GP	-2.53	ZAL	92.79	ZAP	108.39	ETS	179.63	ZAE	144.04	ETE	180.51	ZAC	85.27	ETC	256.28

V1 30.115 V2 24.590 CLP 108.40

PLANETOCENTRIC CONIC

C3	9.204	VHL	3.034	DLA	35.43	RAL	157.73	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	2.871	DPA	-1.08	RAP	179.65

ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.76	9 32 6	3882.91	-28.94	162.99	16.74	68.61	10 36 49	3282.9	-31.58	154.66
112.24	14 57 11	2852.52	-28.93	85.79	16.73	68.59	15 44 44	2252.5	-31.57	77.46
67.76	9 32 6	3882.91	-28.94	162.99	16.74	68.61	10 36 49	3282.9	-31.58	154.66
112.24	14 57 11	2852.52	-28.93	85.79	16.73	68.59	15 44 44	2252.5	-31.57	77.46
67.76	9 32 6	3882.91	-28.94	162.99	16.74	68.61	10 36 49	3282.9	-31.58	154.66
112.24	14 57 11	2852.52	-28.93	85.79	16.73	68.59	15 44 44	2252.5	-31.57	77.46

DIFFERENTIAL CORRECTIONS

TDE	.3636	TRA	-.2325	TC3	-1.2570	BAU	.1677
RDE	.1510	RRA	.1192	RC3	-.5259	FAU	.59002
FDE	4.6272	FRA	6.2236	FC	-55.4962	BSP	2480
BDE	.3937	BRA	.2613	BC3	1.3625	FSP	11299

MID-COURSE EXECUTION ACCURACY

SGT	1159.1	SGR	509.4	SG3	3253.9		
RRT	.4916	RRF	.8977	RTF	.5477		
SGB	1266.1	R23	.6690	R13	.6109		
SG1	1190.1	SG2	432.1	THA	14.09		

ORBIT DETERMINATION ACCURACY

ST	705.8	SR	297.2	SS	2431.5		
CRT	.8709	CRS	-.9820	CST	-.7694		
LSA	2510.6	MSA	441.6	SSA	16.5		
EL1	753.5	EL2	136.8	ALF	20.85		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 1 1965

DISTANCE 652.905

HELIOCENTRIC CONIC

RL 147.95 LAL .00 LOL 52.67 VL 32.900 GAL -.93 AZL 87.86 HCA 200.17 SMA 186.50 ECC .20731 INC 2.1432 V1 30.115
RP 223.24 LAP -.74 LOP 252.82 VP 21.849 GAP -3.78 AZP 92.01 TAL 354.59 TAP 194.76 RCA 147.84 APO 225.17 V2 24.632
RC 259.547 GL 23.99 GP -2.42 ZAL 92.90 ZAP 106.41 ETS 179.52 ZAE 141.85 ETE 180.25 ZAC 85.18 ETC 256.33 CLP 106.42

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.159 VHL 3.026 DLA 35.24 RAL 157.78 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.847 DPA -.61 RAP 178.89 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.09	9 34 8	3876.38	-28.82	162.41	16.65	68.78	10 38 44	3276.4	-31.43	154.09
111.91	14 55 31	2857.14	-28.81	86.10	16.65	68.77	15 43 8	2257.1	-31.42	77.78
68.09	9 34 8	3876.38	-28.82	162.41	16.65	68.78	10 38 44	3276.4	-31.43	154.09
111.91	14 55 31	2857.14	-28.81	86.10	16.65	68.77	15 43 8	2257.1	-31.42	77.78
68.09	9 34 8	3876.38	-28.82	162.41	16.65	68.78	10 38 44	3276.4	-31.43	154.09
111.91	14 55 31	2857.14	-28.81	86.10	16.65	68.77	15 43 8	2257.1	-31.42	77.78

DIFFERENTIAL CORRECTIONS

TDE .4005 TRA -.1811 TC3-1.7147 BAU .2183
RDE .1528 RRA .1175 RC3 -.4882 FAU .59892
FDE 4.6392 FRA 6.3483 FC-56.6134 BSP 3388
BDE .4287 BRA .2159 BC3 1.7828 FSP 11513

MID-COURSE EXECUTION ACCURACY

SGT 1352.2 SGR 495.2 SG3 3310.2
RRT .6150 RRF .8789 RTF .6958
SGB 1440.0 R23 .5242 R13 .7324
SG1 1388.9 SG2 380.1 THA 13.74

ORBIT DETERMINATION ACCURACY

ST 769.3 SR 300.8 SS 2431.3
CRT .9049 CRS -.9792 CST -.8070
LSA 2529.4 MSA 442.0 SSA 17.4
EL1 817.2 EL2 120.5 ALF 19.94

LAUNCH DATE NOV 15 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 3 1965

DISTANCE 656.910

HELIOCENTRIC CONIC

RL 147.95 LAL .00 LOL 52.67 VL 32.897 GAL -.94 AZL 87.87 HCA 201.26 SMA 186.44 ECC .20706 INC 2.1265 V1 30.115
RP 222.85 LAP -.77 LOP 253.91 VP 21.891 GAP -4.02 AZP 91.98 TAL 354.51 TAP 195.77 RCA 147.84 APO 225.04 V2 24.674
RC 261.100 GL 23.84 GP -2.32 ZAL 93.05 ZAP 104.41 ETS 179.43 ZAE 139.63 ETE 180.02 ZAC 85.08 ETC 256.40 CLP 104.43

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.118 VHL 3.020 DLA 35.05 RAL 157.86 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.827 DPA -.14 RAP 178.10 ECC 1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.42	9 36 22	3869.79	-28.69	161.84	16.61	68.94	10 40 52	3269.8	-31.29	153.51
111.58	14 53 57	2862.02	-28.68	86.43	16.60	68.93	15 41 39	2262.0	-31.28	78.11
68.42	9 36 22	3869.79	-28.69	161.84	16.61	68.94	10 40 52	3269.8	-31.29	153.51
111.58	14 53 57	2862.02	-28.68	86.43	16.60	68.93	15 41 39	2262.0	-31.28	78.11
68.42	9 36 22	3869.79	-28.69	161.84	16.61	68.94	10 40 52	3269.8	-31.29	153.51
111.58	14 53 57	2862.02	-28.68	86.43	16.60	68.93	15 41 39	2262.0	-31.28	78.11

DIFFERENTIAL CORRECTIONS

TDE .4372 TRA -.1278 TC3-2.1876 BAU .2723
RDE .1547 RRA .1157 RC3 -.4524 FAU .60747
FDE 4.6273 FRA 6.4474 FC-57.6751 BSP 4407
BDE .4637 BRA .1724 BC3 2.2338 FSP 11679

MID-COURSE EXECUTION ACCURACY

SGT 1587.8 SGR 482.4 SG3 3361.5
RRT .6853 RRF .8579 RTF .7911
SGB 1659.5 R23 .3966 R13 .8103
SG1 1623.5 SG2 343.6 THA 12.32

ORBIT DETERMINATION ACCURACY

ST 835.2 SR 304.4 SS 2421.5
CRT .9306 CRS -.9762 CST -.8365
LSA 2541.3 MSA 441.7 SSA 18.3
EL1 882.6 EL2 105.4 ALF 19.02

LAUNCH DATE NOV 15 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 5 1965

DISTANCE 660.924

HELIOCENTRIC CONIC

RL 147.95 LAL .00 LOL 52.67 VL 32.898 GAL -.96 AZL 87.89 HCA 202.35 SMA 186.38 ECC .20684 INC 2.1114 V1 30.115
RP 222.47 LAP -.80 LOP 255.00 VP 21.933 GAP -4.26 AZP 91.95 TAL 354.42 TAP 196.77 RCA 147.83 APO 224.94 V2 24.716
RC 262.633 GL 23.71 GP -2.23 ZAL 93.21 ZAP 102.41 ETS 179.35 ZAE 137.40 ETE 179.84 ZAC 84.97 ETC 256.46 CLP 102.42

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.083 VHL 3.014 DLA 34.86 RAL 157.98 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.811 DPA .32 RAP 177.31 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.75	9 38 47	3863.20	-28.56	161.26	16.61	69.10	10 43 10	3263.2	-31.14	152.94
111.25	14 52 30	2867.11	-28.55	86.78	16.60	69.09	15 40 17	2267.1	-31.13	78.46
68.75	9 38 47	3863.20	-28.56	161.26	16.61	69.10	10 43 10	3263.2	-31.14	152.94
111.25	14 52 30	2867.11	-28.55	86.78	16.60	69.09	15 40 17	2267.1	-31.13	78.46
68.75	9 38 47	3863.20	-28.56	161.26	16.61	69.10	10 43 10	3263.2	-31.14	152.94
111.25	14 52 30	2867.11	-28.55	86.78	16.60	69.09	15 40 17	2267.1	-31.13	78.46

DIFFERENTIAL CORRECTIONS

TDE .4742 TRA -.0724 TC3-2.6726 BAU .3285
RDE .1565 RRA .1141 RC3 -.4180 FAU .61533
FDE 4.5897 FRA 6.5303 FC-58.6500 BSP 5535
BDE .4994 BRA .1351 BC3 2.7051 FSP 11768

MID-COURSE EXECUTION ACCURACY

SGT 1853.7 SGR 471.0 SG3 3406.9
RRT .7213 RRF .8347 RTF .8520
SGB 1912.6 R23 .2903 R13 .8618
SG1 1885.5 SG2 320.7 THA 10.70

ORBIT DETERMINATION ACCURACY

ST 904.3 SR 307.9 SS 2402.2
CRT .9501 CRS -.9728 CST -.8596
LSA 2547.1 MSA 441.8 SSA 19.3
EL1 950.9 EL2 91.4 ALF 18.10

LAUNCH DATE NOV 15 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 7 1965

DISTANCE 664.945

HELIOCENTRIC CONIC

RL 147.95 LAL .00 LOL 52.67 VL 32.891 GAL -.97 AZL 87.90 HCA 203.45 SMA 186.33 ECC .20665 INC 2.0975 V1 30.115
RP 222.08 LAP -.83 LOP 256.10 VP 21.976 GAP -4.49 AZP 91.92 TAL 354.31 TAP 197.76 RCA 147.83 APO 224.84 V2 24.758
RC 264.145 GL 23.58 GP -2.14 ZAL 93.41 ZAP 100.39 ETS 179.27 ZAE 135.16 ETE 179.68 ZAC 84.86 ETC 256.53 CLP 100.40

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.052 VHL 3.009 DLA 34.67 RAL 158.14 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.797 DPA .78 RAP 176.51 ECC 1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.10	9 41 25	3856.45	-28.43	160.67	16.65	69.26	10 45 42	3256.5	-30.98	152.36
110.90	14 51 6	2872.52	-28.42	87.15	16.65	69.25	15 38 59	2272.5	-30.98	78.83
69.10	9 41 25	3856.45	-28.43	160.67	16.65	69.26	10 45 42	3256.5	-30.98	152.36
110.90	14 51 6	2872.52	-28.42	87.15	16.65	69.25	15 38 59	2272.5	-30.98	78.83
69.10	9 41 25	3856.45	-28.43	160.67	16.65	69.26	10 45 42	3256.5	-30.98	152.36
110.90	14 51 6	2872.52	-28.42	87.15	16.65	69.25	15 38 59	2272.5	-30.98	78.83

DIFFERENTIAL CORRECTIONS

TDE .5100 TRA -.0170 TC3-3.1798 BAU .3876
RDE .1588 RRA .1132 RC3 -.3819 FAU .61968
FDE 4.5773 FRA 6.6614 FC-59.2672 BSP 6652
BDE .5342 BRA .1145 BC3 3.2027 FSP 11954

MID-COURSE EXECUTION ACCURACY

SGT 2146.2 SGR 461.5 SG3 3440.6
RRT .7301 RRF .8094 RTF .8904
SGB 2195.2 R23 .2127 R13 .8955
SG1 2173.0 SG2 311.5 THA 9.11

ORBIT DETERMINATION ACCURACY

ST 973.1 SR 312.5 SS 2399.3
CRT .9641 CRS -.9693 CST -.8772
LSA 2570.0 MSA 442.6 SSA 20.1
EL1 1019.0 EL2 79.3 ALF 17.31

LAUNCH DATE NOV 15 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 668.977 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.888	GAL	-.99	AZL	87.91	HCA	204.55	SMA	186.29	ECC	.20650	INC	2.0850	V1	30.115
RP	221.70	LAP	-.87	LOP	257.20	VP	22.019	GAP	-4.71	AZP	91.90	TAL	354.19	TAP	198.74	RCA	147.82	APO	224.76	V2	24.799
RC	265.639	GL	23.47	GP	-2.06	ZAL	93.64	ZAP	98.37	ETS	179.21	ZAE	132.91	ETE	179.54	ZAC	84.74	ETC	256.61	CLP	98.37

PLANETOCENTRIC CONIC

C3	9.025	VHL	3.004	DLA	34.48	RAL	158.33	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.788	DPA	1.24	RAP	175.70	ECC	1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.46	9 44 16	3849.55	-28.29	160.07	16.74	69.42	10 48 25	3249.5	-30.83	151.76
110.54	14 49 46	2878.28	-28.28	87.54	16.73	69.40	15 37 45	2278.3	-30.82	79.23
69.46	9 44 16	3849.55	-28.29	160.07	16.74	69.42	10 48 25	3249.5	-30.83	151.76
110.54	14 49 46	2878.28	-28.28	87.54	16.73	69.40	15 37 45	2278.3	-30.82	79.23
69.46	9 44 16	3849.55	-28.29	160.07	16.74	69.42	10 48 25	3249.5	-30.83	151.76
110.54	14 49 46	2878.28	-28.28	87.54	16.73	69.40	15 37 45	2278.3	-30.82	79.23

DIFFERENTIAL CORRECTIONS

TDE	.5470	TRA	.0426	TC3	-3.6878	BAU	.4469	SGT	2451.0	SGR	452.6	SG3	3470.6	ST	1045.8	SR	316.1	SS	2366.6
RDE	.1606	RRA	.1119	RC3	-.3491	FAU	.62507	RRT	.7301	RRF	.7817	RTF	.9172	CRT	.9750	CRS	-.9650	CST	-.8914
FDE	4.4983	FRA	6.7240	FC	-59.9617	BSP	7854	SGB	2492.5	R23	.1484	R13	.9199	LSA	2568.5	MSA	443.8	SSA	21.0
BDE	.5701	BRA	.1197	BC3	3.7043	FSP	11980	SG1	2473.6	SG2	306.5	THA	7.80	EL1	1090.5	EL2	67.3	ALF	16.48

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 15 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 673.016 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.886	GAL	-1.02	AZL	87.93	HCA	205.65	SMA	186.25	ECC	.20637	INC	2.0733	V1	30.115
RP	221.32	LAP	-.90	LOP	258.31	VP	22.063	GAP	-4.94	AZP	91.87	TAL	354.05	TAP	199.71	RCA	147.82	APO	224.69	V2	24.841
RC	267.114	GL	23.36	GP	-1.99	ZAL	93.89	ZAP	96.35	ETS	179.15	ZAE	130.66	ETE	179.43	ZAC	84.62	ETC	256.68	CLP	96.35

PLANETOCENTRIC CONIC

C3	9.002	VHL	3.000	DLA	34.28	RAL	158.55	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	2.781	DPA	1.69	RAP	174.90	ECC	1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.83	9 47 22	3842.34	-28.15	159.45	16.86	69.58	10 51 24	3242.3	-30.66	151.14
110.17	14 48 27	2884.51	-28.13	87.96	16.85	69.56	15 36 32	2284.5	-30.65	79.66
69.83	9 47 22	3842.34	-28.15	159.45	16.86	69.58	10 51 24	3242.3	-30.66	151.14
110.17	14 48 27	2884.51	-28.13	87.96	16.85	69.56	15 36 32	2284.5	-30.65	79.66
69.83	9 47 22	3842.34	-28.15	159.45	16.86	69.58	10 51 24	3242.3	-30.66	151.14
110.17	14 48 27	2884.51	-28.13	87.96	16.85	69.56	15 36 32	2284.5	-30.65	79.66

DIFFERENTIAL CORRECTIONS

TDE	.5825	TRA	.1030	TC3	-4.2104	BAU	.5081	SGT	2770.8	SGR	445.3	SG3	3489.3	ST	1117.1	SR	320.3	SS	2341.6
RDE	.1628	RRA	.1110	RC3	-.3155	FAU	.62763	RRT	.7174	RRF	.7519	RTF	.9354	CRT	.9829	CRS	-.9605	CST	-.9025
FDE	4.4282	FRA	6.8077	FC	-60.3609	BSP	9058	SGB	2806.3	R23	.1040	R13	.9368	LSA	2575.9	MSA	445.0	SSA	21.9
BDE	.6048	BRA	.1514	BC3	4.2222	FSP	12035	SG1	2789.3	SG2	308.1	THA	6.66	EL1	1160.8	EL2	56.8	ALF	15.78

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 15 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 677.064 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.884	GAL	-1.04	AZL	87.94	HCA	206.76	SMA	186.22	ECC	.20627	INC	2.0625	V1	30.115
RP	220.94	LAP	-.93	LOP	259.42	VP	22.107	GAP	-5.15	AZP	91.84	TAL	353.90	TAP	200.66	RCA	147.81	APO	224.63	V2	24.883
RC	268.570	GL	23.26	GP	-1.92	ZAL	94.17	ZAP	94.33	ETS	179.10	ZAE	128.41	ETE	179.33	ZAC	84.50	ETC	256.76	CLP	94.33

PLANETOCENTRIC CONIC

C3	8.983	VHL	2.997	DLA	34.07	RAL	158.81	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.778	DPA	2.13	RAP	174.10	ECC	1.1478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.21	9 50 42	3834.88	-27.99	158.80	17.01	69.74	10 54 37	3234.9	-30.49	150.50
109.79	14 47 10	2891.15	-27.98	88.42	17.01	69.72	15 35 21	2291.1	-30.48	80.12
70.21	9 50 42	3834.88	-27.99	158.80	17.01	69.74	10 54 37	3234.9	-30.49	150.50
109.79	14 47 10	2891.15	-27.98	88.42	17.01	69.72	15 35 21	2291.1	-30.48	80.12
110.00	15 9 39	2822.59	-29.52	83.68	17.62	71.93	15 56 42	2222.6	-31.70	75.15
110.00	14 27 23	2951.44	-26.48	92.46	16.35	67.54	15 16 35	2351.4	-29.28	84.40

DIFFERENTIAL CORRECTIONS

TDE	.6171	TRA	.1655	TC3	-4.7352	BAU	.5697	SGT	3097.5	SGR	439.4	SG3	3502.6	ST	1188.3	SR	324.6	SS	2312.7
RDE	.1650	RRA	.1103	RC3	-.2831	FAU	.62935	RRT	.6988	RRF	.7204	RTF	.9482	CRT	.9886	CRS	-.9555	CST	-.9112
FDE	4.3427	FRA	6.8865	FC	-60.6551	BSP	10277	SGB	3128.5	R23	.0713	R13	.9490	LSA	2581.8	MSA	446.8	SSA	22.7
BDE	.6388	BRA	.1989	BC3	4.7437	FSP	12069	SG1	3112.8	SG2	312.7	THA	5.72	EL1	1230.9	EL2	47.2	ALF	15.13

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 15 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 681.121 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.883	GAL	-1.07	AZL	87.95	HCA	207.87	SMA	186.20	ECC	.20620	INC	2.0525	V1	30.115
RP	220.56	LAP	-.96	LOP	260.53	VP	22.151	GAP	-5.37	AZP	91.81	TAL	353.74	TAP	201.61	RCA	147.80	APO	224.59	V2	24.924
RC	270.009	GL	23.15	GP	-1.85	ZAL	94.48	ZAP	92.32	ETS	179.05	ZAE	126.16	ETE	179.25	ZAC	84.37	ETC	256.84	CLP	92.32

PLANETOCENTRIC CONIC

C3	8.967	VHL	2.995	DLA	33.85	RAL	159.10	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.778	DPA	2.56	RAP	173.31	ECC	1.1476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.62	9 54 19	3827.01	-27.83	158.12	17.21	69.90	10 58 6	3227.0	-30.31	149.83
109.38	14 45 51	2898.36	-27.82	88.91	17.20	69.88	15 34 9	2298.4	-30.30	80.63
70.62	9 54 19	3827.01	-27.83	158.12	17.21	69.90	10 58 6	3227.0	-30.31	149.83
109.38	14 45 51	2898.36	-27.82	88.91	17.20	69.88	15 34 9	2298.4	-30.30	80.63
110.00	15 25 34	2777.04	-30.44	80.45	18.19	73.64	16 11 51	2177.0	-32.38	71.77
110.00	14 13 46	2996.32	-25.27	95.40	16.06	66.18	15 3 43	2396.3	-28.27	87.50

DIFFERENTIAL CORRECTIONS

TDE	.6503	TRA	.2302	TC3	-5.2699	BAU	.6325	SGT	3433.8	SGR	434.5	SG3	3503.9	ST	1257.9	SR	329.0	SS	2281.7
RDE	.1673	RRA	.1097	RC3	-.2504	FAU	.62874	RRT	.6740	RRF	.6869	RTF	.9576	CRT	.9926	CRS	-.9499	CST	-.9182
FDE	4.2473	FRA	6.9583	FC	-60.7003	BSP	11519	SGB	3461.2	R23	.0484	R13	.9580	LSA	2587.5	MSA	448.4	SSA	23.5
BDE	.6715	BRA	.2550	BC3	5.2759	FSP	12052	SG1	3446.4	SG2	319.8	THA	4.92	EL1	1299.7	EL2	38.7	ALF	14.57

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 15 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 685.182 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.881 GAL -1.10 AZL 87.96 HCA 208.99 SMA 186.17 ECC .20616 INC 2.0432 V1 30.115
RP 220.18 LAP -.99 LOP 261.64 VP 22.195 GAP -5.58 AZP 91.79 TAL 353.56 TAP 202.55 RCA 147.79 APO 224.56 V2 24.965
RC 271.430 GL 23.06 GP -1.78 ZAL 94.82 ZAP 90.32 ETS 179.01 ZAE 123.93 ETE 179.18 ZAC 84.25 ETC 256.93 CLP 90.32

PLANETOCENTRIC CONIC

C3 8.956 VHL 2.993 DLA 33.63 RAL 159.42 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.782 DPA 2.98 RAP 172.53 ECC 1.1474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.05	9 58 17	3818.60	-27.66	157.39	17.44	70.07	11 1 55	3218.6	-30.12	149.11
108.95	14 44 28	2906.27	-27.65	89.46	17.44	70.05	15 32 55	2306.3	-30.11	81.18
71.05	9 58 17	3818.60	-27.66	157.39	17.44	70.07	11 1 55	3218.6	-30.12	149.11
108.95	14 44 28	2906.27	-27.65	89.46	17.44	70.05	15 32 55	2306.3	-30.11	81.18
110.00	15 37 31	2744.01	-31.05	78.07	18.67	74.92	16 23 15	2144.0	-32.80	69.29
110.00	14 4 25	3028.85	-24.36	97.48	15.93	65.25	14 54 53	2428.9	-27.49	89.71

DIFFERENTIAL CORRECTIONS
TDE .6854 TRA .3009 TC3-5.7969 BAU .6945
RDE .1708 RRA .1102 RC3 -.2141 FAU .62122
FDE 4.2643 FRA 7.1489 FC-60.0523 BSP 12850
BDE .7064 BRA .3204 BC3 5.8008 FSP 12277

MID-COURSE EXECUTION ACCURACY
SGT 3773.4 SGR 433.1 SG3 3486.9
RRT .6419 RRF .6546 RTF .9639
SGB 3798.2 R23 .0405 R13 .9642
SG1 3783.7 SG2 331.2 THA 4.25

ORBIT DETERMINATION ACCURACY
ST 1332.6 SR 335.7 SS 2306.9
CRT .9952 CRS -.9460 CST -.9263
LSA 2647.6 MSA 447.2 SSA 24.2
EL1 1373.9 EL2 31.8 ALF 14.08

LAUNCH DATE NOV 15 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 689.257 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.880 GAL -1.13 AZL 87.97 HCA 210.11 SMA 186.16 ECC .20615 INC 2.0344 V1 30.115
RP 219.81 LAP -1.02 LOP 262.76 VP 22.240 GAP -5.78 AZP 91.76 TAL 353.37 TAP 203.48 RCA 147.78 APO 224.54 V2 25.006
RC 272.833 GL 22.96 GP -1.72 ZAL 95.18 ZAP 88.34 ETS 178.97 ZAE 121.70 ETE 179.13 ZAC 84.13 ETC 257.01 CLP 88.34

PLANETOCENTRIC CONIC

C3 8.948 VHL 2.991 DLA 33.40 RAL 159.77 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 2.788 DPA 3.39 RAP 171.76 ECC 1.1473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.51	10 2 27	3809.86	-27.48	156.64	17.70	70.23	11 5 57	3209.9	-29.91	148.37
108.49	14 43 4	2914.67	-27.47	90.04	17.70	70.22	15 31 39	2314.7	-29.91	81.76
71.51	10 2 27	3809.86	-27.48	156.64	17.70	70.23	11 5 57	3209.9	-29.91	148.37
108.49	14 43 4	2914.67	-27.47	90.04	17.70	70.22	15 31 39	2314.7	-29.91	81.76
110.00	15 47 46	2716.40	-31.52	76.06	19.11	76.03	16 33 3	2116.4	-33.12	67.19
110.00	13 56 56	3056.12	-23.58	99.21	15.90	64.50	14 47 52	2456.1	-26.81	91.54

DIFFERENTIAL CORRECTIONS
TDE .7142 TRA .3680 TC3-6.3325 BAU .7578
RDE .1725 RRA .1092 RC3 -.1861 FAU .62161
FDE 4.0651 FRA 7.1303 FC-60.1434 BSP 14052
BDE .7348 BRA .3839 BC3 6.3352 FSP 12072

MID-COURSE EXECUTION ACCURACY
SGT 4115.4 SGR 429.4 SG3 3480.6
RRT .6142 RRF .6172 RTF .9698
SGB 4137.8 R23 .0223 R13 .9699
SG1 4123.9 SG2 338.2 THA 3.69

ORBIT DETERMINATION ACCURACY
ST 1395.9 SR 339.0 SS 2232.4
CRT .9966 CRS -.9378 CST -.9290
LSA 2615.8 MSA 451.7 SSA 25.0
EL1 1436.2 EL2 27.1 ALF 13.61

LAUNCH DATE NOV 15 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 693.340 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.880 GAL -1.17 AZL 87.97 HCA 211.23 SMA 186.15 ECC .20616 INC 2.0261 V1 30.115
RP 219.44 LAP -1.05 LOP 263.89 VP 22.285 GAP -5.98 AZP 91.73 TAL 353.16 TAP 204.39 RCA 147.77 APO 224.53 V2 25.047
RC 274.220 GL 22.87 GP -1.66 ZAL 95.57 ZAP 86.37 ETS 178.94 ZAE 119.49 ETE 179.08 ZAC 84.01 ETC 257.10 CLP 86.37

PLANETOCENTRIC CONIC

C3 8.944 VHL 2.991 DLA 33.15 RAL 160.15 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.798 DPA 3.79 RAP 171.02 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.99	10 7 1	3800.38	-27.29	155.84	18.00	70.40	11 10 22	3200.4	-29.71	147.57
108.01	14 41 32	2923.97	-27.28	90.68	17.99	70.39	15 30 16	2324.0	-29.70	82.41
71.99	10 7 1	3800.38	-27.29	155.84	18.00	70.40	11 10 22	3200.4	-29.71	147.57
108.01	14 41 32	2923.97	-27.28	90.68	17.99	70.39	15 30 16	2324.0	-29.70	82.41
110.00	15 57 13	2691.63	-31.91	74.23	19.55	77.04	16 42 5	2091.6	-33.36	65.30
110.00	13 50 31	3080.72	-22.85	100.75	15.93	63.85	14 41 51	2480.7	-26.17	93.16

DIFFERENTIAL CORRECTIONS
TDE .7410 TRA .4379 TC3-6.8674 BAU .8213
RDE .1748 RRA .1087 RC3 -.1567 FAU .61830
FDE 3.8981 FRA 7.1488 FC-59.8508 BSP 15267
BDE .7613 BRA .4512 BC3 6.8692 FSP 11908

MID-COURSE EXECUTION ACCURACY
SGT 4460.0 SGR 427.6 SG3 3461.3
RRT .5819 RRF .5795 RTF .9741
SGB 4480.4 R23 .0113 R13 .9741
SG1 4467.0 SG2 347.2 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 1456.4 SR 343.1 SS 2175.9
CRT .9970 CRS -.9294 CST -.9315
LSA 2601.0 MSA 455.2 SSA 25.8
EL1 1496.0 EL2 25.8 ALF 13.22

LAUNCH DATE NOV 15 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 697.429 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.880 GAL -1.21 AZL 87.98 HCA 212.36 SMA 186.14 ECC .20621 INC 2.0184 V1 30.115
RP 219.07 LAP -1.08 LOP 265.02 VP 22.331 GAP -6.18 AZP 91.71 TAL 352.94 TAP 205.30 RCA 147.76 APO 224.53 V2 25.088
RC 275.589 GL 22.78 GP -1.61 ZAL 95.99 ZAP 84.43 ETS 178.91 ZAE 117.31 ETE 179.04 ZAC 83.90 ETC 257.18 CLP 84.43

PLANETOCENTRIC CONIC

C3 8.943 VHL 2.991 DLA 32.90 RAL 160.56 RAD 6567.3 VEL 11.416 PTH 1.98 VHP 2.811 DPA 4.17 RAP 170.30 ECC 1.1472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.50	10 11 56	3790.25	-27.09	154.98	18.33	70.58	11 15 6	3190.3	-29.48	146.72
107.50	14 39 53	2934.07	-27.08	91.38	18.32	70.56	15 28 47	2334.1	-29.48	83.12
72.50	10 11 56	3790.25	-27.09	154.98	18.33	70.58	11 15 6	3190.3	-29.48	146.72
107.50	14 39 53	2934.07	-27.08	91.38	18.32	70.56	15 28 47	2334.1	-29.48	83.12
110.00	16 6 11	2668.70	-32.25	72.53	20.00	78.00	16 50 39	2068.7	-33.57	63.54
110.00	13 44 49	3103.63	-22.15	102.16	16.01	63.27	14 36 33	2503.6	-25.55	94.66

DIFFERENTIAL CORRECTIONS
TDE .7666 TRA .5112 TC3-7.3949 BAU .8843
RDE .1772 RRA .1084 RC3 -.1277 FAU .61315
FDE 3.7339 FRA 7.1740 FC-59.3551 BSP 16495
BDE .7868 BRA .5226 BC3 7.3960 FSP 11772

MID-COURSE EXECUTION ACCURACY
SGT 4804.2 SGR 427.0 SG3 3433.7
RRT .5485 RRF .5416 RTF .9774
SGB 4823.1 R23 .0031 R13 .9774
SG1 4809.9 SG2 356.6 THA 2.81

ORBIT DETERMINATION ACCURACY
ST 1515.7 SR 347.5 SS 2123.1
CRT .9965 CRS -.9202 CST -.9333
LSA 2591.2 MSA 459.2 SSA 26.4
EL1 1554.8 EL2 28.1 ALF 12.87

LAUNCH DATE NOV 15 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 701.527 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.879	GAL	-1.25	AZL	87.99	HCA	213.49	SMA	186.14	ECC	.20627	INC	2.0112
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.376	GAP	-6.38	AZP	91.68	TAL	352.70	TAP	206.19	RCA	147.75	APO	224.54
RC	276.940	GL	22.69	GP	-1.55	ZAL	96.44	ZAP	82.51	ETS	178.89	ZAE	115.14	ETE	179.00	ZAC	83.79	ETC	257.27

V1	30.115	V2	25.128	CLP	82.51														

PLANETOCENTRIC CONIC

C3	8.946	VHL	2.991	DLA	32.64	RAL	161.00	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.827	DPA	4.54	RAP	169.60
ECC	1.1472																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.05	10 17 14	3779.33	-26.88	154.05	18.69	70.76	11 20 13	3179.3	-29.25	145.81
106.95	14 38 5	2945.14	-26.87	92.14	18.68	70.74	15 27 10	2345.1	-29.24	83.90
73.05	10 17 14	3779.33	-26.88	154.05	18.69	70.76	11 20 13	3179.3	-29.25	145.81
106.95	14 38 5	2945.14	-26.87	92.14	18.68	70.74	15 27 10	2345.1	-29.24	83.90
110.00	16 14 49	2647.06	-32.54	70.91	20.45	78.92	16 58 56	2047.1	-33.73	61.87
110.00	13 39 40	3125.40	-21.48	103.49	16.15	62.75	14 31 46	2525.4	-24.95	96.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7900	TRA	.5869	TC3	-7.9158	BAU	.9468	SGT	5147.4	SGR	427.6	SG3	3397.2	ST	1571.9	SR	352.2	SS	2073.5
RDE	.1798	RRA	.1083	RC3	-.0989	FAU	.60605	RRT	.5136	RRF	.5038	RTF	.9801	CRT	.9952	CRS	-.9101	CST	-.9346
FDE	3.5724	FRA	7.2019	FC	-58.6461	BSP	17722	SGB	5165.2	R23	-.0025	R13	.9801	LSA	2584.4	MSA	463.1	SSA	27.1
BDE	.8102	BRA	.5969	BC3	7.9164	FSP	11622	SG1	5152.1	SG2	366.5	THA	2.46	EL1	1610.5	EL2	33.5	ALF	12.58

LAUNCH DATE NOV 15 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 705.632 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.880	GAL	-1.29	AZL	88.00	HCA	214.63	SMA	186.15	ECC	.20637	INC	2.0042
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.421	GAP	-6.57	AZP	91.65	TAL	352.45	TAP	207.08	RCA	147.73	APO	224.56
RC	278.273	GL	22.60	GP	-1.50	ZAL	96.92	ZAP	80.63	ETS	178.87	ZAE	113.00	ETE	178.98	ZAC	83.69	ETC	257.35

V1	30.115	V2	25.168	CLP	80.62														

PLANETOCENTRIC CONIC

C3	8.954	VHL	2.992	DLA	32.36	RAL	161.46	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.845	DPA	4.89	RAP	168.93
ECC	1.1474																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.64	10 22 58	3767.47	-26.66	153.06	19.08	70.94	11 25 45	3167.5	-29.01	144.83
106.36	14 36 5	2957.31	-26.65	92.99	19.08	70.92	15 25 22	2357.3	-29.00	84.76
73.64	10 22 58	3767.47	-26.66	153.06	19.08	70.94	11 25 45	3167.5	-29.01	144.83
106.36	14 36 5	2957.31	-26.65	92.99	19.08	70.92	15 25 22	2357.3	-29.00	84.76
110.00	16 23 16	2626.37	-32.80	69.35	20.93	79.80	17 7 2	2026.4	-33.86	60.27
110.00	13 34 57	3146.41	-20.82	104.77	16.32	62.25	14 27 23	2546.4	-24.36	97.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8100	TRA	.6643	TC3	-8.4326	BAU	1.0094	SGT	5490.0	SGR	429.0	SG3	3354.2	ST	1622.5	SR	356.9	SS	2018.6
RDE	.1824	RRA	.1083	RC3	-.0711	FAU	.59795	RRT	.4781	RRF	.4659	RTF	.9822	CRT	.9931	CRS	-.8984	CST	-.9350
FDE	3.3950	FRA	7.2177	FC	-57.8166	BSP	18911	SGB	5506.7	R23	-.0067	R13	.9821	LSA	2571.9	MSA	468.0	SSA	27.7
BDE	.8303	BRA	.6730	BC3	8.4329	FSP	11433	SG1	5493.8	SG2	376.5	THA	2.15	EL1	1660.8	EL2	40.8	ALF	12.33

LAUNCH DATE NOV 15 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 709.745 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.880	GAL	-1.34	AZL	88.00	HCA	215.77	SMA	186.16	ECC	.20649	INC	1.9978
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.467	GAP	-6.75	AZP	91.62	TAL	352.18	TAP	207.95	RCA	147.72	APO	224.59
RC	279.589	GL	22.50	GP	-1.45	ZAL	97.42	ZAP	78.77	ETS	178.85	ZAE	110.89	ETE	178.95	ZAC	83.60	ETC	257.43

V1	30.115	V2	25.208	CLP	78.77														

PLANETOCENTRIC CONIC

C3	8.965	VHL	2.994	DLA	32.07	RAL	161.96	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.867	DPA	5.23	RAP	168.29
ECC	1.1475																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.27	10 29 7	3754.67	-26.42	151.99	19.50	71.13	11 31 42	3154.7	-28.75	143.77
105.73	14 33 52	2970.59	-26.42	93.91	19.50	71.12	15 23 22	2370.6	-28.74	85.69
74.27	10 29 7	3754.67	-26.42	151.99	19.50	71.13	11 31 42	3154.7	-28.75	143.77
105.73	14 33 52	2970.59	-26.42	93.91	19.50	71.12	15 23 22	2370.6	-28.74	85.69
110.00	16 31 35	2606.37	-33.04	67.84	21.42	80.67	17 15 2	2006.4	-33.97	58.72
110.00	13 30 34	3166.89	-20.16	106.00	16.54	61.79	14 23 21	2566.9	-23.77	98.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8280	TRA	.7454	TC3	-8.9319	BAU	1.0705	SGT	5826.8	SGR	431.4	SG3	3304.2	ST	1670.7	SR	361.8	SS	1968.3
RDE	.1851	RRA	.1084	RC3	-.0438	FAU	.58843	RRT	.4431	RRF	.4289	RTF	.9840	CRT	.9902	CRS	-.8862	CST	-.9355
FDE	3.2266	FRA	7.2287	FC	-56.8244	BSP	20118	SGB	5842.8	R23	-.0100	R13	.9840	LSA	2563.9	MSA	471.4	SSA	28.3
BDE	.8484	BRA	.7533	BC3	8.9320	FSP	11255	SG1	5830.0	SG2	386.5	THA	1.89	EL1	1708.7	EL2	49.4	ALF	12.11

LAUNCH DATE NOV 15 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 713.865 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.881	GAL	-1.38	AZL	88.01	HCA	216.91	SMA	186.17	ECC	.20664	INC	1.9916
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.513	GAP	-6.93	AZP	91.59	TAL	351.90	TAP	208.81	RCA	147.70	APO	224.64
RC	280.887	GL	22.41	GP	-1.40	ZAL	97.95	ZAP	76.95	ETS	178.83	ZAE	108.82	ETE	178.94	ZAC	83.51	ETC	257.51

V1	30.115	V2	25.248	CLP	76.94														

PLANETOCENTRIC CONIC

C3	8.980	VHL	2.997	DLA	31.77	RAL	162.48	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.891	DPA	5.55	RAP	167.69
ECC	1.1478																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.96	10 35 49	3740.52	-26.18	150.82	19.96	71.32	11 38 10	3140.5	-28.48	142.62
105.04	14 31 19	2985.40	-26.17	94.94	19.95	71.31	15 21 4	2385.4	-28.47	86.74
74.96	10 35 49	3740.52	-26.18	150.82	19.96	71.32	11 38 10	3140.5	-28.48	142.62
105.04	14 31 19	2985.40	-26.17	94.94	19.95	71.31	15 21 4	2385.4	-28.47	86.74
110.00	16 39 50	2586.92	-33.24	66.35	21.92	81.53	17 22 57	1986.9	-34.05	57.21
110.00	13 26 28	3186.99	-19.51	107.19	16.79	61.36	14 19 35	2587.0	-23.18	99.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8431	TRA	.8288	TC3	-9.4216	BAU	1.1311	SGT	6161.0	SGR	434.5	SG3	3249.3	ST	1714.6	SR	366.7	SS	1914.1
RDE	.1879	RRA	.1085	RC3	-.0176	FAU	.57809	RRT	.4085	RRF	.3926	RTF	.9854	CRT	.9864	CRS	-.8717	CST	-.9349
FDE	3.0447	FRA	7.2349	FC	-55.7313	BSP	21294	SGB	6176.3	R23	-.0128	R13	.9854	LSA	2551.4	MSA	476.9	SSA	28.8
BDE	.8638	BRA	.8358	BC3	9.4217	FSP	11047	SG1	6163.6	SG2	396.5	THA	1.66	EL1	1752.4	EL2	58.9	ALF	11.93

LAUNCH DATE NOV 15 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 717.993 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.882 GAL -1.44 AZL 88.01 HCA 218.06 SMA 186.19 ECC .20681 INC 1.9857 V1 30.115
RP 217.27 LAP -1.22 LOP 270.71 VP 22.558 GAP -7.11 AZP 91.56 TAL 351.61 TAP 209.67 RCA 147.68 APO 224.69 V2 25.287
RC 282.167 GL 22.31 GP -1.35 ZAL 98.51 ZAP 75.16 ETS 178.81 ZAE 106.77 ETE 178.92 ZAC 83.42 ETC 257.59 CLP 75.16

PLANETOCENTRIC CONIC

C3 9.000 VHL 3.000 DLA 31.46 RAL 163.03 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.918 DPA 5.85 RAP 167.12 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.70	10 43 5	3725.02	-25.92	149.55	20.44	71.52	11 45 10	3125.0	-28.20	141.36
104.30	14 28 25	3001.73	-25.91	96.08	20.44	71.51	15 18 27	2401.7	-28.19	87.89
75.70	10 43 5	3725.02	-25.92	149.55	20.44	71.52	11 45 10	3125.0	-28.20	141.36
104.30	14 28 25	3001.73	-25.91	96.08	20.44	71.51	15 18 27	2401.7	-28.19	87.89
110.00	16 48 3	2567.89	-33.42	64.90	22.44	82.37	17 30 50	1967.9	-34.12	55.72
110.00	13 22 38	3206.87	-18.86	108.36	17.08	60.95	14 16 5	2606.9	-22.59	101.21

DIFFERENTIAL CORRECTIONS
TDE .8548 TRA .9146 TC3-9.8980 BAU 1.1909
RDE .1908 RRA .1088 RC3 .0079 FAU .56665
FDE 2.8561 FRA 7.2351 FC-54.5087 BSP 22451
BDE .8758 BRA .9211 BC3 9.8980 FSP 10825

MID-COURSE EXECUTION ACCURACY
SGT 6490.5 SGR 438.4 SG3 3188.3
RRT .3745 RRF .3572 RTF .9866
SGB 6505.3 R23 -.0148 R13 .9866
SG1 6492.6 SG2 406.4 THA 1.45

ORBIT DETERMINATION ACCURACY
ST 1753.3 SR 371.7 SS 1858.4
CRT .9818 CRS -.8552 CST -.9335
LSA 2536.1 MSA 483.3 SSA 29.3
EL1 1791.0 EL2 69.2 ALF 11.77

LAUNCH DATE NOV 15 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 722.128 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.883 GAL -1.49 AZL 88.02 HCA 219.21 SMA 186.21 ECC .20701 INC 1.9801 V1 30.115
RP 216.91 LAP -1.25 LOP 271.86 VP 22.604 GAP -7.29 AZP 91.53 TAL 351.30 TAP 210.51 RCA 147.66 APO 224.75 V2 25.327
RC 283.431 GL 22.22 GP -1.31 ZAL 99.10 ZAP 73.41 ETS 178.80 ZAE 104.76 ETE 178.92 ZAC 83.35 ETC 257.66 CLP 73.41

PLANETOCENTRIC CONIC

C3 9.024 VHL 3.004 DLA 31.13 RAL 163.60 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.948 DPA 6.13 RAP 166.58 ECC 1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.50	10 51 2	3707.69	-25.65	148.14	20.95	71.73	11 52 50	3107.7	-27.90	139.96
103.50	14 25 2	3020.10	-25.64	97.37	20.95	71.71	15 15 22	2420.1	-27.89	89.19
76.50	10 51 2	3707.69	-25.65	148.14	20.95	71.73	11 52 50	3107.7	-27.90	139.96
103.50	14 25 2	3020.10	-25.64	97.37	20.95	71.71	15 15 22	2420.1	-27.89	89.19
110.00	16 56 14	2549.19	-33.58	63.46	22.98	83.21	17 38 43	1949.2	-34.16	54.27
110.00	13 19 0	3226.60	-18.20	109.52	17.41	60.56	14 12 47	2626.6	-21.98	102.42

DIFFERENTIAL CORRECTIONS
TDE .8636 TRA 1.0037 TC-10.3565 BAU 1.2494
RDE .1938 RRA .1091 RC3 .0325 FAU .55443
FDE 2.6707 FRA 7.2273 FC-53.1915 BSP 23592
BDE .8851 BRA 1.0096 BC310.3565 FSP 10585

MID-COURSE EXECUTION ACCURACY
SGT 6813.9 SGR 442.9 SG3 3123.0
RRT .3417 RRF .3232 RTF .9876
SGB 6828.3 R23 -.0165 R13 .9876
SG1 6815.6 SG2 416.1 THA 1.28

ORBIT DETERMINATION ACCURACY
ST 1788.3 SR 376.8 SS 1804.6
CRT .9761 CRS -.8371 CST -.9321
LSA 2521.2 MSA 489.1 SSA 29.8
EL1 1825.8 EL2 80.2 ALF 11.64

LAUNCH DATE NOV 15 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 726.270 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.885 GAL -1.55 AZL 88.03 HCA 220.36 SMA 186.23 ECC .20724 INC 1.9747 V1 30.115
RP 216.57 LAP -1.28 LOP 273.02 VP 22.649 GAP -7.46 AZP 91.50 TAL 350.97 TAP 211.34 RCA 147.64 APO 224.82 V2 25.365
RC 284.679 GL 22.12 GP -1.27 ZAL 99.71 ZAP 71.70 ETS 178.79 ZAE 102.79 ETE 178.91 ZAC 83.28 ETC 257.73 CLP 71.69

PLANETOCENTRIC CONIC

C3 9.053 VHL 3.009 DLA 30.79 RAL 164.19 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.980 DPA 6.39 RAP 166.09 ECC 1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.38	10 59 44	3688.34	-25.36	146.59	21.50	71.94	12 1 12	3088.3	-27.59	138.42
102.62	14 21 5	3040.67	-25.35	98.81	21.49	71.92	15 11 46	2440.7	-27.58	90.65
77.38	10 59 44	3688.34	-25.36	146.59	21.50	71.94	12 1 12	3088.3	-27.59	138.42
102.62	14 21 5	3040.67	-25.35	98.81	21.49	71.92	15 11 46	2440.7	-27.58	90.65
110.00	17 4 26	2530.75	-33.72	62.04	23.54	84.04	17 46 37	1930.7	-34.18	52.83
110.00	13 15 34	3246.26	-17.54	110.66	17.77	60.18	14 9 40	2646.3	-21.37	103.63

DIFFERENTIAL CORRECTIONS
TDE .8678 TRA 1.0943 TC-10.8051 BAU 1.3077
RDE .1968 RRA .1095 RC3 .0560 FAU .54189
FDE 2.4742 FRA 7.2076 FC-51.8228 BSP 24684
BDE .8898 BRA 1.0997 BC310.8053 FSP 10332

MID-COURSE EXECUTION ACCURACY
SGT 7133.7 SGR 447.8 SG3 3054.6
RRT .3095 RRF .2900 RTF .9885
SGB 7147.8 R23 -.0179 R13 .9884
SG1 7135.1 SG2 425.7 THA 1.12

ORBIT DETERMINATION ACCURACY
ST 1816.1 SR 381.8 SS 1747.1
CRT .9693 CRS -.8159 CST -.9296
LSA 2499.8 MSA 496.4 SSA 30.2
EL1 1853.6 EL2 92.0 ALF 11.55

LAUNCH DATE NOV 15 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 730.419 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.886 GAL -1.61 AZL 88.03 HCA 221.52 SMA 186.26 ECC .20749 INC 1.9696 V1 30.115
RP 216.22 LAP -1.31 LOP 274.17 VP 22.695 GAP -7.63 AZP 91.47 TAL 350.64 TAP 212.16 RCA 147.61 APO 224.91 V2 25.404
RC 285.910 GL 22.01 GP -1.22 ZAL 100.35 ZAP 70.03 ETS 178.78 ZAE 100.85 ETE 178.91 ZAC 83.21 ETC 257.79 CLP 70.02

PLANETOCENTRIC CONIC

C3 9.086 VHL 3.014 DLA 30.43 RAL 164.81 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 3.014 DPA 6.63 RAP 165.63 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.36	11 9 21	3666.44	-25.07	144.84	22.07	72.15	12 10 27	3066.4	-27.27	136.68
101.64	14 16 25	3064.01	-25.06	100.45	22.06	72.14	15 7 29	2464.0	-27.26	92.30
78.36	11 9 21	3666.44	-25.07	144.84	22.07	72.15	12 10 27	3066.4	-27.27	136.68
101.64	14 16 25	3064.01	-25.06	100.45	22.06	72.14	15 7 29	2464.0	-27.26	92.30
110.00	17 12 39	2512.53	-33.84	60.63	24.11	84.86	17 54 32	1912.5	-34.18	51.40
110.00	13 12 17	3265.91	-16.87	111.79	18.16	59.82	14 6 43	2665.9	-20.75	104.81

DIFFERENTIAL CORRECTIONS
TDE .8699 TRA 1.1890 TC-11.2278 BAU 1.3639
RDE .2000 RRA .1099 RC3 .0788 FAU .52830
FDE 2.2872 FRA 7.1873 FC-50.3363 BSP 25791
BDE .8926 BRA 1.1941 BC311.2281 FSP 10087

MID-COURSE EXECUTION ACCURACY
SGT 7444.6 SGR 453.3 SG3 2981.5
RRT .2792 RRF .2589 RTF .9892
SGB 7458.4 R23 -.0190 R13 .9892
SG1 7445.7 SG2 435.2 THA .98

ORBIT DETERMINATION ACCURACY
ST 1842.2 SR 387.0 SS 1694.3
CRT .9614 CRS -.7931 CST -.9271
LSA 2482.0 MSA 503.3 SSA 30.5
EL1 1879.6 EL2 104.4 ALF 11.45

LAUNCH DATE NOV 15 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 734.575 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.888	GAL	-1.67	AZL	88.04	HCA	222.68	SMA	186.29	ECC	.20777	INC	1.9646
RP	215.88	LAP	-1.33	LOP	275.34	VP	22.740	GAP	-7.80	AZP	91.44	TAL	350.28	TAP	212.97	RCA	147.59	APO	225.00
RC	287.127	GL	21.91	GP	-1.18	ZAL	101.01	ZAP	68.39	ETS	178.77	ZAE	98.96	ETE	178.91	ZAC	83.16	ETC	257.85

V1	30.115	V2	25.442	CLP	68.39														

PLANETOCENTRIC CONIC

C3	9.125	VHL	3.021	DLA	30.06	RAL	165.46	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.051	DPA	6.86	RAP	165.21
ECC	1.1502																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.46	11 20 7	3641.17	-24.75	142.84	22.66	72.38	12 20 48	3041.2	-26.93	134.70
100.54	14 10 47	3090.92	-24.74	102.35	22.66	72.36	15 2 18	2490.9	-26.92	94.22
79.46	11 20 7	3641.17	-24.75	142.84	22.66	72.38	12 20 48	3041.2	-26.93	134.70
100.54	14 10 47	3090.92	-24.74	102.35	22.66	72.36	15 2 18	2490.9	-26.92	94.22
110.00	17 20 54	2494.47	-33.94	59.23	24.71	85.69	18 2 29	1894.5	-34.17	49.99
110.00	13 9 11	3285.61	-16.19	112.91	18.59	59.48	14 3 56	2685.6	-20.13	106.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8670	TRA	1.2857	TC	-11.6373	BAU	1.4197	SGT	7750.7	SGR	459.1	SG3	2907.1	ST	1861.1	SR	392.2	SS	1638.1
RDE	.2032	RRA	.1104	RC3	.1005	FAU	.51473	RRT	.2498	RRF	.2285	RTF	.9898	CRT	.9519	CRS	-.7660	CST	-.9234
FDE	2.0885	FRA	7.1560	FC	-48.8347	BSP	26830	SGB	7764.3	R23	-.0202	R13	.9898	LSA	2457.1	MSA	512.2	SSA	30.8
BDE	.8905	BRA	1.2904	BC	311.6377	FSP	9811	SG1	7751.6	SG2	444.5	THA	.85	EL1	1898.3	EL2	117.8	ALF	11.39

LAUNCH DATE NOV 15 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 738.738 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.890	GAL	-1.73	AZL	88.04	HCA	223.85	SMA	186.33	ECC	.20807	INC	1.9600
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.785	GAP	-7.96	AZP	91.41	TAL	349.92	TAP	213.76	RCA	147.56	APO	225.10
RC	288.329	GL	21.80	GP	-1.15	ZAL	101.71	ZAP	66.80	ETS	178.76	ZAE	97.10	ETE	178.91	ZAC	83.11	ETC	257.91

V1	30.115	V2	25.480	CLP	66.80														

PLANETOCENTRIC CONIC

C3	9.169	VHL	3.028	DLA	29.68	RAL	166.12	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	3.091	DPA	7.06	RAP	164.83
ECC	1.1509																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.73	11 32 27	3611.22	-24.43	140.50	23.29	72.60	12 32 38	3011.2	-26.58	132.38
99.27	14 3 46	3122.74	-24.42	104.61	23.29	72.59	14 55 49	2522.7	-26.57	96.48
100.00	14 39 40	3007.98	-26.41	96.72	23.92	75.47	15 29 48	2408.0	-28.15	88.35
100.00	13 39 14	3201.21	-22.46	109.70	22.56	69.74	14 32 35	2601.2	-25.02	101.84
110.00	17 29 12	2476.56	-34.03	57.84	25.32	86.51	18 10 28	1876.6	-34.14	48.59
110.00	13 6 12	3305.39	-15.51	114.03	19.05	59.15	14 1 18	2705.4	-19.48	107.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8614	TRA	1.3862	TC	-12.0224	BAU	1.4738	SGT	8048.7	SGR	465.3	SG3	2829.8	ST	1877.4	SR	397.5	SS	1586.8
RDE	.2065	RRA	.1109	RC3	.1212	FAU	.50056	RRT	.2221	RRF	.2002	RTF	.9904	CRT	.9409	CRS	-.7368	CST	-.9198
FDE	1.9001	FRA	7.1221	FC	-47.2612	BSP	27874	SGB	8062.2	R23	-.0210	R13	.9904	LSA	2434.9	MSA	520.5	SSA	31.0
BDE	.8858	BRA	1.3906	BC	312.0230	FSP	9539	SG1	8049.4	SG2	453.6	THA	.74	EL1	1914.5	EL2	132.0	ALF	11.32

LAUNCH DATE NOV 15 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 742.904 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.892	GAL	-1.80	AZL	88.04	HCA	225.02	SMA	186.37	ECC	.20840	INC	1.9554
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.830	GAP	-8.12	AZP	91.38	TAL	349.53	TAP	214.55	RCA	147.53	APO	225.20
RC	289.516	GL	21.68	GP	-1.11	ZAL	102.43	ZAP	65.25	ETS	178.75	ZAE	95.28	ETE	178.91	ZAC	83.08	ETC	257.96

V1	30.115	V2	25.517	CLP	65.25														

PLANETOCENTRIC CONIC

C3	9.219	VHL	3.036	DLA	29.28	RAL	166.81	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	3.132	DPA	7.25	RAP	164.49
ECC	1.1517																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.24	11 47 2	3574.35	-24.09	137.66	23.95	72.84	12 46 36	2974.3	-26.21	129.55
97.76	13 54 42	3161.71	-24.08	107.37	23.94	72.82	14 47 24	2561.7	-26.20	99.27
100.00	15 3 12	2942.21	-27.45	92.11	24.93	77.69	15 52 14	2342.2	-28.87	83.59
100.00	13 21 13	3269.09	-20.80	114.06	22.68	68.03	14 15 42	2669.1	-23.59	106.38
110.00	17 37 33	2458.72	-34.09	56.45	25.95	87.33	18 18 32	1858.7	-34.09	47.20
110.00	13 3 21	3325.34	-14.81	115.16	19.54	58.83	13 58 47	2725.3	-18.83	108.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8680	TRA	1.5063	TC	-12.3246	BAU	1.5191	SGT	8325.6	SGR	472.9	SG3	2741.8	ST	1920.7	SR	403.5	SS	1575.6
RDE	.2103	RRA	.1119	RC3	.1427	FAU	.48174	RRT	.2008	RRF	.1816	RTF	.9907	CRT	.9297	CRS	-.7172	CST	-.9213
FDE	1.8014	FRA	7.1728	FC	-45.2387	BSP	29282	SGB	8339.0	R23	-.0183	R13	.9907	LSA	2461.8	MSA	522.7	SSA	31.3
BDE	.8932	BRA	1.5105	BC	312.3254	FSP	9456	SG1	8326.1	SG2	463.3	THA	.66	EL1	1957.2	EL2	145.9	ALF	11.11

LAUNCH DATE NOV 15 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 747.081 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.895	GAL	-1.87	AZL	88.05	HCA	226.19	SMA	186.41	ECC	.20876	INC	1.9511
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.875	GAP	-8.28	AZP	91.35	TAL	349.14	TAP	215.33	RCA	147.49	APO	225.32
RC	290.691	GL	21.56	GP	-1.07	ZAL	103.17	ZAP	63.74	ETS	178.74	ZAE	93.50	ETE	178.92	ZAC	83.04	ETC	258.00

V1	30.115	V2	25.554	CLP	63.74														

PLANETOCENTRIC CONIC

C3	9.275	VHL	3.045	DLA	28.86	RAL	167.52	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	3.175	DPA	7.41	RAP	164.19
ECC	1.1526																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.18	12 5 21	3525.62	-23.73	133.95	24.63	73.08	13 4 6	2925.6	-25.83	125.86
95.82	13 42 1	3212.78	-23.72	111.02	24.62	73.06	14 35 34	2612.8	-25.82	102.93
100.00	15 20 53	2895.12	-28.09	88.75	25.82	79.34	16 9 8	2295.1	-29.28	80.15
100.00	13 9 10	3318.52	-19.51	117.16	22.97	66.89	14 4 28	2718.5	-22.47	109.62
110.00	17 45 54	2441.05	-34.14	55.07	26.59	88.14	18 26 35	1841.0	-34.02	45.83
110.00	13 0 38	3345.36	-14.10	116.28	20.06	58.53	13 56 23	2745.4	-18.16	109.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8483	TRA	1.6059	TC	-12.6934	BAU	1.5741	SGT	8615.3	SGR	479.0	SG3	2664.7	ST	1916.2	SR	408.5	SS	1509.6
RDE	.2137	RRA	.1123	RC3	.1609	FAU	.46890	RRT	.1736	RRF	.1524	RTF	.9911	CRT	.9145	CRS	-.6761	CST	-.9144
FDE	1.5752	FRA	7.0863	FC	-43.7679	BSP	30095	SGB	8628.6	R23	-.0204	R13	.9911	LSA	2414.5	MSA	535.6	SSA	31.4
BDE	.8748	BRA	1.6098	BC	312.6944	FSP	9092	SG1	8615.7	SG2	471.7	THA	.55	EL1	1952.5	EL2	162.2	ALF	11.11

LAUNCH DATE NOV 15 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 751.264 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.898 GAL -1.94 AZL 88.05 HCA 227.36 SMA 186.45 ECC .20915 INC 1.9469 V1 30.115
RP 214.56 LAP -1.43 LOP 280.02 VP 22.920 GAP -8.43 AZP 91.32 TAL 348.73 TAP 216.09 RCA 147.46 APO 225.45 V2 25.590
RC 291.851 GL 21.44 GP -1.04 ZAL 103.93 ZAP 62.27 ETS 178.73 ZAE 91.76 ETE 178.93 ZAC 83.02 ETC 258.04 CLP 62.27

PLANETOCENTRIC CONIC

C3 9.337 VHL 3.056 DLA 28.43 RAL 168.25 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.221 DPA 7.56 RAP 163.93 ECC 1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.33	12 34 18	3442.73	-23.37	127.75	25.33	73.32	13 31 40	2842.7	-25.43	119.67
92.67	13 18 52	3298.28	-23.36	117.17	25.33	73.31	14 13 50	2698.3	-25.42	109.10
100.00	15 36 15	2855.63	-28.56	85.91	26.66	80.77	16 23 51	2255.6	-29.54	77.24
100.00	12 59 35	3360.61	-18.36	119.76	23.35	65.99	13 55 36	2760.6	-21.45	112.33
110.00	17 54 19	2423.46	-34.17	53.70	27.25	88.95	18 34 42	1823.5	-33.94	44.46
110.00	12 58 1	3365.55	-13.38	117.40	20.61	58.25	13 54 7	2765.5	-17.48	110.69

DIFFERENTIAL CORRECTIONS
TDE .8272 TRA 1.7120 TC-13.0278 BAU 1.6264
RDE .2172 RRA .1129 RC3 .1785 FAU .45522
FDE 1.3670 FRA 7.0142 FC-42.2081 BSP 30964
BDE .8552 BRA 1.7157 BC313.0291 FSP 8769

MID-COURSE EXECUTION ACCURACY
SGT 8895.0 SGR 485.5 SG3 2585.7
RRT .1486 RRF .1259 RTF .9915
SGB 8908.2 R23 -.0221 R13 .9915
SG1 8895.3 SG2 480.1 THA .47

ORBIT DETERMINATION ACCURACY
ST 1913.7 SR 413.6 SS 1454.1
CRT .8970 CRS -.6317 CST -.9075
LSA 2376.0 MSA 548.8 SSA 31.5
EL1 1949.6 EL2 179.5 ALF 11.07

LAUNCH DATE NOV 15 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 755.453 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.900 GAL -2.02 AZL 88.06 HCA 228.54 SMA 186.50 ECC .20956 INC 1.9428 V1 30.115
RP 214.24 LAP -1.46 LOP 281.20 VP 22.964 GAP -8.59 AZP 91.29 TAL 348.30 TAP 216.84 RCA 147.42 APO 225.59 V2 25.626
RC 292.998 GL 21.31 GP -1.01 ZAL 104.73 ZAP 60.84 ETS 178.72 ZAE 90.06 ETE 178.93 ZAC 83.00 ETC 258.07 CLP 60.84

PLANETOCENTRIC CONIC

C3 9.406 VHL 3.067 DLA 27.99 RAL 168.99 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.269 DPA 7.69 RAP 163.71 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 29	3248.74	-25.39	114.14	26.76	77.02	14 31 38	2648.7	-26.93	105.81
90.00	12 21 38	3495.14	-20.61	130.60	25.23	70.14	13 19 53	2895.1	-23.13	122.83
100.00	15 50 18	2820.54	-28.91	83.36	27.49	82.06	16 37 19	2220.5	-29.71	74.65
100.00	12 51 29	3398.57	-17.29	122.07	23.79	65.23	13 48 8	2798.6	-20.49	114.74
110.00	18 2 47	2405.94	-34.18	52.33	27.93	89.76	18 42 52	1805.9	-33.84	43.10
110.00	12 55 31	3385.94	-12.65	118.52	21.19	57.97	13 51 57	2785.9	-16.79	111.86

DIFFERENTIAL CORRECTIONS
TDE .8031 TRA 1.8221 TC-13.3384 BAU 1.6775
RDE .2209 RRA .1135 RC3 .1952 FAU .44139
FDE 1.1753 FRA 6.9481 FC-40.6256 BSP 31815
BDE .8329 BRA 1.8256 BC313.3399 FSP 8461

MID-COURSE EXECUTION ACCURACY
SGT 9167.8 SGR 492.2 SG3 2506.9
RRT .1252 RRF .1017 RTF .9919
SGB 9181.0 R23 -.0231 R13 .9918
SG1 9168.0 SG2 488.3 THA .39

ORBIT DETERMINATION ACCURACY
ST 1910.1 SR 418.9 SS 1407.2
CRT .8767 CRS -.5850 CST -.9012
LSA 2342.7 MSA 561.0 SSA 31.5
EL1 1945.4 EL2 197.8 ALF 11.00

LAUNCH DATE NOV 15 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 759.647 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.903 GAL -2.10 AZL 88.06 HCA 229.73 SMA 186.55 ECC .21000 INC 1.9389 V1 30.115
RP 213.93 LAP -1.48 LOP 282.38 VP 23.008 GAP -8.74 AZP 91.25 TAL 347.86 TAP 217.59 RCA 147.38 APO 225.73 V2 25.662
RC 294.131 GL 21.18 GP -.98 ZAL 105.54 ZAP 59.45 ETS 178.71 ZAE 88.40 ETE 178.94 ZAC 82.99 ETC 258.10 CLP 59.45

PLANETOCENTRIC CONIC

C3 9.482 VHL 3.079 DLA 27.53 RAL 169.76 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.318 DPA 7.80 RAP 163.54 ECC 1.1560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 16	3182.42	-26.32	109.51	27.81	79.16	14 54 18	2582.4	-27.55	101.06
90.00	12 3 57	3564.61	-18.94	135.01	25.50	68.55	13 3 21	2964.6	-21.69	127.41
100.00	16 3 30	2788.38	-29.19	81.01	28.31	83.27	16 49 58	2188.4	-29.82	72.26
100.00	12 44 24	3433.88	-16.27	124.20	24.28	64.57	13 41 38	2833.9	-19.56	116.95
110.00	18 11 17	2388.49	-34.18	50.97	28.63	90.57	18 51 5	1788.5	-33.72	41.75
110.00	12 53 6	3406.53	-11.90	119.65	21.80	57.72	13 49 53	2806.5	-16.08	113.03

DIFFERENTIAL CORRECTIONS
TDE .7768 TRA 1.9375 TC-13.6169 BAU 1.7264
RDE .2247 RRA .1141 RC3 .2112 FAU .42692
FDE .9937 FRA 6.8830 FC-38.9794 BSP 32684
BDE .8087 BRA 1.9409 BC313.6185 FSP 8169

MID-COURSE EXECUTION ACCURACY
SGT 9430.9 SGR 499.1 SG3 2425.8
RRT .1035 RRF .0791 RTF .9921
SGB 9444.1 R23 -.0239 R13 .9921
SG1 9431.1 SG2 496.4 THA .31

ORBIT DETERMINATION ACCURACY
ST 1907.9 SR 424.3 SS 1366.2
CRT .8537 CRS -.5349 CST -.8951
LSA 2314.4 MSA 573.7 SSA 31.4
EL1 1942.4 EL2 217.1 ALF 10.89

LAUNCH DATE NOV 15 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 763.847 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.907 GAL -2.18 AZL 88.06 HCA 230.91 SMA 186.61 ECC .21047 INC 1.9350 V1 30.115
RP 213.62 LAP -1.50 LOP 283.57 VP 23.051 GAP -8.88 AZP 91.22 TAL 347.40 TAP 218.32 RCA 147.33 APO 225.89 V2 25.697
RC 295.251 GL 21.04 GP -.95 ZAL 106.38 ZAP 58.10 ETS 178.71 ZAE 86.77 ETE 178.95 ZAC 82.99 ETC 258.13 CLP 58.10

PLANETOCENTRIC CONIC

C3 9.565 VHL 3.093 DLA 27.05 RAL 170.54 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.370 DPA 7.89 RAP 163.40 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 55	3132.80	-26.91	105.99	28.77	80.83	15 12 8	2532.8	-27.90	97.47
90.00	11 51 31	3617.66	-17.59	138.31	25.91	67.44	12 51 49	3017.7	-20.49	130.84
100.00	16 16 5	2758.32	-29.41	78.81	29.13	84.41	17 2 4	2158.3	-29.88	70.03
100.00	12 38 2	3467.38	-15.28	126.20	24.82	63.99	13 35 49	2867.4	-18.66	119.03
110.00	18 19 50	2371.11	-34.16	49.61	29.34	91.37	18 59 21	1771.1	-33.59	40.41
110.00	12 50 47	3427.35	-11.14	120.78	22.44	57.47	13 47 54	2827.4	-15.35	114.21

DIFFERENTIAL CORRECTIONS
TDE .7463 TRA 2.0566 TC-13.8716 BAU 1.7742
RDE .2287 RRA .1148 RC3 .2264 FAU .41252
FDE .8182 FRA 6.8160 FC-37.3355 BSP 33530
BDE .7805 BRA 2.0598 BC313.8735 FSP 7885

MID-COURSE EXECUTION ACCURACY
SGT 9687.0 SGR 506.1 SG3 2345.0
RRT .0828 RRF .0578 RTF .9924
SGB 9700.2 R23 -.0246 R13 .9924
SG1 9687.1 SG2 504.4 THA .25

ORBIT DETERMINATION ACCURACY
ST 1903.9 SR 429.7 SS 1330.0
CRT .8270 CRS -.4809 CST -.8891
LSA 2287.6 MSA 586.6 SSA 31.3
EL1 1937.2 EL2 237.4 ALF 10.74

LAUNCH DATE NOV 15 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 768.052 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.910	GAL	-2.27	AZL	88.07	HCA	232.10	SMA	186.67	ECC	.21097	INC	1.9314
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.094	GAP	-9.03	AZP	91.19	TAL	346.93	TAP	219.04	RCA	147.28	APO	226.05
RC	296.356	GL	20.89	GP	-.92	ZAL	107.24	ZAP	56.79	ETS	178.70	ZAE	85.18	ETE	178.97	ZAC	83.00	ETC	258.14

V1	30.115	V2	25.731	CLP	56.79														

PLANETOCENTRIC CONIC

C3	9.657	VHL	3.108	DLA	26.56	RAL	171.34	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.423	DPA	7.96	RAP	163.29

ECC	1.1589	V1	30.115	V2	25.731	CLP	56.79												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 16	3090.82	-27.33	102.99	29.69	82.28	15 27 47	2490.8	-28.11	94.42
90.00	11 41 32	3663.38	-16.37	141.12	26.40	66.57	12 42 35	3063.4	-19.40	133.75
100.00	16 28 14	2729.87	-29.58	76.71	29.96	85.50	17 13 44	2129.9	-29.89	67.92
100.00	12 32 15	3499.57	-14.31	128.09	25.41	63.47	13 30 35	2899.6	-17.76	121.00
110.00	18 28 25	2353.80	-34.12	48.26	30.07	92.17	19 7 39	1753.8	-33.45	39.08
110.00	12 48 33	3448.40	-10.37	121.92	23.11	57.24	13 46 2	2848.4	-14.61	115.39

DIFFERENTIAL CORRECTIONS

TDE	.7137	TRA	2.1815	TC	-14.0949	BAU	1.8200
RDE	.2328	RRA	.1155	RC3	.2407	FAU	.39791
FDE	.6554	FRA	6.7541	FC	-35.6725	BSP	34393
BDE	.7507	BRA	2.1846	BC3	14.0969	FSP	7615

MID-COURSE EXECUTION ACCURACY

SGT	9934.4	SGR	513.1	SG3	2264.3		
RRT	.0637	RRF	.0384	RTF	.9925		
SGB	9947.7	R23	-.0251	R13	.9925		
SG1	9934.5	SG2	512.1	THA	.19		

ORBIT DETERMINATION ACCURACY

ST	1902.8	SR	435.2	SS	1300.9		
CRT	.7971	CRS	-.4253	CST	-.8841		
LSA	2267.7	MSA	599.0	SSA	31.2		
EL1	1934.8	EL2	258.4	ALF	10.52		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 772.263 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.913	GAL	-2.35	AZL	88.07	HCA	233.30	SMA	186.73	ECC	.21151	INC	1.9278
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.137	GAP	-9.17	AZP	91.15	TAL	346.45	TAP	219.75	RCA	147.23	APO	226.22
RC	297.448	GL	20.74	GP	-.89	ZAL	108.13	ZAP	55.52	ETS	178.69	ZAE	83.63	ETE	178.98	ZAC	83.01	ETC	258.15

V1	30.115	V2	25.765	CLP	55.51														

PLANETOCENTRIC CONIC

C3	9.757	VHL	3.124	DLA	26.06	RAL	172.15	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.478	DPA	8.02	RAP	163.23

ECC	1.1606	V1	30.115	V2	25.765	CLP	55.51												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 14	3053.42	-27.64	100.30	30.59	83.60	15 42 8	2453.4	-28.24	91.69
90.00	11 33 2	3704.85	-15.23	143.63	26.96	65.84	12 34 47	3104.8	-18.37	136.36
100.00	16 40 1	2702.70	-29.71	74.70	30.79	86.56	17 25 4	2102.7	-29.87	65.90
100.00	12 26 56	3530.80	-13.36	129.92	26.03	63.01	13 25 47	2930.8	-16.87	122.89
110.00	18 37 3	2336.56	-34.07	46.91	30.82	92.96	19 15 59	1736.6	-33.28	37.76
110.00	12 46 24	3469.70	-9.58	123.07	23.81	57.03	13 44 14	2869.7	-13.86	116.58

DIFFERENTIAL CORRECTIONS

TDE	.6765	TRA	2.3094	TC	-14.2971	BAU	1.8652
RDE	.2371	RRA	.1162	RC3	.2542	FAU	.38361
FDE	.4966	FRA	6.6862	FC	-34.0389	BSP	35200
BDE	.7169	BRA	2.3123	BC3	14.2994	FSP	7341

MID-COURSE EXECUTION ACCURACY

SGT	10175.9	SGR	520.2	SG3	2184.7		
RRT	.0453	RRF	.0196	RTF	.9927		
SGB	10189.2	R23	-.0255	R13	.9927		
SG1	10175.9	SG2	519.6	THA	.13		

ORBIT DETERMINATION ACCURACY

ST	1900.8	SR	440.7	SS	1275.3		
CRT	.7629	CRS	-.3660	CST	-.8796		
LSA	2249.1	MSA	611.5	SSA	31.0		
EL1	1930.9	EL2	280.4	ALF	10.25		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 776.478 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.917	GAL	-2.44	AZL	88.08	HCA	234.49	SMA	186.79	ECC	.21207	INC	1.9243
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.179	GAP	-9.32	AZP	91.12	TAL	345.95	TAP	220.44	RCA	147.18	APO	226.40
RC	298.526	GL	20.58	GP	-.86	ZAL	109.04	ZAP	54.28	ETS	178.68	ZAE	82.11	ETE	178.99	ZAC	83.03	ETC	258.16

V1	30.115	V2	25.798	CLP	54.28														

PLANETOCENTRIC CONIC

C3	9.865	VHL	3.141	DLA	25.54	RAL	172.97	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	3.535	DPA	8.06	RAP	163.20

ECC	1.1624	V1	30.115	V2	25.798	CLP	54.28												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 17	3019.14	-27.88	97.82	31.49	84.82	15 55 37	2419.1	-28.30	89.18
90.00	11 25 34	3743.52	-14.14	145.94	27.56	65.21	12 27 58	3143.5	-17.37	138.75
100.00	16 51 33	2676.57	-29.80	72.76	31.64	87.57	17 36 9	2076.6	-29.82	63.96
100.00	12 22 0	3561.32	-12.41	131.69	26.69	62.58	13 21 21	2961.3	-15.98	124.72
110.00	18 45 42	2319.41	-34.00	45.58	31.58	93.75	19 24 21	1719.4	-33.11	36.45
110.00	12 44 20	3491.25	-8.78	124.23	24.53	56.83	13 42 31	2891.2	-13.09	117.78

DIFFERENTIAL CORRECTIONS

TDE	.6360	TRA	2.4419	TC	-14.4713	BAU	1.9090
RDE	.2415	RRA	.1168	RC3	.2667	FAU	.36948
FDE	.3452	FRA	6.6167	FC	-32.4230	BSP	36014
BDE	.6803	BRA	2.4447	BC3	14.4737	FSP	7082

MID-COURSE EXECUTION ACCURACY

SGT	10409.5	SGR	527.1	SG3	2106.1		
RRT	.0280	RRF	.0018	RTF	.9928		
SGB	10422.8	R23	-.0260	R13	.9928		
SG1	10409.5	SG2	526.9	THA	.08		

ORBIT DETERMINATION ACCURACY

ST	1901.0	SR	446.2	SS	1254.6		
CRT	.7246	CRS	-.3048	CST	-.8760		
LSA	2235.4	MSA	623.8	SSA	30.7		
EL1	1929.0	EL2	303.0	ALF	9.90		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 780.696 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.921	GAL	-2.54	AZL	88.08	HCA	235.69	SMA	186.85	ECC	.21266	INC	1.9209
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.221	GAP	-9.46	AZP	91.08	TAL	345.44	TAP	221.13	RCA	147.12	APO	226.59
RC	299.592	GL	20.42	GP	-.84	ZAL	109.96	ZAP	53.08	ETS	178.67	ZAE	80.63	ETE	179.00	ZAC	83.05	ETC	258.16

V1	30.115	V2	25.831	CLP	53.08														

PLANETOCENTRIC CONIC

C3	9.984	VHL	3.160	DLA	25.00	RAL	173.81	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	3.593	DPA	8.08	RAP	163.22

ECC	1.1643	V1	30.115	V2	25.831	CLP	53.08												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 42	2987.11	-28.05	95.49	32.39	85.97	16 8 29	2387.1	-28.32	86.84
90.00	11 18 52	3780.28	-13.08	148.12	28.21	64.66	12 21 53	3180.3	-16.39	141.01
100.00	17 2 51	2651.29	-29.86	70.88	32.49	88.56	17 47 3	2051.3	-29.74	62.08
100.00	12 17 24	3591.33	-11.46	133.41	27.38	62.20	13 17 15	2991.3	-15.09	126.50
110.00	18 54 24	2302.32	-33.92	44.25	32.36	94.53	19 32 46	1702.3	-32.92	35.16
110.00	12 42 21	3513.07	-7.96	125.39	25.29	56.65	13 40 54	2913.1	-12.30	118.98

DIFFERENTIAL CORRECTIONS

TDE	.6057	TRA	2.5936	TC	-14.5659	BAU	1.9445
RDE	.2461	RRA	.1175	RC3	.2788	FAU	.35332
FDE	.2426	FRA	6.5864	FC	-30.6379	BSP	37147
BDE	.6538	BRA	2.5963	BC3	14.5686	FSP	6913

MID-COURSE EXECUTION ACCURACY

SGT	10623.7	SGR	534.3	SG3	2023.9		
RRT	.0156	RRF	-.0093	RTF	.9929		
SGB	10637.1	R23	-.0248	R13	.9929		
SG1	10623.7	SG2	534.2	THA	.05		

ORBIT DETERMINATION ACCURACY

ST	1925.1	SR	451.8	SS	1248.0		
CRT	.6880	CRS	-.2599	CST	-.8784		
LSA	2251.9	MSA	629.3	SSA	30.5		
EL1	1950.8	EL2	323.6	ALF	9.43		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 784.924 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.925	GAL	-2.64	AZL	88.08	HCA	236.90	SMA	186.92	ECC	.21328	INC	1.9176	V1	30.115
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.263	GAP	-9.60	AZP	91.05	TAL	344.91	TAP	221.80	RCA	147.05	APO	226.79	V2	25.863
RC	300.645	GL	20.25	GP	-.81	ZAL	110.91	ZAP	51.92	ETS	178.66	ZAE	79.19	ETE	179.02	ZAC	83.08	ETC	258.16	CLP	51.91

PLANETOCENTRIC CONIC

C3	10.112	VHL	3.180	DLA	24.45	RAL	174.66	RAD	6567.4	VEL	11.467	PTH	1.99	VHP	3.653	DPA	8.09	RAP	163.26	ECC	1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 34	2956.94	-28.18	93.29	33.29	87.07	16 20 51	2356.9	-28.29	84.63
90.00	11 12 47	3815.54	-12.04	150.19	28.90	64.18	12 16 22	3215.5	-15.42	143.14
100.00	17 13 57	2626.83	-29.89	69.07	33.35	89.51	17 57 44	2026.8	-29.64	60.27
100.00	12 13 5	3620.88	-10.52	135.10	28.11	61.86	13 13 26	3020.9	-14.20	128.24
110.00	19 3 6	2285.36	-33.82	42.94	33.16	95.31	19 41 11	1685.4	-32.71	33.88
110.00	12 40 25	3535.11	-7.14	126.56	26.07	56.48	13 39 21	2935.1	-11.50	120.18

DIFFERENTIAL CORRECTIONS

TDE	.5428	TRA	2.7193	TC-14.7452	BAU	1.9937	
RDE	.2507	RRA	.1180	RC3 .2893	FAU	.34182	
FDE	.0599	FRA	6.4711	FC-29.2653	BSP	37554	
BDE	.5979	BRA	2.7218	BC314.7480	FSP	6573	

MID-COURSE EXECUTION ACCURACY

SGT10856.7	SGR	540.9	SG3	1952.1			
RRT -.0045	RRF	-.0314	RTF	.9930			
SGB10870.1	R23	.0269	R13	-.9930			
SG110856.7	SG2	540.8	THA	179.99			

ORBIT DETERMINATION ACCURACY

ST	1908.7	SR	457.2	SS	1226.2		
CRT	.6342	CRS	-.1773	CST	-.8723		
LSA	2221.8	MSA	646.7	SSA	30.1		
EL1	1931.4	EL2	349.3	ALF	8.93		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 789.153 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.929	GAL	-2.74	AZL	88.09	HCA	238.10	SMA	186.99	ECC	.21394	INC	1.9144	V1	30.115
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.304	GAP	-9.73	AZP	91.01	TAL	344.36	TAP	222.47	RCA	146.99	APO	227.00	V2	25.895
RC	301.687	GL	20.07	GP	-.79	ZAL	111.88	ZAP	50.79	ETS	178.65	ZAE	77.77	ETE	179.03	ZAC	83.12	ETC	258.15	CLP	50.78

PLANETOCENTRIC CONIC

C3	10.251	VHL	3.202	DLA	23.89	RAL	175.53	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	3.715	DPA	8.08	RAP	163.34	ECC	1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 3	2928.16	-28.26	91.19	34.20	88.12	16 32 52	2328.2	-28.22	82.53
90.00	11 7 10	3849.78	-11.02	152.19	29.64	63.75	12 11 20	3249.8	-14.46	145.20
100.00	17 24 54	2603.02	-29.89	67.30	34.23	90.45	18 8 17	2003.0	-29.51	58.51
100.00	12 9 0	3650.16	-9.57	136.76	28.87	61.55	13 9 51	3050.2	-13.30	129.95
110.00	19 11 50	2268.50	-33.70	41.63	33.97	96.07	19 49 38	1668.5	-32.50	32.61
110.00	12 38 34	3557.45	-6.30	127.74	26.88	56.33	13 37 52	2957.4	-10.68	121.39

DIFFERENTIAL CORRECTIONS

TDE	.4911	TRA	2.8649	TC-14.8427	BAU	2.0345	
RDE	.2556	RRA	.1186	RC3 .2994	FAU	.32835	
FDE	-.0724	FRA	6.3944	FC-27.7315	BSP	38307	
BDE	.5537	BRA	2.8673	BC314.8457	FSP	6327	

MID-COURSE EXECUTION ACCURACY

SGT11070.0	SGR	547.6	SG3	1877.0			
RRT -.0196	RRF	-.0470	RTF	.9931			
SGB11083.5	R23	.0275	R13	-.9931			
SG111070.0	SG2	547.5	THA	179.94			

ORBIT DETERMINATION ACCURACY

ST	1919.3	SR	462.7	SS	1218.0		
CRT	.5827	CRS	-.1134	CST	-.8725		
LSA	2224.6	MSA	656.7	SSA	29.7		
EL1	1938.8	EL2	372.3	ALF	8.31		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 793.386 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.933	GAL	-2.84	AZL	88.09	HCA	239.31	SMA	187.06	ECC	.21464	INC	1.9112	V1	30.115
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.344	GAP	-9.87	AZP	90.98	TAL	343.80	TAP	223.12	RCA	146.91	APO	227.22	V2	25.926
RC	302.717	GL	19.89	GP	-.77	ZAL	112.86	ZAP	49.69	ETS	178.64	ZAE	76.39	ETE	179.05	ZAC	83.16	ETC	258.13	CLP	49.69

PLANETOCENTRIC CONIC

C3	10.401	VHL	3.225	DLA	23.32	RAL	176.40	RAD	6567.4	VEL	11.480	PTH	2.00	VHP	3.779	DPA	8.06	RAP	163.45	ECC	1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 13	2900.58	-28.30	89.18	35.12	89.13	16 44 34	2300.6	-28.13	80.52
90.00	11 1 58	3883.21	-10.01	154.12	30.40	63.37	12 6 41	3283.2	-13.50	147.19
100.00	17 35 43	2579.80	-29.86	65.57	35.11	91.35	18 18 42	1979.8	-29.36	56.80
100.00	12 5 9	3679.22	-8.62	138.40	29.67	61.27	13 6 29	3079.2	-12.39	131.64
110.00	19 20 34	2251.74	-33.58	40.34	34.80	96.82	19 58 6	1651.7	-32.27	31.35
110.00	12 36 47	3580.05	-5.44	128.94	27.72	56.20	13 36 27	2980.0	-9.85	122.61

DIFFERENTIAL CORRECTIONS

TDE	.4348	TRA	3.0146	TC-14.9179	BAU	2.0747	
RDE	.2607	RRA	.1190	RC3 .3085	FAU	.31528	
FDE	-.1970	FRA	6.3155	FC-26.2433	BSP	39010	
BDE	.5070	BRA	3.0169	BC314.9211	FSP	6084	

MID-COURSE EXECUTION ACCURACY

SGT11278.0	SGR	554.2	SG3	1803.9			
RRT -.0343	RRF	-.0620	RTF	.9931			
SGB11291.6	R23	.0279	R13	-.9932			
SG111278.0	SG2	553.9	THA	179.90			

ORBIT DETERMINATION ACCURACY

ST	1934.2	SR	468.3	SS	1213.4		
CRT	.5265	CRS	-.0506	CST	-.8748		
LSA	2234.0	MSA	664.5	SSA	29.3		
EL1	1950.6	EL2	394.8	ALF	7.58		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 797.623 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.937	GAL	-2.95	AZL	88.09	HCA	240.52	SMA	187.14	ECC	.21536	INC	1.9082	V1	30.115
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.384	GAP	-10.00	AZP	90.94	TAL	343.23	TAP	223.75	RCA	146.84	APO	227.44	V2	25.956
RC	303.736	GL	19.70	GP	-.75	ZAL	113.86	ZAP	48.63	ETS	178.63	ZAE	75.04	ETE	179.06	ZAC	83.21	ETC	258.11	CLP	48.62

PLANETOCENTRIC CONIC

C3	10.563	VHL	3.250	DLA	22.73	RAL	177.28	RAD	6567.4	VEL	11.487	PTH	2.00	VHP	3.843	DPA	8.02	RAP	163.60	ECC	1.1738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 7	2874.03	-28.32	87.24	36.05	90.10	16 56 1	2274.0	-28.00	78.58
90.00	10 57 6	3916.01	-9.00	156.00	31.20	63.04	12 2 22	3316.0	-12.55	149.12
100.00	17 46 24	2557.14	-29.82	63.89	36.01	92.24	18 29 1	1957.1	-29.19	55.14
100.00	12 1 30	3708.13	-7.67	140.02	30.49	61.02	13 3 18	3108.1	-11.48	133.30
110.00	19 29 19	2235.12	-33.43	39.07	35.65	97.57	20 6 34	1635.1	-32.03	30.12
110.00	12 35 4	3602.92	-4.57	130.14	28.59	56.09	13 35 7	3002.9	-9.00	123.84

DIFFERENTIAL CORRECTIONS

TDE	.3752	TRA	3.1695	TC-14.9662	BAU	2.1139	
RDE	.2659	RRA	.1194	RC3 .3169	FAU	.30244	
FDE	-.3173	FRA	6.2358	FC-24.7890	BSP	39714	
BDE	.4599	BRA	3.1717	BC314.9695	FSP	5849	

MID-COURSE EXECUTION ACCURACY

SGT11479.1	SGR	560.7	SG3	1732.3			
RRT -.0483	RRF	-.0765	RTF	.9932			
SGB11492.8	R23	.0285	R13	-.9932			
SG111479.1	SG2	560.0	THA	179.86			

ORBIT DETERMINATION ACCURACY

ST	1955.9	SR	473.9	SS	1212.5		
CRT	.4669	CRS	.0118	CST	-.8779		
LSA	2251.2	MSA	671.7	SSA	28.8		
EL1	1968.9	EL2	416.3	ALF	6.76		

LAUNCH DATE NOV 15 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 801.863 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.942	GAL	-3.06	AZL	88.09	HCA	241.74	SMA	187.22	ECC	.21613	INC	1.9052	V1	30.115
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.423	GAP	-10.14	AZP	90.90	TAL	342.64	TAP	224.38	RCA	146.75	APO	227.68	V2	25.986
RC	304.746	GL	19.50	GP	-.73	ZAL	114.88	ZAP	47.59	ETS	178.62	ZAE	73.72	ETE	179.08	ZAC	83.27	ETC	258.09	CLP	47.59

PLANETOCENTRIC CONIC

C3	10.737	VHL	3.277	DLA	22.12	RAL	178.17	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	3.910	DPA	7.97	RAP	163.77	ECC	1.1767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 46	2848.37	-28.30	85.36	36.99	91.04	17 7 15	2248.4	-27.86	76.72
90.00	10 52 32	3948.33	-8.00	157.85	32.04	62.75	11 58 20	3348.3	-11.59	151.01
100.00	17 56 58	2534.99	-29.75	62.24	36.93	93.10	18 39 13	1935.0	-29.00	53.52
100.00	11 58 2	3736.95	-6.72	141.62	31.35	60.80	13 0 19	3136.9	-10.56	134.94
110.00	19 38 5	2218.64	-33.28	37.80	36.51	98.30	20 15 3	1618.6	-31.78	28.90
110.00	12 33 24	3626.06	-3.69	131.35	29.48	55.99	13 33 50	3026.1	-8.13	125.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3118	TRA	3.3298	TC-14.9899	BAU	2.1522	SGT11674.9	SGR	567.0	SG3	1662.7	ST	1984.8	SR	479.4	SS	1214.4
RDE	.2714	RRA	.1198	RC3 .3244	FAU	.28997	RRT -.0618	RRF	-.0905	RTF	.9932	CRT	.4043	CRS	.0712	CST	-.8827
FDE	-.4292	FRA	6.1552	FC-23.3805	BSP	40408	SGB11688.7	R23	.0290	R13	-.9932	LSA	2277.2	MSA	676.5	SSA	28.4
BDE	.4134	BRA	3.3320	BC314.9935	FSP	5622	SG111675.0	SG2	565.9	THA	179.83	EL1	1994.7	EL2	436.3	ALF	5.86

LAUNCH DATE NOV 15 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 806.107 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.946	GAL	-3.17	AZL	88.10	HCA	242.96	SMA	187.30	ECC	.21693	INC	1.9022	V1	30.115
RP	210.82	LAP	-1.69	LOP	295.61	VP	23.461	GAP	-10.27	AZP	90.86	TAL	342.04	TAP	225.00	RCA	146.67	APO	227.93	V2	26.015
RC	305.746	GL	19.29	GP	-.71	ZAL	115.91	ZAP	46.59	ETS	178.61	ZAE	72.43	ETE	179.09	ZAC	83.33	ETC	258.06	CLP	46.58

PLANETOCENTRIC CONIC

C3	10.925	VHL	3.305	DLA	21.51	RAL	179.06	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	3.978	DPA	7.90	RAP	163.98	ECC	1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 13	2823.52	-28.26	83.54	37.94	91.95	17 18 17	2223.5	-27.69	74.92
90.00	10 48 14	3980.28	-7.00	159.66	32.91	62.49	11 54 34	3380.3	-10.63	152.87
100.00	18 7 25	2513.33	-29.66	60.64	37.85	93.94	18 49 19	1913.3	-28.79	51.94
100.00	11 54 43	3765.70	-5.76	143.22	32.24	60.62	12 57 29	3165.7	-9.63	136.57
110.00	19 46 50	2202.33	-33.11	36.56	37.39	99.02	20 23 32	1602.3	-31.51	27.70
110.00	12 31 48	3649.47	-2.80	132.58	30.40	55.92	13 32 37	3049.5	-7.26	126.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2450	TRA	3.4942	TC-14.9910	BAU	2.1901	SGT11864.8	SGR	573.2	SG3	1594.5	ST	2020.8	SR	485.0	SS	1218.6
RDE	.2771	RRA	.1200	RC3 .3312	FAU	.27776	RRT -.0750	RRF	-.1041	RTF	.9931	CRT	.3398	CRS	.1284	CST	-.8884
FDE	-.5351	FRA	6.0722	FC-22.0103	BSP	41065	SGB11878.7	R23	.0296	R13	-.9931	LSA	2311.1	MSA	679.6	SSA	27.9
BDE	.3699	BRA	3.4963	BC314.9947	FSP	5401	SG111864.9	SG2	571.6	THA	179.79	EL1	2027.9	EL2	454.6	ALF	4.91

LAUNCH DATE NOV 15 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 810.353 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.951	GAL	-3.29	AZL	88.10	HCA	244.18	SMA	187.38	ECC	.21777	INC	1.8993	V1	30.115
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.499	GAP	-10.40	AZP	90.83	TAL	341.42	TAP	225.60	RCA	146.57	APO	228.18	V2	26.043
RC	306.737	GL	19.08	GP	-.69	ZAL	116.96	ZAP	45.61	ETS	178.60	ZAE	71.16	ETE	179.10	ZAC	83.39	ETC	258.03	CLP	45.61

PLANETOCENTRIC CONIC

C3	11.127	VHL	3.336	DLA	20.89	RAL	179.97	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	4.047	DPA	7.82	RAP	164.22	ECC	1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 30	2799.39	-28.19	81.78	38.90	92.83	17 29 9	2199.4	-27.50	73.18
90.00	10 44 10	4011.94	-6.00	161.45	33.81	62.27	11 51 1	3411.9	-9.66	154.69
100.00	18 17 47	2492.13	-29.55	59.07	38.80	94.76	18 59 19	1892.1	-28.57	50.40
100.00	11 51 33	3794.44	-4.80	144.81	33.16	60.46	12 54 48	3194.4	-8.70	138.19
110.00	19 55 35	2186.18	-32.93	35.33	38.29	99.72	20 32 1	1586.2	-31.24	26.52
110.00	12 30 15	3673.15	-1.90	133.81	31.35	55.86	13 31 28	3073.1	-6.37	127.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1744	TRA	3.6643	TC-14.9671	BAU	2.2271	SGT12048.9	SGR	579.3	SG3	1528.2	ST	2064.9	SR	490.6	SS	1224.5
RDE	.2830	RRA	.1201	RC3 .3371	FAU	.26591	RRT -.0878	RRF	-.1174	RTF	.9931	CRT	.2739	CRS	.1824	CST	-.8950
FDE	-.6339	FRA	5.9872	FC-20.6885	BSP	41715	SGB12062.8	R23	.0302	R13	-.9931	LSA	2353.7	MSA	680.5	SSA	27.4
BDE	.3324	BRA	3.6662	BC314.9709	FSP	5186	SG112049.0	SG2	577.1	THA	179.76	EL1	2069.5	EL2	470.8	ALF	3.93

LAUNCH DATE NOV 15 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 814.602 EARTH TO MARS

RL	147.95	LAL	.00	LOL	52.67	VL	32.956	GAL	-3.41	AZL	88.10	HCA	245.40	SMA	187.46	ECC	.21865	INC	1.8964	V1	30.115
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.537	GAP	-10.53	AZP	90.79	TAL	340.79	TAP	226.19	RCA	146.47	APO	228.45	V2	26.071
RC	307.719	GL	18.86	GP	-.67	ZAL	118.02	ZAP	44.67	ETS	178.58	ZAE	69.93	ETE	179.12	ZAC	83.47	ETC	257.99	CLP	44.66

PLANETOCENTRIC CONIC

C3	11.344	VHL	3.368	DLA	20.25	RAL	180.87	RAD	6567.4	VEL	11.521	PTH	2.01	VHP	4.118	DPA	7.73	RAP	164.48	ECC	1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 36	2775.94	-28.10	80.07	39.88	93.69	17 39 52	2175.9	-27.29	71.50
90.00	10 40 18	4043.38	-5.00	163.22	34.74	62.09	11 47 41	3443.4	-8.69	156.50
100.00	18 28 3	2471.38	-29.42	57.54	39.75	95.55	19 9 14	1871.4	-28.34	48.91
100.00	11 48 32	3823.17	-3.83	146.40	34.10	60.33	12 52 15	3223.2	-7.76	139.81
110.00	20 4 18	2170.23	-32.74	34.13	39.21	100.41	20 40 29	1570.2	-30.96	25.36
110.00	12 28 46	3697.09	-.98	135.06	32.33	55.83	13 30 23	3097.1	-5.46	128.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0998	TRA	3.8399	TC-14.9191	BAU	2.2633	SGT12227.2	SGR	585.2	SG3	1463.7	ST	2117.2	SR	496.2	SS	1232.0
RDE	.2891	RRA	.1201	RC3 .3423	FAU	.25432	RRT -.1002	RRF	-.1303	RTF	.9930	CRT	.2075	CRS	.2333	CST	-.9023
FDE	-.7265	FRA	5.9020	FC-19.4086	BSP	42351	SGB12241.2	R23	.0307	R13	-.9930	LSA	2405.1	MSA	679.4	SSA	26.0
BDE	.3059	BRA	3.8418	BC314.9230	FSP	4977	SG112227.4	SG2	582.3	THA	179.72	EL1	2119.8	EL2	484.8	ALF	2.94

LAUNCH DATE NOV 15 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 818.852 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.960 GAL -3.54 AZL 88.11 HCA 246.63 SMA 187.55 ECC .21957 INC 1.8937 V1 30.115
RP 210.10 LAP -1.74 LOP 299.29 VP 23.573 GAP -10.66 AZP 90.75 TAL 340.14 TAP 226.77 RCA 146.37 APO 228.72 V2 26.098
RC 308.691 GL 18.63 GP -.65 ZAL 119.09 ZAP 43.75 ETS 178.57 ZAE 68.72 ETE 179.13 ZAC 83.54 ETC 257.95 CLP 43.75

PLANETOCENTRIC CONIC

C3 11.578 VHL 3.403 DLA 19.60 RAL 181.79 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.191 DPA 7.62 RAP 164.78 ECC 1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 33	2753.13	-27.98	78.41	40.87	94.51	17 50 26	2153.1	-27.07	69.87
90.00	10 36 37	4074.65	-4.00	164.98	35.71	61.94	11 44 32	3474.6	-7.72	158.28
100.00	18 38 13	2451.07	-29.28	56.05	40.73	96.33	19 19 5	1851.1	-28.09	47.45
100.00	11 45 38	3851.94	-2.86	147.98	35.08	60.23	12 49 50	3251.9	-6.80	141.41
110.00	20 13 1	2154.49	-32.54	32.94	40.14	101.09	20 48 56	1554.5	-30.67	24.22
110.00	12 27 19	3721.29	-.06	136.32	33.33	55.82	13 29 21	3121.3	-4.54	130.11

DIFFERENTIAL CORRECTIONS
TDE .0235 TRA 4.0221 TC-14.8461 BAU 2.2985
RDE .2955 RRA .1200 RC3 .3467 FAU .24305
FDE -.8107 FRA 5.8158 FC-18.1744 BSP 43001
BDE .2964 BRA 4.0238 BC314.8501 FSP 4780

MID-COURSE EXECUTION ACCURACY
SGT12400.0 SGR 591.0 SG3 1400.9
RRT -.1121 RRF -.1426 RTF .9929
SGB12414.1 R23 .0313 R13 -.9930
SG112400.2 SG2 587.2 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 2178.4 SR 501.8 SS 1240.1
CRT .1431 CRS .2800 CST -.9095
LSA 2465.0 MSA 676.8 SSA 26.4
EL1 2179.6 EL2 496.3 ALF 1.99

LAUNCH DATE NOV 15 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 823.105 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.965 GAL -3.67 AZL 88.11 HCA 247.86 SMA 187.63 ECC .22053 INC 1.8909 V1 30.115
RP 209.88 LAP -1.75 LOP 300.52 VP 23.609 GAP -10.79 AZP 90.71 TAL 339.47 TAP 227.33 RCA 146.25 APO 229.01 V2 26.124
RC 309.654 GL 18.40 GP -.64 ZAL 120.18 ZAP 42.86 ETS 178.56 ZAE 67.53 ETE 179.15 ZAC 83.63 ETC 257.91 CLP 42.85

PLANETOCENTRIC CONIC

C3 11.828 VHL 3.439 DLA 18.95 RAL 182.70 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 4.265 DPA 7.50 RAP 165.10 ECC 1.1947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 22	2730.92	-27.86	76.80	41.87	95.31	18 0 53	2130.9	-26.83	68.28
90.00	10 33 7	4105.79	-3.00	166.72	36.70	61.83	11 41 32	3505.8	-6.74	160.04
100.00	18 48 18	2431.21	-29.12	54.60	41.72	97.08	19 28 50	1831.2	-27.83	46.03
100.00	11 42 51	3880.74	-1.89	149.56	36.09	60.16	12 47 32	3280.7	-5.84	143.01
110.00	20 21 43	2138.97	-32.34	31.78	41.10	101.74	20 57 22	1539.0	-30.38	23.11
110.00	12 25 56	3745.74	.88	137.60	34.36	55.83	13 28 22	3145.7	-3.61	131.39

DIFFERENTIAL CORRECTIONS
TDE -.0574 TRA 4.2089 TC-14.7537 BAU 2.3336
RDE .3021 RRA .1198 RC3 .3503 FAU .23216
FDE -.8901 FRA 5.7277 FC-16.9929 BSP 43609
BDE .3075 BRA 4.2106 BC314.7579 FSP 4585

MID-COURSE EXECUTION ACCURACY
SGT12568.0 SGR 596.6 SG3 1340.2
RRT -.1239 RRF -.1550 RTF .9928
SGB12582.2 R23 .0319 R13 -.9929
SG112568.2 SG2 591.9 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 2246.9 SR 507.3 SS 1248.7
CRT .0793 CRS .3242 CST -.9168
LSA 2532.2 MSA 672.7 SSA 25.8
EL1 2247.3 EL2 505.6 ALF 1.08

LAUNCH DATE NOV 15 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 827.359 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.971 GAL -3.80 AZL 88.11 HCA 249.09 SMA 187.72 ECC .22153 INC 1.8882 V1 30.115
RP 209.66 LAP -1.76 LOP 301.75 VP 23.644 GAP -10.92 AZP 90.67 TAL 338.79 TAP 227.88 RCA 146.13 APO 229.31 V2 26.149
RC 310.607 GL 18.16 GP -.62 ZAL 121.27 ZAP 41.99 ETS 178.54 ZAE 66.38 ETE 179.16 ZAC 83.71 ETC 257.86 CLP 41.99

PLANETOCENTRIC CONIC

C3 12.096 VHL 3.478 DLA 18.28 RAL 183.62 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 4.341 DPA 7.37 RAP 165.44 ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 2	2709.30	-27.71	75.23	42.89	96.08	18 11 11	2109.3	-26.58	66.75
90.00	10 29 46	4136.85	-2.00	168.46	37.73	61.75	11 38 42	3536.9	-5.76	161.80
100.00	18 58 18	2411.78	-28.95	53.18	42.72	97.81	19 38 30	1811.8	-27.56	44.65
100.00	11 40 11	3909.61	-.91	151.15	37.12	60.12	12 45 20	3309.6	-4.88	144.61
110.00	20 30 22	2123.70	-32.12	30.64	42.07	102.39	21 5 46	1523.7	-30.08	22.02
110.00	12 24 36	3770.45	1.82	138.89	35.41	55.86	13 27 26	3170.4	-2.67	132.68

DIFFERENTIAL CORRECTIONS
TDE -.1417 TRA 4.4016 TC-14.6416 BAU 2.3683
RDE .3090 RRA .1194 RC3 .3532 FAU .22159
FDE -.9636 FRA 5.6377 FC-15.8604 BSP 44208
BDE .3399 BRA 4.4032 BC314.6459 FSP 4395

MID-COURSE EXECUTION ACCURACY
SGT12731.8 SGR 602.0 SG3 1281.2
RRT -.1356 RRF -.1672 RTF .9927
SGB12746.0 R23 .0326 R13 -.9927
SG112732.0 SG2 596.4 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 2323.1 SR 512.9 SS 1257.4
CRT .0178 CRS .3654 CST -.9237
LSA 2606.7 MSA 667.4 SSA 25.3
EL1 2323.1 EL2 512.8 ALF .24

LAUNCH DATE NOV 15 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 831.613 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.976 GAL -3.94 AZL 88.11 HCA 250.33 SMA 187.81 ECC .22259 INC 1.8856 V1 30.115
RP 209.44 LAP -1.78 LOP 302.99 VP 23.679 GAP -11.05 AZP 90.63 TAL 338.10 TAP 228.42 RCA 146.01 APO 229.62 V2 26.174
RC 311.551 GL 17.92 GP -.61 ZAL 122.38 ZAP 41.15 ETS 178.53 ZAE 65.24 ETE 179.18 ZAC 83.81 ETC 257.81 CLP 41.15

PLANETOCENTRIC CONIC

C3 12.383 VHL 3.519 DLA 17.61 RAL 184.54 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 4.418 DPA 7.23 RAP 165.81 ECC 1.2038

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 35	2688.24	-27.55	73.71	43.93	96.83	18 21 23	2088.2	-26.32	65.26
90.00	10 26 33	4167.85	-1.00	170.19	38.78	61.70	11 36 1	3567.8	-4.78	163.54
100.00	19 8 12	2392.78	-28.76	51.79	43.74	98.51	19 48 5	1792.8	-27.29	43.30
100.00	11 37 37	3938.54	.07	152.74	38.19	60.11	12 43 15	3338.5	-3.91	146.21
110.00	20 39 0	2108.69	-31.89	29.53	43.05	103.01	21 14 9	1508.7	-29.78	20.96
110.00	12 23 18	3795.39	2.77	140.19	36.50	55.92	13 26 34	3195.4	-1.72	133.99

DIFFERENTIAL CORRECTIONS
TDE -.2281 TRA 4.6020 TC-14.5043 BAU 2.4018
RDE .3162 RRA .1188 RC3 .3553 FAU .21123
FDE-1.0294 FRA 5.5483 FC-14.7683 BSP 44831
BDE .3898 BRA 4.6035 BC314.5086 FSP 4216

MID-COURSE EXECUTION ACCURACY
SGT12889.6 SGR 607.2 SG3 1223.9
RRT -.1467 RRF -.1789 RTF .9925
SGB12903.9 R23 .0333 R13 -.9926
SG112889.9 SG2 600.6 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 2407.1 SR 518.4 SS 1265.5
CRT -.0400 CRS .4026 CST -.9303
LSA 2688.2 MSA 661.2 SSA 24.8
EL1 2407.2 EL2 518.0 ALF 179.48

LAUNCH DATE NOV 15 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 835.868 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.981 GAL -4.08 AZL 88.12 HCA 251.56 SMA 187.90 ECC .22369 INC 1.8829 V1 30.115
RP 209.24 LAP -1.79 LOP 304.22 VP 23.712 GAP -11.19 AZP 90.60 TAL 337.39 TAP 228.95 RCA 145.87 APO 229.94 V2 26.198
RC 312.486 GL 17.66 GP -.59 ZAL 123.49 ZAP 40.33 ETS 178.51 ZAE 64.13 ETE 179.19 ZAC 83.90 ETC 257.76 CLP 40.33

PLANETOCENTRIC CONIC

C3 12.690 VHL 3.562 DLA 16.93 RAL 185.46 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 4.496 DPA 7.08 RAP 166.20 ECC 1.2088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 0	2667.74	-27.37	72.24	44.98	97.55	18 31 27	2067.7	-26.05	63.82
90.00	10 23 29	4198.81	.00	171.91	39.87	61.68	11 33 27	3598.8	-3.79	165.28
100.00	19 18 1	2374.23	-28.57	50.45	44.78	99.19	19 57 35	1774.2	-27.00	42.00
100.00	11 35 9	3967.55	1.06	154.33	39.28	60.12	12 41 16	3367.5	-2.93	147.80
110.00	20 47 35	2093.96	-31.66	28.44	44.06	103.61	21 22 29	1494.0	-29.47	19.92
110.00	12 22 3	3820.58	3.73	141.51	37.61	56.00	13 25 44	3220.6	-.75	135.30

DIFFERENTIAL CORRECTIONS
TDE -.3183 TRA 4.8074 TC-14.3498 BAU 2.4352
RDE .3236 RRA .1180 RC3 .3568 FAU .20118
FDE-1.0902 FRA 5.4555 FC-13.7252 BSP 45413
BDE .4539 BRA 4.8089 BC314.3543 FSP 4041

MID-COURSE EXECUTION ACCURACY
SGT13042.8 SGR 612.3 SG3 1168.2
RRT -.1579 RRF -.1906 RTF .9924
SGB13057.2 R23 .0340 R13 -.9924
SG113043.2 SG2 604.6 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 2497.2 SR 523.9 SS 1272.7
CRT -.0951 CRS .4376 CST -.9363
LSA 2775.2 MSA 654.2 SSA 24.3
EL1 2497.7 EL2 521.4 ALF 178.80

LAUNCH DATE NOV 15 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 840.123 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.986 GAL -4.22 AZL 88.12 HCA 252.80 SMA 188.00 ECC .22484 INC 1.8803 V1 30.115
RP 209.04 LAP -1.80 LOP 305.46 VP 23.745 GAP -11.32 AZP 90.56 TAL 336.66 TAP 229.47 RCA 145.73 APO 230.27 V2 26.221
RC 313.411 GL 17.41 GP -.58 ZAL 124.60 ZAP 39.54 ETS 178.50 ZAE 63.04 ETE 179.21 ZAC 84.01 ETC 257.71 CLP 39.54

PLANETOCENTRIC CONIC

C3 13.018 VHL 3.608 DLA 16.25 RAL 186.38 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 4.577 DPA 6.91 RAP 166.62 ECC 1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 17	2647.79	-27.19	70.81	46.04	98.24	18 41 25	2047.8	-25.77	62.43
90.00	10 20 31	4229.74	1.00	173.64	40.98	61.70	11 31 1	3629.7	-2.79	167.01
100.00	19 27 44	2356.13	-28.37	49.14	45.83	99.85	20 7 0	1756.1	-26.71	40.73
100.00	11 32 46	3996.63	2.04	155.92	40.40	60.17	12 39 23	3396.6	-1.94	149.40
110.00	20 56 8	2079.54	-31.43	27.39	45.08	104.20	21 30 47	1479.5	-29.16	18.92
110.00	12 20 51	3845.99	4.70	142.84	38.75	56.10	13 24 57	3246.0	.22	136.63

DIFFERENTIAL CORRECTIONS
TDE -.4119 TRA 5.0191 TC-14.1774 BAU 2.4683
RDE .3313 RRA .1171 RC3 .3575 FAU .19154
FDE-1.1459 FRA 5.3612 FC-12.7377 BSP 45992
BDE .5286 BRA 5.0205 BC314.1819 FSP 3870

MID-COURSE EXECUTION ACCURACY
SGT13191.5 SGR 617.1 SG3 1114.7
RRT -.1690 RRF -.2024 RTF .9921
SGB13206.0 R23 .0349 R13 -.9922
SG113191.9 SG2 608.2 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 2593.3 SR 529.4 SS 1279.1
CRT -.1470 CRS .4700 CST -.9418
LSA 2867.5 MSA 646.8 SSA 23.8
EL1 2594.5 EL2 523.4 ALF 178.21

LAUNCH DATE NOV 15 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 844.378 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.992 GAL -4.37 AZL 88.12 HCA 254.05 SMA 188.09 ECC .22604 INC 1.8778 V1 30.115
RP 208.85 LAP -1.81 LOP 306.71 VP 23.777 GAP -11.45 AZP 90.52 TAL 335.92 TAP 229.97 RCA 145.58 APO 230.61 V2 26.243
RC 314.329 GL 17.15 GP -.57 ZAL 125.72 ZAP 38.77 ETS 178.48 ZAE 61.97 ETE 179.22 ZAC 84.11 ETC 257.65 CLP 38.76

PLANETOCENTRIC CONIC

C3 13.370 VHL 3.656 DLA 15.56 RAL 187.30 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 4.658 DPA 6.73 RAP 167.06 ECC 1.2200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 28	2628.37	-26.99	69.42	47.13	98.91	18 51 16	2028.4	-25.48	61.08
90.00	10 17 41	4260.68	2.00	175.37	42.12	61.75	11 28 42	3660.7	-1.80	168.74
100.00	19 37 22	2338.48	-28.15	47.87	46.90	100.49	20 16 20	1738.5	-26.42	39.50
100.00	11 30 29	4025.81	3.03	157.53	41.55	60.25	12 37 34	3425.8	-.95	151.00
110.00	21 4 38	2065.43	-31.19	26.36	46.12	104.76	21 39 3	1465.4	-28.85	17.94
110.00	12 19 42	3871.62	5.67	144.19	39.91	56.23	13 24 14	3271.6	1.20	137.96

DIFFERENTIAL CORRECTIONS
TDE -.5081 TRA 5.2387 TC-13.9862 BAU 2.5007
RDE .3394 RRA .1159 RC3 .3575 FAU .18212
FDE-1.1948 FRA 5.2670 FC-11.7928 BSP 46574
BDE .6110 BRA 5.2399 BC313.9907 FSP 3706

MID-COURSE EXECUTION ACCURACY
SGT13336.2 SGR 621.8 SG3 1062.7
RRT -.1798 RRF -.2138 RTF .9919
SGB13350.7 R23 .0357 R13 -.9919
SG113336.7 SG2 611.7 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 2695.0 SR 534.8 SS 1284.0
CRT -.1951 CRS .4995 CST -.9468
LSA 2964.6 MSA 638.9 SSA 23.4
EL1 2697.1 EL2 524.1 ALF 177.70

LAUNCH DATE NOV 15 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 848.631 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 32.997 GAL -4.52 AZL 88.12 HCA 255.29 SMA 188.19 ECC .22729 INC 1.8752 V1 30.115
RP 208.67 LAP -1.81 LOP 307.95 VP 23.808 GAP -11.58 AZP 90.48 TAL 335.17 TAP 230.46 RCA 145.42 APO 230.97 V2 26.264
RC 315.238 GL 16.88 GP -.55 ZAL 126.85 ZAP 38.02 ETS 178.46 ZAE 60.92 ETE 179.24 ZAC 84.22 ETC 257.59 CLP 38.01

PLANETOCENTRIC CONIC

C3 13.745 VHL 3.707 DLA 14.87 RAL 188.22 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 4.742 DPA 6.55 RAP 167.52 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 31	2609.51	-26.78	68.08	48.23	99.55	19 1 1	2009.5	-25.19	59.77
90.00	10 14 57	4291.61	2.99	177.09	43.30	61.83	11 26 29	3691.6	-.80	170.46
100.00	19 46 54	2321.28	-27.93	46.64	47.99	101.10	20 25 35	1721.3	-26.12	38.31
100.00	11 28 16	4055.07	4.02	159.14	42.73	60.35	12 35 51	3455.1	.04	152.61
110.00	21 13 4	2051.66	-30.94	25.36	47.18	105.31	21 47 16	1451.7	-28.53	16.99
110.00	12 18 35	3897.46	6.65	145.55	41.10	56.39	13 23 33	3297.5	2.18	139.31

DIFFERENTIAL CORRECTIONS
TDE -.6082 TRA 5.4636 TC-13.7817 BAU 2.5333
RDE .3477 RRA .1145 RC3 .3570 FAU .17305
FDE-1.2389 FRA 5.1699 FC-10.8997 BSP 47124
BDE .7006 BRA 5.4648 BC313.7863 FSP 3546

MID-COURSE EXECUTION ACCURACY
SGT13477.0 SGR 626.4 SG3 1012.5
RRT -.1907 RRF -.2253 RTF .9916
SGB13491.5 R23 .0365 R13 -.9916
SG113477.5 SG2 614.9 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 2801.1 SR 540.2 SS 1287.4
CRT -.2402 CRS .5269 CST -.9513
LSA 3065.5 MSA 630.7 SSA 22.9
EL1 2804.2 EL2 523.8 ALF 177.25

LAUNCH DATE NOV 15 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 852.883 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 33.003 GAL -4.68 AZL 88.13 HCA 256.54 SMA 188.29 ECC .22860 INC 1.8727 V1 30.115
RP 208.49 LAP -1.82 LOP 309.20 VP 23.838 GAP -11.71 AZP 90.44 TAL 334.40 TAP 230.93 RCA 145.25 APO 231.33 V2 26.285
RC 316.140 GL 16.61 GP -.54 ZAL 127.98 ZAP 37.29 ETS 178.45 ZAE 59.89 ETE 179.25 ZAC 84.34 ETC 257.53 CLP 37.28

PLANETOCENTRIC CONIC
C3 14.146 VHL 3.761 DLA 14.17 RAL 189.13 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 4.826 DPA 6.35 RAP 168.00 ECC 1.2328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 28	2591.18	-26.57	66.78	49.34	100.17	19 10 39	1991.2	-24.90	58.51
90.00	10 12 20	4322.56	3.99	178.83	44.50	61.94	11 24 22	3722.6	.20	172.19
100.00	19 56 20	2304.56	-27.71	45.45	49.10	101.69	20 34 45	1704.6	-25.82	37.16
100.00	11 26 8	4084.41	5.00	160.76	43.94	60.49	12 34 13	3484.4	1.03	154.22
110.00	21 21 27	2038.24	-30.70	24.39	48.26	105.83	21 55 26	1438.2	-28.22	16.07
110.00	12 17 31	3923.50	7.63	146.94	42.32	56.58	13 22 54	3323.5	3.18	140.67

DIFFERENTIAL CORRECTIONS
TDE -.7103 TRA 5.6965 TC-13.5597 BAU 2.5652
RDE .3564 RRA .1129 RC3 .3558 FAU .16422
FDE-1.2780 FRA 5.0713 FC-10.0507 BSP 47693
BDE .7947 BRA 5.6977 BC313.5644 FSP 3392

MID-COURSE EXECUTION ACCURACY
SGT13613.0 SGR 630.7 SG3 963.8
RRT -.2014 RRF -.2368 RTF .9913
SGB13627.6 R23 .0376 R13 -.9913
SG113613.6 SG2 617.8 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 2911.0 SR 545.5 SS 1289.1
CRT -.2814 CRS .5524 CST -.9551
LSA 3169.4 MSA 622.9 SSA 22.5
EL1 2915.2 EL2 522.7 ALF 176.88

LAUNCH DATE NOV 15 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 857.133 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 33.009 GAL -4.84 AZL 88.13 HCA 257.78 SMA 188.39 ECC .22996 INC 1.8702 V1 30.115
RP 208.32 LAP -1.83 LOP 310.45 VP 23.868 GAP -11.85 AZP 90.40 TAL 333.61 TAP 231.39 RCA 145.07 APO 231.71 V2 26.304
RC 317.035 GL 16.33 GP -.53 ZAL 129.11 ZAP 36.58 ETS 178.43 ZAE 58.89 ETE 179.27 ZAC 84.46 ETC 257.47 CLP 36.58

PLANETOCENTRIC CONIC
C3 14.573 VHL 3.818 DLA 13.47 RAL 190.05 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 4.913 DPA 6.14 RAP 168.50 ECC 1.2398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 18	2573.40	-26.35	65.52	50.48	100.76	19 20 11	1973.4	-24.60	57.29
90.00	10 9 48	4353.53	4.97	180.56	45.73	62.09	11 22 21	3753.5	1.20	173.92
100.00	20 5 41	2288.32	-27.48	44.30	50.22	102.25	20 43 50	1688.3	-25.51	36.05
100.00	11 24 5	4113.84	5.99	162.39	45.18	60.66	12 32 39	3513.8	2.03	155.83
110.00	21 29 47	2025.19	-30.45	23.45	49.35	106.34	22 3 32	1425.2	-27.91	15.18
110.00	12 16 29	3949.74	8.61	148.33	43.57	56.79	13 22 18	3349.7	4.18	142.05

DIFFERENTIAL CORRECTIONS
TDE -.8157 TRA 5.9363 TC-13.3259 BAU 2.5972
RDE .3653 RRA .1111 RC3 .3540 FAU .15569
FDE-1.3124 FRA 4.9709 FC3-9.2489 BSP 48220
BDE .8938 BRA 5.9373 BC313.3306 FSP 3242

MID-COURSE EXECUTION ACCURACY
SGT13745.9 SGR 634.9 SG3 916.8
RRT -.2120 RRF -.2484 RTF .9910
SGB13760.5 R23 .0387 R13 -.9910
SG113746.5 SG2 620.4 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 3024.2 SR 550.8 SS 1289.0
CRT -.3196 CRS .5760 CST -.9584
LSA 3276.0 MSA 615.1 SSA 22.0
EL1 3029.5 EL2 521.0 ALF 176.57

LAUNCH DATE NOV 15 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 861.380 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 33.014 GAL -5.01 AZL 88.13 HCA 259.03 SMA 188.49 ECC .23139 INC 1.8677 V1 30.115
RP 208.16 LAP -1.83 LOP 311.70 VP 23.896 GAP -11.99 AZP 90.36 TAL 332.81 TAP 231.84 RCA 144.88 APO 232.11 V2 26.323
RC 317.924 GL 16.05 GP -.52 ZAL 130.24 ZAP 35.89 ETS 178.41 ZAE 57.90 ETE 179.28 ZAC 84.59 ETC 257.41 CLP 35.89

PLANETOCENTRIC CONIC
C3 15.030 VHL 3.877 DLA 12.77 RAL 190.96 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 5.001 DPA 5.93 RAP 169.03 ECC 1.2474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 0	2556.16	-26.13	64.31	51.63	101.33	19 29 36	1956.2	-24.30	56.12
90.00	10 7 21	4384.52	5.96	182.31	46.99	62.27	11 20 25	3784.5	2.20	175.65
100.00	20 14 56	2272.56	-27.25	43.18	51.36	102.80	20 52 49	1672.6	-25.21	34.97
100.00	11 22 6	4143.36	6.97	164.03	46.45	60.86	12 31 9	3543.4	3.03	157.46
110.00	21 38 3	2012.52	-30.21	22.55	50.47	106.82	22 11 35	1412.5	-27.61	14.32
110.00	12 15 29	3976.16	9.59	149.75	44.85	57.03	13 21 45	3376.2	5.18	143.43

DIFFERENTIAL CORRECTIONS
TDE -.9247 TRA 6.1826 TC-13.0818 BAU 2.6295
RDE .3747 RRA .1089 RC3 .3516 FAU .14745
FDE-1.3415 FRA 4.8684 FC3-8.4934 BSP 48747
BDE .9977 BRA 6.1836 BC313.0866 FSP 3096

MID-COURSE EXECUTION ACCURACY
SGT13875.4 SGR 638.9 SG3 871.4
RRT -.2228 RRF -.2600 RTF .9906
SGB13890.2 R23 .0398 R13 -.9906
SG113876.2 SG2 622.8 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 3140.0 SR 556.0 SS 1286.8
CRT -.3551 CRS .5978 CST -.9614
LSA 3384.6 MSA 607.1 SSA 21.6
EL1 3146.4 EL2 518.7 ALF 176.30

LAUNCH DATE NOV 15 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 865.624 EARTH TO MARS
RL 147.95 LAL .00 LOL 52.67 VL 33.020 GAL -5.18 AZL 88.13 HCA 260.29 SMA 188.60 ECC .23287 INC 1.8652 V1 30.115
RP 208.01 LAP -1.84 LOP 312.95 VP 23.924 GAP -12.12 AZP 90.31 TAL 331.99 TAP 232.28 RCA 144.68 APO 232.52 V2 26.341
RC 318.808 GL 15.77 GP -.51 ZAL 131.37 ZAP 35.22 ETS 178.39 ZAE 56.93 ETE 179.29 ZAC 84.71 ETC 257.34 CLP 35.22

PLANETOCENTRIC CONIC
C3 15.517 VHL 3.939 DLA 12.06 RAL 191.87 RAD 6567.6 VEL 11.700 PTH 2.06 VHP 5.091 DPA 5.70 RAP 169.56 ECC 1.2554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 36	2539.47	-25.90	63.14	52.80	101.87	19 38 56	1939.5	-24.00	54.99
90.00	10 4 59	4415.54	6.94	184.06	48.29	62.48	11 18 35	3815.5	3.20	177.38
100.00	20 24 6	2257.29	-27.01	42.11	52.52	103.32	21 1 43	1657.3	-24.91	33.94
100.00	11 20 11	4172.95	7.95	165.68	47.74	61.09	12 29 44	3573.0	4.03	159.08
110.00	21 46 14	2000.25	-29.96	21.67	51.60	107.28	22 19 35	1400.3	-27.30	13.49
110.00	12 14 32	4002.75	10.57	151.18	46.16	57.30	13 21 14	3402.8	6.19	144.84

DIFFERENTIAL CORRECTIONS
TDE-1.0363 TRA 6.4362 TC-12.8263 BAU 2.6617
RDE .3844 RRA .1065 RC3 .3487 FAU .13947
FDE-1.3661 FRA 4.7642 FC3-7.7818 BSP 49249
BDE 1.1053 BRA 6.4371 BC312.8310 FSP 2954

MID-COURSE EXECUTION ACCURACY
SGT14000.9 SGR 642.8 SG3 827.6
RRT -.2336 RRF -.2716 RTF .9901
SGB14015.6 R23 .0410 R13 -.9901
SG114001.7 SG2 624.9 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 3257.6 SR 561.1 SS 1282.5
CRT -.3877 CRS .6181 CST -.9640
LSA 3494.6 MSA 599.4 SSA 21.2
EL1 3265.1 EL2 516.1 ALF 176.08

LAUNCH DATE NOV 15 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 869.864 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.026 GAL -5.36 AZL 88.14 HCA 261.54 SMA 188.70 ECC .23442 INC 1.8628 V1 30.115
RP 207.86 LAP -1.84 LOP 314.21 VP 23.951 GAP -12.26 AZP 90.27 TAL 331.16 TAP 232.70 RCA 144.47 APO 232.94 V2 26.357
RC 319.685 GL 15.48 GP -.50 ZAL 132.50 ZAP 34.57 ETS 178.37 ZAE 55.98 ETE 179.31 ZAC 84.85 ETC 257.28 CLP 34.57

PLANETOCENTRIC CONIC

C3 16.036 VHL 4.004 DLA 11.36 RAL 192.77 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 5.183 DPA 5.47 RAP 170.12 ECC 1.2639

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 5	2523.33	-25.67	62.02	53.98	102.39	19 48 9	1923.3	-23.70	53.90
90.00	10 2 43	4446.58	7.91	185.82	49.61	62.72	11 16 49	3846.6	4.19	179.12
100.00	20 33 9	2242.52	-26.78	41.08	53.69	103.81	21 10 32	1642.5	-24.61	32.95
100.00	11 18 19	4202.63	8.92	167.35	49.07	61.35	12 28 22	3602.6	5.03	160.72
110.00	21 54 22	1988.40	-29.72	20.84	52.75	107.73	22 27 30	1388.4	-27.01	12.70
110.00	12 13 36	4029.51	11.55	152.64	47.49	57.60	13 20 46	3429.5	7.19	146.25

DIFFERENTIAL CORRECTIONS
TDE-1.1513 TRA 6.6976 TC-12.5613 BAU 2.6940
RDE .3944 RRA .1038 RC3 .3454 FAU .13178
FDE-1.3864 FRA 4.6573 FC3-7.1144 BSP 49751
BDE 1.2170 BRA 6.6984 BC312.5661 FSP 2817

MID-COURSE EXECUTION ACCURACY
SGT14123.0 SGR 646.4 SG3 785.2
RRT -.2444 RRF -.2835 RTF .9896
SGB14137.8 R23 .0424 R13 -.9897
SG114123.9 SG2 626.8 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 3376.8 SR 566.2 SS 1276.1
CRT -.4178 CRS .6372 CST -.9662
LSA 3605.7 MSA 591.9 SSA 20.8
EL1 3385.3 EL2 513.1 ALF 175.90

LAUNCH DATE NOV 15 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 874.099 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.032 GAL -5.54 AZL 88.14 HCA 262.80 SMA 188.81 ECC .23604 INC 1.8604 V1 30.115
RP 207.73 LAP -1.85 LOP 315.46 VP 23.977 GAP -12.40 AZP 90.23 TAL 330.31 TAP 233.10 RCA 144.24 APO 233.38 V2 26.373
RC 320.558 GL 15.19 GP -.49 ZAL 133.63 ZAP 33.94 ETS 178.35 ZAE 55.04 ETE 179.32 ZAC 84.99 ETC 257.21 CLP 33.93

PLANETOCENTRIC CONIC

C3 16.589 VHL 4.073 DLA 10.66 RAL 193.67 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 5.276 DPA 5.22 RAP 170.70 ECC 1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 28	2507.75	-25.43	60.94	55.18	102.89	19 57 15	1907.8	-23.41	52.85
90.00	10 0 30	4477.66	8.88	187.60	50.96	63.00	11 15 8	3877.7	5.19	180.86
100.00	20 42 7	2228.26	-26.54	40.08	54.89	104.28	21 19 15	1628.3	-24.32	31.99
100.00	11 16 32	4232.37	9.88	169.03	50.42	61.65	12 27 4	3632.4	6.02	162.37
110.00	22 2 25	1976.98	-29.48	20.03	53.92	108.15	22 35 22	1377.0	-26.72	11.94
110.00	12 12 43	4056.42	12.53	154.11	48.85	57.93	13 20 20	3456.4	8.20	147.68

DIFFERENTIAL CORRECTIONS
TDE-1.2697 TRA 6.9658 TC-12.2896 BAU 2.7267
RDE .4048 RRA .1009 RC3 .3415 FAU .12433
FDE-1.4026 FRA 4.5485 FC3-6.4882 BSP 50228
BDE 1.3326 BRA 6.9665 BC312.2943 FSP 2682

MID-COURSE EXECUTION ACCURACY
SGT14241.9 SGR 650.0 SG3 744.3
RRT -.2552 RRF -.2954 RTF .9891
SGB14256.7 R23 .0439 R13 -.9891
SG114242.8 SG2 628.4 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 3496.8 SR 571.1 SS 1267.7
CRT -.4456 CRS .6550 CST -.9681
LSA 3717.4 MSA 584.6 SSA 20.5
EL1 3506.3 EL2 509.9 ALF 175.75

LAUNCH DATE NOV 15 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 878.329 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.038 GAL -5.73 AZL 88.14 HCA 264.05 SMA 188.92 ECC .23773 INC 1.8579 V1 30.115
RP 207.60 LAP -1.85 LOP 316.72 VP 24.002 GAP -12.55 AZP 90.19 TAL 329.44 TAP 233.50 RCA 144.01 APO 233.83 V2 26.388
RC 321.425 GL 14.90 GP -.48 ZAL 134.75 ZAP 33.32 ETS 178.33 ZAE 54.12 ETE 179.33 ZAC 85.13 ETC 257.14 CLP 33.32

PLANETOCENTRIC CONIC

C3 17.179 VHL 4.145 DLA 9.96 RAL 194.56 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 5.371 DPA 4.97 RAP 171.29 ECC 1.2827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 43	2492.73	-25.20	59.90	56.40	103.36	20 6 16	1892.7	-23.11	51.85
90.00	9 58 23	4508.75	9.83	189.38	52.34	63.31	11 13 31	3908.8	6.17	182.61
100.00	20 50 59	2214.52	-26.31	39.13	56.10	104.73	21 27 53	1614.5	-24.02	31.07
100.00	11 14 48	4262.19	10.84	170.72	51.81	61.97	12 25 50	3662.2	7.01	164.03
110.00	22 10 24	1965.99	-29.24	19.27	55.10	108.55	22 43 10	1366.0	-26.43	11.21
110.00	12 11 52	4083.48	13.50	155.60	50.24	58.29	13 19 56	3483.5	9.21	149.13

DIFFERENTIAL CORRECTIONS
TDE-1.3906 TRA 7.2428 TC-12.0101 BAU 2.7595
RDE .4155 RRA .0975 RC3 .3373 FAU .11714
FDE-1.4147 FRA 4.4376 FC3-5.9032 BSP 50687
BDE 1.4514 BRA 7.2435 BC312.0149 FSP 2551

MID-COURSE EXECUTION ACCURACY
SGT14357.9 SGR 653.3 SG3 704.9
RRT -.2661 RRF -.3075 RTF .9885
SGB14372.7 R23 .0456 R13 -.9885
SG114358.9 SG2 629.7 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 3617.3 SR 575.9 SS 1257.1
CRT -.4711 CRS .6717 CST -.9697
LSA 3829.2 MSA 577.6 SSA 20.1
EL1 3627.6 EL2 506.6 ALF 175.62

LAUNCH DATE NOV 15 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 882.553 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.044 GAL -5.92 AZL 88.14 HCA 265.31 SMA 189.03 ECC .23949 INC 1.8555 V1 30.115
RP 207.48 LAP -1.85 LOP 317.98 VP 24.025 GAP -12.69 AZP 90.15 TAL 328.56 TAP 233.88 RCA 143.76 APO 234.29 V2 26.402
RC 322.286 GL 14.61 GP -.47 ZAL 135.87 ZAP 32.72 ETS 178.31 ZAE 53.22 ETE 179.34 ZAC 85.27 ETC 257.08 CLP 32.72

PLANETOCENTRIC CONIC

C3 17.808 VHL 4.220 DLA 9.26 RAL 195.45 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 5.468 DPA 4.71 RAP 171.90 ECC 1.2931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 52	2478.26	-24.97	58.90	57.64	103.81	20 15 11	1878.3	-22.83	50.89
90.00	9 56 19	4539.87	10.78	191.18	53.75	63.66	11 11 59	3939.9	7.15	184.38
100.00	20 59 45	2201.30	-26.07	38.21	57.32	105.16	21 36 26	1601.3	-23.74	30.19
100.00	11 13 8	4292.07	11.79	172.43	53.22	62.33	12 24 40	3692.1	8.00	165.70
110.00	22 18 18	1955.46	-29.01	18.53	56.31	108.92	22 50 54	1355.5	-26.16	10.52
110.00	12 11 3	4110.68	14.47	157.11	51.67	58.69	13 19 34	3510.7	10.22	150.59

DIFFERENTIAL CORRECTIONS
TDE-1.5145 TRA 7.5275 TC-11.7236 BAU 2.7922
RDE .4266 RRA .0939 RC3 .3326 FAU .11015
FDE-1.4224 FRA 4.3249 FC3-5.3551 BSP 51148
BDE 1.5735 BRA 7.5281 BC311.7283 FSP 2425

MID-COURSE EXECUTION ACCURACY
SGT14469.4 SGR 656.5 SG3 666.8
RRT -.2770 RRF -.3196 RTF .9878
SGB14484.3 R23 .0473 R13 -.9878
SG114470.5 SG2 630.8 THA 179.28

ORBIT DETERMINATION ACCURACY
ST 3737.3 SR 580.6 SS 1244.1
CRT -.4946 CRS .6872 CST -.9711
LSA 3940.3 MSA 570.8 SSA 19.7
EL1 3748.5 EL2 503.1 ALF 175.52

LAUNCH DATE NOV 15 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 886.769 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.051 GAL -6.12 AZL 88.15 HCA 266.57 SMA 189.14 ECC .24132 INC 1.8531 V1 30.115
RP 207.36 LAP -1.85 LOP 319.24 VP 24.048 GAP -12.84 AZP 90.11 TAL 327.67 TAP 234.24 RCA 143.49 APO 234.78 V2 26.416
RC 323.141 GL 14.31 GP -.46 ZAL 136.99 ZAP 32.14 ETS 178.29 ZAE 52.34 ETE 179.36 ZAC 85.42 ETC 257.01 CLP 32.13

PLANETOCENTRIC CONIC

C3 18.477 VHL 4.299 DLA 8.56 RAL 196.33 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 5.567 DPA 4.44 RAP 172.52 ECC 1.3041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 55	2464.36	-24.74	57.95	58.89	104.23	20 23 59	1864.4	-22.54	49.96
90.00	9 54 19	4571.02	11.71	192.99	55.19	64.03	11 10 30	3971.0	8.13	186.15
100.00	21 8 25	2188.60	-25.84	37.34	58.57	105.57	21 44 53	1588.6	-23.46	29.35
100.00	11 11 30	4322.01	12.73	174.16	54.66	62.73	12 23 32	3722.0	8.98	167.38
110.00	22 26 8	1945.38	-28.79	17.83	57.53	109.28	22 58 33	1345.4	-25.89	9.86
110.00	12 10 17	4137.99	15.43	158.65	53.12	59.11	13 19 15	3538.0	11.22	152.07

DIFFERENTIAL CORRECTIONS
TDE-1.6423 TRA 7.8193 TC-11.4368 BAU 2.8263
RDE .4382 RRA .0899 RC3 .3276 FAU .10343
FDE-1.4276 FRA 4.2086 FC3-4.8460 BSP 51558
BDE 1.6998 BRA 7.8198 BC311.4415 FSP 2301

MID-COURSE EXECUTION ACCURACY
SGT14579.3 SGR 659.6 SG3 630.0
RRT -.2881 RRF -.3322 RTF .9870
SGB14594.2 R23 .0493 R13 -.9871
SG114580.5 SG2 631.6 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 3857.1 SR 585.2 SS 1229.5
CRT -.5166 CRS .7023 CST -.9721
LSA 4051.2 MSA 564.4 SSA 19.4
EL1 3869.1 EL2 499.5 ALF 175.44

LAUNCH DATE NOV 15 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 890.978 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.057 GAL -6.32 AZL 88.15 HCA 267.83 SMA 189.25 ECC .24324 INC 1.8507 V1 30.115
RP 207.26 LAP -1.85 LOP 320.50 VP 24.070 GAP -12.99 AZP 90.07 TAL 326.76 TAP 234.59 RCA 143.22 APO 235.28 V2 26.428
RC 323.990 GL 14.02 GP -.45 ZAL 138.10 ZAP 31.57 ETS 178.27 ZAE 51.47 ETE 179.37 ZAC 85.57 ETC 256.94 CLP 31.57

PLANETOCENTRIC CONIC

C3 19.190 VHL 4.381 DLA 7.87 RAL 197.21 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 5.669 DPA 4.16 RAP 173.16 ECC 1.3158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 50	2451.03	-24.52	57.03	60.17	104.63	20 32 41	1851.0	-22.27	49.09
90.00	9 52 23	4602.18	12.64	194.81	56.66	64.45	11 9 6	4002.2	9.09	187.93
100.00	21 16 59	2176.44	-25.62	36.51	59.83	105.95	21 53 15	1576.4	-23.19	28.55
100.00	11 9 56	4352.00	13.66	175.90	56.14	63.15	12 22 28	3752.0	9.95	169.07
110.00	22 33 53	1935.78	-28.57	17.17	58.77	109.62	23 6 8	1335.8	-25.63	9.23
110.00	12 9 32	4165.43	16.38	160.20	54.60	59.57	13 18 57	3565.4	12.22	153.57

DIFFERENTIAL CORRECTIONS
TDE-1.7732 TRA 8.1195 TC-11.1467 BAU 2.8610
RDE .4501 RRA .0855 RC3 .3222 FAU .09695
FDE-1.4283 FRA 4.0904 FC3-4.3738 BSP 51952
BDE 1.8295 BRA 8.1200 BC311.1514 FSP 2180

MID-COURSE EXECUTION ACCURACY
SGT14686.3 SGR 662.5 SG3 594.5
RRT -.2993 RRF -.3448 RTF .9862
SGB14701.2 R23 .0515 R13 -.9862
SG114687.6 SG2 632.1 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 3976.0 SR 589.7 SS 1212.4
CRT -.5369 CRS .7164 CST -.9730
LSA 4161.1 MSA 558.0 SSA 19.1
EL1 3988.8 EL2 495.9 ALF 175.38

LAUNCH DATE NOV 15 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 895.179 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.063 GAL -6.53 AZL 88.15 HCA 269.10 SMA 189.36 ECC .24524 INC 1.8483 V1 30.115
RP 207.16 LAP -1.85 LOP 321.77 VP 24.091 GAP -13.15 AZP 90.03 TAL 325.83 TAP 234.93 RCA 142.92 APO 235.80 V2 26.439
RC 324.833 GL 13.72 GP -.44 ZAL 139.20 ZAP 31.02 ETS 178.24 ZAE 50.61 ETE 179.38 ZAC 85.73 ETC 256.88 CLP 31.02

PLANETOCENTRIC CONIC

C3 19.950 VHL 4.467 DLA 7.18 RAL 198.08 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 5.772 DPA 3.87 RAP 173.81 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 40	2438.25	-24.29	56.17	61.45	105.02	20 41 18	1838.3	-22.00	48.25
90.00	9 50 31	4633.35	13.54	196.65	58.16	64.89	11 7 45	4033.4	10.05	189.72
100.00	21 25 26	2164.81	-25.40	35.71	61.11	106.31	22 1 31	1564.8	-22.92	27.79
100.00	11 8 25	4382.03	14.58	177.66	57.64	63.61	12 21 27	3782.0	10.92	170.78
110.00	22 41 33	1926.64	-28.36	16.54	60.03	109.94	23 13 39	1326.6	-25.38	8.63
110.00	12 8 49	4192.96	17.33	161.78	56.12	60.06	13 18 42	3593.0	13.21	155.08

DIFFERENTIAL CORRECTIONS
TDE-1.9074 TRA 8.4281 TC-10.8551 BAU 2.8964
RDE .4623 RRA .0807 RC3 .3166 FAU .09068
FDE-1.4258 FRA 3.9698 FC3-3.9351 BSP 52314
BDE 1.9626 BRA 8.4285 BC310.8598 FSP 2061

MID-COURSE EXECUTION ACCURACY
SGT14790.5 SGR 665.3 SG3 560.2
RRT -.3106 RRF -.3577 RTF .9853
SGB14805.5 R23 .0538 R13 -.9853
SG114792.0 SG2 632.4 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 4093.7 SR 594.0 SS 1193.4
CRT -.5557 CRS .7298 CST -.9737
LSA 4269.7 MSA 551.9 SSA 18.7
EL1 4107.2 EL2 492.2 ALF 175.32

LAUNCH DATE NOV 15 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 899.369 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.070 GAL -6.75 AZL 88.15 HCA 270.36 SMA 189.47 ECC .24732 INC 1.8459 V1 30.115
RP 207.08 LAP -1.85 LOP 323.03 VP 24.111 GAP -13.31 AZP 89.99 TAL 324.89 TAP 235.25 RCA 142.61 APO 236.34 V2 26.449
RC 325.671 GL 13.43 GP -.43 ZAL 140.30 ZAP 30.48 ETS 178.22 ZAE 49.77 ETE 179.39 ZAC 85.89 ETC 256.81 CLP 30.48

PLANETOCENTRIC CONIC

C3 20.759 VHL 4.556 DLA 6.50 RAL 198.95 RAD 6567.8 VEL 11.922 PTH 2.12 VHP 5.877 DPA 3.58 RAP 174.48 ECC 1.3416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 22	2426.05	-24.07	55.34	62.76	105.38	20 49 48	1826.0	-21.73	47.45
90.00	9 48 43	4664.54	14.44	198.51	59.69	65.37	11 6 27	4064.5	10.99	191.52
100.00	21 33 49	2153.71	-25.19	34.96	62.41	106.66	22 9 42	1553.7	-22.66	27.07
100.00	11 6 57	4412.11	15.48	179.44	59.18	64.11	12 20 30	3812.1	11.87	172.50
110.00	22 49 8	1917.99	-28.16	15.95	61.30	110.23	23 21 6	1318.0	-25.14	8.08
110.00	12 8 8	4220.59	18.26	163.38	57.66	60.59	13 18 28	3620.6	14.20	156.62

DIFFERENTIAL CORRECTIONS
TDE-2.0445 TRA 8.7453 TC-10.5611 BAU 2.9322
RDE .4750 RRA .0756 RC3 .3107 FAU .08459
FDE-1.4194 FRA 3.8463 FC3-3.5277 BSP 52668
BDE 2.0989 BRA 8.7456 BC310.5657 FSP 1947

MID-COURSE EXECUTION ACCURACY
SGT14891.0 SGR 668.0 SG3 527.1
RRT -.3219 RRF -.3707 RTF .9842
SGB14906.0 R23 .0563 R13 -.9842
SG114892.5 SG2 632.3 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4209.5 SR 598.1 SS 1172.0
CRT -.5731 CRS .7425 CST -.9742
LSA 4376.4 MSA 545.9 SSA 18.4
EL1 4223.6 EL2 488.5 ALF 175.28

LAUNCH DATE NOV 15 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 903.549 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.076 GAL -6.97 AZL 88.16 HCA 271.63 SMA 189.59 ECC .24949 INC 1.8435 V1 30.115
RP 207.00 LAP -1.84 LOP 324.30 VP 24.130 GAP -13.47 AZP 89.95 TAL 323.93 TAP 235.56 RCA 142.29 APO 236.89 V2 26.459
RC 326.503 GL 13.13 GP -.43 ZAL 141.39 ZAP 29.96 ETS 178.20 ZAE 48.94 ETE 179.40 ZAC 86.06 ETC 256.75 CLP 29.96

PLANETOCENTRIC CONIC

C3 21.620 VHL 4.650 DLA 5.82 RAL 199.81 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 5.984 DPA 3.28 RAP 175.16 ECC 1.3558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 59	2414.40	-23.86	54.55	64.08	105.71	20 58 13	1814.4	-21.48	46.69
90.00	9 46 57	4695.73	15.31	200.38	61.25	65.89	11 5 13	4095.7	11.93	193.34
100.00	21 42 5	2143.15	-24.98	34.24	63.72	106.98	22 17 48	1543.1	-22.42	26.38
100.00	11 5 32	4442.22	16.37	181.23	60.75	64.63	12 19 35	3842.2	12.82	174.24
110.00	22 56 38	1909.81	-27.96	15.39	62.59	110.51	23 28 28	1309.8	-24.92	7.55
110.00	12 7 28	4248.31	19.18	165.01	59.24	61.14	13 18 17	3648.3	15.18	158.17

DIFFERENTIAL CORRECTIONS
TDE-2.1859 TRA 9.0711 TC-10.2690 BAU 2.9694
RDE .4881 RRA .0700 RC3 .3046 FAU .07872
FDE-1.4100 FRA 3.7203 FC3-3.1523 BSP 52970
BDE 2.2398 BRA 9.0713 BC310.2735 FSP 1834

MID-COURSE EXECUTION ACCURACY
SGT14989.7 SGR 670.5 SG3 495.2
RRT -.3334 RRF -.3841 RTF .9830
SGB15004.7 R23 .0591 R13 -.9830
SG114991.4 SG2 632.1 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 4324.3 SR 602.1 SS 1148.9
CRT -.5895 CRS .7548 CST -.9746
LSA 4482.2 MSA 540.1 SSA 18.1
EL1 4339.0 EL2 484.7 ALF 175.25

LAUNCH DATE NOV 15 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 907.717 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.083 GAL -7.20 AZL 88.16 HCA 272.89 SMA 189.71 ECC .25176 INC 1.8411 V1 30.115
RP 206.93 LAP -1.84 LOP 325.56 VP 24.148 GAP -13.64 AZP 89.91 TAL 322.96 TAP 235.85 RCA 141.95 APO 237.47 V2 26.467
RC 327.330 GL 12.83 GP -.42 ZAL 142.47 ZAP 29.46 ETS 178.18 ZAE 48.13 ETE 179.41 ZAC 86.22 ETC 256.68 CLP 29.45

PLANETOCENTRIC CONIC

C3 22.537 VHL 4.747 DLA 5.15 RAL 200.66 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 6.094 DPA 2.97 RAP 175.86 ECC 1.3709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 29	2403.31	-23.66	53.80	65.42	106.03	21 6 32	1803.3	-21.23	45.97
90.00	9 45 15	4726.92	16.17	202.27	62.84	66.43	11 4 2	4126.9	12.85	195.17
100.00	21 50 15	2133.12	-24.78	33.56	65.05	107.28	22 25 48	1533.1	-22.18	25.73
100.00	11 4 10	4472.35	17.24	183.05	62.34	65.19	12 18 42	3872.3	13.75	175.99
110.00	23 4 3	1902.13	-27.78	14.87	63.89	110.77	23 35 45	1302.1	-24.70	7.06
110.00	12 6 51	4276.11	20.08	166.66	60.85	61.74	13 18 7	3676.1	16.15	159.74

DIFFERENTIAL CORRECTIONS
TDE-2.3303 TRA 9.4055 TC3-9.9780 BAU 3.0076
RDE .5016 RRA .0640 RC3 .2984 FAU .07303
FDE-1.3975 FRA 3.5917 FC3-2.8054 BSP 53249
BDE 2.3836 BRA 9.4057 BC3 9.9824 FSP 1725

MID-COURSE EXECUTION ACCURACY
SGT15085.3 SGR 672.9 SG3 464.3
RRT -.3450 RRF -.3976 RTF .9816
SGB15100.3 R23 .0622 R13 -.9817
SG115087.1 SG2 631.5 THA 179.12

ORBIT DETERMINATION ACCURACY
ST 4436.5 SR 606.0 SS 1123.8
CRT -.6047 CRS .7666 CST -.9748
LSA 4585.5 MSA 534.5 SSA 17.8
EL1 4451.7 EL2 481.0 ALF 175.22

LAUNCH DATE NOV 15 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 911.872 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.089 GAL -7.43 AZL 88.16 HCA 274.16 SMA 189.82 ECC .25412 INC 1.8387 V1 30.115
RP 206.86 LAP -1.83 LOP 326.83 VP 24.165 GAP -13.81 AZP 89.87 TAL 321.97 TAP 236.13 RCA 141.59 APO 238.06 V2 26.474
RC 328.152 GL 12.54 GP -.41 ZAL 143.55 ZAP 28.97 ETS 178.16 ZAE 47.33 ETE 179.42 ZAC 86.40 ETC 256.62 CLP 28.96

PLANETOCENTRIC CONIC

C3 23.513 VHL 4.849 DLA 4.48 RAL 201.50 RAD 6568.0 VEL 12.037 PTH 2.15 VHP 6.206 DPA 2.66 RAP 176.57 ECC 1.3870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 52	2392.78	-23.46	53.10	66.77	106.33	21 14 45	1792.8	-20.99	45.29
90.00	9 43 36	4758.11	17.01	204.17	64.46	67.02	11 2 54	4158.1	13.75	197.01
100.00	21 58 19	2123.62	-24.58	32.93	66.39	107.56	22 33 43	1523.6	-21.95	25.12
100.00	11 2 50	4502.50	18.09	184.88	63.97	65.79	12 17 53	3902.5	14.67	177.76
110.00	23 11 24	1894.92	-27.60	14.39	65.22	111.01	23 42 59	1294.9	-24.50	6.59
110.00	12 6 15	4303.96	20.97	168.33	62.49	62.36	13 17 59	3704.0	17.10	161.33

DIFFERENTIAL CORRECTIONS
TDE-2.4778 TRA 9.7490 TC3-9.6890 BAU 3.0471
RDE .5156 RRA .0576 RC3 .2919 FAU .06752
FDE-1.3818 FRA 3.4599 FC3-2.4862 BSP 53503
BDE 2.5309 BRA 9.7492 BC3 9.6934 FSP 1617

MID-COURSE EXECUTION ACCURACY
SGT15178.2 SGR 675.2 SG3 434.5
RRT -.3566 RRF -.4115 RTF .9801
SGB15193.2 R23 .0656 R13 -.9802
SG115180.1 SG2 630.7 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 4546.2 SR 609.6 SS 1096.8
CRT -.6188 CRS .7779 CST -.9748
LSA 4686.4 MSA 529.0 SSA 17.5
EL1 4562.0 EL2 477.2 ALF 175.20

LAUNCH DATE NOV 15 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 916.013 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.096 GAL -7.67 AZL 88.16 HCA 275.42 SMA 189.94 ECC .25658 INC 1.8363 V1 30.115
RP 206.81 LAP -1.83 LOP 328.10 VP 24.181 GAP -13.99 AZP 89.83 TAL 320.97 TAP 236.39 RCA 141.21 APO 238.68 V2 26.480
RC 328.970 GL 12.25 GP -.41 ZAL 144.61 ZAP 28.49 ETS 178.13 ZAE 46.55 ETE 179.43 ZAC 86.57 ETC 256.56 CLP 28.49

PLANETOCENTRIC CONIC

C3 24.552 VHL 4.955 DLA 3.83 RAL 202.34 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 6.320 DPA 2.34 RAP 177.29 ECC 1.4041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 10	2382.80	-23.26	52.43	68.14	106.62	21 22 53	1782.8	-20.77	44.65
90.00	9 42 0	4789.29	17.83	206.09	66.12	67.63	11 1 50	4189.3	14.64	198.87
100.00	22 6 18	2114.65	-24.40	32.32	67.76	107.83	22 41 33	1514.7	-21.73	24.54
100.00	11 1 33	4532.66	18.92	186.73	65.63	66.42	12 17 6	3932.7	15.57	179.54
110.00	23 18 39	1888.21	-27.44	13.93	66.56	111.23	23 50 7	1288.2	-24.31	6.17
110.00	12 5 42	4331.88	21.84	170.02	64.16	63.03	13 17 54	3731.9	18.05	162.95

DIFFERENTIAL CORRECTIONS
TDE-2.6293 TRA10.1024 TC3-9.4024 BAU 3.0877
RDE .5299 RRA .0507 RC3 .2854 FAU .06218
FDE-1.3628 FRA 3.3257 FC3-2.1925 BSP 53729
BDE 2.6821 BRA10.1025 BC3 9.4068 FSP 1514

MID-COURSE EXECUTION ACCURACY
SGT15268.8 SGR 677.4 SG3 405.8
RRT -.3684 RRF -.4255 RTF .9783
SGB15283.8 R23 .0693 R13 -.9784
SG115270.8 SG2 629.7 THA 179.06

ORBIT DETERMINATION ACCURACY
ST 4653.8 SR 613.0 SS 1067.9
CRT -.6321 CRS .7889 CST -.9746
LSA 4785.4 MSA 523.6 SSA 17.3
EL1 4670.1 EL2 473.4 ALF 175.19

LAUNCH DATE NOV 15 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 920.138 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.102 GAL -7.92 AZL 88.17 HCA 276.69 SMA 190.06 ECC .25915 INC 1.8338 V1 30.115
RP 206.77 LAP -1.82 LOP 329.37 VP 24.196 GAP -14.17 AZP 89.79 TAL 319.95 TAP 236.64 RCA 140.81 APO 239.32 V2 26.486
RC 329.784 GL 11.95 GP -.40 ZAL 145.67 ZAP 28.02 ETS 178.11 ZAE 45.78 ETE 179.44 ZAC 86.75 ETC 256.50 CLP 28.02

PLANETOCENTRIC CONIC

C3 25.658 VHL 5.065 DLA 3.17 RAL 203.17 RAD 6568.0 VEL 12.126 PTH 2.17 VHP 6.437 DPA 2.01 RAP 178.02 ECC 1.4223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 22	2373.36	-23.08	51.80	69.52	106.88	21 30 55	1773.4	-20.55	44.04
90.00	9 40 27	4820.45	18.62	208.03	67.80	68.28	11 0 48	4220.4	15.51	200.74
100.00	22 14 11	2106.21	-24.22	31.76	69.13	108.08	22 49 17	1506.2	-21.52	24.00
100.00	11 0 19	4562.83	19.73	188.61	67.32	67.08	12 16 22	3962.8	16.46	181.34
110.00	23 25 50	1881.97	-27.29	13.51	67.91	111.44	23 57 12	1282.0	-24.13	5.77
110.00	12 5 10	4359.84	22.69	171.75	65.86	63.72	13 17 49	3759.8	18.98	164.58

DIFFERENTIAL CORRECTIONS
TDE-2.7830 TRA10.4652 TC3-9.1184 BAU 3.1294
RDE .5446 RRA .0433 RC3 .2787 FAU .05698
FDE-1.3404 FRA 3.1884 FC3-1.9224 BSP 53934
BDE 2.8358 BRA10.4653 BC3 9.1227 FSP 1412

MID-COURSE EXECUTION ACCURACY
SGT15355.7 SGR 679.4 SG3 378.0
RRT -.3801 RRF -.4396 RTF .9763
SGB15370.8 R23 .0734 R13 -.9764
SG115357.9 SG2 628.4 THA 179.03

ORBIT DETERMINATION ACCURACY
ST 4757.7 SR 616.3 SS 1037.0
CRT -.6443 CRS .7994 CST -.9743
LSA 4880.8 MSA 518.4 SSA 17.0
EL1 4774.4 EL2 469.6 ALF 175.18

LAUNCH DATE NOV 15 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 924.247 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.109 GAL -8.18 AZL 88.17 HCA 277.96 SMA 190.19 ECC .26183 INC 1.8314 V1 30.115
RP 206.73 LAP -1.81 LOP 330.63 VP 24.210 GAP -14.35 AZP 89.75 TAL 318.91 TAP 236.87 RCA 140.39 APO 239.98 V2 26.490
RC 330.595 GL 11.66 GP -.39 ZAL 146.71 ZAP 27.57 ETS 178.09 ZAE 45.02 ETE 179.44 ZAC 86.93 ETC 256.44 CLP 27.57

PLANETOCENTRIC CONIC

C3 26.837 VHL 5.180 DLA 2.53 RAL 204.00 RAD 6568.1 VEL 12.174 PTH 2.18 VHP 6.557 DPA 1.67 RAP 178.77 ECC 1.4417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 27	2364.46	-22.90	51.21	70.92	107.13	21 38 52	1764.5	-20.34	43.47
90.00	9 38 57	4851.59	19.40	209.99	69.51	68.96	10 59 49	4251.6	16.37	202.63
100.00	22 21 59	2098.28	-24.05	31.23	70.52	108.31	22 56 57	1498.3	-21.33	23.49
100.00	10 59 7	4593.00	20.52	190.50	69.04	67.77	12 15 40	3993.0	17.33	183.16
110.00	23 32 56	1876.22	-27.14	13.13	69.28	111.63	24 4 12	1276.2	-23.96	5.41
110.00	12 4 39	4387.83	23.53	173.49	67.60	64.45	13 17 47	3787.8	19.89	166.24

DIFFERENTIAL CORRECTIONS
TDE-2.9414 TRA10.8378 TC3-8.8394 BAU 3.1729
RDE .5598 RRA .0354 RC3 .2720 FAU .05195
FDE-1.3155 FRA 3.0481 FC3-1.6760 BSP 54078
BDE 2.9942 BRA10.8379 BC3 8.8435 FSP 1313

MID-COURSE EXECUTION ACCURACY
SGT15440.9 SGR 681.4 SG3 351.2
RRT -.3920 RRF -.4541 RTF .9740
SGB15455.9 R23 .0780 R13 -.9740
SG115443.2 SG2 626.8 THA 179.01

ORBIT DETERMINATION ACCURACY
ST 4859.6 SR 619.3 SS 1004.6
CRT -.6560 CRS .8098 CST -.9738
LSA 4974.4 MSA 513.3 SSA 16.7
EL1 4876.7 EL2 465.8 ALF 175.18

LAUNCH DATE NOV 15 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 928.337 EARTH TO MARS

RL 147.95 LAL .00 LOL 52.67 VL 33.116 GAL -8.44 AZL 88.17 HCA 279.23 SMA 190.31 ECC .26462 INC 1.8289 V1 30.115
RP 206.70 LAP -1.81 LOP 331.90 VP 24.223 GAP -14.55 AZP 89.71 TAL 317.86 TAP 237.09 RCA 139.95 APO 240.67 V2 26.493
RC 331.403 GL 11.38 GP -.39 ZAL 147.75 ZAP 27.14 ETS 178.06 ZAE 44.27 ETE 179.45 ZAC 87.12 ETC 256.38 CLP 27.13

PLANETOCENTRIC CONIC

C3 28.091 VHL 5.300 DLA 1.89 RAL 204.82 RAD 6568.1 VEL 12.226 PTH 2.20 VHP 6.679 DPA 1.33 RAP 179.53 ECC 1.4623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 27	2356.09	-22.73	50.65	72.34	107.35	21 46 43	1756.1	-20.14	42.93
90.00	9 37 30	4882.70	20.15	211.97	71.25	69.67	10 58 52	4282.7	17.20	204.53
100.00	22 29 41	2090.87	-23.89	30.74	71.93	108.52	23 4 31	1490.9	-21.14	23.02
100.00	10 57 57	4623.15	21.29	192.42	70.78	68.50	12 15 1	4023.2	18.18	185.00
110.00	23 39 57	1870.93	-27.01	12.77	70.66	111.80	24 11 8	1270.9	-23.81	5.07
110.00	12 4 11	4415.85	24.34	175.27	69.37	65.22	13 17 47	3815.9	20.79	167.92

DIFFERENTIAL CORRECTIONS
TDE-3.1034 TRA11.2202 TC3-8.5657 BAU 3.2184
RDE .5754 RRA .0271 RC3 .2652 FAU .04706
FDE-1.2876 FRA 2.9048 FC3-1.4505 BSP 54186
BDE 3.1563 BRA11.2202 BC3 8.5698 FSP 1217

MID-COURSE EXECUTION ACCURACY
SGT15523.6 SGR 683.3 SG3 325.3
RRT -.4039 RRF -.4689 RTF .9712
SGB15538.6 R23 .0830 R13 -.9713
SG115526.0 SG2 624.9 THA 178.98

ORBIT DETERMINATION ACCURACY
ST 4958.3 SR 622.2 SS 970.5
CRT -.6669 CRS .8200 CST -.9731
LSA 5065.1 MSA 508.2 SSA 16.4
EL1 4975.8 EL2 462.0 ALF 175.18

LAUNCH DATE NOV 16 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 428.257 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	35.350	GAL	-6.05	AZL	88.30	HCA	135.70	SMA	243.58	ECC	.40451	INC	1.6996
RP	244.91	LAP	1.19	LOP	189.39	VP	23.215	GAP	23.86	AZP	91.22	TAL	338.86	TAP	114.56	RCA	145.05	APO	342.11
RC	126.220	GL	9.80	GP	.40	ZAL	123.17	ZAP	173.94	ETS	174.93	ZAE	155.53	ETE	358.24	ZAC	88.82	ETC	256.13

V1	30.121	V2	22.396	CLP	173.95														

PLANETOCENTRIC CONIC

C3	37.490	VHL	6.123	DLA	10.02	RAL	181.55	RAD	6568.5	VEL	12.604	PTH	2.29	VHP	10.714	DPA	.25	RAP	183.77
ECC	1.6170																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 23	2686.13	-27.53	73.56	57.74	96.90	19 13 9	2086.1	-26.29	65.11
90.00	9 3 5	4697.89	15.37	200.51	51.38	65.92	10 21 23	4097.9	11.99	193.46
100.00	19 54 40	2407.81	-28.91	52.89	57.53	97.95	20 34 48	1807.8	-27.51	44.37
100.00	10 19 28	4451.44	16.64	181.79	50.78	64.80	11 33 40	3851.4	13.10	174.77
110.00	21 14 11	2159.03	-32.60	33.28	56.82	100.89	21 50 10	1559.0	-30.76	24.55
110.00	11 16 28	4272.99	19.98	166.47	49.00	61.67	12 27 41	3673.0	16.04	159.56

DIFFERENTIAL CORRECTIONS

TDE	.9845	TRA	-2.4376	TC3	.6807	BAU	.3425
RDE	-.4835	RRA	-.1758	RC3	-.0611	FAU	.06286
FDE	-.4335	FRA	1.5824	FC3	-1.4517	BSP	8833
BDE	1.0968	BRA	2.4439	BC3	.6834	FSP	556

MID-COURSE EXECUTION ACCURACY

SGT	2628.5	SGR	488.1	SG3	204.2		
RRT	-.0720	RRF	.0567	RTF	-.8594		
SGB	2673.4	R23	.0074	R13	.8593		
SG1	2628.7	SG2	486.8	THA	179.21		

ORBIT DETERMINATION ACCURACY

ST	1154.2	SR	455.2	SS	563.8		
CRT	-.7271	CRS	-.5810	CST	.9795		
LSA	1322.2	MSA	329.1	SSA	29.6		
EL1	1204.0	EL2	299.6	ALF	162.91		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 430.272 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	35.238	GAL	-5.86	AZL	88.31	HCA	136.61	SMA	240.11	ECC	.39535	INC	1.6949
RP	244.68	LAP	1.16	LOP	190.30	VP	23.067	GAP	23.26	AZP	91.23	TAL	339.19	TAP	115.80	RCA	145.18	APO	335.04
RC	128.267	GL	10.00	GP	.42	ZAL	122.64	ZAP	173.47	ETS	175.07	ZAE	155.24	ETE	358.46	ZAC	88.92	ETC	256.11

V1	30.121	V2	22.418	CLP	173.48														

PLANETOCENTRIC CONIC

C3	35.653	VHL	5.971	DLA	10.40	RAL	181.17	RAD	6568.4	VEL	12.531	PTH	2.27	VHP	10.472	DPA	.09	RAP	184.16
ECC	1.5868																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 44	2685.99	-27.53	73.55	56.56	96.91	19 8 30	2086.0	-26.29	65.10
90.00	9 4 38	4672.64	14.67	198.99	50.15	65.50	10 22 31	4072.6	11.24	191.99
100.00	19 50 15	2406.97	-28.90	52.83	56.36	97.98	20 30 22	1807.0	-27.50	44.31
100.00	10 20 49	4426.89	15.92	180.32	49.54	64.36	11 34 36	3826.9	12.34	173.35
110.00	21 10 14	2156.69	-32.57	33.11	55.65	100.99	21 46 10	1556.7	-30.72	24.38
110.00	11 17 19	4249.93	19.23	165.10	47.75	61.18	12 28 9	3649.9	15.24	158.26

DIFFERENTIAL CORRECTIONS

TDE	.9648	TRA	-2.4099	TC3	.7414	BAU	.3547
RDE	-.4648	RRA	-.1678	RC3	-.0633	FAU	.06463
FDE	-.4327	FRA	1.6126	FC3	-1.5695	BSP	9017
BDE	1.0710	BRA	2.4158	BC3	.7441	FSP	587

MID-COURSE EXECUTION ACCURACY

SGT	2677.5	SGR	481.1	SG3	214.4		
RRT	-.0737	RRF	.0580	RTF	-.8642		
SGB	2720.3	R23	.0078	R13	.8641		
SG1	2677.7	SG2	479.8	THA	179.22		

ORBIT DETERMINATION ACCURACY

ST	1164.2	SR	448.7	SS	571.0		
CRT	-.7242	CRS	-.5725	CST	.9783		
LSA	1332.0	MSA	328.3	SSA	29.9		
EL1	1211.7	EL2	297.3	ALF	163.37		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 432.414 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	35.131	GAL	-5.67	AZL	88.31	HCA	137.51	SMA	236.89	ECC	.38658	INC	1.6901
RP	244.46	LAP	1.14	LOP	191.20	VP	22.925	GAP	22.67	AZP	91.25	TAL	339.53	TAP	117.04	RCA	145.31	APO	328.47
RC	130.354	GL	10.20	GP	.43	ZAL	122.10	ZAP	172.99	ETS	175.18	ZAE	155.01	ETE	358.67	ZAC	89.03	ETC	256.09

V1	30.121	V2	22.440	CLP	173.00														

PLANETOCENTRIC CONIC

C3	33.929	VHL	5.825	DLA	10.79	RAL	180.76	RAD	6568.3	VEL	12.462	PTH	2.25	VHP	10.236	DPA	-.08	RAP	184.56
ECC	1.5584																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 57	2686.34	-27.53	73.58	55.39	96.89	19 3 43	2086.3	-26.29	65.13
90.00	9 6 13	4647.25	13.94	197.48	48.92	65.10	10 23 40	4047.3	10.47	190.52
100.00	19 45 41	2406.60	-28.90	52.80	55.19	98.00	20 25 47	1806.6	-27.49	44.28
100.00	10 22 10	4402.23	15.19	178.85	48.31	63.94	11 35 32	3802.2	11.56	171.94
110.00	21 6 9	2154.78	-32.55	32.96	54.47	101.07	21 42 4	1554.8	-30.68	24.24
110.00	11 18 11	4226.82	18.46	163.75	46.51	60.71	12 28 37	3626.8	14.42	156.96

DIFFERENTIAL CORRECTIONS

TDE	.9447	TRA	-2.3810	TC3	.8068	BAU	.3672
RDE	-.4467	RRA	-.1602	RC3	-.0655	FAU	.06650
FDE	-.4311	FRA	1.6429	FC3	-1.6967	BSP	9190
BDE	1.0449	BRA	2.3864	BC3	.8095	FSP	621

MID-COURSE EXECUTION ACCURACY

SGT	2726.0	SGR	473.9	SG3	225.2		
RRT	-.0754	RRF	.0592	RTF	-.8690		
SGB	2766.9	R23	.0084	R13	.8690		
SG1	2726.3	SG2	472.5	THA	179.23		

ORBIT DETERMINATION ACCURACY

ST	1173.0	SR	442.0	SS	577.8		
CRT	-.7212	CRS	-.5633	CST	.9769		
LSA	1340.5	MSA	327.5	SSA	30.1		
EL1	1218.3	EL2	294.8	ALF	163.82		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 434.672 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	35.029	GAL	-5.48	AZL	88.31	HCA	138.42	SMA	233.89	ECC	.37818	INC	1.6851
RP	244.23	LAP	1.12	LOP	192.11	VP	22.790	GAP	22.08	AZP	91.26	TAL	339.88	TAP	118.30	RCA	145.44	APO	322.35
RC	132.477	GL	10.39	GP	.45	ZAL	121.55	ZAP	172.50	ETS	175.27	ZAE	154.82	ETE	358.88	ZAC	89.14	ETC	256.07

V1	30.121	V2	22.463	CLP	172.51														

PLANETOCENTRIC CONIC

C3	32.310	VHL	5.684	DLA	11.19	RAL	180.34	RAD	6568.3	VEL	12.397	PTH	2.24	VHP	10.005	DPA	-.24	RAP	184.95
ECC	1.5317																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 0	2687.20	-27.54	73.64	54.21	96.86	18 58 47	2087.2	-26.30	65.19
90.00	9 7 49	4621.75	13.21	195.97	47.70	64.72	10 24 50	4021.8	9.69	189.05
100.00	19 40 58	2406.72	-28.90	52.81	54.01	97.99	20 21 5	1806.7	-27.49	44.29
100.00	10 23 32	4377.47	14.44	177.39	47.09	63.54	11 36 29	3777.5	10.77	170.52
110.00	21 1 57	2153.29	-32.53	32.85	53.30	101.14	21 37 51	1553.3	-30.65	24.14
110.00	11 19 2	4203.66	17.69	162.40	45.28	60.26	12 29 5	3603.7	13.60	155.68

DIFFERENTIAL CORRECTIONS

TDE	.9233	TRA	-2.3522	TC3	.8750	BAU	.3791
RDE	-.4290	RRA	-.1529	RC3	-.0676	FAU	.06843
FDE	-.4284	FRA	1.6736	FC3	-1.8337	BSP	9373
BDE	1.0181	BRA	2.3572	BC3	.8776	FSP	657

MID-COURSE EXECUTION ACCURACY

SGT	2774.4	SGR	466.5	SG3	236.4		
RRT	-.0766	RRF	.0600	RTF	-.8735		
SGB	2813.4	R23	.0088	R13	.8735		
SG1	2774.6	SG2	465.1	THA	179.24		

ORBIT DETERMINATION ACCURACY

ST	1180.2	SR	435.0	SS	584.1		
CRT	-.7175	CRS	-.5530	CST	.9754		
LSA	1347.4	MSA	326.9	SSA	30.4		
EL1	1223.4	EL2	292.3	ALF	164.26		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 437.035 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.931 GAL -5.31 AZL 88.32 HCA 139.33 SMA 231.10 ECC .37012 INC 1.6799 V1 30.121
RP 243.99 LAP 1.09 LOP 193.02 VP 22.663 GAP 21.50 AZP 91.27 TAL 340.23 TAP 119.56 RCA 145.56 APO 316.63 V2 22.486
RC 134.631 GL 10.59 GP .47 ZAL 120.97 ZAP 172.00 ETS 175.35 ZAE 154.68 ETE 359.08 ZAC 89.25 ETC 256.05 CLP 172.02

PLANETOCENTRIC CONIC

C3 30.791 VHL 5.549 DLA 11.59 RAL 179.91 RAD 6568.2 VEL 12.335 PTH 2.22 VHP 9.780 DPA -.39 RAP 185.33 ECC 1.5067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 54	2688.57	-27.55	73.74	53.04	96.81	18 53 43	2088.6	-26.32	65.29
90.00	9 9 25	4596.15	12.46	194.46	46.49	64.36	10 26 2	3996.2	8.91	187.58
100.00	19 36 7	2407.31	-28.91	52.85	52.84	97.97	20 16 14	1807.3	-27.50	44.33
100.00	10 24 54	4352.65	13.68	175.94	45.87	63.16	11 37 27	3752.6	9.97	169.11
110.00	20 57 38	2152.23	-32.51	32.77	52.13	101.18	21 33 30	1552.2	-30.63	24.06
110.00	11 19 52	4180.49	16.90	161.06	44.06	59.84	12 29 33	3580.5	12.77	154.40

DIFFERENTIAL CORRECTIONS
TDE .9025 TRA-2.3222 TC3 .9477 BAU .3912
RDE -.4119 RRA -.1459 RC3 -.0696 FAU .07048
FDE -.4250 FRA 1.7041 FC3-1.9816 BSP 9545
BDE .9921 BRA 2.3268 BC3 .9503 FSP 695

MID-COURSE EXECUTION ACCURACY
SGT 2822.4 SGR 458.8 SG3 248.2
RRT -.0781 RRF .0609 RTF -.8778
SGB 2859.5 R23 .0096 R13 .8778
SG1 2822.6 SG2 457.4 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 1186.8 SR 427.9 SS 589.9
CRT -.7140 CRS -.5423 CST .9737
LSA 1353.6 MSA 326.2 SSA 30.6
EL1 1227.9 EL2 289.5 ALF 164.69

LAUNCH DATE NOV 16 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 439.496 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.837 GAL -5.13 AZL 88.33 HCA 140.24 SMA 228.48 ECC .36240 INC 1.6746 V1 30.121
RP 243.75 LAP 1.07 LOP 193.93 VP 22.541 GAP 20.92 AZP 91.29 TAL 340.59 TAP 120.83 RCA 145.68 APO 311.29 V2 22.510
RC 136.814 GL 10.78 GP .49 ZAL 120.38 ZAP 171.50 ETS 175.41 ZAE 154.59 ETE 359.28 ZAC 89.36 ETC 256.03 CLP 171.52

PLANETOCENTRIC CONIC

C3 29.362 VHL 5.419 DLA 12.01 RAL 179.45 RAD 6568.2 VEL 12.277 PTH 2.21 VHP 9.560 DPA -.55 RAP 185.71 ECC 1.4832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 38	2690.47	-27.57	73.87	51.87	96.75	18 48 29	2090.5	-26.34	65.42
90.00	9 11 3	4570.42	11.70	192.95	45.29	64.03	10 27 14	3970.4	8.11	186.11
100.00	19 31 6	2408.41	-28.92	52.93	51.67	97.93	20 11 14	1808.4	-27.52	44.41
100.00	10 26 17	4327.72	12.91	174.49	44.67	62.80	11 38 25	3727.7	9.17	167.70
110.00	20 53 10	2151.61	-32.51	32.73	50.97	101.21	21 29 2	1551.6	-30.62	24.02
110.00	11 20 42	4157.28	16.10	159.74	42.85	59.43	12 30 0	3557.3	11.92	153.12

DIFFERENTIAL CORRECTIONS
TDE .8958 TRA-2.2770 TC3 1.0449 BAU .4111
RDE -.3957 RRA -.1395 RC3 -.0719 FAU .07242
FDE -.4163 FRA 1.7395 FC3-2.1352 BSP 9361
BDE .9793 BRA 2.2813 BC3 1.0474 FSP 744

MID-COURSE EXECUTION ACCURACY
SGT 2870.3 SGR 451.5 SG3 260.4
RRT -.0875 RRF .0595 RTF -.8861
SGB 2905.6 R23 .0200 R13 .8861
SG1 2870.6 SG2 449.7 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 1201.5 SR 420.8 SS 593.8
CRT -.7178 CRS -.5250 CST .9677
LSA 1365.8 MSA 327.2 SSA 30.0
EL1 1241.1 EL2 283.6 ALF 165.09

LAUNCH DATE NOV 16 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 442.045 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.746 GAL -4.96 AZL 88.33 HCA 141.16 SMA 226.04 ECC .35501 INC 1.6689 V1 30.121
RP 243.50 LAP 1.05 LOP 194.85 VP 22.426 GAP 20.34 AZP 91.30 TAL 340.95 TAP 122.11 RCA 145.80 APO 306.29 V2 22.535
RC 139.022 GL 10.98 GP .51 ZAL 119.78 ZAP 170.99 ETS 175.46 ZAE 154.54 ETE 359.47 ZAC 89.47 ETC 256.02 CLP 171.01

PLANETOCENTRIC CONIC

C3 28.023 VHL 5.294 DLA 12.42 RAL 178.99 RAD 6568.1 VEL 12.223 PTH 2.20 VHP 9.346 DPA -.70 RAP 186.09 ECC 1.4612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 16	2692.86	-27.59	74.05	50.70	96.66	18 43 8	2092.9	-26.38	65.59
90.00	9 12 42	4544.72	10.92	191.46	44.10	63.71	10 28 27	3944.7	7.31	184.65
100.00	19 25 59	2409.96	-28.93	53.04	50.51	97.87	20 6 9	1810.0	-27.54	44.52
100.00	10 27 40	4302.86	12.13	173.05	43.48	62.47	11 39 23	3702.9	8.35	166.30
110.00	20 48 36	2151.41	-32.50	32.71	49.81	101.22	21 24 28	1551.4	-30.62	24.00
110.00	11 21 32	4134.17	15.30	158.43	41.65	59.05	12 30 26	3534.2	11.08	151.86

DIFFERENTIAL CORRECTIONS
TDE .8658 TRA-2.2541 TC3 1.1148 BAU .4185
RDE -.3795 RRA -.1329 RC3 -.0735 FAU .07477
FDE -.4136 FRA 1.7679 FC3-2.3098 BSP 9724
BDE .9453 BRA 2.2580 BC3 1.1172 FSP 781

MID-COURSE EXECUTION ACCURACY
SGT 2917.5 SGR 443.2 SG3 273.5
RRT -.0841 RRF .0609 RTF -.8880
SGB 2951.0 R23 .0156 R13 .8879
SG1 2917.7 SG2 441.6 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 1200.5 SR 413.1 SS 599.5
CRT -.7096 CRS -.5153 CST .9678
LSA 1365.3 MSA 326.0 SSA 30.6
EL1 1237.8 EL2 282.3 ALF 165.51

LAUNCH DATE NOV 16 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 444.677 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.660 GAL -4.79 AZL 88.34 HCA 142.07 SMA 223.76 ECC .34792 INC 1.6630 V1 30.121
RP 243.25 LAP 1.02 LOP 195.76 VP 22.317 GAP 19.76 AZP 91.31 TAL 341.32 TAP 123.39 RCA 145.91 APO 301.61 V2 22.560
RC 141.251 GL 11.17 GP .53 ZAL 119.16 ZAP 170.47 ETS 175.50 ZAE 154.54 ETE 359.67 ZAC 89.57 ETC 256.00 CLP 170.49

PLANETOCENTRIC CONIC

C3 26.766 VHL 5.174 DLA 12.84 RAL 178.50 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 9.136 DPA -.84 RAP 186.46 ECC 1.4405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 44	2695.75	-27.61	74.26	49.54	96.56	18 37 40	2095.8	-26.41	65.79
90.00	9 14 22	4518.99	10.14	189.97	42.92	63.42	10 29 41	3919.0	6.50	183.19
100.00	19 20 43	2412.00	-28.95	53.19	49.34	97.80	20 0 55	1812.0	-27.57	44.66
100.00	10 29 4	4277.98	11.35	171.62	42.29	62.16	11 40 22	3678.0	7.53	164.91
110.00	20 43 56	2151.63	-32.51	32.73	48.65	101.21	21 19 47	1551.6	-30.62	24.02
110.00	11 22 21	4111.11	14.48	157.14	40.47	58.69	12 30 52	3511.1	10.23	150.62

DIFFERENTIAL CORRECTIONS
TDE .8387 TRA-2.2272 TC3 1.1930 BAU .4277
RDE -.3638 RRA -.1266 RC3 -.0749 FAU .07717
FDE -.4084 FRA 1.7981 FC3-2.4960 BSP 9998
BDE .9142 BRA 2.2308 BC3 1.1953 FSP 822

MID-COURSE EXECUTION ACCURACY
SGT 2964.2 SGR 434.7 SG3 287.2
RRT -.0823 RRF .0614 RTF -.8907
SGB 2995.9 R23 .0136 R13 .8907
SG1 2964.4 SG2 433.2 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 1200.0 SR 405.2 SS 604.3
CRT -.7024 CRS -.5028 CST .9666
LSA 1364.8 MSA 325.4 SSA 31.0
EL1 1235.2 EL2 280.2 ALF 165.92

LAUNCH DATE NOV 16 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 447.384 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.577 GAL -4.63 AZL 88.34 HCA 142.99 SMA 221.62 ECC .34114 INC 1.6570 V1 30.121
RP 243.00 LAP 1.00 LOP 196.68 VP 22.214 GAP 19.19 AZP 91.32 TAL 341.69 TAP 124.68 RCA 146.01 APO 297.22 V2 22.585
RC 143.499 GL 11.36 GP .55 ZAL 118.52 ZAP 169.95 ETS 175.53 ZAE 154.57 ETE 359.86 ZAC 89.68 ETC 255.99 CLP 169.96

PLANETOCENTRIC CONIC

C3 25.585 VHL 5.058 DLA 13.27 RAL 178.00 RAD 6568.0 VEL 12.123 PTH 2.17 VHP 8.932 DPA -.99 RAP 186.83 ECC 1.4211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 4	2699.16	-27.63	74.50	48.38	96.44	18 32 3	2099.2	-26.45	66.03
90.00	9 16 3	4493.24	9.36	188.49	41.76	63.15	10 30 56	3893.2	5.68	181.74
100.00	19 15 20	2414.51	-28.97	53.38	48.19	97.70	19 55 34	1814.5	-27.60	44.84
100.00	10 30 28	4252.92	10.55	170.21	41.12	61.87	11 41 21	3652.9	6.71	163.53
110.00	20 39 8	2152.28	-32.52	32.78	47.50	101.18	21 15 0	1552.3	-30.63	24.07
110.00	11 23 9	4088.12	13.67	155.86	39.29	58.36	12 31 17	3488.1	9.38	149.38

DIFFERENTIAL CORRECTIONS
TDE .8139 TRA-2.1977 TC3 1.2774 BAU .4377
RDE -.3487 RRA -.1207 RC3 -.0762 FAU .07965
FDE -.4017 FRA 1.8292 FC3-2.6950 BSP 10221
BDE .8854 BRA 2.2010 BC3 1.2797 FSP 867

MID-COURSE EXECUTION ACCURACY
SGT 3010.3 SGR 426.2 SG3 301.4
RRT -.0814 RRF .0611 RTF -.8939
SGB 3040.3 R23 .0132 R13 .8938
SG1 3010.5 SG2 424.8 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 1200.1 SR 397.2 SS 608.4
CRT -.6962 CRS -.4886 CST .9646
LSA 1364.4 MSA 325.0 SSA 31.3
EL1 1233.3 EL2 277.4 ALF 166.32

LAUNCH DATE NOV 16 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 450.162 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.498 GAL -4.47 AZL 88.35 HCA 143.91 SMA 219.60 ECC .33463 INC 1.6506 V1 30.121
RP 242.74 LAP .97 LOP 197.60 VP 22.117 GAP 18.63 AZP 91.33 TAL 342.07 TAP 125.98 RCA 146.12 APO 293.09 V2 22.611
RC 145.763 GL 11.55 GP .58 ZAL 117.88 ZAP 169.41 ETS 175.55 ZAE 154.65 ETE .06 ZAC 89.79 ETC 255.97 CLP 169.43

PLANETOCENTRIC CONIC

C3 24.477 VHL 4.947 DLA 13.69 RAL 177.49 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 8.732 DPA -1.12 RAP 187.19 ECC 1.4028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 16	2703.06	-27.66	74.78	47.22	96.30	18 26 19	2103.1	-26.50	66.31
90.00	9 17 44	4467.51	8.56	187.02	40.60	62.91	10 32 11	3867.5	4.86	180.29
100.00	19 9 49	2417.49	-29.00	53.59	47.03	97.59	19 50 6	1817.5	-27.65	45.05
100.00	10 31 52	4228.31	9.75	168.80	39.96	61.60	11 42 20	3628.3	5.88	162.15
110.00	20 34 14	2153.34	-32.53	32.86	46.36	101.13	21 10 7	1553.3	-30.65	24.14
110.00	11 23 56	4065.23	12.85	154.59	38.13	58.05	12 31 42	3465.2	8.53	148.15

DIFFERENTIAL CORRECTIONS
TDE .7897 TRA-2.1669 TC3 1.3685 BAU .4485
RDE -.3340 RRA -.1151 RC3 -.0773 FAU .08225
FDE -.3936 FRA 1.8609 FC3-2.9090 BSP 10415
BDE .8575 BRA 2.1700 BC3 1.3707 FSP 916

MID-COURSE EXECUTION ACCURACY
SGT 3056.4 SGR 417.5 SG3 316.4
RRT -.0808 RRF .0604 RTF -.8973
SGB 3084.8 R23 .0135 R13 .8973
SG1 3056.6 SG2 416.1 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 1199.4 SR 389.0 SS 612.0
CRT -.6901 CRS -.4726 CST .9621
LSA 1363.0 MSA 325.0 SSA 31.5
EL1 1230.7 EL2 274.4 ALF 166.71

LAUNCH DATE NOV 16 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 453.005 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.422 GAL -4.31 AZL 88.36 HCA 144.83 SMA 217.71 ECC .32840 INC 1.6439 V1 30.121
RP 242.47 LAP .95 LOP 198.52 VP 22.025 GAP 18.06 AZP 91.34 TAL 342.45 TAP 127.28 RCA 146.22 APO 289.21 V2 22.638
RC 148.041 GL 11.74 GP .60 ZAL 117.21 ZAP 168.87 ETS 175.56 ZAE 154.78 ETE .26 ZAC 89.90 ETC 255.96 CLP 168.89

PLANETOCENTRIC CONIC

C3 23.435 VHL 4.841 DLA 14.13 RAL 176.95 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 8.536 DPA -1.26 RAP 187.54 ECC 1.3857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 20	2707.45	-27.70	75.10	46.07	96.15	18 20 27	2107.5	-26.56	66.62
90.00	9 19 26	4441.83	7.76	185.55	39.45	62.68	10 33 28	3841.8	4.04	178.85
100.00	19 4 10	2420.93	-29.03	53.84	45.89	97.46	19 44 31	1820.9	-27.69	45.30
100.00	10 33 16	4203.58	8.95	167.40	38.82	61.36	11 43 20	3603.6	5.06	160.78
110.00	20 29 14	2154.80	-32.55	32.97	45.22	101.07	21 5 8	1554.8	-30.68	24.25
110.00	11 24 42	4042.48	12.02	153.34	36.98	57.76	12 32 5	3442.5	7.68	146.94

DIFFERENTIAL CORRECTIONS
TDE .7664 TRA-2.1339 TC3 1.4646 BAU .4595
RDE -.3198 RRA -.1097 RC3 -.0782 FAU .08498
FDE -.3844 FRA 1.8922 FC3-3.1391 BSP 10576
BDE .8305 BRA 2.1368 BC3 1.4667 FSP 967

MID-COURSE EXECUTION ACCURACY
SGT 3101.0 SGR 408.6 SG3 332.1
RRT -.0805 RRF .0592 RTF -.9007
SGB 3127.8 R23 .0146 R13 .9007
SG1 3101.2 SG2 407.3 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 1197.9 SR 380.7 SS 615.0
CRT -.6843 CRS -.4555 CST .9589
LSA 1360.7 MSA 325.1 SSA 31.6
EL1 1227.4 EL2 270.9 ALF 167.09

LAUNCH DATE NOV 16 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 455.909 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.349 GAL -4.16 AZL 88.36 HCA 145.75 SMA 215.94 ECC .32242 INC 1.6368 V1 30.121
RP 242.20 LAP .92 LOP 199.44 VP 21.939 GAP 17.51 AZP 91.35 TAL 342.84 TAP 128.59 RCA 146.31 APO 285.56 V2 22.664
RC 150.330 GL 11.92 GP .63 ZAL 116.54 ZAP 168.32 ETS 175.57 ZAE 154.93 ETE .47 ZAC 90.01 ETC 255.95 CLP 168.33

PLANETOCENTRIC CONIC

C3 22.458 VHL 4.739 DLA 14.56 RAL 176.41 RAD 6567.9 VEL 11.993 PTH 2.14 VHP 8.345 DPA -1.39 RAP 187.89 ECC 1.3696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 16	2712.31	-27.73	75.45	44.92	95.97	18 14 29	2112.3	-26.61	66.96
90.00	9 21 8	4416.23	6.96	184.10	38.32	62.48	10 34 44	3816.2	3.22	177.42
100.00	18 58 25	2424.81	-29.06	54.13	44.74	97.32	19 38 50	1824.8	-27.75	45.57
100.00	10 34 40	4178.96	8.14	166.02	37.68	61.14	11 44 19	3579.0	4.23	159.42
110.00	20 24 7	2156.65	-32.57	33.11	44.08	100.99	21 0 4	1556.6	-30.71	24.38
110.00	11 25 27	4019.88	11.20	152.11	35.84	57.49	12 32 27	3419.9	6.83	145.74

DIFFERENTIAL CORRECTIONS
TDE .7416 TRA-2.1020 TC3 1.5620 BAU .4696
RDE -.3061 RRA -.1046 RC3 -.0787 FAU .08781
FDE -.3736 FRA 1.9244 FC3-3.3849 BSP 10756
BDE .8023 BRA 2.1046 BC3 1.5640 FSP 1020

MID-COURSE EXECUTION ACCURACY
SGT 3144.8 SGR 399.5 SG3 348.6
RRT -.0788 RRF .0572 RTF -.9038
SGB 3170.1 R23 .0152 R13 .9038
SG1 3145.0 SG2 398.3 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 1194.3 SR 372.2 SS 617.5
CRT -.6773 CRS -.4365 CST .9556
LSA 1356.2 MSA 325.6 SSA 31.8
EL1 1222.0 EL2 267.6 ALF 167.47

LAUNCH DATE NOV 16 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 458.869 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.279 GAL -4.01 AZL 88.37 HCA 146.68 SMA 214.26 ECC .31670 INC 1.6294 V1 30.121
RP 241.93 LAP .89 LOP 200.37 VP 21.857 GAP 16.96 AZP 91.36 TAL 343.23 TAP 129.91 RCA 146.41 APO 282.12 V2 22.692
RC 152.629 GL 12.09 GP .66 ZAL 115.85 ZAP 167.75 ETS 175.57 ZAE 155.13 ETE .68 ZAC 90.12 ETC 255.94 CLP 167.77

PLANETOCENTRIC CONIC

C3 21.540 VHL 4.641 DLA 14.99 RAL 175.85 RAD 6567.9 VEL 11.955 PTH 2.13 VHP 8.158 DPA -1.51 RAP 188.23 ECC 1.3545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 6	2717.62	-27.77	75.84	43.78	95.78	18 8 23	2117.6	-26.68	67.34
90.00	9 22 50	4390.72	6.16	182.66	37.20	62.31	10 36 1	3790.7	2.40	175.99
100.00	18 52 34	2429.10	-29.10	54.44	43.61	97.16	19 33 3	1829.1	-27.80	45.88
100.00	10 36 3	4154.48	7.34	164.65	36.56	60.94	11 45 18	3554.5	3.41	158.07
110.00	20 18 56	2158.86	-32.60	33.27	42.96	100.90	20 54 55	1558.9	-30.76	24.54
110.00	11 26 11	3997.48	10.38	150.90	34.71	57.25	12 32 48	3397.5	5.99	144.56

DIFFERENTIAL CORRECTIONS
TDE .7179 TRA-2.0685 TC3 1.6654 BAU .4801
RDE -.2928 RRA -.0999 RC3 -.0788 FAU .09079
FDE -.3617 FRA 1.9565 FC3-3.6491 BSP 10913
BDE .7753 BRA 2.0709 BC3 1.6673 FSP 1078

MID-COURSE EXECUTION ACCURACY
SGT 3188.1 SGR 390.3 SG3 365.8
RRT -.0772 RRF .0546 RTF -.9070
SGB 3211.9 R23 .0166 R13 .9070
SG1 3188.2 SG2 389.1 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 1190.2 SR 363.5 SS 619.5
CRT -.0705 CRS -.4161 CST .9516
LSA 1350.9 MSA 326.4 SSA 31.8
EL1 1216.1 EL2 263.9 ALF 167.85

LAUNCH DATE NOV 16 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 461.882 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.212 GAL -3.87 AZL 88.38 HCA 147.61 SMA 212.68 ECC .31122 INC 1.6217 V1 30.121
RP 241.65 LAP .87 LOP 201.29 VP 21.781 GAP 16.41 AZP 91.37 TAL 343.62 TAP 131.23 RCA 146.49 APO 278.88 V2 22.720
RC 154.936 GL 12.27 GP .69 ZAL 115.15 ZAP 167.18 ETS 175.56 ZAE 155.37 ETE .89 ZAC 90.22 ETC 255.93 CLP 167.19

PLANETOCENTRIC CONIC

C3 20.678 VHL 4.547 DLA 15.43 RAL 175.27 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 7.975 DPA -1.63 RAP 188.56 ECC 1.3403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 48	2723.37	-27.81	76.25	42.64	95.58	18 2 12	2123.4	-26.74	67.75
90.00	9 24 32	4365.34	5.35	181.23	36.09	62.15	10 37 18	3765.3	1.58	174.57
100.00	18 46 36	2433.80	-29.14	54.79	42.47	96.98	19 27 10	1833.8	-27.87	46.21
100.00	10 37 26	4130.14	6.53	163.29	35.44	60.76	11 46 16	3530.1	2.58	156.73
110.00	20 13 39	2161.43	-32.63	33.46	41.84	100.79	20 49 40	1561.4	-30.80	24.72
110.00	11 26 52	3975.28	9.56	149.70	33.60	57.02	12 33 7	3375.3	5.15	143.39

DIFFERENTIAL CORRECTIONS
TDE .6974 TRA-2.0310 TC3 1.7787 BAU .4922
RDE -.2800 RRA -.0954 RC3 -.0787 FAU .09392
FDE -.3486 FRA 1.9889 FC3-3.9321 BSP 10977
BDE .7515 BRA 2.0332 BC3 1.7804 FSP 1138

MID-COURSE EXECUTION ACCURACY
SGT 3230.5 SGR 381.0 SG3 383.9
RRT -.0770 RRF .0512 RTF -.9108
SGB 3252.9 R23 .0199 R13 .9107
SG1 3230.7 SG2 379.8 THA 179.47

ORBIT DETERMINATION ACCURACY
ST 1186.9 SR 354.8 SS 621.2
CRT -.6657 CRS -.3940 CST .9461
LSA 1346.1 MSA 328.0 SSA 31.6
EL1 1211.3 EL2 259.4 ALF 168.20

LAUNCH DATE NOV 16 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 464.943 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.147 GAL -3.73 AZL 88.39 HCA 148.54 SMA 211.20 ECC .30597 INC 1.6134 V1 30.121
RP 241.36 LAP .84 LOP 202.22 VP 21.710 GAP 15.87 AZP 91.38 TAL 344.01 TAP 132.55 RCA 146.58 APO 275.82 V2 22.748
RC 157.250 GL 12.43 GP .73 ZAL 114.45 ZAP 166.59 ETS 175.55 ZAE 155.64 ETE 1.12 ZAC 90.33 ETC 255.92 CLP 166.61

PLANETOCENTRIC CONIC

C3 19.869 VHL 4.457 DLA 15.86 RAL 174.69 RAD 6567.8 VEL 11.885 PTH 2.11 VHP 7.797 DPA -1.74 RAP 188.89 ECC 1.3270

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 26	2729.50	-27.85	76.70	41.51	95.36	17 55 55	2129.5	-26.81	68.18
90.00	9 26 14	4340.16	4.55	179.81	34.99	62.02	10 38 34	3740.2	.77	173.17
100.00	18 40 33	2438.85	-29.18	55.16	41.35	96.79	19 21 12	1838.9	-27.93	46.57
100.00	10 38 47	4106.04	5.73	161.96	34.34	60.61	11 47 13	3506.0	1.77	155.40
110.00	20 8 18	2164.30	-32.67	33.68	40.73	100.67	20 44 23	1564.3	-30.85	24.93
110.00	11 27 32	3953.36	8.74	148.53	32.50	56.82	12 33 25	3353.4	4.32	142.24

DIFFERENTIAL CORRECTIONS
TDE .6690 TRA-2.0007 TC3 1.8817 BAU .5002
RDE -.2675 RRA -.0911 RC3 -.0777 FAU .09724
FDE -.3344 FRA 2.0207 FC3-4.2371 BSP 11223
BDE .7204 BRA 2.0027 BC3 1.8833 FSP 1199

MID-COURSE EXECUTION ACCURACY
SGT 3271.2 SGR 371.2 SG3 402.9
RRT -.0713 RRF .0468 RTF -.9129
SGB 3292.2 R23 .0192 R13 .9129
SG1 3271.3 SG2 370.3 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 1176.9 SR 345.7 SS 622.5
CRT -.6548 CRS -.3708 CST .9425
LSA 1335.4 MSA 328.6 SSA 31.8
EL1 1199.6 EL2 256.4 ALF 168.58

LAUNCH DATE NOV 16 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 468.051 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.086 GAL -3.59 AZL 88.40 HCA 149.47 SMA 209.79 ECC .30094 INC 1.6048 V1 30.121
RP 241.08 LAP .82 LOP 203.15 VP 21.643 GAP 15.33 AZP 91.38 TAL 344.41 TAP 133.87 RCA 146.66 APO 272.93 V2 22.777
RC 159.568 GL 12.59 GP .76 ZAL 113.73 ZAP 165.99 ETS 175.53 ZAE 155.95 ETE 1.36 ZAC 90.44 ETC 255.91 CLP 166.01

PLANETOCENTRIC CONIC

C3 19.109 VHL 4.371 DLA 16.29 RAL 174.08 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 7.622 DPA -1.85 RAP 189.21 ECC 1.3145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 57	2736.01	-27.89	77.17	40.39	95.13	17 49 33	2136.0	-26.88	68.64
90.00	9 27 55	4315.17	3.75	178.41	33.91	61.91	10 39 50	3715.2	-.04	171.78
100.00	18 34 25	2444.25	-29.22	55.55	40.23	96.58	19 15 10	1844.3	-28.00	46.96
100.00	10 40 7	4082.16	4.93	160.63	33.26	60.48	11 48 9	3482.2	.96	154.09
110.00	20 2 53	2167.47	-32.71	33.92	39.62	100.53	20 39 1	1567.5	-30.91	25.16
110.00	11 28 9	3931.72	7.93	147.37	31.41	56.64	12 33 41	3331.7	3.49	141.10

DIFFERENTIAL CORRECTIONS
TDE .6446 TRA-1.9666 TC3 1.9949 BAU .5100
RDE -.2554 RRA -.0871 RC3 -.0764 FAU .10070
FDE -.3187 FRA 2.0535 FC3-4.5623 BSP 11365
BDE .6933 BRA 1.9685 BC3 1.9964 FSP 1265

MID-COURSE EXECUTION ACCURACY
SGT 3311.6 SGR 361.4 SG3 422.8
RRT -.0669 RRF .0412 RTF -.9157
SGB 3331.3 R23 .0208 R13 .9157
SG1 3311.7 SG2 360.6 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 1168.6 SR 336.6 SS 623.6
CRT -.6461 CRS -.3453 CST .9372
LSA 1325.8 MSA 330.3 SSA 31.8
EL1 1189.6 EL2 252.4 ALF 168.95

LAUNCH DATE NOV 16 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 471.202 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 34.027 GAL -3.46 AZL 88.40 HCA 150.40 SMA 208.47 ECC .29612 INC 1.5955 V1 30.121
RP 240.79 LAP .79 LOP 204.09 VP 21.581 GAP 14.80 AZP 91.39 TAL 344.80 TAP 135.20 RCA 146.74 APO 270.20 V2 22.806
RC 161.890 GL 12.74 GP .80 ZAL 113.01 ZAP 165.38 ETS 175.51 ZAE 156.30 ETE 1.61 ZAC 90.55 ETC 255.90 CLP 165.40

PLANETOCENTRIC CONIC

C3 18.395 VHL 4.289 DLA 16.71 RAL 173.47 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 7.452 DPA -1.94 RAP 189.52 ECC 1.3027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 23	2742.86	-27.93	77.66	39.27	94.88	17 43 6	2142.9	-26.96	69.13
90.00	9 29 34	4290.42	2.95	177.03	32.83	61.82	10 41 4	3690.4	-.84	170.40
100.00	18 28 13	2449.96	-29.27	55.97	39.12	96.37	19 9 3	1850.0	-28.08	47.37
100.00	10 41 25	4058.55	4.13	159.33	32.18	60.37	11 49 4	3458.5	.16	152.80
110.00	19 57 24	2170.90	-32.75	34.18	38.52	100.38	20 33 35	1570.9	-30.97	25.41
110.00	11 28 43	3910.38	7.13	146.24	30.33	56.48	12 33 54	3310.4	2.68	139.99

DIFFERENTIAL CORRECTIONS
TDE .6223 TRA-1.9291 TC3 2.1151 BAU .5205
RDE -.2437 RRA -.0834 RC3 -.0745 FAU .10431
FDE -.3011 FRA 2.0861 FC3-4.9092 BSP 11447
BDE .6683 BRA 1.9309 BC3 2.1164 FSP 1335

MID-COURSE EXECUTION ACCURACY
SGT 3350.1 SGR 351.6 SG3 443.6
RRT -.0625 RRF .0341 RTF -.9188
SGB 3368.5 R23 .0240 R13 .9188
SG1 3350.2 SG2 350.9 THA 179.62

ORBIT DETERMINATION ACCURACY
ST 1160.0 SR 327.5 SS 624.1
CRT -.6387 CRS -.3174 CST .9301
LSA 1315.5 MSA 333.0 SSA 31.5
EL1 1179.6 EL2 247.8 ALF 169.30

LAUNCH DATE NOV 16 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 474.393 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.970 GAL -3.33 AZL 88.41 HCA 151.34 SMA 207.22 ECC .29151 INC 1.5857 V1 30.121
RP 240.49 LAP .76 LOP 205.02 VP 21.523 GAP 14.27 AZP 91.39 TAL 345.20 TAP 136.54 RCA 146.81 APO 267.62 V2 22.836
RC 164.213 GL 12.88 GP .84 ZAL 112.28 ZAP 164.76 ETS 175.47 ZAE 156.67 ETE 1.87 ZAC 90.66 ETC 255.89 CLP 164.78

PLANETOCENTRIC CONIC

C3 17.724 VHL 4.210 DLA 17.13 RAL 172.84 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 7.285 DPA -2.04 RAP 189.83 ECC 1.291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 46	2749.98	-27.97	78.18	38.16	94.62	17 36 36	2150.0	-27.03	69.64
90.00	9 31 12	4265.98	2.17	175.66	31.77	61.76	10 42 17	3666.0	-1.62	169.03
100.00	18 21 58	2455.91	-29.31	56.41	38.01	96.14	19 2 53	1855.9	-28.15	47.79
100.00	10 42 41	4035.28	3.35	158.05	31.12	60.28	11 49 56	3435.3	-.63	151.52
110.00	19 51 53	2174.54	-32.80	34.45	37.43	100.23	20 28 8	1574.5	-31.04	25.67
110.00	11 29 15	3889.42	6.34	145.13	29.26	56.34	12 34 4	3289.4	1.88	138.89

DIFFERENTIAL CORRECTIONS
TDE .5949 TRA-1.8977 TC3 2.2259 BAU .5277
RDE -.2323 RRA -.0798 RC3 -.0716 FAU .10813
FDE -.2832 FRA 2.1190 FC3-5.2815 BSP 11655
BDE .6387 BRA 1.8994 BC3 2.2271 FSP 1406

MID-COURSE EXECUTION ACCURACY
SGT 3387.1 SGR 341.4 SG3 465.5
RRT -.0534 RRF .0255 RTF -.9207
SGB 3404.3 R23 .0242 R13 .9207
SG1 3387.2 SG2 340.9 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 1147.2 SR 318.0 SS 625.0
CRT -.6261 CRS -.2889 CST .9249
LSA 1301.9 MSA 334.5 SSA 31.5
EL1 1165.2 EL2 244.1 ALF 169.70

LAUNCH DATE NOV 16 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 477.622 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.916 GAL -3.20 AZL 88.42 HCA 152.28 SMA 206.03 ECC .28709 INC 1.5755 V1 30.121
RP 240.19 LAP .73 LOP 205.96 VP 21.470 GAP 13.75 AZP 91.39 TAL 345.59 TAP 137.87 RCA 146.88 APO 265.18 V2 22.866
RC 166.536 GL 13.01 GP .89 ZAL 111.55 ZAP 164.12 ETS 175.44 ZAE 157.09 ETE 2.16 ZAC 90.77 ETC 255.88 CLP 164.15

PLANETOCENTRIC CONIC

C3 17.095 VHL 4.135 DLA 17.55 RAL 172.21 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 7.121 DPA -2.12 RAP 190.12 ECC 1.2813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 6	2757.35	-28.01	78.72	37.05	94.36	17 30 3	2157.4	-27.11	70.17
90.00	9 32 47	4241.85	1.39	174.31	30.72	61.71	10 43 29	3641.9	-2.40	167.69
100.00	18 15 39	2462.08	-29.36	56.86	36.91	95.91	18 56 41	1862.1	-28.23	48.24
100.00	10 43 54	4012.36	2.57	156.79	30.07	60.21	11 50 46	3412.4	-1.41	150.27
110.00	19 46 20	2178.36	-32.84	34.74	36.34	100.06	20 22 39	1578.4	-31.11	25.95
110.00	11 29 42	3868.84	5.57	144.04	28.21	56.22	12 34 11	3268.8	1.09	137.82

DIFFERENTIAL CORRECTIONS
TDE .5700 TRA-1.8625 TC3 2.3467 BAU .5366
RDE -.2214 RRA -.0766 RC3 -.0681 FAU .11212
FDE -.2624 FRA 2.1525 FC3-5.6779 BSP 11791
BDE .6114 BRA 1.8641 BC3 2.3477 FSP 1484

MID-COURSE EXECUTION ACCURACY
SGT 3423.1 SGR 331.2 SG3 488.5
RRT -.0441 RRF .0146 RTF -.9232
SGB 3439.0 R23 .0265 R13 .9232
SG1 3423.1 SG2 330.8 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 1134.3 SR 308.6 SS 625.3
CRT -.6149 CRS -.2564 CST .9174
LSA 1287.6 MSA 337.6 SSA 31.3
EL1 1150.8 EL2 239.8 ALF 170.07

LAUNCH DATE NOV 16 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 480.887 EARTH TO MARS

RL 147.92 LAL .80 LOL 53.68 VL 33.864 GAL -3.08 AZL 88.44 HCA 153.22 SMA 204.91 ECC .28287 INC 1.5643 V1 30.121
RP 239.88 LAP .70 LOP 206.90 VP 21.420 GAP 13.23 AZP 91.40 TAL 345.99 TAP 139.20 RCA 146.95 APO 262.87 V2 22.897
RC 168.857 GL 13.14 GP .94 ZAL 110.81 ZAP 163.47 ETS 175.39 ZAE 157.54 ETE 2.46 ZAC 90.89 ETC 255.88 CLP 163.50

PLANETOCENTRIC CONIC

C3 16.503 VHL 4.062 DLA 17.96 RAL 171.56 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 6.962 DPA -2.20 RAP 190.41 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 23	2764.91	-28.04	79.27	35.95	94.09	17 23 28	2164.9	-27.18	70.71
90.00	9 34 19	4218.12	.62	172.99	29.69	61.69	10 44 37	3618.1	-3.17	166.36
100.00	18 9 19	2468.41	-29.40	57.33	35.81	95.67	18 50 28	1868.4	-28.30	48.69
100.00	10 45 3	3989.85	1.81	155.55	29.02	60.16	11 51 33	3389.8	-2.17	149.03
110.00	19 40 46	2182.32	-32.89	35.04	35.26	99.89	20 17 8	1582.3	-31.18	26.24
110.00	11 30 6	3848.71	4.80	142.98	27.16	56.12	12 34 15	3248.7	.32	136.77

DIFFERENTIAL CORRECTIONS
TDE .5466 TRA-1.8266 TC3 2.4688 BAU .5449
RDE -.2107 RRA -.0737 RC3 -.0636 FAU .11632
FDE -.2419 FRA 2.1852 FC3-6.1019 BSP 11906
BDE .5858 BRA 1.8281 BC3 2.4696 FSP 1564

MID-COURSE EXECUTION ACCURACY
SGT 3457.1 SGR 320.9 SG3 512.5
RRT -.0332 RRF .0019 RTF -.9255
SGB 3471.9 R23 .0292 R13 .9255
SG1 3457.1 SG2 320.7 THA 179.82

ORBIT DETERMINATION ACCURACY
ST 1121.6 SR 299.0 SS 626.0
CRT -.6040 CRS -.2242 CST .9094
LSA 1273.6 MSA 340.7 SSA 31.0
EL1 1136.7 EL2 235.2 ALF 170.44

LAUNCH DATE NOV 16 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 484.185 EARTH TO MARS
RL 147.92 LAL .00 LOL 53.68 VL 33.814 GAL -2.96 AZL 88.45 HCA 154.16 SMA 203.85 ECC .27883 INC 1.5526 V1 30.121
RP 239.58 LAP .68 LOP 207.85 VP 21.375 GAP 12.72 AZP 91.40 TAL 346.38 TAP 140.54 RCA 147.01 APO 260.69 V2 22.928
RC 171.174 GL 13.25 GP .99 ZAL 110.07 ZAP 162.81 ETS 175.34 ZAE 158.02 ETE 2.79 ZAC 91.00 ETC 255.87 CLP 162.83
PLANETOCENTRIC CONIC
C3 15.948 VHL 3.993 DLA 18.35 RAL 170.90 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 6.805 DPA -2.26 RAP 190.69 ECC 1.2625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 39	2772.58	-28.08	79.83	34.85	93.81	17 16 52	2172.6	-27.26	71.26
90.00	9 35 47	4194.84	-.13	171.69	28.66	61.68	10 45 41	3594.8	-3.91	165.06
100.00	18 2 59	2474.84	-29.44	57.80	34.72	95.42	18 44 14	1874.8	-28.38	49.16
100.00	10 46 8	3967.81	1.06	154.34	27.99	60.12	11 52 16	3367.8	-2.92	147.82
110.00	19 35 11	2186.35	-32.94	35.35	34.18	99.71	20 11 37	1586.3	-31.25	26.53
110.00	11 30 25	3829.06	4.06	141.95	26.13	56.03	12 34 14	3229.1	-.43	135.74

DIFFERENTIAL CORRECTIONS
TDE .5220 TRA-1.7910 TC3 2.5936 BAU .5531
RDE -.2005 RRA -.0711 RC3 -.0581 FAU .12069
FDE -.2174 FRA 2.2195 FC3-6.5519 BSP 12018
BDE .5591 BRA 1.7924 BC3 2.5943 FSP 1651

MID-COURSE EXECUTION ACCURACY
SGT 3490.2 SGR 310.5 SG3 537.8
RRT -.0192 RRF -.0144 RTF -.9279
SGB 3504.0 R23 .0323 R13 .9279
SG1 3490.2 SG2 310.5 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 1106.5 SR 289.4 SS 626.4
CRT -.5911 CRS -.1864 CST .8999
LSA 1257.2 MSA 345.1 SSA 30.5
EL1 1120.2 EL2 230.6 ALF 170.82

LAUNCH DATE NOV 16 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 487.517 EARTH TO MARS
RL 147.92 LAL .00 LOL 53.68 VL 33.766 GAL -2.84 AZL 88.46 HCA 155.11 SMA 202.85 ECC .27495 INC 1.5399 V1 30.121
RP 239.26 LAP .65 LOP 208.79 VP 21.333 GAP 12.22 AZP 91.40 TAL 346.77 TAP 141.88 RCA 147.07 APO 258.62 V2 22.959
RC 173.485 GL 13.34 GP 1.05 ZAL 109.33 ZAP 162.13 ETS 175.28 ZAE 158.54 ETE 3.15 ZAC 91.12 ETC 255.87 CLP 162.16
PLANETOCENTRIC CONIC
C3 15.425 VHL 3.928 DLA 18.74 RAL 170.22 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 6.653 DPA -2.32 RAP 190.95 ECC 1.2539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 55	2780.31	-28.11	80.39	33.76	93.53	17 10 15	2180.3	-27.33	71.81
90.00	9 37 10	4172.04	-.86	170.42	27.64	61.70	10 46 42	3572.0	-4.64	163.78
100.00	17 56 38	2481.30	-29.48	58.27	33.64	95.17	18 37 59	1881.3	-28.45	49.62
100.00	10 47 7	3946.28	.33	153.16	26.97	60.11	11 52 54	3346.3	-3.65	146.63
110.00	19 29 37	2190.41	-32.98	35.65	33.11	99.54	20 6 7	1590.4	-31.31	26.83
110.00	11 30 38	3809.93	3.33	140.95	25.10	55.96	12 34 8	3209.9	-1.16	134.75

DIFFERENTIAL CORRECTIONS
TDE .5054 TRA-1.7479 TC3 2.7340 BAU .5639
RDE -.1906 RRA -.0688 RC3 -.0517 FAU .12532
FDE -.1944 FRA 2.2519 FC3-7.0336 BSP 11947
BDE .5401 BRA 1.7493 BC3 2.7345 FSP 1737

MID-COURSE EXECUTION ACCURACY
SGT 3522.2 SGR 300.4 SG3 564.2
RRT -.0065 RRF -.0328 RTF -.9311
SGB 3535.0 R23 .0389 R13 .9311
SG1 3522.2 SG2 300.4 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 1095.5 SR 279.9 SS 627.3
CRT -.5851 CRS -.1506 CST .8870
LSA 1244.0 MSA 351.5 SSA 29.6
EL1 1108.2 EL2 224.4 ALF 171.13

LAUNCH DATE NOV 16 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 490.877 EARTH TO MARS
RL 147.92 LAL .00 LOL 53.68 VL 33.721 GAL -2.73 AZL 88.47 HCA 156.05 SMA 201.89 ECC .27126 INC 1.5261 V1 30.121
RP 238.95 LAP .62 LOP 209.74 VP 21.295 GAP 11.72 AZP 91.39 TAL 347.16 TAP 143.21 RCA 147.13 APO 256.66 V2 22.991
RC 175.790 GL 13.42 GP 1.12 ZAL 108.59 ZAP 161.43 ETS 175.22 ZAE 159.09 ETE 3.55 ZAC 91.24 ETC 255.86 CLP 161.46
PLANETOCENTRIC CONIC
C3 14.935 VHL 3.865 DLA 19.11 RAL 169.55 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 6.503 DPA -2.37 RAP 191.21 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 14	2787.94	-28.15	80.94	32.67	93.25	17 3 42	2187.9	-27.40	72.36
90.00	9 38 26	4149.91	-1.58	169.19	26.63	61.72	10 47 36	3549.9	-5.35	162.53
100.00	17 50 21	2487.67	-29.52	58.74	32.56	94.93	18 31 49	1887.7	-28.52	50.08
100.00	10 48 0	3925.42	-.37	152.02	25.96	60.11	11 53 25	3325.4	-4.35	145.48
110.00	19 24 5	2194.39	-33.03	35.96	32.04	99.36	20 0 40	1594.4	-31.38	27.12
110.00	11 30 45	3791.46	2.62	139.99	24.09	55.91	12 33 57	3191.5	-1.87	133.78

DIFFERENTIAL CORRECTIONS
TDE .4729 TRA-1.7215 TC3 2.8361 BAU .5664
RDE -.1808 RRA -.0665 RC3 -.0432 FAU .13015
FDE -.1684 FRA 2.2867 FC3-7.5444 BSP 12267
BDE .5063 BRA 1.7227 BC3 2.8365 FSP 1832

MID-COURSE EXECUTION ACCURACY
SGT 3548.6 SGR 289.6 SG3 591.9
RRT .0202 RRF -.0569 RTF -.9316
SGB 3560.4 R23 -.0379 R13 -.9316
SG1 3548.6 SG2 289.6 THA .10

ORBIT DETERMINATION ACCURACY
ST 1073.5 SR 269.9 SS 628.6
CRT -.5613 CRS -.1106 CST .8815
LSA 1222.8 MSA 352.7 SSA 29.8
EL1 1084.7 EL2 221.1 ALF 171.62

LAUNCH DATE NOV 16 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 494.266 EARTH TO MARS
RL 147.92 LAL .00 LOL 53.68 VL 33.677 GAL -2.62 AZL 88.49 HCA 157.01 SMA 200.99 ECC .26772 INC 1.5113 V1 30.121
RP 238.63 LAP .59 LOP 210.69 VP 21.261 GAP 11.23 AZP 91.39 TAL 347.54 TAP 144.55 RCA 147.18 APO 254.80 V2 23.024
RC 178.086 GL 13.49 GP 1.19 ZAL 107.85 ZAP 160.72 ETS 175.14 ZAE 159.67 ETE 3.99 ZAC 91.36 ETC 255.86 CLP 160.75
PLANETOCENTRIC CONIC
C3 14.474 VHL 3.804 DLA 19.46 RAL 168.86 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 6.357 DPA -2.40 RAP 191.46 ECC 1.2382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 36	2795.45	-28.17	81.49	31.59	92.98	16 57 11	2195.5	-27.46	72.90
90.00	9 39 35	4128.43	-2.27	167.99	25.63	61.77	10 48 23	3528.4	-6.03	161.32
100.00	17 44 7	2493.91	-29.56	59.20	31.48	94.69	18 25 40	1893.9	-28.59	50.53
100.00	10 48 45	3905.20	-1.06	150.91	24.95	60.12	11 53 50	3305.2	-5.03	144.37
110.00	19 18 36	2198.27	-33.07	36.25	30.98	99.19	19 55 15	1598.3	-31.45	27.40
110.00	11 30 45	3773.61	1.94	139.05	23.08	55.87	12 33 38	3173.6	-2.55	132.85

DIFFERENTIAL CORRECTIONS
TDE .4500 TRA-1.6849 TC3 2.9605 BAU .5729
RDE -.1715 RRA -.0647 RC3 -.0336 FAU .13523
FDE -.1418 FRA 2.3199 FC3-8.0886 BSP 12350
BDE .4816 BRA 1.6862 BC3 2.9607 FSP 1929

MID-COURSE EXECUTION ACCURACY
SGT 3574.5 SGR 279.4 SG3 621.0
RRT .0457 RRF -.0849 RTF -.9335
SGB 3585.4 R23 -.0421 R13 -.9335
SG1 3574.5 SG2 279.1 THA .21

ORBIT DETERMINATION ACCURACY
ST 1056.3 SR 260.1 SS 630.0
CRT -.5461 CRS -.0697 CST .8706
LSA 1204.8 MSA 357.5 SSA 29.3
EL1 1066.2 EL2 215.9 ALF 172.01

LAUNCH DATE NOV 16 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 497.683 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.635 GAL -2.52 AZL 88.50 HCA 157.96 SMA 200.14 ECC .26433 INC 1.4953 V1 30.121
RP 238.31 LAP .56 LOP 211.64 VP 21.230 GAP 10.75 AZP 91.39 TAL 347.93 TAP 145.89 RCA 147.23 APO 253.04 V2 23.056
RC 180.373 GL 13.53 GP 1.26 ZAL 107.11 ZAP 159.99 ETS 175.06 ZAE 160.28 ETE 4.49 ZAC 91.48 ETC 255.85 CLP 160.03

PLANETOCENTRIC CONIC

C3 14.040 VHL 3.747 DLA 19.80 RAL 168.16 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 6.214 DPA -2.43 RAP 191.70 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 3	2802.70	-28.20	82.02	30.50	92.71	16 50 46	2202.7	-27.52	73.42
90.00	9 40 34	4107.73	-2.94	166.83	24.63	61.82	10 49 2	3507.7	-6.68	160.15
100.00	17 37 57	2499.90	-29.59	59.65	30.40	94.46	18 19 37	1899.9	-28.66	50.97
100.00	10 49 21	3885.77	-1.72	149.84	23.96	60.15	11 54 6	3285.8	-5.68	143.29
110.00	19 13 12	2201.93	-33.11	36.53	29.92	99.03	19 49 54	1601.9	-31.51	27.67
110.00	11 30 36	3756.50	1.29	138.16	22.08	55.84	12 33 12	3156.5	-3.20	131.96

DIFFERENTIAL CORRECTIONS
TDE .4279 TRA-1.6494 TC3 3.0841 BAU .5789
RDE -.1624 RRA -.0632 RC3 -.0223 FAU .14055
FDE -.1142 FRA 2.3544 FC3-8.6668 BSP 12437
BDE .4577 BRA 1.6506 BC3 3.0842 FSP 2033

MID-COURSE EXECUTION ACCURACY
SGT 3599.4 SGR 269.3 SG3 651.5
RRT .0767 RRF -.1188 RTF -.9352
SGB 3609.5 R23 -.0469 R13 -.9353
SG1 3599.5 SG2 268.5 THA .33

ORBIT DETERMINATION ACCURACY
ST 1039.0 SR 250.3 SS 632.2
CRT -.5297 CRS -.0275 CST .8591
LSA 1187.2 MSA 362.7 SSA 28.7
EL1 1047.8 EL2 210.5 ALF 172.42

LAUNCH DATE NOV 16 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 501.126 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.595 GAL -2.41 AZL 88.52 HCA 158.92 SMA 199.33 ECC .26110 INC 1.4778 V1 30.121
RP 237.98 LAP .53 LOP 212.60 VP 21.202 GAP 10.27 AZP 91.38 TAL 348.30 TAP 147.22 RCA 147.28 APO 251.37 V2 23.089
RC 182.651 GL 13.56 GP 1.35 ZAL 106.37 ZAP 159.24 ETS 174.97 ZAE 160.92 ETE 5.04 ZAC 91.61 ETC 255.85 CLP 159.28

PLANETOCENTRIC CONIC

C3 13.631 VHL 3.692 DLA 20.12 RAL 167.46 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 6.075 DPA -2.44 RAP 191.93 ECC 1.2243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 38	2809.57	-28.22	82.52	29.42	92.46	16 44 27	2209.6	-27.58	73.92
90.00	9 41 22	4087.92	-3.57	165.72	23.64	61.89	10 49 29	3487.9	-7.31	159.03
100.00	17 31 55	2505.52	-29.62	60.06	29.33	94.24	18 13 41	1905.5	-28.71	51.37
100.00	10 49 45	3867.20	-2.35	148.82	22.96	60.19	11 54 12	3267.2	-6.30	142.26
110.00	19 7 53	2205.30	-33.14	36.79	28.85	98.89	19 44 38	1605.3	-31.56	27.92
110.00	11 30 17	3740.18	.66	137.31	21.08	55.82	12 32 37	3140.2	-3.82	131.10

DIFFERENTIAL CORRECTIONS
TDE .4103 TRA-1.6088 TC3 3.2190 BAU .5866
RDE -.1538 RRA -.0621 RC3 -.0092 FAU .14619
FDE -.0868 FRA 2.3868 FC3-9.2846 BSP 12407
BDE .4382 BRA 1.6100 BC3 3.2190 FSP 2138

MID-COURSE EXECUTION ACCURACY
SGT 3622.9 SGR 259.9 SG3 683.5
RRT .1115 RRF -.1588 RTF -.9376
SGB 3632.2 R23 -.0541 R13 -.9376
SG1 3623.0 SG2 258.2 THA .46

ORBIT DETERMINATION ACCURACY
ST 1023.2 SR 240.6 SS 634.4
CRT -.5175 CRS .0147 CST .8446
LSA 1170.3 MSA 369.8 SSA 27.7
EL1 1031.0 EL2 204.3 ALF 172.78

LAUNCH DATE NOV 16 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 504.593 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.557 GAL -2.32 AZL 88.54 HCA 159.87 SMA 198.56 ECC .25801 INC 1.4587 V1 30.121
RP 237.65 LAP .50 LOP 213.56 VP 21.178 GAP 9.79 AZP 91.37 TAL 348.68 TAP 148.55 RCA 147.33 APO 249.79 V2 23.123
RC 184.919 GL 13.56 GP 1.44 ZAL 105.65 ZAP 158.47 ETS 174.86 ZAE 161.60 ETE 5.67 ZAC 91.75 ETC 255.84 CLP 158.52

PLANETOCENTRIC CONIC

C3 13.247 VHL 3.640 DLA 20.41 RAL 166.75 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 5.938 DPA -2.43 RAP 192.14 ECC 1.2180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 24	2815.84	-28.24	82.98	28.35	92.23	16 38 20	2215.8	-27.63	74.37
90.00	9 41 55	4069.21	-4.17	164.67	22.65	61.97	10 49 44	3469.2	-7.89	157.97
100.00	17 26 3	2510.60	-29.64	60.44	28.26	94.05	18 7 54	1910.6	-28.77	51.74
100.00	10 49 56	3849.68	-2.94	147.86	21.97	60.24	11 54 6	3249.7	-6.88	141.29
110.00	19 2 42	2208.23	-33.18	37.01	27.79	98.76	19 39 30	1608.2	-31.61	28.13
110.00	11 29 47	3724.81	.08	136.51	20.09	55.82	12 31 52	3124.8	-4.41	130.30

DIFFERENTIAL CORRECTIONS
TDE .3820 TRA-1.5789 TC3 3.3201 BAU .5880
RDE -.1452 RRA -.0612 RC3 .0067 FAU .15194
FDE -.0544 FRA 2.4229 FC3-9.9299 BSP 12627
BDE .4086 BRA 1.5801 BC3 3.3201 FSP 2256

MID-COURSE EXECUTION ACCURACY
SGT 3638.2 SGR 250.7 SG3 716.7
RRT .1612 RRF -.2087 RTF -.9382
SGB 3646.8 R23 -.0576 R13 -.9382
SG1 3638.4 SG2 247.4 THA .64

ORBIT DETERMINATION ACCURACY
ST 999.9 SR 230.6 SS 637.7
CRT -.4895 CRS .0632 CST .8357
LSA 1148.9 MSA 372.9 SSA 27.5
EL1 1006.6 EL2 199.8 ALF 173.29

LAUNCH DATE NOV 16 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 508.084 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.520 GAL -2.22 AZL 88.56 HCA 160.84 SMA 197.83 ECC .25506 INC 1.4377 V1 30.121
RP 237.31 LAP .47 LOP 214.52 VP 21.157 GAP 9.33 AZP 91.36 TAL 349.04 TAP 149.88 RCA 147.37 APO 248.28 V2 23.157
RC 187.176 GL 13.54 GP 1.55 ZAL 104.92 ZAP 157.68 ETS 174.75 ZAE 162.30 ETE 6.39 ZAC 91.89 ETC 255.84 CLP 157.73

PLANETOCENTRIC CONIC

C3 12.884 VHL 3.589 DLA 20.68 RAL 166.02 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 5.805 DPA -2.41 RAP 192.35 ECC 1.2120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 23	2821.39	-28.25	83.39	27.26	92.03	16 32 24	2221.4	-27.67	74.77
90.00	9 42 11	4051.68	-4.73	163.69	21.66	62.05	10 49 43	3451.7	-8.44	156.97
100.00	17 20 23	2515.01	-29.66	60.76	27.18	93.87	18 2 18	1915.0	-28.81	52.06
100.00	10 49 51	3833.28	-3.49	146.96	20.98	60.29	11 53 45	3233.3	-7.42	140.37
110.00	18 57 41	2210.64	-33.20	37.19	26.73	98.65	19 34 31	1610.6	-31.65	28.31
110.00	11 29 4	3710.42	-.47	135.76	19.10	55.82	12 30 54	3110.4	-4.95	129.54

DIFFERENTIAL CORRECTIONS
TDE .3621 TRA-1.5426 TC3 3.4404 BAU .5926
RDE -.1370 RRA -.0607 RC3 .0249 FAU .15810
FDE -.0250 FRA 2.4567 FC-10.6236 BSP 12696
BDE .3872 BRA 1.5438 BC3 3.4405 FSP 2377

MID-COURSE EXECUTION ACCURACY
SGT 3655.3 SGR 242.6 SG3 751.9
RRT .2148 RRF -.2661 RTF -.9397
SGB 3663.4 R23 -.0650 R13 -.9397
SG1 3655.7 SG2 236.9 THA .82

ORBIT DETERMINATION ACCURACY
ST 981.4 SR 220.9 SS 641.3
CRT -.4697 CRS .1080 CST .8231
LSA 1131.0 MSA 378.4 SSA 26.7
EL1 987.1 EL2 193.9 ALF 173.72

LAUNCH DATE NOV 16 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 511.597 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.485 GAL -2.13 AZL 88.59 HCA 161.80 SMA 197.14 ECC .25224 INC 1.4143 V1 30.121
RP 236.98 LAP .44 LOP 215.48 VP 21.139 GAP 8.86 AZP 91.34 TAL 349.41 TAP 151.21 RCA 147.41 APO 246.86 V2 23.191
RC 189.421 GL 13.49 GP 1.67 ZAL 104.21 ZAP 156.87 ETS 174.61 ZAE 163.03 ETE 7.23 ZAC 92.04 ETC 255.84 CLP 156.93

PLANETOCENTRIC CONIC

C3 12.542 VHL 3.541 DLA 20.92 RAL 165.30 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 5.674 DPA -2.37 RAP 192.54 ECC 1.2064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 38	2825.98	-28.26	83.72	26.18	91.86	16 26 44	2226.0	-27.70	75.10
90.00	9 42 7	4035.56	-5.25	162.78	20.67	62.13	10 49 22	3435.6	-8.94	156.05
100.00	17 14 58	2518.56	-29.68	61.03	26.10	93.74	17 56 57	1918.6	-28.85	52.32
100.00	10 49 28	3818.20	-4.00	146.12	19.99	60.35	11 53 6	3218.2	-7.92	139.53
110.00	18 52 51	2212.35	-33.22	37.32	25.65	98.58	19 29 43	1612.4	-31.68	28.44
110.00	11 28 5	3697.18	-.98	135.07	18.10	55.83	12 29 42	3097.2	-5.46	128.84

DIFFERENTIAL CORRECTIONS
TDE .3431 TRA-1.5053 TC3 3.5563 BAU .5964
RDE -.1290 RRA -.0607 RC3 .0462 FAU .16456
FDE .0040 FRA 2.4887 FC-11.3590 BSP 12713
BDE .3666 BRA 1.5065 BC3 3.5566 FSP 2499

MID-COURSE EXECUTION ACCURACY
SGT 3667.5 SGR 236.0 SG3 788.6
RRT .2778 RRF -.3330 RTF -.9410
SGB 3675.1 R23 -.0735 R13 -.9411
SG1 3668.1 SG2 226.7 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 962.1 SR 211.1 SS 644.9
CRT -.4487 CRS .1525 CST .8107
LSA 1112.9 MSA 383.4 SSA 25.9
EL1 966.9 EL2 187.7 ALF 174.16

LAUNCH DATE NOV 16 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 515.131 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.451 GAL -2.04 AZL 88.61 HCA 162.77 SMA 196.48 ECC .24954 INC 1.3889 V1 30.121
RP 236.64 LAP .41 LOP 216.45 VP 21.124 GAP 8.41 AZP 91.33 TAL 349.76 TAP 152.53 RCA 147.45 APO 245.51 V2 23.226
RC 191.655 GL 13.40 GP 1.80 ZAL 103.50 ZAP 156.04 ETS 174.47 ZAE 163.79 ETE 8.20 ZAC 92.20 ETC 255.83 CLP 156.11

PLANETOCENTRIC CONIC

C3 12.219 VHL 3.496 DLA 21.12 RAL 164.56 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 5.547 DPA -2.31 RAP 192.73 ECC 1.2011

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 15	2829.35	-28.27	83.97	25.09	91.74	16 21 24	2229.4	-27.73	75.34
90.00	9 41 37	4021.08	-5.71	161.97	19.67	62.22	10 48 39	3421.1	-9.38	155.22
100.00	17 9 52	2521.02	-29.69	61.21	25.01	93.64	17 51 53	1921.0	-28.87	52.50
100.00	10 48 41	3804.65	-4.46	145.38	18.99	60.41	11 52 6	3204.6	-8.36	138.77
110.00	18 48 16	2213.21	-33.23	37.39	24.57	98.54	19 25 9	1613.2	-31.69	28.50
110.00	11 26 47	3685.22	-1.44	134.44	17.11	55.84	12 28 13	3085.2	-5.91	128.21

DIFFERENTIAL CORRECTIONS
TDE .3239 TRA-1.4703 TC3 3.6650 BAU .5988
RDE -.1214 RRA -.0611 RC3 .0709 FAU .17119
FDE .0355 FRA 2.5244 FC-12.1293 BSP 12785
BDE .3459 BRA 1.4716 BC3 3.6656 FSP 2636

MID-COURSE EXECUTION ACCURACY
SGT 3677.2 SGR 231.4 SG3 826.8
RRT .3510 RRF -.4100 RTF -.9422
SGB 3684.4 R23 -.0835 R13 -.9423
SG1 3678.1 SG2 216.6 THA 1.27

ORBIT DETERMINATION ACCURACY
ST 942.6 SR 201.5 SS 649.9
CRT -.4240 CRS .2005 CST .7980
LSA 1095.3 MSA 389.0 SSA 25.0
EL1 946.6 EL2 181.7 ALF 174.62

LAUNCH DATE NOV 16 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 518.687 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.419 GAL -1.95 AZL 88.64 HCA 163.74 SMA 195.85 ECC .24697 INC 1.3594 V1 30.121
RP 236.29 LAP .38 LOP 217.42 VP 21.112 GAP 7.96 AZP 91.31 TAL 350.11 TAP 153.85 RCA 147.48 APO 244.23 V2 23.261
RC 193.877 GL 13.28 GP 1.95 ZAL 102.81 ZAP 155.19 ETS 174.30 ZAE 164.58 ETE 9.36 ZAC 92.37 ETC 255.83 CLP 155.26

PLANETOCENTRIC CONIC

C3 11.913 VHL 3.451 DLA 21.28 RAL 163.81 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 5.423 DPA -2.22 RAP 192.90 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 18	2831.20	-28.27	84.10	23.99	91.67	16 16 29	2231.2	-27.74	75.48
90.00	9 40 38	4008.53	-6.10	161.26	18.66	62.30	10 47 26	3408.5	-9.77	154.50
100.00	17 5 9	2522.11	-29.69	61.29	23.92	93.60	17 47 11	1922.1	-28.88	52.58
100.00	10 47 28	3792.85	-4.85	144.72	17.98	60.47	11 50 40	3192.9	-8.75	138.11
110.00	18 43 57	2213.00	-33.22	37.37	23.48	98.55	19 20 50	1613.0	-31.69	28.48
110.00	11 25 9	3674.73	-1.84	133.90	16.10	55.86	12 26 23	3074.7	-6.31	127.66

DIFFERENTIAL CORRECTIONS
TDE .3076 TRA-1.4338 TC3 3.7736 BAU .6012
RDE -.1138 RRA -.0619 RC3 .1001 FAU .17838
FDE .0594 FRA 2.5536 FC-12.9631 BSP 12797
BDE .3280 BRA 1.4351 BC3 3.7749 FSP 2767

MID-COURSE EXECUTION ACCURACY
SGT 3683.8 SGR 229.4 SG3 867.4
RRT .4318 RRF -.4942 RTF -.9432
SGB 3691.0 R23 -.0949 R13 -.9433
SG1 3685.2 SG2 206.9 THA 1.55

ORBIT DETERMINATION ACCURACY
ST 924.2 SR 191.9 SS 653.3
CRT -.4005 CRS .2404 CST .7887
LSA 1078.9 MSA 391.3 SSA 24.3
EL1 927.5 EL2 175.2 ALF 175.07

LAUNCH DATE NOV 16 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 522.261 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.388 GAL -1.87 AZL 88.67 HCA 164.71 SMA 195.26 ECC .24452 INC 1.3275 V1 30.121
RP 235.94 LAP .35 LOP 218.39 VP 21.102 GAP 7.52 AZP 91.28 TAL 350.45 TAP 155.16 RCA 147.52 APO 243.01 V2 23.297
RC 196.086 GL 13.11 GP 2.12 ZAL 102.13 ZAP 154.31 ETS 174.11 ZAE 165.39 ETE 10.74 ZAC 92.56 ETC 255.83 CLP 154.39

PLANETOCENTRIC CONIC

C3 11.623 VHL 3.409 DLA 21.40 RAL 163.06 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 5.301 DPA -2.11 RAP 193.07 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 52	2831.17	-28.27	84.10	22.88	91.67	16 12 3	2231.2	-27.74	75.48
90.00	9 39 2	3998.23	-6.43	160.68	17.64	62.36	10 45 40	3398.2	-10.08	153.90
100.00	17 0 54	2521.53	-29.69	61.25	22.80	93.62	17 42 55	1921.5	-28.87	52.54
100.00	10 45 41	3783.10	-5.18	144.19	16.96	60.52	11 48 44	3183.1	-9.07	137.56
110.00	18 40 0	2211.48	-33.21	37.26	22.36	98.61	19 16 51	1611.5	-31.66	28.37
110.00	11 23 4	3665.92	-2.17	133.44	15.09	55.88	12 24 10	3065.9	-6.64	127.19

DIFFERENTIAL CORRECTIONS
TDE .2897 TRA-1.3991 TC3 3.8691 BAU .6015
RDE -.1067 RRA -.0633 RC3 .1339 FAU .18549
FDE .0910 FRA 2.5903 FC-13.8168 BSP 12840
BDE .3087 BRA 1.4005 BC3 3.8714 FSP 2921

MID-COURSE EXECUTION ACCURACY
SGT 3684.3 SGR 231.4 SG3 908.8
RRT .5188 RRF -.5843 RTF -.9441
SGB 3691.5 R23 -.1089 R13 -.9443
SG1 3686.2 SG2 197.7 THA 1.87

ORBIT DETERMINATION ACCURACY
ST 904.1 SR 182.5 SS 659.1
CRT -.3701 CRS .2905 CST .7768
LSA 1061.9 MSA 396.0 SSA 23.3
EL1 906.7 EL2 169.1 ALF 175.57

LAUNCH DATE NOV 16 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 525.855 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.359	GAL	-1.79	AZL	88.71	HCA	165.68	SMA	194.70	ECC	.24219	INC	1.2902
RP	235.59	LAP	.32	LOP	219.36	VP	21.095	GAP	7.08	AZP	91.25	TAL	350.79	TAP	156.47	RCA	147.55	APO	241.85
RC	198.280	GL	12.88	GP	2.31	ZAL	101.46	ZAP	153.40	ETS	173.89	ZAE	166.22	ETE	12.41	ZAC	92.76	ETC	255.82

V1	30.121	V2	23.333	CLP	153.50														

PLANETOCENTRIC CONIC

C3	11.347	VHL	3.368	DLA	21.46	RAL	162.29	RAD	6567.4	VEL	11.521	PTH	2.01	VHP	5.183	DPA	-1.97	RAP	193.22
ECC	1.1867																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 4	2828.82	-28.27	83.93	21.75	91.76	16 8 13	2228.8	-27.72	75.31
90.00	9 36 42	3990.59	-6.67	160.25	16.59	62.42	10 43 12	3390.6	-10.31	153.46
100.00	16 57 11	2518.90	-29.68	61.05	21.67	93.72	17 39 10	1918.9	-28.85	52.35
100.00	10 43 16	3775.74	-5.43	143.78	15.91	60.56	11 46 12	3175.7	-9.31	137.14
110.00	18 36 27	2208.36	-33.18	37.02	21.22	98.75	19 13 15	1608.4	-31.61	28.14
110.00	11 20 30	3659.05	-2.44	133.08	14.05	55.89	12 21 29	3059.0	-6.90	126.83

DIFFERENTIAL CORRECTIONS

TDE	.2777	TRA	-1.3606	TC3	3.9726	BAU	.6032	SGT	3683.6	SGR	238.1
RDE	-.0996	RRA	-.0653	RC3	.1741	FAU	.19337	RRT	.6051	RRF	-.6732
FDE	.1097	FRA	2.6162	FC	-14.7535	BSP	12795	SGB	3691.3	R23	-.1253
BDE	.2950	BRA	1.3622	BC3	3.9764	FSP	3064	SG1	3686.5	SG2	189.4

MID-COURSE EXECUTION ACCURACY

SGT	3683.6	SGR	238.1	SG3	953.1
RRT	.6051	RRF	-.6732	RTF	-.9451
SGB	3691.3	R23	-.1253	R13	-.9453
SG1	3686.5	SG2	189.4	THA	2.25

ORBIT DETERMINATION ACCURACY

ST	886.6	SR	173.1	SS	661.3
CRT	-.3453	CRS	.3286	CST	.7681
LSA	1046.5	MSA	397.2	SSA	22.5
EL1	888.7	EL2	162.1	ALF	176.01

LAUNCH DATE NOV 16 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 529.468 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.331	GAL	-1.72	AZL	88.75	HCA	166.66	SMA	194.17	ECC	.23996	INC	1.2478
RP	235.24	LAP	.29	LOP	220.34	VP	21.091	GAP	6.65	AZP	91.21	TAL	351.12	TAP	157.78	RCA	147.57	APO	240.76
RC	200.460	GL	12.59	GP	2.53	ZAL	100.80	ZAP	152.47	ETS	173.64	ZAE	167.06	ETE	14.46	ZAC	93.00	ETC	255.82

V1	30.121	V2	23.369	CLP	152.58														

PLANETOCENTRIC CONIC

C3	11.084	VHL	3.329	DLA	21.45	RAL	161.51	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	5.067	DPA	-1.79	RAP	193.37
ECC	1.1824																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 3	2823.61	-28.26	83.55	20.59	91.95	16 5 7	2223.6	-27.69	74.93
90.00	9 33 28	3986.11	-6.81	159.99	15.51	62.45	10 39 54	3386.1	-10.45	153.20
100.00	16 54 9	2513.73	-29.66	60.67	20.50	93.92	17 36 3	1913.7	-28.80	51.97
100.00	10 40 3	3771.22	-5.58	143.53	14.84	60.59	11 42 54	3171.2	-9.46	136.89
110.00	18 33 23	2203.25	-33.12	36.63	20.04	98.98	19 10 7	1603.3	-31.53	27.77
110.00	11 17 18	3654.46	-2.61	132.84	13.00	55.90	12 18 13	3054.5	-7.07	126.59

DIFFERENTIAL CORRECTIONS

TDE	.2655	TRA	-1.3242	TC3	4.0630	BAU	.6029	SGT	3677.3	SGR	251.0
RDE	-.0927	RRA	-.0681	RC3	.2215	FAU	.20137	RRT	.6870	RRF	-.7563
FDE	.1277	FRA	2.6450	FC	-15.7290	BSP	12773	SGB	3685.9	R23	-.1444
BDE	.2812	BRA	1.3260	BC3	4.0690	FSP	3221	SG1	3681.4	SG2	182.2

MID-COURSE EXECUTION ACCURACY

SGT	3677.3	SGR	251.0	SG3	998.8
RRT	.6870	RRF	-.7563	RTF	-.9458
SGB	3685.9	R23	-.1444	R13	-.9461
SG1	3681.4	SG2	182.2	THA	2.69

ORBIT DETERMINATION ACCURACY

ST	868.9	SR	163.9	SS	663.9
CRT	-.3143	CRS	.3694	CST	.7611
LSA	1031.7	MSA	397.2	SSA	21.6
EL1	870.5	EL2	155.4	ALF	176.49

LAUNCH DATE NOV 16 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 533.097 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.304	GAL	-1.64	AZL	88.80	HCA	167.64	SMA	193.66	ECC	.23783	INC	1.1993
RP	234.89	LAP	.26	LOP	221.32	VP	21.089	GAP	6.23	AZP	91.17	TAL	351.43	TAP	159.08	RCA	147.60	APO	239.72
RC	202.623	GL	12.22	GP	2.80	ZAL	100.16	ZAP	151.51	ETS	173.34	ZAE	167.91	ETE	17.02	ZAC	93.26	ETC	255.82

V1	30.121	V2	23.405	CLP	151.64														

PLANETOCENTRIC CONIC

C3	10.832	VHL	3.291	DLA	21.36	RAL	160.71	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.955	DPA	-1.57	RAP	193.51
ECC	1.1783																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 57	2814.89	-28.23	82.91	19.39	92.27	16 2 52	2214.9	-27.62	74.30
90.00	9 29 10	3985.39	-6.83	159.95	14.39	62.45	10 35 35	3385.4	-10.47	153.16
100.00	16 51 55	2505.44	-29.62	60.06	19.30	94.24	17 33 41	1905.4	-28.71	51.37
100.00	10 35 53	3770.08	-5.62	143.46	13.72	60.59	11 38 43	3170.1	-9.49	136.82
110.00	18 30 56	2195.70	-33.04	36.06	18.82	99.31	19 7 31	1595.7	-31.40	27.21
110.00	11 13 22	3652.58	-2.68	132.74	11.90	55.91	12 14 15	3052.6	-7.14	126.49

DIFFERENTIAL CORRECTIONS

TDE	.2539	TRA	-1.2900	TC3	4.1420	BAU	.6011	SGT	3666.5	SGR	271.7
RDE	-.0859	RRA	-.0718	RC3	.2777	FAU	.20950	RRT	.7588	RRF	-.8281
FDE	.1434	FRA	2.6774	FC	-16.7450	BSP	12802	SGB	3676.6	R23	-.1664
BDE	.2680	BRA	1.2920	BC3	4.1513	FSP	3398	SG1	3672.3	SG2	176.7

MID-COURSE EXECUTION ACCURACY

SGT	3666.5	SGR	271.7	SG3	1046.1
RRT	.7588	RRF	-.8281	RTF	-.9463
SGB	3676.6	R23	-.1664	R13	-.9467
SG1	3672.3	SG2	176.7	THA	3.23

ORBIT DETERMINATION ACCURACY

ST	851.7	SR	155.0	SS	666.8
CRT	-.2769	CRS	.4125	CST	.7560
LSA	1018.2	MSA	396.1	SSA	20.7
EL1	852.8	EL2	148.8	ALF	177.02

LAUNCH DATE NOV 16 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 536.744 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.278	GAL	-1.57	AZL	88.86	HCA	168.63	SMA	193.18	ECC	.23581	INC	1.1419
RP	234.53	LAP	.22	LOP	222.31	VP	21.089	GAP	5.81	AZP	91.12	TAL	351.74	TAP	160.37	RCA	147.63	APO	238.73
RC	204.770	GL	11.75	GP	3.11	ZAL	99.54	ZAP	150.52	ETS	173.00	ZAE	168.75	ETE	20.24	ZAC	93.56	ETC	255.81

V1	30.121	V2	23.442	CLP	150.66														

PLANETOCENTRIC CONIC

C3	10.589	VHL	3.254	DLA	21.17	RAL	159.88	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	4.845	DPA	-1.29	RAP	193.65
ECC	1.1743																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 58	2801.86	-28.19	81.96	18.13	92.74	16 1 40	2201.9	-27.52	73.36
90.00	9 23 33	3989.21	-6.71	160.17	13.21	62.43	10 30 2	3389.2	-10.36	153.38
100.00	16 50 40	2493.30	-29.55	59.16	18.03	94.71	17 32 13	1893.3	-28.59	50.49
100.00	10 30 32	3773.00	-5.52	143.63	12.56	60.57	11 33 25	3173.0	-9.40	136.99
110.00	18 29 10	2185.09	-32.92	35.25	17.53	99.77	19 5 36	1585.1	-31.22	26.44
110.00	11 8 31	3653.98	-2.63	132.81	10.76	55.91	12 9 25	3054.0	-7.09	126.56

DIFFERENTIAL CORRECTIONS

TDE	.2462	TRA	-1.2539	TC3	4.2187	BAU	.5992	SGT	3651.2	SGR	301.5
RDE	-.0792	RRA	-.0765	RC3	.3457	FAU	.21812	RRT	.8168	RRF	-.8851
FDE	.1460	FRA	2.7024	FC	-17.8329	BSP	12759	SGB	3663.7	R23	-.1907
BDE	.2586	BRA	1.2562	BC3	4.2329	FSP	3573	SG1	3659.5	SG2	173.5

MID-COURSE EXECUTION ACCURACY

SGT	3651.2	SGR	301.5	SG3	1095.6
RRT	.8168	RRF	-.8851	RTF	-.9467
SGB	3663.7	R23	-.1907	R13	-.9474
SG1	3659.5	SG2	173.5	THA	3.87

ORBIT DETERMINATION ACCURACY

ST	836.1	SR	146.1	SS	665.9
CRT	-.2381	CRS	.4496	CST	.7552
LSA	1005.4	MSA	390.8	SSA	19.9
EL1	836.9	EL2	141.8	ALF	177.55

LAUNCH DATE NOV 16 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 540.407 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.254 GAL -1.51 AZL 88.93 HCA 169.61 SMA 192.72 ECC 23388 INC 1.0721 V1 30.121
RP 234.17 LAP .19 LOP 223.29 VP 21.092 GAP 5.40 AZP 91.06 TAL 352.04 TAP 161.66 RCA 147.65 APO 237.80 V2 23.479
RC 206.900 GL 11.16 GP 3.48 ZAL 98.93 ZAP 149.49 ETS 172.59 ZAE 169.55 ETE 24.36 ZAC 93.92 ETC 255.81 CLP 149.67

PLANETOCENTRIC CONIC

C3 10.355 VHL 3.218 DLA 20.86 RAL 159.01 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.739 DPA -.95 RAP 193.79 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 20	2783.47	-28.13	80.62	16.81	93.41	16 1 43	2183.5	-27.36	72.04
90.00	9 16 18	3998.56	-6.42	160.70	11.96	62.36	10 22 57	3398.6	-10.07	153.92
100.00	16 50 35	2476.34	-29.45	57.91	16.69	95.36	17 31 51	1876.3	-28.40	49.26
100.00	10 23 44	3780.92	-5.25	144.07	11.32	60.53	11 26 45	3180.9	-9.14	137.43
110.00	18 28 18	2170.62	-32.75	34.16	16.16	100.39	19 4 29	1570.6	-30.97	25.39
110.00	11 2 30	3659.41	-2.42	133.10	9.57	55.89	12 3 30	3059.4	-6.88	126.85

DIFFERENTIAL CORRECTIONS
TDE .2450 TRA-1.2145 TC3 4.2972 BAU .5979
RDE -.0720 RRA -.0822 RC3 .4294 FAU .22751
FDE .1233 FRA 2.7112 FC-19.0212 BSP 12658
BDE .2554 BRA 1.2173 BC3 4.3186 FSP 3735

MID-COURSE EXECUTION ACCURACY
SGT 3632.4 SGR 342.5 SG3 1148.2
RRT .8607 RRF -.9272 RTF -.9471
SGB 3648.5 R23 -.2165 R13 -.9479
SG1 3644.4 SG2 173.8 THA 4.65

ORBIT DETERMINATION ACCURACY
ST 824.1 SR 136.7 SS 658.3
CRT -.2005 CRS .4730 CST .7628
LSA 994.0 MSA 377.9 SSA 19.3
EL1 824.6 EL2 133.8 ALF 178.04

LAUNCH DATE NOV 16 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 544.085 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.230 GAL -1.44 AZL 89.01 HCA 170.60 SMA 192.29 ECC .23205 INC .9889 V1 30.121
RP 233.80 LAP .16 LOP 224.28 VP 21.097 GAP 5.00 AZP 90.98 TAL 352.33 TAP 162.94 RCA 147.67 APO 236.91 V2 23.517
RC 209.011 GL 10.39 GP 3.93 ZAL 98.35 ZAP 148.42 ETS 172.09 ZAE 170.29 ETE 29.65 ZAC 94.36 ETC 255.80 CLP 148.64

PLANETOCENTRIC CONIC

C3 10.127 VHL 3.182 DLA 20.38 RAL 158.10 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.636 DPA -.52 RAP 193.94 ECC 1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 20	2758.35	-28.01	78.79	15.38	94.32	16 3 19	2158.3	-27.12	70.24
90.00	9 7 2	4014.75	-5.91	161.61	10.62	62.26	10 13 57	3414.7	-9.58	154.85
100.00	16 51 57	2453.25	-29.29	56.21	15.24	96.24	17 32 50	1853.3	-28.12	47.60
100.00	10 15 6	3795.07	-4.78	144.85	10.00	60.46	11 18 21	3195.1	-8.68	138.23
110.00	18 28 31	2151.15	-32.50	32.69	14.67	101.23	19 4 22	1551.2	-30.61	23.98
110.00	10 55 2	3669.94	-2.02	133.65	8.28	55.87	11 56 12	3069.9	-6.49	127.41

DIFFERENTIAL CORRECTIONS
TDE .2448 TRA-1.1772 TC3 4.3642 BAU .5953
RDE -.0644 RRA -.0896 RC3 .5323 FAU .23691
FDE .0901 FRA 2.7222 FC-20.2522 BSP 12560
BDE .2531 BRA 1.1806 BC3 4.3965 FSP 3917

MID-COURSE EXECUTION ACCURACY
SGT 3608.6 SGR 397.3 SG3 1201.9
RRT .8921 RRF -.9563 RTF -.9473
SGB 3630.4 R23 -.2415 R13 -.9485
SG1 3626.0 SG2 178.6 THA 5.62

ORBIT DETERMINATION ACCURACY
ST 813.2 SR 127.4 SS 650.4
CRT -.1473 CRS .5016 CST .7761
LSA 984.7 MSA 361.2 SSA 18.7
EL1 813.4 EL2 126.0 ALF 178.65

LAUNCH DATE NOV 16 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 547.779 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.208 GAL -1.38 AZL 89.11 HCA 171.60 SMA 191.88 ECC .23031 INC .8877 V1 30.121
RP 233.44 LAP .13 LOP 225.28 VP 21.104 GAP 4.60 AZP 90.88 TAL 352.61 TAP 164.21 RCA 147.69 APO 236.07 V2 23.555
RC 211.104 GL 9.40 GP 4.49 ZAL 97.78 ZAP 147.30 ETS 171.48 ZAE 170.89 ETE 36.45 ZAC 94.89 ETC 255.79 CLP 147.58

PLANETOCENTRIC CONIC

C3 9.904 VHL 3.147 DLA 19.68 RAL 157.13 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.537 DPA .02 RAP 194.11 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 23	2724.60	-27.81	76.34	13.80	95.54	16 6 47	2124.6	-26.76	67.83
90.00	8 55 12	4039.62	-5.12	163.01	9.16	62.11	10 2 31	3439.6	-8.81	156.28
100.00	16 55 9	2422.25	-29.04	53.94	13.64	97.41	17 35 31	1822.2	-27.71	45.39
100.00	10 4 7	3817.20	-4.03	146.07	8.56	60.36	11 7 44	3217.2	-7.95	139.47
110.00	18 30 7	2125.12	-32.14	30.75	13.02	102.33	19 5 32	1525.1	-30.11	22.12
110.00	10 45 38	3687.10	-1.37	134.54	6.90	55.84	11 47 5	3087.1	-5.84	128.31

DIFFERENTIAL CORRECTIONS
TDE .2458 TRA-1.1430 TC3 4.3997 BAU .5891
RDE -.0564 RRA -.0996 RC3 .6599 FAU .24575
FDE .0424 FRA 2.7377 FC-21.4809 BSP 12562
BDE .2522 BRA 1.1473 BC3 4.4489 FSP 4136

MID-COURSE EXECUTION ACCURACY
SGT 3571.2 SGR 469.1 SG3 1254.5
RRT .9130 RRF -.9751 RTF -.9470
SGB 3601.9 R23 -.2648 R13 -.9487
SG1 3596.8 SG2 190.0 THA 6.86

ORBIT DETERMINATION ACCURACY
ST 804.2 SR 118.4 SS 643.2
CRT -.0693 CRS .5388 CST .7973
LSA 979.4 MSA 339.1 SSA 18.2
EL1 804.3 EL2 118.1 ALF 179.40

LAUNCH DATE NOV 16 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 551.488 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.187 GAL -1.32 AZL 89.24 HCA 172.59 SMA 191.49 ECC .22865 INC .7563 V1 30.121
RP 233.07 LAP .10 LOP 226.27 VP 21.114 GAP 4.21 AZP 90.75 TAL 352.88 TAP 165.48 RCA 147.71 APO 235.28 V2 23.593
RC 213.179 GL 8.10 GP 5.21 ZAL 97.23 ZAP 146.13 ETS 170.71 ZAE 171.27 ETE 44.99 ZAC 95.57 ETC 255.77 CLP 146.48

PLANETOCENTRIC CONIC

C3 9.686 VHL 3.112 DLA 18.68 RAL 156.05 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.442 DPA .71 RAP 194.32 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 59	2679.51	-27.48	73.08	12.01	97.13	16 12 39	2079.5	-26.20	64.65
90.00	8 40 0	4075.88	-3.96	165.05	7.53	61.94	9 47 56	3475.9	-7.68	158.35
100.00	17 0 39	2380.70	-28.64	50.92	11.83	98.96	17 40 20	1780.7	-27.10	42.45
100.00	9 50 1	3849.92	-2.93	147.87	6.97	60.24	10 54 11	3249.9	-6.87	141.30
110.00	18 33 31	2090.18	-31.60	28.17	11.14	103.77	19 8 21	1490.2	-29.39	19.66
110.00	10 33 39	3713.21	-.37	135.90	5.36	55.82	11 35 32	3113.2	-4.85	129.69

DIFFERENTIAL CORRECTIONS
TDE .2583 TRA-1.1023 TC3 4.4568 BAU .5870
RDE -.0457 RRA -.1115 RC3 .8275 FAU .25576
FDE -.0652 FRA 2.7187 FC-22.8604 BSP 12430
BDE .2623 BRA 1.1079 BC3 4.5330 FSP 4321

MID-COURSE EXECUTION ACCURACY
SGT 3537.0 SGR 565.1 SG3 1311.5
RRT .9271 RRF -.9867 RTF -.9471
SGB 3581.9 R23 -.2817 R13 -.9496
SG1 3575.8 SG2 209.6 THA 8.45

ORBIT DETERMINATION ACCURACY
ST 803.8 SR 107.5 SS 631.7
CRT .0351 CRS .5627 CST .8399
LSA 983.5 MSA 298.5 SSA 18.4
EL1 803.8 EL2 107.4 ALF .27

LAUNCH DATE NOV 16 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 555.211 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.167	GAL	-1.27	AZL	89.41	HCA	173.59	SMA	191.12	ECC	.22708	INC	.5860
RP	232.70	LAP	.07	LOP	227.27	VP	21.125	GAP	3.83	AZP	90.58	TAL	353.14	TAP	166.74	RCA	147.72	APO	234.52
RC	215.236	GL	6.32	GP	6.15	ZAL	96.71	ZAP	144.88	ETS	169.70	ZAE	171.28	ETE	55.16	ZAC	96.46	ETC	255.75

PLANETOCENTRIC CONIC

C3	9.473	VHL	3.078	DLA	17.23	RAL	154.83	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	4.352	DPA	1.63	RAP	194.59

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 58	2618.88	-26.89	68.74	9.92	99.23	16 21 37	2018.9	-25.34	60.42
90.00	8 20 15	4127.77	-2.29	167.95	5.70	61.77	9 29 3	3527.8	-6.05	161.29
100.00	17 9 15	2324.54	-27.98	46.88	9.70	100.98	17 47 59	1724.5	-26.18	38.54
100.00	9 31 40	3897.34	-1.33	150.48	5.17	60.13	10 36 37	3297.3	-5.29	143.93
110.00	18 39 21	2042.64	-30.78	24.70	8.94	105.66	19 13 23	1442.6	-28.32	16.37
110.00	10 18 3	3752.00	1.12	137.93	3.64	55.83	11 20 35	3152.0	-3.37	131.72

DIFFERENTIAL CORRECTIONS

TDE	.2801	TRA	-1.0640	TC3	4.4911	BAU	.5841
RDE	-.0312	RRA	-.1275	RC3	1.0482	FAU	.26522
FDE	-.2301	FRA	2.6909	FC	-24.2389	BSP	12363
BDE	.2818	BRA	1.0716	BC3	4.6118	FSP	4530

MID-COURSE EXECUTION ACCURACY

SGT	3495.0	SGR	693.9	SG3	1367.0		
RRT	.9355	RRF	-.9934	RTF	-.9467		
SGB	3563.2	R23	-.2930	R13	-.9505		
SG1	3555.1	SG2	240.9	THA	10.57		

ORBIT DETERMINATION ACCURACY

ST	816.0	SR	96.5	SS	635.9
CRT	.2243	CRS	.6192	CST	.8982
LSA	1010.2	MSA	242.1	SSA	19.4
EL1	816.2	EL2	94.0	ALF	1.54

LAUNCH DATE NOV 16 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 558.950 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.148	GAL	-1.21	AZL	89.65	HCA	174.60	SMA	190.77	ECC	.22558	INC	.3380
RP	232.32	LAP	.03	LOP	228.27	VP	21.138	GAP	3.45	AZP	90.35	TAL	353.39	TAP	167.99	RCA	147.74	APO	233.81
RC	217.275	GL	3.81	GP	7.44	ZAL	96.19	ZAP	143.51	ETS	168.34	ZAE	170.71	ETE	66.18	ZAC	97.68	ETC	255.71

PLANETOCENTRIC CONIC

C3	9.272	VHL	3.045	DLA	15.08	RAL	153.37	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	4.270	DPA	2.87	RAP	194.96

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 36	2535.79	-25.85	62.89	7.38	101.99	16 34 52	1935.8	-23.93	54.74
90.00	7 53 58	4202.52	.12	172.12	3.60	61.68	9 4 1	3602.5	-3.67	165.49
100.00	17 22 8	2247.05	-26.85	41.39	7.13	103.66	17 59 35	1647.1	-24.70	33.25
100.00	9 7 7	3966.48	1.02	154.27	3.10	60.12	10 13 14	3366.5	-2.96	147.75
110.00	18 48 38	1976.38	-29.47	19.99	6.28	108.17	19 21 35	1376.4	-26.70	11.90
110.00	9 57 6	3809.92	3.33	140.95	1.65	55.96	11 0 36	3209.9	-1.16	134.75

DIFFERENTIAL CORRECTIONS

TDE	.3340	TRA	-1.0037	TC3	4.5934	BAU	.5940
RDE	-.0051	RRA	-.1450	RC3	1.3655	FAU	.27709
FDE	-.5562	FRA	2.5613	FC	-25.8708	BSP	11877
BDE	.3340	BRA	1.0141	BC3	4.7921	FSP	4609

MID-COURSE EXECUTION ACCURACY

SGT	3470.8	SGR	878.3	SG3	1430.8		
RRT	.9424	RRF	-.9970	RTF	-.9481		
SGB	3580.2	R23	-.2912	R13	-.9539		
SG1	3568.7	SG2	285.7	THA	13.50		

ORBIT DETERMINATION ACCURACY

ST	863.9	SR	88.9	SS	696.1
CRT	.5972	CRS	.7678	CST	.9668
LSA	1102.2	MSA	152.6	SSA	24.2
EL1	865.5	EL2	71.1	ALF	3.54

LAUNCH DATE NOV 16 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 562.700 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.129	GAL	-1.16	AZL	89.99	HCA	175.60	SMA	190.44	ECC	.22416	INC	.0933
RP	231.95	LAP	.00	LOP	229.28	VP	21.153	GAP	3.07	AZP	90.01	TAL	353.63	TAP	169.23	RCA	147.75	APO	233.13
RC	219.295	GL	.07	GP	9.31	ZAL	95.70	ZAP	141.96	ETS	166.40	ZAE	169.30	ETE	76.64	ZAC	99.45	ETC	255.65

PLANETOCENTRIC CONIC

C3	9.110	VHL	3.018	DLA	11.76	RAL	151.52	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	4.200	DPA	4.67	RAP	195.54

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 15	2417.52	-23.92	54.76	4.19	105.62	16 54 32	1817.5	-21.55	46.89
90.00	7 17 33	4313.93	3.71	178.34	1.15	61.91	8 29 27	3713.9	-.08	171.71
100.00	17 41 33	2135.94	-24.83	33.75	3.89	107.20	18 17 9	1535.9	-22.24	25.91
100.00	8 32 56	4070.75	4.54	160.00	.69	60.42	9 40 47	3470.7	.57	153.47
110.00	19 3 18	1880.17	-27.24	13.39	2.95	111.50	19 34 38	1280.2	-24.07	5.66
110.00	9 27 41	3899.28	6.72	145.65	359.35	56.40	10 32 40	3299.3	2.25	139.41

DIFFERENTIAL CORRECTIONS

TDE	.3781	TRA	-.9761	TC3	4.5090	BAU	.5906
RDE	.0341	RRA	-.1763	RC3	1.7849	FAU	.28172
FDE	-.9257	FRA	2.5052	FC	-26.7725	BSP	12319
BDE	.3797	BRA	.9919	BC3	4.8494	FSP	4942

MID-COURSE EXECUTION ACCURACY

SGT	3392.0	SGR	1132.2	SG3	1465.9		
RRT	.9442	RRF	-.9988	RTF	-.9460		
SGB	3576.0	R23	-.2903	R13	-.9557		
SG1	3558.3	SG2	355.7	THA	17.67		

ORBIT DETERMINATION ACCURACY

ST	918.8	SR	125.5	SS	846.9
CRT	.9308	CRS	.9521	CST	.9925
LSA	1252.9	MSA	80.2	SSA	33.6
EL1	926.3	EL2	45.5	ALF	7.26

LAUNCH DATE NOV 16 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 566.462 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.112	GAL	-1.12	AZL	90.54	HCA	176.61	SMA	190.13	ECC	.22282	INC	.5357
RP	231.57	LAP	-.03	LOP	230.29	VP	21.170	GAP	2.71	AZP	89.46	TAL	353.86	TAP	170.47	RCA	147.76	APO	232.49
RC	221.297	GL	-5.97	GP	12.26	ZAL	95.18	ZAP	140.03	ETS	163.46	ZAE	166.54	ETE	85.14	ZAC	102.27	ETC	255.51

PLANETOCENTRIC CONIC

C3	9.084	VHL	3.014	DLA	6.26	RAL	148.94	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	4.155	DPA	7.47	RAP	196.51

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 47	2238.32	-20.14	42.99	.08	110.34	17 25 6	1638.3	-17.19	35.56
90.00	6 23 27	4492.01	9.32	188.42	358.41	63.14	7 38 19	3892.0	5.64	181.67
100.00	18 12 6	1966.37	-20.96	22.65	359.74	111.81	18 44 53	1366.4	-17.82	15.27
100.00	7 41 49	4239.19	10.10	169.41	358.00	61.72	8 52 28	3639.2	6.25	162.75
110.00	19 27 9	1731.50	-23.16	3.77	358.69	115.87	19 56 1	1131.5	-19.49	356.55
110.00	8 43 15	4046.83	12.18	153.58	356.76	57.81	9 50 42	3446.8	7.84	147.17

DIFFERENTIAL CORRECTIONS

TDE	.4933	TRA	-.9141	TC3	4.4550	BAU	.6181
RDE	.1353	RRA	-.2045	RC3	2.4611	FAU	.28958
FDE	-1.7541	FRA	2.1747	FC	-27.5995	BSP	12381
BDE	.5115	BRA	.9367	BC3	5.0896	FSP	4925

MID-COURSE EXECUTION ACCURACY

SGT	3338.7	SGR	1555.6	SG3	1509.4		
RRT	.9451	RRF	-.9996	RTF	-.9442		
SGB	3683.3	R23	-.2737	R13	-.9614		
SG1	3654.0	SG2	464.3	THA	24.18		

ORBIT DETERMINATION ACCURACY

ST	1077.5	SR	286.2	SS	1290.7
CRT	.9934	CRS	.9975	CST	.9866
LSA	1700.1	MSA	135.7	SSA	12.0
EL1	1114.4	EL2	31.8	ALF	14.79

LAUNCH DATE NOV 16 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 22 1965

DISTANCE 570.239

HELIOCENTRIC CONIC

RL 147.92 LAL .00 LOL 53.68 VL 33.096 GAL -1.07 AZL 91.56 HCA 177.62 SMA 189.83 ECC .22154 INC 1.5652 V1 30.121
RP 231.20 LAP -.06 LOP 231.30 VP 21.189 GAP 2.35 AZP 88.44 TAL 354.07 TAP 171.70 RCA 147.77 APO 231.89 V2 23.788
RC 223.281 GL -16.89 GP 17.52 ZAL 94.55 ZAP 137.09 ETS 158.60 ZAE 161.28 ETE 90.97 ZAC 107.29 ETC 255.17 CLP 140.18

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.625 VHL 3.102 DLA -3.86 RAL 144.80 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 4.181 DPA 12.43 RAP 198.35 ECC 1.1584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 49	1934.61	-11.94	24.48	355.10	115.87	18 19 4	1334.6	-8.36	17.63
90.00	4 51 24	4818.27	18.57	207.90	356.18	68.23	6 11 42	4218.3	15.45	200.61
100.00	19 6 21	1678.04	-12.74	5.21	354.69	117.27	19 34 19	1078.0	-8.98	358.43
100.00	6 14 33	4550.08	19.39	187.81	355.82	66.80	7 30 23	3950.1	16.09	180.58
110.00	20 10 27	1477.37	-14.85	348.76	353.47	121.15	20 35 4	877.4	-10.61	342.22
110.00	7 26 56	4323.51	21.58	169.51	354.72	62.82	8 39 0	3723.5	17.77	162.46

DIFFERENTIAL CORRECTIONS

TDE .7073 TRA -.8489 TC3 4.0652 BAU .6801
RDE .3975 RRA -.2431 RC3 3.3776 FAU .28190
FDE-3.0945 FRA 1.7010 FC-25.3569 BSP 13574
BDE .8114 BRA .8831 BC3 5.2853 FSP 5006

MID-COURSE EXECUTION ACCURACY

SGT 3246.3 SGR 2265.7 SG3 1471.6
RRT .9452 RRF -.9998 RTF -.9422
SGB 3958.7 R23 -.2321 R13 -.9726
SG1 3910.9 SG2 613.8 THA 34.38

ORBIT DETERMINATION ACCURACY

ST 1390.9 SR 749.0 SS 2099.2
CRT .9861 CRS .9998 CST .9831
LSA 2618.4 MSA 214.7 SSA 3.7
EL1 1575.9 EL2 109.7 ALF 28.12

LAUNCH DATE NOV 16 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 24 1965

DISTANCE 574.024

HELIOCENTRIC CONIC

RL 147.92 LAL .00 LOL 53.68 VL 33.080 GAL -1.03 AZL 94.10 HCA 178.63 SMA 189.55 ECC .22033 INC 4.0921 V1 30.121
RP 230.82 LAP -.10 LOP 232.32 VP 21.209 GAP 1.99 AZP 85.90 TAL 354.28 TAP 172.92 RCA 147.79 APO 231.31 V2 23.827
RC 225.247 GL -39.37 GP 29.03 ZAL 93.41 ZAP 130.57 ETS 149.96 ZAE 149.64 ETE 94.39 ZAC 118.23 ETC 253.91 CLP 138.06

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.877 VHL 3.725 DLA -24.80 RAL 136.29 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 4.522 DPA 23.23 RAP 202.66 ECC 1.2284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 43	1217.55	10.66	343.92	354.88	116.39	21 0 1	617.6	14.12	336.95
90.00	0 50 39	5687.75	27.71	268.55	.11	96.06	2 25 26	5087.8	28.26	259.93
100.00	21 38 56	1026.37	8.91	328.95	353.96	118.65	21 56 2	426.4	12.67	322.17
100.00	2 34 7	5354.16	29.68	244.20	.31	93.73	4 3 21	4754.2	29.88	235.40
110.00	22 4 48	945.25	5.09	320.47	351.62	123.85	22 20 33	345.2	9.50	314.16
110.00	4 24 44	5008.05	34.15	218.01	.40	88.30	5 48 12	4408.1	33.53	208.82

DIFFERENTIAL CORRECTIONS

TDE 1.3524 TRA -.6746 TC3 2.8252 BAU .9291
RDE 1.5651 RRA -.1050 RC3 4.1350 FAU .25001
FDE-5.9328 FRA .2341 FC-15.5974 BSP 15328
BDE 2.0684 BRA .6827 BC3 5.0080 FSP 3791

MID-COURSE EXECUTION ACCURACY

SGT 3172.3 SGR 3913.7 SG3 1277.0
RRT .9420 RRF -.9998 RTF -.9361
SGB 5037.9 R23 -.1506 R13 -.9886
SG1 4967.6 SG2 839.0 THA 51.33

ORBIT DETERMINATION ACCURACY

ST 2109.1 SR 2409.6 SS 3568.5
CRT .9900 CRS 1.0000 CST .9887
LSA 4786.5 MSA 279.7 SSA 1.4
EL1 3194.4 EL2 224.2 ALF 48.84

LAUNCH DATE NOV 16 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 30 1965

DISTANCE 585.484

HELIOCENTRIC CONIC

RL 147.92 LAL .00 LOL 53.68 VL 33.038 GAL -.93 AZL 83.43 HCA 181.72 SMA 188.80 ECC .21710 INC 6.5592 V1 30.121
RP 229.67 LAP -.20 LOP 235.38 VP 21.278 GAP .97 AZP 96.56 TAL 354.79 TAP 176.50 RCA 147.81 APO 229.78 V2 23.948
RC 231.027 GL 54.42 GP -25.36 ZAL 92.00 ZAP 129.24 ETS 201.21 ZAE 154.88 ETE 251.53 ZAC 65.14 ETC 254.44 CLP 134.43

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.578 VHL 4.645 DLA 60.67 RAL 183.95 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 4.092 DPA -25.69 RAP 178.11 ECC 1.3551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.87	11 59 13	4109.61	-58.95	213.75	106.31	41.56	13 7 42	3509.6	-64.44	201.81
22.87	5 23 35	4752.87	-20.57	240.43	36.50	21.44	6 42 47	4152.9	-27.99	237.54
32.87	10 1 57	4293.30	-42.97	214.04	77.97	40.77	11 13 31	3693.3	-48.77	206.53
32.87	8 6 32	4499.78	-31.77	223.93	59.79	34.20	9 21 31	3899.8	-38.26	218.63
33.80	9 6 35	4392.36	-37.17	218.28	68.75	37.92	10 19 47	3792.4	-43.29	211.95
146.20	18 43 57	2716.84	-37.16	80.53	68.74	37.92	19 29 14	2116.8	-43.29	74.20

DIFFERENTIAL CORRECTIONS

TDE .1030 TRA -.8240 TC3 1.5972 BAU .9049
RDE .9033 RRA .9445 RC3-2.6997 FAU .32953
FDE 4.6212 FRA 4.4271 FC-13.2212 BSP 13016
BDE .9092 BRA 1.2534 BC3 3.1368 FSP 4257

MID-COURSE EXECUTION ACCURACY

SGT 2554.2 SGR 3631.9 SG3 1515.5
RRT -.9180 RRF .9996 RTF -.9071
SGB 4440.1 R23 -.1575 R13 .9875
SG1 4359.2 SG2 843.8 THA 124.31

ORBIT DETERMINATION ACCURACY

ST 636.9 SR 1325.3 SS 2339.9
CRT -.3625 CRS -.9992 CST .3260
LSA 2697.7 MSA 599.8 SSA 1.2
EL1 1350.0 EL2 582.7 ALF 102.19

LAUNCH DATE NOV 16 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 1 1965

DISTANCE 589.320

HELIOCENTRIC CONIC

RL 147.92 LAL .00 LOL 53.68 VL 33.025 GAL -.90 AZL 85.20 HCA 182.74 SMA 188.57 ECC .21614 INC 4.7958 V1 30.121
RP 229.28 LAP -.23 LOP 236.41 VP 21.305 GAP .64 AZP 94.79 TAL 354.94 TAP 177.68 RCA 147.82 APO 229.33 V2 23.988
RC 232.913 GL 44.69 GP -16.99 ZAL 92.10 ZAP 131.14 ETS 193.99 ZAE 162.25 ETE 240.59 ZAC 73.30 ETC 255.27 CLP 133.46

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.404 VHL 3.925 DLA 53.21 RAL 172.43 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 3.758 DPA -18.23 RAP 182.21 ECC 1.2535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.87	8 45 11	4264.19	-37.33	203.10	47.67	48.87	9 56 15	3664.2	-42.32	195.36
137.13	17 33 30	2687.53	-37.32	77.23	47.65	48.86	18 18 17	2087.5	-42.31	69.50
42.87	8 45 11	4264.19	-37.33	203.10	47.67	48.87	9 56 15	3664.2	-42.32	195.36
137.13	17 33 30	2687.53	-37.32	77.23	47.65	48.86	18 18 17	2087.5	-42.31	69.50
42.87	8 45 11	4264.19	-37.33	203.10	47.67	48.87	9 56 15	3664.2	-42.32	195.36
137.13	17 33 30	2687.53	-37.32	77.23	47.65	48.86	18 18 17	2087.5	-42.31	69.50

DIFFERENTIAL CORRECTIONS

TDE -.0970 TRA -.8440 TC3 2.0063 BAU .6393
RDE .6616 RRA .6261 RC3-2.3687 FAU .35707
FDE 5.6358 FRA 5.0063 FC-20.0685 BSP 12724
BDE .6687 BRA 1.0509 BC3 3.1042 FSP 6342

MID-COURSE EXECUTION ACCURACY

SGT 2594.6 SGR 2592.1 SG3 1862.6
RRT -.9225 RRF .9996 RTF -.9131
SGB 3667.5 R23 -.2199 R13 .9754
SG1 3595.8 SG2 721.9 THA 135.03

ORBIT DETERMINATION ACCURACY

ST 634.9 SR 1070.3 SS 2928.1
CRT -.6208 CRS -.9997 CST .6019
LSA 3141.6 MSA 502.6 SSA 1.6
EL1 1156.0 EL2 460.9 ALF 114.33

LAUNCH DATE NOV 16 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 593.166 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.013	GAL	-.87	AZL	86.01	HCA	183.78	SMA	188.36	ECC	.21523	INC	3.9848
RP	228.88	LAP	-.26	LOP	237.44	VP	21.332	GAP	.31	AZP	93.98	TAL	355.08	TAP	178.85	RCA	147.82	APO	228.91
RC	234.778	GL	39.21	GP	-12.81	ZAL	92.02	ZAP	130.85	ETS	189.88	ZAE	164.92	ETE	228.21	ZAC	77.30	ETC	255.55

V1	30.121	V2	24.029	CLP	132.12														

PLANETOCENTRIC CONIC

C3	13.182	VHL	3.631	DLA	48.68	RAL	167.48	RAD	6567.5	VEL	11.600	PTH	2.03	VHP	3.605	DPA	-14.33	RAP	183.82
ECC	1.2169																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.59	8 43 24	4188.01	-36.04	193.92	37.73	54.74	9 53 12	3588.0	-40.36	185.76
131.41	16 55 45	2694.91	-36.03	76.73	37.72	54.73	17 40 40	2094.9	-40.35	68.57
48.59	8 43 24	4188.01	-36.04	193.92	37.73	54.74	9 53 12	3588.0	-40.36	185.76
131.41	16 55 45	2694.91	-36.03	76.73	37.72	54.73	17 40 40	2094.9	-40.35	68.57
48.59	8 43 24	4188.01	-36.04	193.92	37.73	54.74	9 53 12	3588.0	-40.36	185.76
131.41	16 55 45	2694.91	-36.03	76.73	37.72	54.73	17 40 40	2094.9	-40.35	68.57

DIFFERENTIAL CORRECTIONS

TDE	-.0837	TRA	-.7972	TC3	2.2256	BAU	.5427
RDE	.4564	RRA	.4399	RC3	-2.1279	FAU	.38857
FDE	5.3398	FRA	4.8679	FC	-25.5192	BSP	10931
BDE	.4640	BRA	.9105	BC3	3.0792	FSP	6729

MID-COURSE EXECUTION ACCURACY

SGT	2502.0	SGR	2003.0	SG3	2025.8		
RRT	-.9171	RRF	.9994	RTF	-.9074		
SGB	3205.0	R23	-.2719	R13	.9620		
SG1	3141.2	SG2	636.1	THA	141.87		

ORBIT DETERMINATION ACCURACY

ST	588.7	SR	787.7	SS	2846.3
CRT	-.5989	CRS	-.9998	CST	.5829
LSA	2973.7	MSA	474.8	SSA	2.4
EL1	890.6	EL2	416.9	ALF	121.88

LAUNCH DATE NOV 16 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 597.024 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.002	GAL	-.85	AZL	86.48	HCA	184.81	SMA	188.17	ECC	.21438	INC	3.5242
RP	228.51	LAP	-.30	LOP	238.48	VP	21.361	GAP	-.00	AZP	93.51	TAL	355.20	TAP	180.02	RCA	147.83	APO	228.51
RC	236.623	GL	35.73	GP	-10.33	ZAL	91.87	ZAP	129.87	ETS	187.33	ZAE	165.49	ETE	216.98	ZAC	79.62	ETC	255.68

V1	30.121	V2	24.070	CLP	130.66														

PLANETOCENTRIC CONIC

C3	12.061	VHL	3.473	DLA	45.76	RAL	164.68	RAD	6567.5	VEL	11.552	PTH	2.02	VHP	3.502	DPA	-11.92	RAP	184.51
ECC	1.1985																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.41	8 45 41	4135.40	-34.83	187.89	32.04	58.20	9 54 36	3535.4	-38.74	179.58
127.59	16 31 9	2709.56	-34.82	77.15	32.04	58.19	17 16 19	2109.6	-38.73	68.85
52.41	8 45 41	4135.40	-34.83	187.89	32.04	58.20	9 54 36	3535.4	-38.74	179.58
127.59	16 31 9	2709.56	-34.82	77.15	32.04	58.19	17 16 19	2109.6	-38.73	68.85
52.41	8 45 41	4135.40	-34.83	187.89	32.04	58.20	9 54 36	3535.4	-38.74	179.58
127.59	16 31 9	2709.56	-34.82	77.15	32.04	58.19	17 16 19	2109.6	-38.73	68.85

DIFFERENTIAL CORRECTIONS

TDE	-.0597	TRA	-.7618	TC3	2.2538	BAU	.4726
RDE	.3589	RRA	.3531	RC3	-1.8735	FAU	.40516
FDE	5.2413	FRA	4.9486	FC	-29.0813	BSP	10080
BDE	.3638	BRA	.8396	BC3	2.9308	FSP	7380

MID-COURSE EXECUTION ACCURACY

SGT	2388.7	SGR	1655.6	SG3	2150.9		
RRT	-.9102	RRF	.9990	RTF	-.9006		
SGB	2906.4	R23	-.3084	R13	.9505		
SG1	2849.0	SG2	574.9	THA	146.19		

ORBIT DETERMINATION ACCURACY

ST	551.4	SR	644.1	SS	2829.5
CRT	-.5506	CRS	-.9999	CST	.5387
LSA	2917.5	MSA	461.9	SSA	3.2
EL1	750.1	EL2	395.2	ALF	127.09

LAUNCH DATE NOV 16 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 600.897 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.991	GAL	-.82	AZL	86.78	HCA	185.85	SMA	187.98	ECC	.21358	INC	3.2236
RP	228.12	LAP	-.33	LOP	239.52	VP	21.391	GAP	-.32	AZP	93.21	TAL	355.32	TAP	181.17	RCA	147.83	APO	228.13
RC	238.446	GL	33.35	GP	-8.71	ZAL	91.70	ZAP	128.59	ETS	185.61	ZAE	165.01	ETE	208.05	ZAC	81.09	ETC	255.75

V1	30.121	V2	24.111	CLP	129.13														

PLANETOCENTRIC CONIC

C3	11.386	VHL	3.374	DLA	43.76	RAL	162.85	RAD	6567.4	VEL	11.523	PTH	2.01	VHP	3.419	DPA	-10.24	RAP	184.77
ECC	1.1874																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.13	8 48 47	4096.16	-33.87	183.60	28.37	60.44	9 57 3	3496.2	-37.50	175.24
124.87	16 13 29	2724.66	-33.86	77.84	28.36	60.43	16 58 54	2124.7	-37.50	69.48
55.13	8 48 47	4096.16	-33.87	183.60	28.37	60.44	9 57 3	3496.2	-37.50	175.24
124.87	16 13 29	2724.66	-33.86	77.84	28.36	60.43	16 58 54	2124.7	-37.50	69.48
55.13	8 48 47	4096.16	-33.87	183.60	28.37	60.44	9 57 3	3496.2	-37.50	175.24
124.87	16 13 29	2724.66	-33.86	77.84	28.36	60.43	16 58 54	2124.7	-37.50	69.48

DIFFERENTIAL CORRECTIONS

TDE	-.0249	TRA	-.7192	TC3	2.2110	BAU	.4236
RDE	.2956	RRA	.2933	RC3	-1.6905	FAU	.42462
FDE	5.0829	FRA	4.9316	FC	-32.2875	BSP	9130
BDE	.2966	BRA	.7767	BC3	2.7833	FSP	7716

MID-COURSE EXECUTION ACCURACY

SGT	2255.4	SGR	1424.4	SG3	2259.1		
RRT	-.8994	RRF	.9984	RTF	-.8899		
SGB	2667.5	R23	-.3402	R13	.9388		
SG1	2612.8	SG2	537.5	THA	148.94		

ORBIT DETERMINATION ACCURACY

ST	510.9	SR	543.9	SS	2755.3
CRT	-.4593	CRS	-.9999	CST	.4527
LSA	2818.3	MSA	454.0	SSA	4.1
EL1	638.2	EL2	386.8	ALF	131.12

LAUNCH DATE NOV 16 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 604.779 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.982	GAL	-.80	AZL	86.99	HCA	186.90	SMA	187.81	ECC	.21283	INC	3.0124
RP	227.73	LAP	-.36	LOP	240.56	VP	21.422	GAP	-.62	AZP	92.99	TAL	355.41	TAP	182.31	RCA	147.84	APO	227.78
RC	240.248	GL	31.63	GP	-7.56	ZAL	91.54	ZAP	127.16	ETS	184.37	ZAE	163.95	ETE	201.36	ZAC	82.10	ETC	255.81

V1	30.121	V2	24.152	CLP	127.54														

PLANETOCENTRIC CONIC

C3	10.930	VHL	3.306	DLA	42.30	RAL	161.56	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	3.347	DPA	-8.97	RAP	184.76
ECC	1.1799																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.15	8 51 51	4065.57	-33.11	180.38	25.79	62.01	9 59 36	3465.6	-36.56	172.00
122.85	16 0 4	2738.41	-33.10	78.57	25.78	61.99	16 45 43	2138.4	-36.55	70.19
57.15	8 51 51	4065.57	-33.11	180.38	25.79	62.01	9 59 36	3465.6	-36.56	172.00
122.85	16 0 4	2738.41	-33.10	78.57	25.78	61.99	16 45 43	2138.4	-36.55	70.19
57.15	8 51 51	4065.57	-33.11	180.38	25.79	62.01	9 59 36	3465.6	-36.56	172.00
122.85	16 0 4	2738.41	-33.10	78.57	25.78	61.99	16 45 43	2138.4	-36.55	70.19

DIFFERENTIAL CORRECTIONS

TDE	.0114	TRA	-.6777	TC3	2.1063	BAU	.3816
RDE	.2550	RRA	.2530	RC3	-1.5443	FAU	.44350
FDE	4.9640	FRA	4.9282	FC	-35.1290	BSP	8245
BDE	.2553	BRA	.7234	BC3	2.6118	FSP	7997

MID-COURSE EXECUTION ACCURACY

SGT	2112.4	SGR	1260.7	SG3	2361.2		
RRT	-.8842	RRF	.9974	RTF	-.8751		
SGB	2460.0	R23	-.3705	R13	.9262		
SG1	2405.0	SG2	517.1	THA	150.69		

ORBIT DETERMINATION ACCURACY

ST	478.7	SR	477.4	SS	2689.1
CRT	-.3382	CRS	-.9999	CST	.3391
LSA	2736.1	MSA	449.5	SSA	5.1
EL1	553.0	EL2	388.9	ALF	135.23

LAUNCH DATE NOV 16 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 608.671 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.972 GAL -.79 AZL 87.14 HCA 187.94 SMA 187.64 ECC .21213 INC 2.8572 V1 30.121
RP 227.34 LAP -.39 LOP 241.61 VP 21.454 GAP -.93 AZP 92.83 TAL 355.50 TAP 183.44 RCA 147.84 APO 227.45 V2 24.193
RC 242.030 GL 30.32 GP -6.70 ZAL 91.39 ZAP 125.62 ETS 183.44 ZAE 162.56 ETE 196.44 ZAC 82.80 ETC 255.85 CLP 125.91

PLANETOCENTRIC CONIC

C3 10.598 VHL 3.256 DLA 41.21 RAL 160.59 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 3.282 DPA -7.95 RAP 184.59 ECC 1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.72	8 54 38	4040.96	-32.52	177.87	23.88	63.15	10 1 59	3441.0	-35.83	169.48
121.28	15 49 32	2750.46	-32.51	79.25	23.87	63.14	16 35 22	2150.5	-35.82	70.86
58.72	8 54 38	4040.96	-32.52	177.87	23.88	63.15	10 1 59	3441.0	-35.83	169.48
121.28	15 49 32	2750.46	-32.51	79.25	23.87	63.14	16 35 22	2150.5	-35.82	70.86
58.72	8 54 38	4040.96	-32.52	177.87	23.88	63.15	10 1 59	3441.0	-35.83	169.48
121.28	15 49 32	2750.46	-32.51	79.25	23.87	63.14	16 35 22	2150.5	-35.82	70.86

DIFFERENTIAL CORRECTIONS
TDE .0404 TRA -.6398 TC3 1.9209 BAU .3378
RDE .2312 RRA .2268 RC3-1.4121 FAU .45830
FDE 4.9623 FRA 5.0044 FC-37.4363 BSP 7501
BDE .2347 BRA .6789 BC3 2.3841 FSP 8390

MID-COURSE EXECUTION ACCURACY
SGT 1951.8 SGR 1136.9 SG3 2455.1
RRT -.8631 RRF .9960 RTF -.8544
SGB 2258.8 R23 -.4022 R13 .9113
SG1 2200.6 SG2 509.3 THA 151.66

ORBIT DETERMINATION ACCURACY
ST 456.2 SR 437.8 SS 2677.0
CRT -.2182 CRS -.9998 CST .2284
LSA 2714.6 MSA 443.8 SSA 6.0
EL1 494.2 EL2 394.4 ALF 140.32

LAUNCH DATE NOV 16 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 612.574 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.963 GAL -.77 AZL 87.26 HCA 188.99 SMA 187.49 ECC .21147 INC 2.7374 V1 30.121
RP 226.95 LAP -.43 LOP 242.66 VP 21.488 GAP -1.22 AZP 92.70 TAL 355.57 TAP 184.56 RCA 147.84 APO 227.14 V2 24.235
RC 243.792 GL 29.31 GP -6.04 ZAL 91.26 ZAP 124.01 ETS 182.72 ZAE 160.96 ETE 192.80 ZAC 83.31 ETC 255.89 CLP 124.23

PLANETOCENTRIC CONIC

C3 10.345 VHL 3.216 DLA 40.35 RAL 159.83 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.222 DPA -7.08 RAP 184.31 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.96	8 57 10	4020.65	-32.04	175.85	22.40	64.03	10 4 10	3420.7	-35.24	167.45
120.04	15 41 0	2760.96	-32.03	79.87	22.40	64.02	16 27 1	2161.0	-35.23	71.48
59.96	8 57 10	4020.65	-32.04	175.85	22.40	64.03	10 4 10	3420.7	-35.24	167.45
120.04	15 41 0	2760.96	-32.03	79.87	22.40	64.02	16 27 1	2161.0	-35.23	71.48
59.96	8 57 10	4020.65	-32.04	175.85	22.40	64.03	10 4 10	3420.7	-35.24	167.45
120.04	15 41 0	2760.96	-32.03	79.87	22.40	64.02	16 27 1	2161.0	-35.23	71.48

DIFFERENTIAL CORRECTIONS
TDE .0727 TRA -.6006 TC3 1.7211 BAU .2989
RDE .2141 RRA .2067 RC3-1.3073 FAU .47450
FDE 4.9619 FRA 5.0734 FC-39.7111 BSP 6757
BDE .2262 BRA .6352 BC3 2.1613 FSP 8746

MID-COURSE EXECUTION ACCURACY
SGT 1792.7 SGR 1042.2 SG3 2550.3
RRT -.8350 RRF .9942 RTF -.8275
SGB 2073.6 R23 -.4358 R13 .8935
SG1 2009.5 SG2 511.6 THA 152.15

ORBIT DETERMINATION ACCURACY
ST 441.9 SR 408.9 SS 2661.2
CRT -.0690 CRS -.9996 CST .0896
LSA 2692.7 MSA 440.2 SSA 6.9
EL1 447.3 EL2 403.1 ALF 159.23

LAUNCH DATE NOV 16 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 616.488 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.955 GAL -.76 AZL 87.36 HCA 190.05 SMA 187.35 ECC .21086 INC 2.6419 V1 30.121
RP 226.56 LAP -.46 LOP 243.71 VP 21.522 GAP -1.51 AZP 92.60 TAL 355.63 TAP 185.67 RCA 147.84 APO 226.85 V2 24.277
RC 245.534 GL 28.49 GP -5.51 ZAL 91.15 ZAP 122.34 ETS 182.15 ZAE 159.23 ETE 190.07 ZAC 83.68 ETC 255.92 CLP 122.51

PLANETOCENTRIC CONIC

C3 10.142 VHL 3.185 DLA 39.66 RAL 159.24 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 3.167 DPA -6.33 RAP 183.92 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.98	8 59 26	4003.56	-31.65	174.18	21.24	64.73	10 6 10	3403.6	-34.76	165.79
119.02	15 33 59	2770.12	-31.64	80.42	21.23	64.71	16 20 9	2170.1	-34.75	72.03
60.98	8 59 26	4003.56	-31.65	174.18	21.24	64.73	10 6 10	3403.6	-34.76	165.79
119.02	15 33 59	2770.12	-31.64	80.42	21.23	64.71	16 20 9	2170.1	-34.75	72.03
60.98	8 59 26	4003.56	-31.65	174.18	21.24	64.73	10 6 10	3403.6	-34.76	165.79
119.02	15 33 59	2770.12	-31.64	80.42	21.23	64.71	16 20 9	2170.1	-34.75	72.03

DIFFERENTIAL CORRECTIONS
TDE .1051 TRA -.5621 TC3 1.4720 BAU .2589
RDE .2021 RRA .1913 RC3-1.2161 FAU .49000
FDE 4.9740 FRA 5.1489 FC-41.8263 BSP 6009
BDE .2278 BRA .5938 BC3 1.9093 FSP 9079

MID-COURSE EXECUTION ACCURACY
SGT 1624.9 SGR 965.4 SG3 2641.4
RRT -.7935 RRF .9917 RTF -.7869
SGB 1890.1 R23 -.4779 R13 .8689
SG1 1815.5 SG2 525.9 THA 152.23

ORBIT DETERMINATION ACCURACY
ST 438.0 SR 388.2 SS 2649.6
CRT .0897 CRS -.9993 CST -.0584
LSA 2678.0 MSA 437.4 SSA 7.9
EL1 443.8 EL2 381.6 ALF 18.26

LAUNCH DATE NOV 16 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 620.411 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.948 GAL -.75 AZL 87.44 HCA 191.11 SMA 187.22 ECC .21030 INC 2.5644 V1 30.121
RP 226.17 LAP -.49 LOP 244.77 VP 21.557 GAP -1.80 AZP 92.52 TAL 355.67 TAP 186.77 RCA 147.85 APO 226.59 V2 24.318
RC 247.256 GL 27.82 GP -5.08 ZAL 91.06 ZAP 120.62 ETS 181.68 ZAE 157.40 ETE 187.99 ZAC 83.95 ETC 255.96 CLP 120.75

PLANETOCENTRIC CONIC

C3 9.976 VHL 3.158 DLA 39.10 RAL 158.76 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 3.116 DPA -5.64 RAP 183.47 ECC 1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.83	9 1 33	3988.85	-31.32	172.77	20.29	65.29	10 8 2	3388.8	-34.36	164.37
118.17	15 28 4	2778.24	-31.31	80.93	20.29	65.28	16 14 23	2178.2	-34.35	72.53
61.83	9 1 33	3988.85	-31.32	172.77	20.29	65.29	10 8 2	3388.8	-34.36	164.37
118.17	15 28 4	2778.24	-31.31	80.93	20.29	65.28	16 14 23	2178.2	-34.35	72.53
61.83	9 1 33	3988.85	-31.32	172.77	20.29	65.29	10 8 2	3388.8	-34.36	164.37
118.17	15 28 4	2778.24	-31.31	80.93	20.29	65.28	16 14 23	2178.2	-34.35	72.53

DIFFERENTIAL CORRECTIONS
TDE .1401 TRA -.5223 TC3 1.1924 BAU .2196
RDE .1933 RRA .1793 RC3-1.1356 FAU .50479
FDE 4.9950 FRA 5.2362 FC-43.8062 BSP 5218
BDE .2388 BRA .5522 BC3 1.6466 FSP 9403

MID-COURSE EXECUTION ACCURACY
SGT 1456.7 SGR 901.8 SG3 2729.0
RRT -.7329 RRF .9886 RTF -.7277
SGB 1713.3 R23 -.5298 R13 .8346
SG1 1622.3 SG2 551.0 THA 152.10

ORBIT DETERMINATION ACCURACY
ST 446.3 SR 373.2 SS 2641.9
CRT .2558 CRS -.9988 CST -.2145
LSA 2669.9 MSA 435.9 SSA 8.9
EL1 470.5 EL2 342.3 ALF 27.44

LAUNCH DATE NOV 16 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 624.344 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.941	GAL	-.75	AZL	87.50	HCA	192.17	SMA	187.09	ECC	.20977	INC	2.4998
RP	225.78	LAP	-.53	LOP	245.83	VP	21.594	GAP	-2.07	AZP	92.44	TAL	355.70	TAP	187.86	RCA	147.85	APO	226.34
RC	248.959	GL	27.26	GP	-4.72	ZAL	91.00	ZAP	118.85	ETS	181.29	ZAE	155.50	ETE	186.38	ZAC	84.14	ETC	255.99

V1	30.121	V2	24.360	CLP	118.96														

PLANETOCENTRIC CONIC

C3	9.837	VHL	3.136	DLA	38.62	RAL	158.39	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.069	DPA	-5.01	RAP	182.96

ECC	1.1619	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		62.56	9 3 34	3975.95	-31.04	171.54	19.52	65.77	10 9 50	3375.9	-34.02	163.15							
		117.44	15 23 3	2785.55	-31.03	81.38	19.51	65.75	16 9 28	2185.6	-34.02	73.00							
		62.56	9 3 34	3975.95	-31.04	171.54	19.52	65.77	10 9 50	3375.9	-34.02	163.15							
		117.44	15 23 3	2785.55	-31.03	81.38	19.51	65.75	16 9 28	2185.6	-34.02	73.00							
		62.56	9 3 34	3975.95	-31.04	171.54	19.52	65.77	10 9 50	3375.9	-34.02	163.15							
		117.44	15 23 3	2785.55	-31.03	81.38	19.51	65.75	16 9 28	2185.6	-34.02	73.00							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1731	TRA	-.4811	TC3	.8897	BAU	.1825	SGT	1295.0	SGR	849.0	SG3	2816.0	ST	462.8	SR	363.2	SS	2642.6
RDE	.1875	RRA	.1695	RC3	-1.0653	FAU	.51961	RRT	-.6461	RRF	.9847	RTF	-.6420	CRT	.4039	CRS	-.9982	CST	-.3545
FDE	5.0355	FRA	5.3211	FC	-45.7311	BSP	4460	SGB	1548.5	R23	-.5932	R13	.7860	LSA	2672.6	MSA	432.1	SSA	9.8
BDE	.2552	BRA	.5101	BC3	1.3880	FSP	9724	SG1	1433.6	SG2	585.4	THA	151.97	EL1	502.4	EL2	306.0	ALF	29.40

LAUNCH DATE NOV 16 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 628.288 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.934	GAL	-.74	AZL	87.55	HCA	193.23	SMA	186.98	ECC	.20928	INC	2.4454
RP	225.38	LAP	-.56	LOP	246.90	VP	21.631	GAP	-2.35	AZP	92.38	TAL	355.71	TAP	188.94	RCA	147.85	APO	226.11
RC	250.643	GL	26.79	GP	-4.41	ZAL	90.96	ZAP	117.04	ETS	180.95	ZAE	153.53	ETE	185.10	ZAC	84.27	ETC	256.03

V1	30.121	V2	24.402	CLP	117.13														

PLANETOCENTRIC CONIC

C3	9.718	VHL	3.117	DLA	38.21	RAL	158.09	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.026	DPA	-4.41	RAP	182.39

ECC	1.1599	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		63.20	9 5 31	3964.49	-30.80	170.47	18.89	66.17	10 11 36	3364.5	-33.73	162.08							
		116.80	15 18 43	2792.20	-30.78	81.81	18.88	66.16	16 5 15	2192.2	-33.72	73.42							
		63.20	9 5 31	3964.49	-30.80	170.47	18.89	66.17	10 11 36	3364.5	-33.73	162.08							
		116.80	15 18 43	2792.20	-30.78	81.81	18.88	66.16	16 5 15	2192.2	-33.72	73.42							
		63.20	9 5 31	3964.49	-30.80	170.47	18.89	66.17	10 11 36	3364.5	-33.73	162.08							
		116.80	15 18 43	2792.20	-30.78	81.81	18.88	66.16	16 5 15	2192.2	-33.72	73.42							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2094	TRA	-.4391	TC3	.5632	BAU	.1493	SGT	1151.6	SGR	803.9	SG3	2900.4	ST	493.1	SR	355.5	SS	2638.8
RDE	.1831	RRA	.1615	RC3	-1.0021	FAU	.53413	RRT	-.5160	RRF	.9800	RTF	-.5130	CRT	.5385	CRS	-.9974	CST	-.4830
FDE	5.0648	FRA	5.4104	FC	-47.5838	BSP	3713	SGB	1404.4	R23	-.6791	R13	.7066	LSA	2673.5	MSA	430.4	SSA	10.8
BDE	.2782	BRA	.4678	BC3	1.1495	FSP	10029	SG1	1254.0	SG2	632.3	THA	152.72	EL1	543.9	EL2	271.6	ALF	29.13

LAUNCH DATE NOV 16 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 632.241 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.928	GAL	-.74	AZL	87.60	HCA	194.30	SMA	186.87	ECC	.20884	INC	2.3989
RP	224.99	LAP	-.59	LOP	247.97	VP	21.669	GAP	-2.62	AZP	92.32	TAL	355.71	TAP	190.01	RCA	147.85	APO	225.90
RC	252.307	GL	26.39	GP	-4.15	ZAL	90.95	ZAP	115.19	ETS	180.67	ZAE	151.51	ETE	184.09	ZAC	84.35	ETC	256.08

V1	30.121	V2	24.444	CLP	115.26														

PLANETOCENTRIC CONIC

C3	9.615	VHL	3.101	DLA	37.84	RAL	157.86	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	2.986	DPA	-3.84	RAP	181.78

ECC	1.1582	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		63.77	9 7 25	3954.23	-30.58	169.51	18.37	66.52	10 13 20	3354.2	-33.47	161.13							
		116.23	15 15 0	2798.26	-30.57	82.20	18.36	66.51	16 1 38	2198.3	-33.46	73.81							
		63.77	9 7 25	3954.23	-30.58	169.51	18.37	66.52	10 13 20	3354.2	-33.47	161.13							
		116.23	15 15 0	2798.26	-30.57	82.20	18.36	66.51	16 1 38	2198.3	-33.46	73.81							
		63.77	9 7 25	3954.23	-30.58	169.51	18.37	66.52	10 13 20	3354.2	-33.47	161.13							
		116.23	15 15 0	2798.26	-30.57	82.20	18.36	66.51	16 1 38	2198.3	-33.46	73.81							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2463	TRA	-.3971	TC3	.2062	BAU	.1240	SGT	1042.6	SGR	764.4	SG3	2980.0	ST	533.7	SR	350.6	SS	2640.5
RDE	.1801	RRA	.1552	RC3	-.9426	FAU	.54732	RRT	-.3271	RRF	.9744	RTF	-.3230	CRT	.6468	CRS	-.9965	CST	-.5872
FDE	5.1019	FRA	5.5181	FC	-49.2805	BSP	3041	SGB	1292.8	R23	-.8048	R13	.5494	LSA	2682.4	MSA	429.4	SSA	11.8
BDE	.3051	BRA	.4264	BC3	.9649	FSP	10340	SG1	1094.5	SG2	688.2	THA	156.98	EL1	591.2	EL2	241.4	ALF	28.11

LAUNCH DATE NOV 16 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 636.204 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.922	GAL	-.74	AZL	87.64	HCA	195.37	SMA	186.78	ECC	.20843	INC	2.3584
RP	224.60	LAP	-.63	LOP	249.04	VP	21.707	GAP	-2.88	AZP	92.27	TAL	355.70	TAP	191.07	RCA	147.85	APO	225.70
RC	253.951	GL	26.04	GP	-3.92	ZAL	90.97	ZAP	113.31	ETS	180.43	ZAE	149.44	ETE	183.27	ZAC	84.40	ETC	256.12

V1	30.121	V2	24.486	CLP	113.37														

PLANETOCENTRIC CONIC

C3	9.525	VHL	3.086	DLA	37.52	RAL	157.69	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	2.950	DPA	-3.29	RAP	181.13

ECC	1.1568	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		64.29	9 9 22	3944.76	-30.38	168.64	17.94	66.84	10 15 7	3344.8	-33.23	160.26							
		115.71	15 11 43	2804.04	-30.37	82.57	17.94	66.82	15 58 27	2204.0	-33.22	74.19							
		64.29	9 9 22	3944.76	-30.38	168.64	17.94	66.84	10 15 7	3344.8	-33.23	160.26							
		115.71	15 11 43	2804.04	-30.37	82.57	17.94	66.82	15 58 27	2204.0	-33.22	74.19							
		64.29	9 9 22	3944.76	-30.38	168.64	17.94	66.84	10 15 7	3344.8	-33.23	160.26							
		115.71	15 11 43	2804.04	-30.37	82.57	17.94	66.82	15 58 27	2204.0	-33.22	74.19							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2822	TRA	-.3536	TC3	-.1750	BAU	.1153	SGT	985.4	SGR	729.9	SG3	3056.6	ST	579.8	SR	347.7	SS	2643.2
RDE	.1783	RRA	.1497	RC3	-.8880	FAU	.56020	RRT	-.0797	RRF	.9678	RTF	-.0711	CRT	.7312	CRS	-.9955	CST	-.6695
FDE	5.1408	FRA	5.6149	FC	-50.9162	BSP	2520	SGB	1226.3	R23	-.9543	R13	.1614	LSA	2694.7	MSA	426.6	SSA	12.7
BDE	.3339	BRA	.3840	BC3	.9051	FSP	10611	SG1	989.2	SG2	724.9	THA	172.67	EL1	641.2	EL2	214.5	ALF	26.93

LAUNCH DATE NOV 16 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 640.176 EARTH TO MARS

```
RL  147.92 LAL    .00 LOL  53.68 VL  32.917 GAL   -.75 AZL  87.68 HCA 196.45 SMA 186.69 ECC .20805 INC 2.3230 V1  30.121
RP  224.21 LAP   -.66 LOP 250.12 VP  21.747 GAP  -3.14 AZP  92.23 TAL 355.67 TAP 192.12 RCA 147.85 APO 225.53 V2  24.527
RC 255.576 GL   25.73 GP   -3.72 ZAL  91.01 ZAP 111.40 ETS 180.21 ZAE 147.33 ETE 182.59 ZAC  84.41 ETC 256.17 CLP 111.44
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PLANETOCENTRIC CONIC

```
C3   9.446 VHL  3.073 DLA  37.22 RAL 157.58 RAD 6567.3 VEL 11.438 PTH   1.98 VHP  2.918 DPA  -2.75 RAP 180.44 ECC 1.1555
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.76	9 11 22	3935.96	-30.19	167.83	17.60	67.12	10 16 58	3336.0	-33.01	159.45
115.24	15 8 48	2809.59	-30.18	82.93	17.59	67.11	15 55 38	2209.6	-33.00	74.55
64.76	9 11 22	3935.96	-30.19	167.83	17.60	67.12	10 16 58	3336.0	-33.01	159.45
115.24	15 8 48	2809.59	-30.18	82.93	17.59	67.11	15 55 38	2209.6	-33.00	74.55
64.76	9 11 22	3935.96	-30.19	167.83	17.60	67.12	10 16 58	3336.0	-33.01	159.45
115.24	15 8 48	2809.59	-30.18	82.93	17.59	67.11	15 55 38	2209.6	-33.00	74.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .3218 TRA -.3090 TC3 -.5738 BAU  .1282     SGT 1003.9 SGR  699.1 SG3 3129.2     ST   638.1 SR   345.1 SS  2633.5
RDE  .1766 RRA  .1451 RC3 -.8374 FAU .57263     RRT  .1901 RRF  .9600 RTF  .2052     CRT  .7976 CRS -.9943 CST -.7346
FDE 5.1480 FRA 5.7130 FC-52.4813 BSP   2335     SGB 1223.3 R23  .8938 R13  .3511     LSA 2698.1 MSA  426.7 SSA    13.7
BDE  .3671 BRA  .3414 BC3 1.0151 FSP  10864     SG1 1019.8 SG2  675.6 THA  13.60     EL1  700.2 EL2  189.7 ALF   25.32
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LAUNCH DATE NOV 16 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 644.158 EARTH TO MARS

```
RL  147.92 LAL    .00 LOL  53.68 VL  32.912 GAL   -.75 AZL  87.71 HCA 197.53 SMA 186.60 ECC .20771 INC 2.2919 V1  30.121
RP  223.82 LAP   -.69 LOP 251.20 VP  21.787 GAP  -3.39 AZP  92.19 TAL 355.63 TAP 193.16 RCA 147.84 APO 225.37 V2  24.569
RC 257.180 GL   25.46 GP   -3.53 ZAL  91.08 ZAP 109.46 ETS 180.03 ZAE 145.19 ETE 182.04 ZAC  84.40 ETC 256.22 CLP 109.50
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PLANETOCENTRIC CONIC

```
C3   9.376 VHL  3.062 DLA  36.94 RAL 157.52 RAD 6567.3 VEL 11.435 PTH   1.98 VHP  2.889 DPA  -2.22 RAP 179.73 ECC 1.1543
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.21	9 13 28	3927.60	-30.02	167.07	17.33	67.38	10 18 56	3327.6	-32.80	158.70
114.79	15 6 13	2815.04	-30.01	83.29	17.32	67.36	15 53 8	2215.0	-32.80	74.92
65.21	9 13 28	3927.60	-30.02	167.07	17.33	67.38	10 18 56	3327.6	-32.80	158.70
114.79	15 6 13	2815.04	-30.01	83.29	17.32	67.36	15 53 8	2215.0	-32.80	74.92
65.21	9 13 28	3927.60	-30.02	167.07	17.33	67.38	10 18 56	3327.6	-32.80	158.70
114.79	15 6 13	2815.04	-30.01	83.29	17.32	67.36	15 53 8	2215.0	-32.80	74.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .3608 TRA -.2639 TC3 -.9966 BAU  .1593     SGT 1100.0 SGR  671.7 SG3 3196.0     ST   700.4 SR   344.4 SS  2634.2
RDE  .1761 RRA  .1415 RC3 -.7880 FAU .58344     RRT  .4227 RRF  .9511 RTF  .4482     CRT  .8468 CRS -.9929 CST -.7837
FDE 5.1722 FRA 5.8292 FC-53.8708 BSP   2606     SGB 1288.9 R23  .7467 R13  .5912     LSA 2714.1 MSA  426.4 SSA    14.7
BDE  .4015 BRA  .2994 BC3 1.2705 FSP  11114     SG1 1149.8 SG2  582.4 THA  19.73     EL1  762.1 EL2  168.3 ALF   23.85
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LAUNCH DATE NOV 16 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 648.149 EARTH TO MARS

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RL  147.92 LAL    .00 LOL  53.68 VL  32.908 GAL   -.76 AZL  87.74 HCA 198.62 SMA 186.53 ECC .20741 INC 2.2639 V1  30.121
RP  223.44 LAP   -.72 LOP 252.28 VP  21.828 GAP  -3.64 AZP  92.15 TAL 355.57 TAP 194.19 RCA 147.84 APO 225.22 V2  24.611
RC 258.763 GL   25.21 GP   -3.37 ZAL  91.18 ZAP 107.50 ETS 179.86 ZAE 143.02 ETE 181.57 ZAC  84.37 ETC 256.28 CLP 107.53
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PLANETOCENTRIC CONIC

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C3   9.314 VHL  3.052 DLA  36.68 RAL 157.50 RAD 6567.3 VEL 11.433 PTH   1.98 VHP  2.863 DPA  -1.71 RAP 179.00 ECC 1.1533
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.64	9 15 40	3919.64	-29.85	166.35	17.12	67.62	10 21 0	3319.6	-32.61	157.98
114.36	15 3 53	2820.41	-29.84	83.64	17.11	67.60	15 50 54	2220.4	-32.60	75.27
65.64	9 15 40	3919.64	-29.85	166.35	17.12	67.62	10 21 0	3319.6	-32.61	157.98
114.36	15 3 53	2820.41	-29.84	83.64	17.11	67.60	15 50 54	2220.4	-32.60	75.27
65.64	9 15 40	3919.64	-29.85	166.35	17.12	67.62	10 21 0	3319.6	-32.61	157.98
114.36	15 3 53	2820.41	-29.84	83.64	17.11	67.60	15 50 54	2220.4	-32.60	75.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .4001 TRA -.2163 TC3-1.4429 BAU  .2020     SGT 1263.5 SGR  646.4 SG3 3256.1     ST   766.9 SR   343.9 SS  2622.0
RDE  .1756 RRA  .1380 RC3 -.7413 FAU .59360     RRT  .5908 RRF  .9406 RTF  .6285     CRT  .8846 CRS -.9914 CST -.8218
FDE 5.1659 FRA 5.9193 FC-55.1742 BSP   3241     SGB 1419.2 R23  .6165 R13  .7161     LSA 2720.3 MSA  425.5 SSA    15.6
BDE  .4370 BRA  .2566 BC3 1.6222 FSP  11310     SG1 1330.0 SG2  495.4 THA  19.65     EL1  827.2 EL2  148.7 ALF   22.40
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LAUNCH DATE NOV 16 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 652.149 EARTH TO MARS

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RL  147.92 LAL    .00 LOL  53.68 VL  32.904 GAL   -.77 AZL  87.76 HCA 199.70 SMA 186.46 ECC .20714 INC 2.2391 V1  30.121
RP  223.05 LAP   -.75 LOP 253.37 VP  21.869 GAP  -3.88 AZP  92.11 TAL 355.50 TAP 195.20 RCA 147.84 APO 225.09 V2  24.653
RC 260.326 GL   24.99 GP   -3.22 ZAL  91.30 ZAP 105.51 ETS 179.71 ZAE 140.83 ETE 181.18 ZAC  84.32 ETC 256.34 CLP 105.54
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PLANETOCENTRIC CONIC

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C3   9.259 VHL  3.043 DLA  36.43 RAL 157.53 RAD 6567.3 VEL 11.430 PTH   1.98 VHP  2.841 DPA  -1.20 RAP 178.24 ECC 1.1524
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.06	9 18 0	3911.93	-29.69	165.65	16.97	67.84	10 23 12	3311.9	-32.42	157.28
113.94	15 1 47	2825.81	-29.68	84.00	16.97	67.83	15 48 53	2225.8	-32.41	75.64
66.06	9 18 0	3911.93	-29.69	165.65	16.97	67.84	10 23 12	3311.9	-32.42	157.28
113.94	15 1 47	2825.81	-29.68	84.00	16.97	67.83	15 48 53	2225.8	-32.41	75.64
66.06	9 18 0	3911.93	-29.69	165.65	16.97	67.84	10 23 12	3311.9	-32.42	157.28
113.94	15 1 47	2825.81	-29.68	84.00	16.97	67.83	15 48 53	2225.8	-32.41	75.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .4406 TRA -.1663 TC3-1.8997 BAU  .2504     SGT 1475.3 SGR  623.6 SG3 3310.6     ST   838.6 SR   344.3 SS  2613.5
RDE  .1757 RRA  .1351 RC3 -.6962 FAU .60250     RRT  .6969 RRF  .9288 RTF  .7469     CRT  .9136 CRS -.9897 CST -.8519
FDE 5.1622 FRA 6.0170 FC-56.3357 BSP   4129     SGB 1601.7 R23  .5008 R13  .7945     LSA 2733.5 MSA  424.4 SSA    16.5
BDE  .4744 BRA  .2143 BC3 2.0233 FSP  11502     SG1 1543.6 SG2  427.5 THA  17.83     EL1  897.1 EL2  130.9 ALF   21.03
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LAUNCH DATE NOV 16 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 656.158 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.901 GAL -.79 AZL 87.78 HCA 200.79 SMA 186.40 ECC .20690 INC 2.2165 V1 30.121
RP 222.66 LAP -.79 LOP 254.46 VP 21.911 GAP -4.12 AZP 92.07 TAL 355.41 TAP 196.21 RCA 147.84 APO 224.97 V2 24.695
RC 261.869 GL 24.79 GP -3.08 ZAL 91.46 ZAP 103.52 ETS 179.58 ZAE 138.61 ETE 180.85 ZAC 84.26 ETC 256.41 CLP 103.54

PLANETOCENTRIC CONIC

C3 9.210 VHL 3.035 DLA 36.19 RAL 157.60 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.822 DPA -.69 RAP 177.47 ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.47	9 20 30	3904.32	-29.53	164.96	16.88	68.06	10 25 34	3304.3	-32.23	156.60
113.53	14 59 51	2831.34	-29.51	84.37	16.87	68.04	15 47 2	2231.3	-32.22	76.01
66.47	9 20 30	3904.32	-29.53	164.96	16.88	68.06	10 25 34	3304.3	-32.23	156.60
113.53	14 59 51	2831.34	-29.51	84.37	16.87	68.04	15 47 2	2231.3	-32.22	76.01
66.47	9 20 30	3904.32	-29.53	164.96	16.88	68.06	10 25 34	3304.3	-32.23	156.60
113.53	14 59 51	2831.34	-29.51	84.37	16.87	68.04	15 47 2	2231.3	-32.22	76.01

DIFFERENTIAL CORRECTIONS
TDE .4810 TRA -.1169 TC3-2.3799 BAU .3038
RDE .1757 RRA .1327 RC3 -.6524 FAU .61028
FDE 5.1262 FRA 6.1134 FC-57.3678 BSP 5113
BDE .5121 BRA .1769 BC3 2.4677 FSP 11660

MID-COURSE EXECUTION ACCURACY
SGT 1728.0 SGR 602.7 SG3 3358.0
RRT .7570 RRF .9152 RTF .8215
SGB 1830.1 R23 .3998 R13 .8465
SG1 1790.2 SG2 380.2 THA 15.51

ORBIT DETERMINATION ACCURACY
ST 912.8 SR 344.8 SS 2593.8
CRT .9346 CRS -.9877 CST -.8735
LSA 2738.3 MSA 425.6 SSA 17.5
EL1 968.9 EL2 115.6 ALF 19.74

LAUNCH DATE NOV 16 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 660.177 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.898 GAL -.80 AZL 87.80 HCA 201.89 SMA 186.35 ECC .20669 INC 2.1962 V1 30.121
RP 222.28 LAP -.82 LOP 255.55 VP 21.954 GAP -4.36 AZP 92.04 TAL 355.32 TAP 197.21 RCA 147.83 APO 224.87 V2 24.737
RC 263.392 GL 24.61 GP -2.96 ZAL 91.64 ZAP 101.51 ETS 179.47 ZAE 136.38 ETE 180.57 ZAC 84.19 ETC 256.47 CLP 101.52

PLANETOCENTRIC CONIC

C3 9.166 VHL 3.028 DLA 35.95 RAL 157.71 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.807 DPA -.20 RAP 176.69 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.87	9 23 7	3896.89	-29.36	164.29	16.84	68.26	10 28 4	3296.9	-32.04	155.94
113.13	14 58 6	2836.93	-29.35	84.74	16.83	68.25	15 45 23	2236.9	-32.03	76.39
66.87	9 23 7	3896.89	-29.36	164.29	16.84	68.26	10 28 4	3296.9	-32.04	155.94
113.13	14 58 6	2836.93	-29.35	84.74	16.83	68.25	15 45 23	2236.9	-32.03	76.39
66.87	9 23 7	3896.89	-29.36	164.29	16.84	68.26	10 28 4	3296.9	-32.04	155.94
113.13	14 58 6	2836.93	-29.35	84.74	16.83	68.25	15 45 23	2236.9	-32.03	76.39

DIFFERENTIAL CORRECTIONS
TDE .5206 TRA -.0643 TC3-2.8657 BAU .3591
RDE .1762 RRA .1304 RC3 -.6110 FAU .61754
FDE 5.0845 FRA 6.1931 FC-58.3276 BSP 6207
BDE .5496 BRA .1454 BC3 2.9301 FSP 11752

MID-COURSE EXECUTION ACCURACY
SGT 2001.0 SGR 583.9 SG3 3401.1
RRT .7913 RRF .9000 RTF .8708
SGB 2084.5 R23 .3098 R13 .8839
SG1 2055.3 SG2 347.6 THA 13.39

ORBIT DETERMINATION ACCURACY
ST 987.6 SR 345.9 SS 2573.0
CRT .9512 CRS -.9856 CST -.8913
LSA 2744.9 MSA 424.7 SSA 18.4
EL1 1041.5 EL2 101.3 ALF 18.61

LAUNCH DATE NOV 16 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 664.203 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.895 GAL -.82 AZL 87.82 HCA 202.99 SMA 186.30 ECC .20651 INC 2.1776 V1 30.121
RP 221.89 LAP -.85 LOP 256.65 VP 21.997 GAP -4.59 AZP 92.00 TAL 355.20 TAP 198.19 RCA 147.83 APO 224.78 V2 24.779
RC 264.895 GL 24.44 GP -2.84 ZAL 91.85 ZAP 99.49 ETS 179.36 ZAE 134.14 ETE 180.33 ZAC 84.10 ETC 256.55 CLP 99.50

PLANETOCENTRIC CONIC

C3 9.127 VHL 3.021 DLA 35.71 RAL 157.86 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.795 DPA .29 RAP 175.91 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.28	9 25 59	3889.30	-29.20	163.61	16.84	68.47	10 30 48	3289.3	-31.85	155.26
112.72	14 56 25	2842.88	-29.19	85.14	16.84	68.45	15 43 48	2242.9	-31.84	76.79
67.28	9 25 59	3889.30	-29.20	163.61	16.84	68.47	10 30 48	3289.3	-31.85	155.26
112.72	14 56 25	2842.88	-29.19	85.14	16.84	68.45	15 43 48	2242.9	-31.84	76.79
67.28	9 25 59	3889.30	-29.20	163.61	16.84	68.47	10 30 48	3289.3	-31.85	155.26
112.72	14 56 25	2842.88	-29.19	85.14	16.84	68.45	15 43 48	2242.9	-31.84	76.79

DIFFERENTIAL CORRECTIONS
TDE .5606 TRA -.0106 TC3-3.3747 BAU .4176
RDE .1771 RRA .1290 RC3 -.5671 FAU .62095
FDE 5.0539 FRA 6.3143 FC-58.8973 BSP 7331
BDE .5879 BRA .1295 BC3 3.4220 FSP 11927

MID-COURSE EXECUTION ACCURACY
SGT 2299.8 SGR 566.6 SG3 3429.8
RRT .8045 RRF .8828 RTF .9025
SGB 2368.5 R23 .2381 R13 .9096
SG1 2345.4 SG2 330.0 THA 11.44

ORBIT DETERMINATION ACCURACY
ST 1064.9 SR 348.1 SS 2562.1
CRT .9635 CRS -.9832 CST -.9047
LSA 2763.7 MSA 425.8 SSA 19.3
EL1 1116.9 EL2 88.9 ALF 17.59

LAUNCH DATE NOV 16 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 668.240 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.893 GAL -.84 AZL 87.84 HCA 204.09 SMA 186.26 ECC .20637 INC 2.1604 V1 30.121
RP 221.51 LAP -.88 LOP 257.75 VP 22.040 GAP -4.81 AZP 91.97 TAL 355.07 TAP 199.17 RCA 147.82 APO 224.70 V2 24.820
RC 266.379 GL 24.28 GP -2.73 ZAL 92.08 ZAP 97.47 ETS 179.27 ZAE 131.90 ETE 180.12 ZAC 84.02 ETC 256.62 CLP 97.48

PLANETOCENTRIC CONIC

C3 9.093 VHL 3.016 DLA 35.47 RAL 158.04 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.786 DPA .77 RAP 175.12 ECC 1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.69	9 29 1	3881.65	-29.03	162.93	16.89	68.67	10 33 43	3281.7	-31.66	154.58
112.31	14 54 51	2849.09	-29.02	85.56	16.88	68.65	15 42 20	2249.1	-31.65	77.22
67.69	9 29 1	3881.65	-29.03	162.93	16.89	68.67	10 33 43	3281.7	-31.66	154.58
112.31	14 54 51	2849.09	-29.02	85.56	16.88	68.65	15 42 20	2249.1	-31.65	77.22
67.69	9 29 1	3881.65	-29.03	162.93	16.89	68.67	10 33 43	3281.7	-31.66	154.58
112.31	14 54 51	2849.09	-29.02	85.56	16.88	68.65	15 42 20	2249.1	-31.65	77.22

DIFFERENTIAL CORRECTIONS
TDE .5999 TRA .0452 TC3-3.8865 BAU .4768
RDE .1775 RRA .1270 RC3 -.5280 FAU .62591
FDE 4.9550 FRA 6.3661 FC-59.5899 BSP 8503
BDE .6256 BRA .1348 BC3 3.9222 FSP 11938

MID-COURSE EXECUTION ACCURACY
SGT 2608.5 SGR 550.5 SG3 3456.9
RRT .8094 RRF .8637 RTF .9250
SGB 2666.0 R23 .1765 R13 .9289
SG1 2646.8 SG2 318.6 THA 9.84

ORBIT DETERMINATION ACCURACY
ST 1142.4 SR 349.0 SS 2520.9
CRT .9732 CRS -.9803 CST -.9152
LSA 2756.7 MSA 426.6 SSA 20.2
EL1 1192.0 EL2 77.0 ALF 16.63

LAUNCH DATE NOV 16 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 672.284 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.891 GAL -.87 AZL 87.86 HCA 205.20 SMA 186.23 ECC .20625 INC 2.1448 V1 30.121
RP 221.13 LAP -.91 LOP 258.86 VP 22.084 GAP -5.03 AZP 91.94 TAL 354.93 TAP 200.13 RCA 147.82 APO 224.64 V2 24.862
RC 267.844 GL 24.13 GP -2.63 ZAL 92.35 ZAP 95.45 ETS 179.19 ZAE 129.65 ETE 179.94 ZAC 83.92 ETC 256.70 CLP 95.46

PLANETOCENTRIC CONIC

C3 9.064 VHL 3.011 DLA 35.23 RAL 158.26 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.781 DPA 1.24 RAP 174.33 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.11	9 32 16	3873.94	-28.86	162.24	16.98	68.86	10 36 50	3273.9	-31.46	153.90
111.89	14 53 22	2855.55	-28.85	85.99	16.98	68.85	15 40 58	2255.5	-31.45	77.66
68.11	9 32 16	3873.94	-28.86	162.24	16.98	68.86	10 36 50	3273.9	-31.46	153.90
111.89	14 53 22	2855.55	-28.85	85.99	16.98	68.85	15 40 58	2255.5	-31.45	77.66
68.11	9 32 16	3873.94	-28.86	162.24	16.98	68.86	10 36 50	3273.9	-31.46	153.90
111.89	14 53 22	2855.55	-28.85	85.99	16.98	68.85	15 40 58	2255.5	-31.45	77.66

DIFFERENTIAL CORRECTIONS

TDE .6380 TRA .1028 TC3-4.4075 BAU .5373
RDE .1785 RRA .1256 RC3 -.4884 FAU .62843
FDE 4.8719 FRA 6.4386 FC-60.0244 BSP 9697
BDE .6625 BRA .1623 BC3 4.4344 FSP 11970

MID-COURSE EXECUTION ACCURACY

SGT 2928.2 SGR 536.2 SG3 3474.6
RRT .8045 RRF .8425 RTF .9406
SGB 2976.9 R23 .1296 R13 .9428
SG1 2960.2 SG2 315.1 THA 8.48

ORBIT DETERMINATION ACCURACY

ST 1218.8 SR 351.0 SS 2490.2
CRT .9805 CRS -.9772 CST -.9237
LSA 2761.7 MSA 427.0 SSA 21.1
EL1 1266.6 EL2 66.3 ALF 15.81

LAUNCH DATE NOV 16 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 676.337 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.889 GAL -.89 AZL 87.87 HCA 206.31 SMA 186.20 ECC .20616 INC 2.1303 V1 30.121
RP 220.75 LAP -.94 LOP 259.97 VP 22.128 GAP -5.25 AZP 91.91 TAL 354.77 TAP 201.08 RCA 147.81 APO 224.59 V2 24.903
RC 269.292 GL 23.99 GP -2.53 ZAL 92.64 ZAP 93.44 ETS 179.11 ZAE 127.40 ETE 179.79 ZAC 83.83 ETC 256.78 CLP 93.45

PLANETOCENTRIC CONIC

C3 9.038 VHL 3.006 DLA 34.98 RAL 158.52 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.779 DPA 1.71 RAP 173.54 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.55	9 35 47	3865.89	-28.68	161.52	17.11	69.05	10 40 12	3265.9	-31.26	153.20
111.45	14 51 54	2862.52	-28.67	86.47	17.11	69.04	15 39 36	2262.5	-31.25	78.14
68.55	9 35 47	3865.89	-28.68	161.52	17.11	69.05	10 40 12	3265.9	-31.26	153.20
111.45	14 51 54	2862.52	-28.67	86.47	17.11	69.04	15 39 36	2262.5	-31.25	78.14
68.55	9 35 47	3865.89	-28.68	161.52	17.11	69.05	10 40 12	3265.9	-31.26	153.20
111.45	14 51 54	2862.52	-28.67	86.47	17.11	69.04	15 39 36	2262.5	-31.25	78.14

DIFFERENTIAL CORRECTIONS

TDE .6749 TRA .1619 TC3-4.9398 BAU .5994
RDE .1796 RRA .1245 RC3 -.4486 FAU .62864
FDE 4.7726 FRA 6.5193 FC-60.2137 BSP 10903
BDE .6984 BRA .2043 BC3 4.9602 FSP 11994

MID-COURSE EXECUTION ACCURACY

SGT 3258.6 SGR 523.2 SG3 3481.3
RRT .7920 RRF .8191 RTF .9516
SGB 3300.3 R23 .0953 R13 .9529
SG1 3285.1 SG2 316.8 THA 7.32

ORBIT DETERMINATION ACCURACY

ST 1294.2 SR 353.2 SS 2456.1
CRT .9861 CRS -.9736 CST -.9299
LSA 2765.4 MSA 429.0 SSA 22.0
EL1 1340.4 EL2 56.8 ALF 15.09

LAUNCH DATE NOV 16 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 680.399 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.888 GAL -.92 AZL 87.88 HCA 207.42 SMA 186.18 ECC .20610 INC 2.1170 V1 30.121
RP 220.37 LAP -.97 LOP 261.09 VP 22.173 GAP -5.46 AZP 91.88 TAL 354.60 TAP 202.03 RCA 147.81 APO 224.55 V2 24.945
RC 270.721 GL 23.86 GP -2.44 ZAL 92.96 ZAP 91.44 ETS 179.05 ZAE 125.16 ETE 179.65 ZAC 83.73 ETC 256.86 CLP 91.44

PLANETOCENTRIC CONIC

C3 9.017 VHL 3.003 DLA 34.73 RAL 158.81 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.781 DPA 2.16 RAP 172.77 ECC 1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.99	9 39 32	3857.59	-28.49	160.79	17.29	69.25	10 43 49	3257.6	-31.05	152.47
111.01	14 50 27	2869.91	-28.48	86.97	17.28	69.23	15 38 17	2269.9	-31.04	78.65
68.99	9 39 32	3857.59	-28.49	160.79	17.29	69.25	10 43 49	3257.6	-31.05	152.47
111.01	14 50 27	2869.91	-28.48	86.97	17.28	69.23	15 38 17	2269.9	-31.04	78.65
68.99	9 39 32	3857.59	-28.49	160.79	17.29	69.25	10 43 49	3257.6	-31.05	152.47
111.01	14 50 27	2869.91	-28.48	86.97	17.28	69.23	15 38 17	2269.9	-31.04	78.65

DIFFERENTIAL CORRECTIONS

TDE .7113 TRA .2244 TC3-5.4686 BAU .6611
RDE .1808 RRA .1234 RC3 -.4102 FAU .62792
FDE 4.6621 FRA 6.5804 FC-60.2871 BSP 12146
BDE .7339 BRA .2561 BC3 5.4840 FSP 11992

MID-COURSE EXECUTION ACCURACY

SGT 3591.6 SGR 511.7 SG3 3481.2
RRT .7763 RRF .7938 RTF .9601
SGB 3627.9 R23 .0674 R13 .9608
SG1 3613.7 SG2 320.6 THA 6.36

ORBIT DETERMINATION ACCURACY

ST 1369.7 SR 355.7 SS 2418.5
CRT .9903 CRS -.9696 CST -.9354
LSA 2768.8 MSA 429.9 SSA 22.8
EL1 1414.3 EL2 47.8 ALF 14.44

LAUNCH DATE NOV 16 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 684.465 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.887 GAL -.95 AZL 87.90 HCA 208.54 SMA 186.16 ECC .20606 INC 2.1043 V1 30.121
RP 220.00 LAP -1.01 LOP 262.20 VP 22.217 GAP -5.66 AZP 91.85 TAL 354.41 TAP 202.96 RCA 147.80 APO 224.52 V2 24.986
RC 272.134 GL 23.73 GP -2.35 ZAL 93.31 ZAP 89.45 ETS 178.99 ZAE 122.94 ETE 179.54 ZAC 83.64 ETC 256.94 CLP 89.45

PLANETOCENTRIC CONIC

C3 9.000 VHL 3.000 DLA 34.47 RAL 159.13 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.786 DPA 2.59 RAP 172.01 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.46	9 43 34	3848.88	-28.30	160.02	17.50	69.44	10 47 43	3248.9	-30.83	151.71
110.54	14 49 0	2877.86	-28.29	87.51	17.49	69.43	15 36 58	2277.9	-30.82	79.20
69.46	9 43 34	3848.88	-28.30	160.02	17.50	69.44	10 47 43	3248.9	-30.83	151.71
110.54	14 49 0	2877.86	-28.29	87.51	17.49	69.43	15 36 58	2277.9	-30.82	79.20
69.46	9 43 34	3848.88	-28.30	160.02	17.50	69.44	10 47 43	3248.9	-30.83	151.71
110.54	14 49 0	2877.86	-28.29	87.51	17.49	69.43	15 36 58	2277.9	-30.82	79.20

DIFFERENTIAL CORRECTIONS

TDE .7487 TRA .2917 TC3-5.9979 BAU .7230
RDE .1833 RRA .1238 RC3 -.3669 FAU .62039
FDE 4.6401 FRA 6.7545 FC-59.6800 BSP 13453
BDE .7708 BRA .3168 BC3 6.0091 FSP 12189

MID-COURSE EXECUTION ACCURACY

SGT 3930.8 SGR 503.3 SG3 3462.0
RRT .7514 RRF .7672 RTF .9657
SGB 3962.9 R23 .0552 R13 .9662
SG1 3949.1 SG2 330.5 THA 5.53

ORBIT DETERMINATION ACCURACY

ST 1448.2 SR 360.6 SS 2427.5
CRT .9934 CRS -.9661 CST -.9406
LSA 2816.7 MSA 431.1 SSA 23.5
EL1 1491.9 EL2 40.1 ALF 13.90

LAUNCH DATE NOV 16 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 688.545 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.886	GAL	-.99	AZL	87.91	HCA	209.67	SMA	186.15	ECC	.20606	INC	2.0926
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.262	GAP	-5.87	AZP	91.82	TAL	354.21	TAP	203.88	RCA	147.79	APO	224.50
RC	273.529	GL	23.61	GP	-2.26	ZAL	93.69	ZAP	87.48	ETS	178.93	ZAE	120.72	ETE	179.44	ZAC	83.54	ETC	257.03

V1	30.121	V2	25.027	CLP	87.48														

PLANETOCENTRIC CONIC

C3	8.986	VHL	2.998	DLA	34.21	RAL	159.48	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.793	DPA	3.02	RAP	171.27
ECC	1.1479																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.95	9 47 51	3839.85	-28.10	159.23	17.74	69.63	10 51 51	3239.9	-30.61	150.93
110.05	14 47 32	2886.32	-28.09	88.09	17.74	69.62	15 35 38	2286.3	-30.60	79.79
69.95	9 47 51	3839.85	-28.10	159.23	17.74	69.63	10 51 51	3239.9	-30.61	150.93
110.05	14 47 32	2886.32	-28.09	88.09	17.74	69.62	15 35 38	2286.3	-30.60	79.79
69.95	9 47 51	3839.85	-28.10	159.23	17.74	69.63	10 51 51	3239.9	-30.61	150.93
110.05	14 47 32	2886.32	-28.09	88.09	17.74	69.62	15 35 38	2286.3	-30.60	79.79

DIFFERENTIAL CORRECTIONS

TDE	.7790	TRA	.3554	TC3	-6.5363	BAU	.7863
RDE	.1840	RRA	.1224	RC3	-.3330	FAU	.61962
FDE	4.4340	FRA	6.7465	FC	-59.6951	BSP	14645
BDE	.8005	BRA	.3759	BC3	6.5448	FSP	11959

MID-COURSE EXECUTION ACCURACY

SGT	4271.9	SGR	493.5	SG3	3451.5		
RRT	.7297	RRF	.7373	RTF	.9709		
SGB	4300.3	R23	.0358	R13	.9711		
SG1	4287.1	SG2	336.3	THA	4.85		

ORBIT DETERMINATION ACCURACY

ST	1513.9	SR	361.8	SS	2350.7		
CRT	.9955	CRS	-.9602	CST	-.9426		
LSA	2785.5	MSA	434.6	SSA	24.4		
EL1	1556.1	EL2	33.4	ALF	13.39		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 692.632 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.885	GAL	-1.02	AZL	87.92	HCA	210.79	SMA	186.14	ECC	.20608	INC	2.0817
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.307	GAP	-6.07	AZP	91.79	TAL	354.00	TAP	204.79	RCA	147.78	APO	224.50
RC	274.906	GL	23.49	GP	-2.18	ZAL	94.09	ZAP	85.53	ETS	178.88	ZAE	118.52	ETE	179.35	ZAC	83.45	ETC	257.11

V1	30.121	V2	25.067	CLP	85.52														

PLANETOCENTRIC CONIC

C3	8.976	VHL	2.996	DLA	33.94	RAL	159.87	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.804	DPA	3.43	RAP	170.55
ECC	1.1477																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.46	9 52 29	3830.22	-27.89	158.39	18.02	69.83	10 56 19	3230.2	-30.38	150.10
109.54	14 45 59	2895.53	-27.88	88.72	18.02	69.82	15 34 14	2295.5	-30.37	80.43
70.46	9 52 29	3830.22	-27.89	158.39	18.02	69.83	10 56 19	3230.2	-30.38	150.10
109.54	14 45 59	2895.53	-27.88	88.72	18.02	69.82	15 34 14	2295.5	-30.37	80.43
110.00	15 19 42	2792.61	-30.14	81.56	18.88	73.04	16 6 15	2192.6	-32.16	72.93
110.00	14 17 56	2981.14	-25.69	94.41	17.04	66.63	15 7 37	2381.1	-28.62	86.46

DIFFERENTIAL CORRECTIONS

TDE	.8083	TRA	.4226	TC3	-7.0702	BAU	.8492
RDE	.1851	RRA	.1215	RC3	-.2981	FAU	.61583
FDE	4.2492	FRA	6.7634	FC	-59.3943	BSP	15852
BDE	.8292	BRA	.4398	BC3	7.0765	FSP	11807

MID-COURSE EXECUTION ACCURACY

SGT	4613.8	SGR	485.5	SG3	3429.7		
RRT	.7040	RRF	.7057	RTF	.9748		
SGB	4639.3	R23	.0221	R13	.9749		
SG1	4626.5	SG2	343.9	THA	4.26		

ORBIT DETERMINATION ACCURACY

ST	1578.3	SR	363.9	SS	2286.5		
CRT	.9968	CRS	-.9539	CST	-.9443		
LSA	2767.4	MSA	438.2	SSA	25.2		
EL1	1619.5	EL2	28.5	ALF	12.95		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 696.726 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.885	GAL	-1.06	AZL	87.93	HCA	211.92	SMA	186.14	ECC	.20613	INC	2.0712
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.353	GAP	-6.26	AZP	91.76	TAL	353.77	TAP	205.69	RCA	147.77	APO	224.50
RC	276.266	GL	23.38	GP	-2.11	ZAL	94.53	ZAP	83.60	ETS	178.84	ZAE	116.35	ETE	179.28	ZAC	83.36	ETC	257.20

V1	30.121	V2	25.108	CLP	83.59														

PLANETOCENTRIC CONIC

C3	8.970	VHL	2.995	DLA	33.66	RAL	160.29	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	2.818	DPA	3.83	RAP	169.85
ECC	1.1476																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.00	9 57 25	3820.04	-27.68	157.51	18.34	70.03	11 1 5	3220.0	-30.14	149.23
109.00	14 44 21	2905.46	-27.67	89.40	18.33	70.02	15 32 47	2305.5	-30.13	81.12
71.00	9 57 25	3820.04	-27.68	157.51	18.34	70.03	11 1 5	3220.0	-30.14	149.23
109.00	14 44 21	2905.46	-27.67	89.40	18.33	70.02	15 32 47	2305.5	-30.13	81.12
110.00	15 35 45	2748.24	-30.97	78.38	19.54	74.76	16 21 34	2148.2	-32.75	69.61
110.00	14 5 11	3025.26	-24.47	97.26	16.87	65.35	14 55 37	2425.3	-27.58	89.47

DIFFERENTIAL CORRECTIONS

TDE	.8345	TRA	.4918	TC3	-7.6024	BAU	.9123
RDE	.1866	RRA	.1209	RC3	-.2636	FAU	.61045
FDE	4.0685	FRA	6.7824	FC	-58.9138	BSP	17045
BDE	.8551	BRA	.5064	BC3	7.6070	FSP	11643

MID-COURSE EXECUTION ACCURACY

SGT	4956.2	SGR	479.1	SG3	3400.4		
RRT	.6751	RRF	.6726	RTF	.9779		
SGB	4979.3	R23	.0122	R13	.9780		
SG1	4966.8	SG2	352.7	THA	3.75		

ORBIT DETERMINATION ACCURACY

ST	1637.6	SR	366.6	SS	2226.0		
CRT	.9973	CRS	-.9468	CST	-.9455		
LSA	2752.4	MSA	441.2	SSA	25.9		
EL1	1678.0	EL2	26.2	ALF	12.59		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 700.828 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.885	GAL	-1.11	AZL	87.94	HCA	213.05	SMA	186.14	ECC	.20620	INC	2.0616
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.398	GAP	-6.45	AZP	91.73	TAL	353.53	TAP	206.58	RCA	147.76	APO	224.52
RC	277.609	GL	23.26	GP	-2.03	ZAL	94.99	ZAP	81.70	ETS	178.80	ZAE	114.20	ETE	179.22	ZAC	83.27	ETC	257.28

V1	30.121	V2	25.148	CLP	81.69														

PLANETOCENTRIC CONIC

C3	8.968	VHL	2.995	DLA	33.37	RAL	160.73	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	2.835	DPA	4.20	RAP	169.17
ECC	1.1476																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.56	10 2 44	3809.18	-27.45	156.58	18.69	70.24	11 6 13	3209.2	-29.88	148.31
108.44	14 42 36	2916.23	-27.44	90.14	18.68	70.22	15 31 13	2316.2	-29.87	81.87
71.56	10 2 44	3809.18	-27.45	156.58	18.69	70.24	11 6 13	3209.2	-29.88	148.31
108.44	14 42 36	2916.23	-27.44	90.14	18.68	70.22	15 31 13	2316.2	-29.87	81.87
110.00	15 48 40	2713.78	-31.56	75.86	20.12	76.14	16 33 53	2113.8	-33.14	66.99
110.00	13 55 51	3059.63	-23.47	99.43	16.85	64.41	14 46 50	2459.6	-26.72	91.77

DIFFERENTIAL CORRECTIONS

TDE	.8596	TRA	.5649	TC3	-8.1233	BAU	.9744
RDE	.1883	RRA	.1205	RC3	-.2290	FAU	.60266
FDE	3.8919	FRA	6.8127	FC	-58.1753	BSP	18264
BDE	.8800	BRA	.5776	BC3	8.1265	FSP	11478

MID-COURSE EXECUTION ACCURACY

SGT	5296.4	SGR	474.1	SG3	3360.9		
RRT	.6439	RRF	.6382	RTF	.9803		
SGB	5317.6	R23	.0051	R13	.9804		
SG1	5305.2	SG2	362.1	THA	3.31		

ORBIT DETERMINATION ACCURACY

ST	1696.1	SR	369.7	SS	2169.8		
CRT	.9972	CRS	-.9389	CST	-.9463		
LSA	2742.8	MSA	445.0	SSA	26.6		
EL1	1735.7	EL2	27.2	ALF	12.26		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 704.938 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.886 GAL -1.15 AZL 87.95 HCA 214.19 SMA 186.15 ECC .20630 INC 2.0525 V1 30.121
RP 218.16 LAP -1.15 LOP 267.85 VP 22.444 GAP -6.64 AZP 91.70 TAL 353.27 TAP 207.46 RCA 147.74 APO 224.55 V2 25.188
RC 278.933 GL 23.15 GP -1.96 ZAL 95.48 ZAP 79.83 ETS 178.77 ZAE 112.07 ETE 179.16 ZAC 83.19 ETC 257.36 CLP 79.82

PLANETOCENTRIC CONIC

C3 8.970 VHL 2.995 DLA 33.07 RAL 161.21 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.855 DPA 4.57 RAP 168.53 ECC 1.1476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.16	10 8 26	3797.49	-27.21	155.58	19.07	70.44	11 11 43	3197.5	-29.62	147.32
107.84	14 40 42	2928.00	-27.20	90.95	19.06	70.43	15 29 30	2328.0	-29.61	82.70
72.16	10 8 26	3797.49	-27.21	155.58	19.07	70.44	11 11 43	3197.5	-29.62	147.32
107.84	14 40 42	2928.00	-27.20	90.95	19.06	70.43	15 29 30	2328.0	-29.61	82.70
110.00	16 0 6	2684.07	-32.03	73.67	20.67	77.36	16 44 50	2084.1	-33.43	64.72
110.00	13 48 11	3089.43	-22.58	101.29	16.91	63.63	14 39 41	2489.4	-25.94	93.73

DIFFERENTIAL CORRECTIONS
TDE .8813 TRA .6397 TC3-8.6375 BAU 1.0361
RDE .1901 RRA .1202 RC3 -.1957 FAU .59426
FDE 3.7048 FRA 6.8312 FC-57.3527 BSP 19447
BDE .9015 BRA .6509 BC3 8.6397 FSP 11306

MID-COURSE EXECUTION ACCURACY
SGT 5634.2 SGR 470.4 SG3 3316.7
RRT .6114 RRF .6027 RTF .9823
SGB 5653.8 R23 -.0006 R13 .9824
SG1 5641.6 SG2 371.7 THA 2.93

ORBIT DETERMINATION ACCURACY
ST 1748.8 SR 372.8 SS 2110.2
CRT .9963 CRS -.9299 CST -.9464
LSA 2729.0 MSA 449.1 SSA 27.3
EL1 1787.8 EL2 31.1 ALF 12.00

LAUNCH DATE NOV 16 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 709.056 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.886 GAL -1.20 AZL 87.96 HCA 215.33 SMA 186.16 ECC .20642 INC 2.0437 V1 30.121
RP 217.80 LAP -1.18 LOP 268.99 VP 22.489 GAP -6.83 AZP 91.67 TAL 352.99 TAP 208.33 RCA 147.73 APO 224.58 V2 25.228
RC 280.240 GL 23.04 GP -1.90 ZAL 96.00 ZAP 77.99 ETS 178.74 ZAE 109.98 ETE 179.12 ZAC 83.11 ETC 257.44 CLP 77.98

PLANETOCENTRIC CONIC

C3 8.976 VHL 2.996 DLA 32.76 RAL 161.71 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.878 DPA 4.91 RAP 167.91 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.80	10 14 31	3785.02	-26.96	154.52	19.48	70.65	11 17 36	3185.0	-29.34	146.27
107.20	14 38 38	2940.73	-26.95	91.84	19.48	70.64	15 27 38	2340.7	-29.34	83.59
72.80	10 14 31	3785.02	-26.96	154.52	19.48	70.65	11 17 36	3185.0	-29.34	146.27
107.20	14 38 38	2940.73	-26.95	91.84	19.48	70.64	15 27 38	2340.7	-29.34	83.59
110.00	16 10 43	2657.23	-32.41	71.67	21.21	78.48	16 55 0	2057.2	-33.66	62.66
110.00	13 41 36	3116.52	-21.75	102.95	17.04	62.96	14 33 33	2516.5	-25.20	95.50

DIFFERENTIAL CORRECTIONS
TDE .8997 TRA .7172 TC3-9.1421 BAU 1.0973
RDE .1920 RRA .1201 RC3 -.1630 FAU .58443
FDE 3.5118 FRA 6.8500 FC-56.3663 BSP 20616
BDE .9200 BRA .7272 BC3 9.1435 FSP 11100

MID-COURSE EXECUTION ACCURACY
SGT 5969.0 SGR 467.8 SG3 3265.5
RRT .5772 RRF .5665 RTF .9840
SGB 5987.3 R23 -.0047 R13 .9839
SG1 5975.2 SG2 381.6 THA 2.60

ORBIT DETERMINATION ACCURACY
ST 1796.4 SR 376.2 SS 2049.8
CRT .9948 CRS -.9194 CST -.9459
LSA 2713.5 MSA 454.0 SSA 27.9
EL1 1834.9 EL2 37.4 ALF 11.77

LAUNCH DATE NOV 16 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 713.181 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.887 GAL -1.25 AZL 87.96 HCA 216.48 SMA 186.17 ECC .20657 INC 2.0356 V1 30.121
RP 217.44 LAP -1.21 LOP 270.14 VP 22.535 GAP -7.01 AZP 91.64 TAL 352.71 TAP 209.19 RCA 147.71 APO 224.63 V2 25.268
RC 281.529 GL 22.93 GP -1.83 ZAL 96.54 ZAP 76.18 ETS 178.71 ZAE 107.92 ETE 179.08 ZAC 83.04 ETC 257.52 CLP 76.18

PLANETOCENTRIC CONIC

C3 8.986 VHL 2.998 DLA 32.43 RAL 162.24 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 2.903 DPA 5.23 RAP 167.33 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.49	10 21 6	3771.36	-26.70	153.37	19.93	70.87	11 23 57	3171.4	-29.06	145.14
106.51	14 36 16	2954.82	-26.69	92.81	19.93	70.85	15 25 31	2354.8	-29.05	84.58
73.49	10 21 6	3771.36	-26.70	153.37	19.93	70.87	11 23 57	3171.4	-29.06	145.14
106.51	14 36 16	2954.82	-26.69	92.81	19.93	70.85	15 25 31	2354.8	-29.05	84.58
110.00	16 20 47	2632.31	-32.73	69.80	21.76	79.55	17 4 39	2032.3	-33.83	60.73
110.00	13 35 46	3141.87	-20.96	104.49	17.22	62.36	14 28 8	2541.9	-24.49	97.12

DIFFERENTIAL CORRECTIONS
TDE .9158 TRA .7977 TC3-9.6323 BAU 1.1573
RDE .1941 RRA .1199 RC3 -.1313 FAU .57368
FDE 3.3195 FRA 6.8550 FC-55.2669 BSP 21779
BDE .9362 BRA .8067 BC3 9.6332 FSP 10895

MID-COURSE EXECUTION ACCURACY
SGT 6299.1 SGR 466.4 SG3 3208.6
RRT .5427 RRF .5298 RTF .9854
SGB 6316.3 R23 -.0083 R13 .9853
SG1 6304.2 SG2 391.4 THA 2.31

ORBIT DETERMINATION ACCURACY
ST 1840.6 SR 379.7 SS 1989.7
CRT .9926 CRS -.9079 CST -.9453
LSA 2698.1 MSA 458.3 SSA 28.5
EL1 1878.8 EL2 45.1 ALF 11.58

LAUNCH DATE NOV 16 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 717.313 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.888 GAL -1.30 AZL 87.97 HCA 217.63 SMA 186.19 ECC .20675 INC 2.0278 V1 30.121
RP 217.09 LAP -1.24 LOP 271.29 VP 22.581 GAP -7.18 AZP 91.61 TAL 352.41 TAP 210.03 RCA 147.70 APO 224.69 V2 25.307
RC 282.801 GL 22.82 GP -1.77 ZAL 97.12 ZAP 74.41 ETS 178.68 ZAE 105.89 ETE 179.04 ZAC 82.98 ETC 257.60 CLP 74.41

PLANETOCENTRIC CONIC

C3 9.001 VHL 3.000 DLA 32.10 RAL 162.80 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.931 DPA 5.54 RAP 166.79 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.22	10 28 12	3756.48	-26.43	152.13	20.41	71.09	11 30 49	3156.5	-28.76	143.91
105.78	14 33 37	2970.32	-26.42	93.89	20.40	71.07	15 23 8	2370.3	-28.75	85.67
74.22	10 28 12	3756.48	-26.43	152.13	20.41	71.09	11 30 49	3156.5	-28.76	143.91
105.78	14 33 37	2970.32	-26.42	93.89	20.40	71.07	15 23 8	2370.3	-28.75	85.67
110.00	16 30 30	2608.78	-33.01	68.02	22.32	80.57	17 13 59	2008.8	-33.96	58.91
110.00	13 30 30	3166.01	-20.19	105.94	17.45	61.81	14 23 16	2566.0	-23.80	98.66

DIFFERENTIAL CORRECTIONS
TDE .9287 TRA .8809 TC-10.1069 BAU 1.2163
RDE .1962 RRA .1200 RC3 -.1004 FAU .56179
FDE 3.1201 FRA 6.8578 FC-54.0349 BSP 22927
BDE .9492 BRA .8891 BC310.1074 FSP 10668

MID-COURSE EXECUTION ACCURACY
SGT 6623.2 SGR 466.0 SG3 3145.9
RRT .5077 RRF .4931 RTF .9865
SGB 6639.6 R23 -.0111 R13 .9865
SG1 6627.5 SG2 401.2 THA 2.05

ORBIT DETERMINATION ACCURACY
ST 1879.9 SR 383.4 SS 1927.9
CRT .9896 CRS -.8945 CST -.9439
LSA 2679.9 MSA 464.1 SSA 29.0
EL1 1917.8 EL2 53.9 ALF 11.42

LAUNCH DATE NOV 16 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 721.453 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.890	GAL	-1.35	AZL	87.98	HCA	218.78	SMA	186.21	ECC	.20695	INC	2.0203	V1	30.121
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.626	GAP	-7.36	AZP	91.58	TAL	352.09	TAP	210.87	RCA	147.68	APO	224.75	V2	25.346
RC	284.057	GL	22.70	GP	-1.71	ZAL	97.72	ZAP	72.68	ETS	178.66	ZAE	103.90	ETE	179.02	ZAC	82.92	ETC	257.67	CLP	72.68

PLANETOCENTRIC CONIC

C3	9.020	VHL	3.003	DLA	31.75	RAL	163.38	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.961	DPA	5.82	RAP	166.28	ECC	1.1484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.01	10 35 53	3740.18	-26.14	150.78	20.92	71.31	11 38 13	3140.2	-28.45	142.58
104.99	14 30 36	2987.43	-26.13	95.08	20.91	71.30	15 20 24	2387.4	-28.44	86.88
75.01	10 35 53	3740.18	-26.14	150.78	20.92	71.31	11 38 13	3140.2	-28.45	142.58
104.99	14 30 36	2987.43	-26.13	95.08	20.91	71.30	15 20 24	2387.4	-28.44	86.88
110.00	16 39 58	2586.28	-33.25	66.31	22.89	81.55	17 23 5	1986.3	-34.06	57.16
110.00	13 25 41	3189.32	-19.44	107.33	17.73	61.31	14 18 51	2589.3	-23.11	100.12

DIFFERENTIAL CORRECTIONS

TDE	.9377	TRA	.9667	TC-10.5701	BAU	1.2746	
RDE	.1985	RRA	.1200	RC3 -.0708	FAU	.54954	
FDE	2.9191	FRA	6.8493	FC-52.7467	BSP	24046	
BDE	.9585	BRA	.9741	BC310.5704	FSP	10424	

MID-COURSE EXECUTION ACCURACY

SGT	6943.6	SGR	466.6	SG3	3080.1		
RRT	.4726	RRF	.4565	RTF	.9875		
SGB	6959.2	R23	-.0135	R13	.9875		
SG1	6947.1	SG2	410.9	THA	1.83		

ORBIT DETERMINATION ACCURACY

ST	1913.1	SR	387.2	SS	1865.7		
CRT	.9858	CRS	-.8793	CST	-.9422		
LSA	2658.8	MSA	469.5	SSA	29.5		
EL1	1950.8	EL2	63.7	ALF	11.30		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 725.600 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.891	GAL	-1.41	AZL	87.99	HCA	219.93	SMA	186.24	ECC	.20718	INC	2.0133	V1	30.121
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.672	GAP	-7.53	AZP	91.54	TAL	351.76	TAP	211.69	RCA	147.66	APO	224.83	V2	25.385
RC	285.296	GL	22.59	GP	-1.65	ZAL	98.34	ZAP	70.99	ETS	178.64	ZAE	101.95	ETE	178.99	ZAC	82.87	ETC	257.73	CLP	70.98

PLANETOCENTRIC CONIC

C3	9.043	VHL	3.007	DLA	31.39	RAL	163.99	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.994	DPA	6.09	RAP	165.81	ECC	1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.87	10 44 13	3722.17	-25.84	149.31	21.45	71.54	11 46 15	3122.2	-28.12	141.12
104.13	14 27 8	3006.44	-25.83	96.41	21.45	71.53	15 17 15	2406.4	-28.11	88.22
75.87	10 44 13	3722.17	-25.84	149.31	21.45	71.54	11 46 15	3122.2	-28.12	141.12
104.13	14 27 8	3006.44	-25.83	96.41	21.45	71.53	15 17 15	2406.4	-28.11	88.22
110.00	16 49 17	2564.58	-33.45	64.64	23.47	82.52	17 32 1	1964.6	-34.12	55.47
110.00	13 21 15	3212.03	-18.69	108.67	18.05	60.84	14 14 47	2612.0	-22.43	101.53

DIFFERENTIAL CORRECTIONS

TDE	.9438	TRA	1.0559	TC-11.0140	BAU	1.3316	
RDE	.2009	RRA	.1202	RC3 -.0422	FAU	.53654	
FDE	2.7162	FRA	6.8460	FC-51.3650	BSP	25144	
BDE	.9649	BRA	1.0627	BC311.0141	FSP	10180	

MID-COURSE EXECUTION ACCURACY

SGT	7257.2	SGR	468.1	SG3	3011.1		
RRT	.4382	RRF	.4208	RTF	.9883		
SGB	7272.3	R23	-.0153	R13	.9882		
SG1	7260.1	SG2	420.6	THA	1.62		

ORBIT DETERMINATION ACCURACY

ST	1942.4	SR	391.1	SS	1804.6		
CRT	.9811	CRS	-.8616	CST	-.9397		
LSA	2637.0	MSA	476.9	SSA	30.0		
EL1	1979.9	EL2	74.3	ALF	11.19		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 729.754 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.893	GAL	-1.47	AZL	87.99	HCA	221.09	SMA	186.27	ECC	.20743	INC	2.0065	V1	30.121
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.717	GAP	-7.69	AZP	91.51	TAL	351.41	TAP	212.51	RCA	147.63	APO	224.91	V2	25.423
RC	286.520	GL	22.47	GP	-1.60	ZAL	99.00	ZAP	69.34	ETS	178.62	ZAE	100.03	ETE	178.98	ZAC	82.83	ETC	257.80	CLP	69.33

PLANETOCENTRIC CONIC

C3	9.072	VHL	3.012	DLA	31.01	RAL	164.63	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	3.030	DPA	6.34	RAP	165.38	ECC	1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.80	10 53 19	3702.05	-25.53	147.68	22.02	71.77	11 55 1	3102.0	-27.78	139.50
103.20	14 23 5	3027.77	-25.52	97.91	22.02	71.76	15 13 33	2427.8	-27.77	89.73
76.80	10 53 19	3702.05	-25.53	147.68	22.02	71.77	11 55 1	3102.0	-27.78	139.50
103.20	14 23 5	3027.77	-25.52	97.91	22.02	71.76	15 13 33	2427.8	-27.77	89.73
110.00	16 58 28	2543.50	-33.63	63.02	24.06	83.46	17 40 51	1943.5	-34.17	53.82
110.00	13 17 7	3234.32	-17.94	109.97	18.40	60.41	14 11 1	2634.3	-21.75	102.90

DIFFERENTIAL CORRECTIONS

TDE	.9460	TRA	1.1474	TC-11.4412	BAU	1.3876	
RDE	.2034	RRA	.1205	RC3 -.0145	FAU	.52294	
FDE	2.5155	FRA	6.8271	FC-49.9059	BSP	26210	
BDE	.9676	BRA	1.1537	BC311.4412	FSP	9919	

MID-COURSE EXECUTION ACCURACY

SGT	7564.6	SGR	470.4	SG3	2937.9		
RRT	.4040	RRF	.3855	RTF	.9890		
SGB	7579.2	R23	-.0168	R13	.9890		
SG1	7567.0	SG2	430.1	THA	1.44		

ORBIT DETERMINATION ACCURACY

ST	1965.9	SR	395.1	SS	1743.8		
CRT	.9753	CRS	-.8420	CST	-.9370		
LSA	2612.9	MSA	483.5	SSA	30.4		
EL1	2003.4	EL2	85.7	ALF	11.11		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 733.915 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.895	GAL	-1.54	AZL	88.00	HCA	222.26	SMA	186.31	ECC	.20771	INC	1.9999	V1	30.121
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.763	GAP	-7.86	AZP	91.48	TAL	351.05	TAP	213.31	RCA	147.61	APO	225.00	V2	25.461
RC	287.729	GL	22.35	GP	-1.54	ZAL	99.68	ZAP	67.73	ETS	178.60	ZAE	98.16	ETE	178.96	ZAC	82.79	ETC	257.85	CLP	67.72

PLANETOCENTRIC CONIC

C3	9.105	VHL	3.017	DLA	30.62	RAL	165.28	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	3.067	DPA	6.56	RAP	164.98	ECC	1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.83	11 3 24	3679.18	-25.21	145.84	22.62	72.02	12 4 43	3079.2	-27.43	137.68
102.17	14 18 15	3052.06	-25.20	99.61	22.61	72.00	15 9 7	2452.1	-27.42	91.45
77.83	11 3 24	3679.18	-25.21	145.84	22.62	72.02	12 4 43	3079.2	-27.43	137.68
102.17	14 18 15	3052.06	-25.20	99.61	22.61	72.00	15 9 7	2452.1	-27.42	91.45
110.00	17 7 34	2522.92	-33.78	61.43	24.67	84.39	17 49 37	1922.9	-34.18	52.21
110.00	13 13 15	3256.32	-17.20	111.24	18.80	59.99	14 7 32	2656.3	-21.06	104.24

DIFFERENTIAL CORRECTIONS

TDE	.9440	TRA	1.2420	TC-11.8495	BAU	1.4424	
RDE	.2060	RRA	.1207	RC3 .0119	FAU	.50909	
FDE	2.3095	FRA	6.8049	FC-48.4060	BSP	27256	
BDE	.9662	BRA	1.2479	BC311.8495	FSP	9659	

MID-COURSE EXECUTION ACCURACY

SGT	7865.2	SGR	473.3	SG3	2863.0		
RRT	.3707	RRF	.3511	RTF	.9896		
SGB	7879.4	R23	-.0182	R13	.9896		
SG1	7867.1	SG2	439.5	THA	1.28		

ORBIT DETERMINATION ACCURACY

ST	1983.6	SR	399.2	SS	1682.2		
CRT	.9682	CRS	-.8189	CST	-.9334		
LSA	2584.8	MSA	491.8	SSA	30.7		
EL1	2021.0	EL2	98.0	ALF	11.05		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 738.083 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.897	GAL	-1.60	AZL	88.01	HCA	223.42	SMA	186.34	ECC	.20801	INC	1.9938	V1	30.121
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.808	GAP	-8.02	AZP	91.45	TAL	350.68	TAP	214.10	RCA	147.58	APO	225.11	V2	25.498
RC	288.924	GL	22.23	GP	-1.49	ZAL	100.39	ZAP	66.16	ETS	178.59	ZAE	96.32	ETE	178.95	ZAC	82.76	ETC	257.91	CLP	66.15

PLANETOCENTRIC CONIC

C3	9.144	VHL	3.024	DLA	30.22	RAL	165.96	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	3.107	DPA	6.77	RAP	164.63	ECC	1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.99	11 14 37	3652.97	-24.87	143.76	23.24	72.26	12 15 30	3053.0	-27.06	135.62
101.01	14 12 27	3079.92	-24.86	101.57	23.24	72.25	15 3 47	2479.9	-27.05	93.43
78.99	11 14 37	3652.97	-24.87	143.76	23.24	72.26	12 15 30	3053.0	-27.06	135.62
101.01	14 12 27	3079.92	-24.86	101.57	23.24	72.25	15 3 47	2479.9	-27.05	93.43
110.00	17 16 38	2502.75	-33.90	59.87	25.30	85.31	17 58 20	1902.8	-34.18	50.64
110.00	13 9 38	3278.14	-16.45	112.49	19.23	59.61	14 4 16	2678.1	-20.37	105.55

DIFFERENTIAL CORRECTIONS

TDE	.9384	TRA	1.3400	TC-12.2383	BAU	1.4961	
RDE	.2087	RRA	.1211	RC3 .0373	FAU	.49486	
FDE	2.1087	FRA	6.7778	FC-46.8530	BSP	28277	
BDE	.9613	BRA	1.3455	BC312.2384	FSP	9388	

MID-COURSE EXECUTION ACCURACY

SGT	8159.4	SGR	476.9	SG3	2786.0		
RRT	.3384	RRF	.3179	RTF	.9901		
SGB	8173.4	R23	-.0193	R13	.9901		
SG1	8161.0	SG2	448.7	THA	1.14		

ORBIT DETERMINATION ACCURACY

ST	1996.9	SR	403.4	SS	1623.4		
CRT	.9598	CRS	-.7931	CST	-.9294		
LSA	2556.3	MSA	500.2	SSA	31.1		
EL1	2034.2	EL2	111.1	ALF	11.01		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 742.253 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.900	GAL	-1.67	AZL	88.01	HCA	224.60	SMA	186.38	ECC	.20834	INC	1.9878	V1	30.121
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.853	GAP	-8.18	AZP	91.42	TAL	350.29	TAP	214.88	RCA	147.55	APO	225.22	V2	25.535
RC	290.105	GL	22.11	GP	-1.44	ZAL	101.13	ZAP	64.63	ETS	178.57	ZAE	94.52	ETE	178.94	ZAC	82.74	ETC	257.95	CLP	64.62

PLANETOCENTRIC CONIC

C3	9.188	VHL	3.031	DLA	29.80	RAL	166.67	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	3.149	DPA	6.96	RAP	164.32	ECC	1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.31	11 27 29	3621.89	-24.52	141.33	23.90	72.51	12 27 51	3021.9	-26.68	133.20
99.69	14 5 14	3112.88	-24.51	103.90	23.90	72.50	14 57 7	2512.9	-26.67	95.78
100.00	14 27 40	3041.21	-25.83	99.01	24.33	74.40	15 18 21	2441.2	-27.72	90.72
100.00	13 47 43	3168.79	-23.21	107.59	23.42	70.61	14 40 32	2568.8	-25.64	99.63
110.00	17 25 41	2482.87	-34.00	58.33	25.94	86.22	18 7 4	1882.9	-34.15	49.09
110.00	13 6 12	3299.90	-15.70	113.72	19.70	59.24	14 1 12	2699.9	-19.66	106.85

DIFFERENTIAL CORRECTIONS

TDE	.9464	TRA	1.4590	TC-12.5363	BAU	1.5400	
RDE	.2122	RRA	.1220	RC3 .0841	FAU	.47570	
FDE	2.0025	FRA	6.8368	FC-44.8209	BSP	29689	
BDE	.9699	BRA	1.4641	BC312.5364	FSP	9304	

MID-COURSE EXECUTION ACCURACY

SGT	8429.7	SGR	482.7	SG3	2697.1		
RRT	.3113	RRF	.2934	RTF	.9904		
SGB	8443.5	R23	-.0167	R13	.9904		
SG1	8431.1	SG2	458.6	THA	1.02		

ORBIT DETERMINATION ACCURACY

ST	2039.8	SR	408.9	SS	1608.7		
CRT	.9509	CRS	-.7749	CST	-.9301		
LSA	2581.1	MSA	503.0	SSA	31.3		
EL1	2076.7	EL2	124.2	ALF	10.83		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 746.435 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.902	GAL	-1.74	AZL	88.02	HCA	225.77	SMA	186.43	ECC	.20870	INC	1.9820	V1	30.121
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.897	GAP	-8.33	AZP	91.38	TAL	349.88	TAP	215.65	RCA	147.52	APO	225.34	V2	25.572
RC	291.272	GL	21.98	GP	-1.40	ZAL	101.89	ZAP	63.14	ETS	178.56	ZAE	92.76	ETE	178.94	ZAC	82.72	ETC	258.00	CLP	63.13

PLANETOCENTRIC CONIC

C3	9.239	VHL	3.040	DLA	29.37	RAL	167.39	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	3.194	DPA	7.12	RAP	164.04	ECC	1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.88	11 42 30	3584.05	-24.15	138.40	24.58	72.77	12 42 14	2984.0	-26.28	130.29
98.12	13 55 58	3152.85	-24.14	106.74	24.58	72.75	14 48 31	2552.8	-26.27	98.63
100.00	14 57 41	2955.16	-27.26	93.02	25.50	77.24	15 46 56	2355.2	-28.75	84.53
100.00	13 23 28	3256.97	-21.10	113.29	23.41	68.32	14 17 45	2657.0	-23.86	105.57
110.00	17 34 40	2463.35	-34.08	56.81	26.59	87.11	18 15 44	1863.3	-34.10	47.56
110.00	13 2 58	3321.55	-14.94	114.94	20.20	58.89	13 58 20	2721.5	-18.95	108.12

DIFFERENTIAL CORRECTIONS

TDE	.9262	TRA	1.5561	TC-12.9101	BAU	1.5946	
RDE	.2149	RRA	.1222	RC3 .0860	FAU	.46324	
FDE	1.7642	FRA	6.7593	FC-43.4079	BSP	30488	
BDE	.9508	BRA	1.5609	BC312.9104	FSP	8944	

MID-COURSE EXECUTION ACCURACY

SGT	8716.1	SGR	486.5	SG3	2622.3		
RRT	.2798	RRF	.2595	RTF	.9908		
SGB	8729.6	R23	-.0193	R13	.9908		
SG1	8717.1	SG2	467.0	THA	.90		

ORBIT DETERMINATION ACCURACY

ST	2030.5	SR	412.7	SS	1534.3		
CRT	.9389	CRS	-.7379	CST	-.9229		
LSA	2525.9	MSA	515.9	SSA	31.5		
EL1	2067.3	EL2	139.5	ALF	10.86		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 750.623 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.905	GAL	-1.82	AZL	88.02	HCA	226.95	SMA	186.48	ECC	.20909	INC	1.9764	V1	30.121
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.942	GAP	-8.49	AZP	91.35	TAL	349.47	TAP	216.41	RCA	147.49	APO	225.47	V2	25.608
RC	292.426	GL	21.84	GP	-1.35	ZAL	102.67	ZAP	61.69	ETS	178.55	ZAE	91.04	ETE	178.93	ZAC	82.71	ETC	258.03	CLP	61.68

PLANETOCENTRIC CONIC

C3	9.296	VHL	3.049	DLA	28.92	RAL	168.13	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.240	DPA	7.27	RAP	163.81	ECC	1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.87	12 1 25	3533.93	-23.77	134.57	25.29	73.03	13 0 19	2933.9	-25.87	126.48
96.13	13 42 58	3205.34	-23.76	110.48	25.28	73.01	14 36 24	2605.3	-25.86	102.40
100.00	15 17 33	2901.59	-28.01	89.22	26.45	79.11	16 5 54	2301.6	-29.23	80.63
100.00	13 9 32	3312.92	-19.66	116.81	23.68	67.01	14 4 45	2712.9	-22.60	109.25
110.00	17 43 40	2444.06	-34.13	55.31	27.26	88.00	18 24 24	1844.1	-34.03	46.06
110.00	12 59 54	3343.21	-14.18	116.16	20.73	58.56	13 55 37	2743.2	-18.23	109.39

DIFFERENTIAL CORRECTIONS

TDE	.9045	TRA	1.6591	TC-13.2507	BAU	1.6468	
RDE	.2179	RRA	.1225	RC3 .1075	FAU	.44969	
FDE	1.5480	FRA	6.6935	FC-41.8814	BSP	31310	
BDE	.9304	BRA	1.6637	BC313.2511	FSP	8618	

MID-COURSE EXECUTION ACCURACY

SGT	8992.4	SGR	491.0	SG3	2544.3		
RRT	.2498	RRF	.2280	RTF	.9912		
SGB	9005.8	R23	-.0210	R13	.9912		
SG1	8993.3	SG2	475.4	THA	.78		

ORBIT DETERMINATION ACCURACY

ST	2022.4	SR	417.0	SS	1471.5		
CRT	.9247	CRS	-.6979	CST	-.9159		
LSA	2479.8	MSA	528.4	SSA	31.6		
EL1	2059.1	EL2	155.9	ALF	10.86		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 754.816 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.908	GAL	-1.89	AZL	88.03	HCA	228.13	SMA	186.53	ECC	.20950	INC	1.9710
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.986	GAP	-8.64	AZP	91.32	TAL	349.03	TAP	217.16	RCA	147.45	APO	225.60
RC	293.566	GL	21.70	GP	-1.31	ZAL	103.48	ZAP	60.28	ETS	178.54	ZAE	89.35	ETE	178.93	ZAC	82.71	ETC	258.06

V1	30.121	V2	25.644	CLP	60.27														

PLANETOCENTRIC CONIC

C3	9.359	VHL	3.059	DLA	28.46	RAL	168.90	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	3.288	DPA	7.40	RAP	163.61
ECC	1.1540																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.06	12 30 42	3450.47	-23.38	128.32	26.02	73.30	13 28 12	2850.5	-25.44	120.25
92.94	13 19 46	3291.45	-23.37	116.67	26.02	73.28	14 14 38	2691.5	-25.44	108.60
100.00	15 34 15	2858.25	-28.53	86.10	27.34	80.67	16 21 53	2258.3	-29.52	77.44
100.00	12 58 54	3358.91	-18.41	119.66	24.05	66.02	13 54 53	2758.9	-21.49	112.22
110.00	17 52 40	2424.98	-34.17	53.82	27.95	88.88	18 33 5	1825.0	-33.94	44.58
110.00	12 56 59	3364.94	-13.40	117.36	21.30	58.26	13 53 4	2764.9	-17.50	110.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8808	TRA	1.7677	TC	-13.5630	BAU	1.6971	SGT	9261.0	SGR	496.1	SG3	2465.5	ST	2014.7	SR	421.4	SS	1417.4
RDE	.2211	RRA	.1229	RC3	.1282	FAU	.43575	RRT	.2216	RRF	.1986	RTF	.9916	CRT	.9082	CRS	-.6548	CST	-.9091
FDE	1.3482	FRA	6.6336	FC	-40.3076	BSP	32151	SGB	9274.3	R23	-.0223	R13	.9915	LSA	2439.8	MSA	540.6	SSA	31.7
BDE	.9081	BRA	1.7720	BC	313.5636	FSP	8311	SG1	9261.7	SG2	483.8	THA	.68	EL1	2051.0	EL2	173.2	ALF	10.83

LAUNCH DATE NOV 16 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 759.016 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.911	GAL	-1.97	AZL	88.03	HCA	229.31	SMA	186.58	ECC	.20994	INC	1.9659
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.029	GAP	-8.79	AZP	91.28	TAL	348.59	TAP	217.90	RCA	147.41	APO	225.75
RC	294.693	GL	21.56	GP	-1.27	ZAL	104.32	ZAP	58.91	ETS	178.52	ZAE	87.71	ETE	178.94	ZAC	82.71	ETC	258.09

V1	30.121	V2	25.679	CLP	58.90														

PLANETOCENTRIC CONIC

C3	9.430	VHL	3.071	DLA	27.98	RAL	169.68	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.338	DPA	7.51	RAP	163.46
ECC	1.1552																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 45	3247.69	-25.41	114.07	27.48	77.06	14 30 53	2647.7	-26.94	105.73
90.00	12 19 57	3497.17	-20.56	130.73	25.93	70.09	13 18 14	2897.2	-23.09	122.97
100.00	15 49 18	2820.39	-28.92	83.35	28.21	82.07	16 36 18	2220.4	-29.71	74.64
100.00	12 50 6	3399.69	-17.26	122.14	24.50	65.21	13 46 45	2799.7	-20.46	114.81
110.00	18 1 40	2406.08	-34.18	52.34	28.65	89.76	18 41 46	1806.1	-33.84	43.11
110.00	12 54 12	3386.77	-12.62	118.57	21.90	57.96	13 50 39	2786.8	-16.76	111.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8540	TRA	1.8811	TC	-13.8446	BAU	1.7454	SGT	9520.0	SGR	501.6	SG3	2385.6	ST	2006.4	SR	426.0	SS	1370.2
RDE	.2244	RRA	.1234	RC3	.1481	FAU	.42137	RRT	.1949	RRF	.1711	RTF	.9918	CRT	.8890	CRS	-.6076	CST	-.9021
FDE	1.1588	FRA	6.5792	FC	-38.6860	BSP	33008	SGB	9533.2	R23	-.0231	R13	.9918	LSA	2403.6	MSA	553.5	SSA	31.7
BDE	.8830	BRA	1.8852	BC	313.8454	FSP	8025	SG1	9520.5	SG2	492.0	THA	.59	EL1	2042.2	EL2	191.7	ALF	10.78

LAUNCH DATE NOV 16 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 763.220 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.914	GAL	-2.06	AZL	88.04	HCA	230.50	SMA	186.64	ECC	.21041	INC	1.9609
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.073	GAP	-8.93	AZP	91.25	TAL	348.12	TAP	218.62	RCA	147.37	APO	225.91
RC	295.805	GL	21.41	GP	-1.23	ZAL	105.18	ZAP	57.57	ETS	178.51	ZAE	86.10	ETE	178.94	ZAC	82.73	ETC	258.11

V1	30.121	V2	25.714	CLP	57.57														

PLANETOCENTRIC CONIC

C3	9.507	VHL	3.083	DLA	27.49	RAL	170.48	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.390	DPA	7.61	RAP	163.34
ECC	1.1565																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 42	3178.01	-26.38	109.20	28.57	79.31	14 54 40	2578.0	-27.59	100.74
90.00	12 1 22	3570.06	-18.80	135.35	26.20	68.43	13 0 53	2970.1	-21.57	127.77
100.00	16 3 17	2786.06	-29.21	80.84	29.06	83.36	16 49 43	2186.1	-29.82	72.09
100.00	12 42 28	3437.25	-16.17	124.40	25.00	64.51	13 39 46	2837.3	-19.47	117.16
110.00	18 10 41	2387.35	-34.18	50.88	29.37	90.62	18 50 29	1787.3	-33.71	41.66
110.00	12 51 33	3408.72	-11.82	119.77	22.53	57.69	13 48 22	2808.7	-16.00	113.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8242	TRA	1.9993	TC	-14.0992	BAU	1.7922	SGT	9771.5	SGR	507.4	SG3	2305.9	ST	1998.1	SR	430.7	SS	1329.1
RDE	.2280	RRA	.1239	RC3	.1670	FAU	.40695	RRT	.1696	RRF	.1452	RTF	.9920	CRT	.8667	CRS	-.5571	CST	-.8955
FDE	.9805	FRA	6.5238	FC	-37.0563	BSP	33859	SGB	9784.7	R23	-.0238	R13	.9920	LSA	2371.3	MSA	566.1	SSA	31.7
BDE	.8552	BRA	2.0032	BC	314.1001	FSP	7750	SG1	9771.9	SG2	500.0	THA	.51	EL1	2033.0	EL2	211.2	ALF	10.70

LAUNCH DATE NOV 16 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 767.430 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.918	GAL	-2.14	AZL	88.04	HCA	231.69	SMA	186.70	ECC	.21090	INC	1.9561
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.116	GAP	-9.08	AZP	91.21	TAL	347.65	TAP	219.34	RCA	147.32	APO	226.07
RC	296.904	GL	21.26	GP	-1.19	ZAL	106.06	ZAP	56.28	ETS	178.50	ZAE	84.53	ETE	178.94	ZAC	82.74	ETC	258.12

V1	30.121	V2	25.748	CLP	56.27														

PLANETOCENTRIC CONIC

C3	9.593	VHL	3.097	DLA	26.98	RAL	171.29	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	3.443	DPA	7.68	RAP	163.26
ECC	1.1579																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 6	3126.34	-26.98	105.53	29.56	81.05	15 13 12	2526.3	-27.94	97.00
90.00	11 48 28	3625.26	-17.39	138.78	26.63	67.29	12 48 53	3025.3	-20.31	131.33
100.00	16 16 32	2754.21	-29.44	78.50	29.91	84.57	17 2 27	2154.2	-29.88	69.73
100.00	12 35 43	3472.63	-15.13	126.51	25.56	63.91	13 33 35	2872.6	-18.51	119.35
110.00	18 19 43	2368.77	-34.15	49.43	30.10	91.48	18 59 12	1768.8	-33.57	40.23
110.00	12 49 1	3430.82	-11.01	120.97	23.19	57.43	13 46 12	2830.8	-15.23	114.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7915	TRA	2.1223	TC	-14.3272	BAU	1.8376	SGT10016.0	SGR	513.3	SG3	2226.5	ST	1890.3	SR	435.5	SS	1293.5
RDE	.2317	RRA	.1245	RC3	.1849	FAU	.39253	RRT	.1458	RRF	.1208	RTF	.9922	CRT	.8410	CRS	-.5025	CST	-.8888
FDE	.8091	FRA	6.4688	FC	-35.4241	BSP	34696	SGB10029.1	R23	-.0245	R13	.9922	LSA	2342.5	MSA	579.6	SSA	31.6
BDE	.8247	BRA	2.1260	BC	314.3284	FSP	7481	SG110016.3	SG2	507.8	THA	.43	EL1	2024.2	EL2	231.7	ALF	10.57

LAUNCH DATE NOV 16 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 771.645 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.921	GAL	-2.23	AZL	88.05	HCA	232.89	SMA	186.76	ECC	.21143	INC	1.9514	V1	30.121
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.158	GAP	-9.22	AZP	91.18	TAL	347.15	TAP	220.04	RCA	147.27	APO	226.25	V2	25.782
RC	297.989	GL	21.09	GP	-1.16	ZAL	106.96	ZAP	55.03	ETS	178.49	ZAE	82.99	ETE	178.95	ZAC	82.77	ETC	258.13	CLP	55.02

PLANETOCENTRIC CONIC

C3	9.687	VHL	3.112	DLA	26.46	RAL	172.12	RAD	6567.3	VEL	11.449	PTH	1.99	VHP	3.499	DPA	7.74	RAP	163.22	ECC	1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 2	3082.79	-27.40	102.42	30.51	82.56	15 29 25	2482.8	-28.15	93.83
90.00	11 38 9	3672.65	-16.12	141.68	27.14	66.40	12 39 21	3072.7	-19.17	134.34
100.00	16 29 16	2724.23	-29.61	76.29	30.77	85.72	17 14 40	2124.2	-29.89	67.50
100.00	12 29 36	3506.45	-14.10	128.50	26.16	63.37	13 28 3	2906.5	-17.57	121.42
110.00	18 28 45	2350.35	-34.11	47.99	30.86	92.33	19 7 56	1750.3	-33.41	38.82
110.00	12 46 36	3453.09	-10.19	122.18	23.88	57.19	13 44 9	2853.1	-14.45	115.66

DIFFERENTIAL CORRECTIONS

TDE	.7542	TRA	2.2490	TC-14.5303	BAU	1.8820	
RDE	.2355	RRA	.1250	RC3 .2017	FAU	.37834	
FDE	.6441	FRA	6.4108	FC-33.8118	BSP	35503	
BDE	.7901	BRA	2.2525	BC314.5317	FSP	7214	

MID-COURSE EXECUTION ACCURACY

SGT10253.0	SGR	519.4	SG3	2148.2			
RRT	.1229	RRF	.0975	RTF	.9924		
SGB10266.1	R23	-.0250	R13	.9924			
SG110253.2	SG2	515.5	THA	.36			

ORBIT DETERMINATION ACCURACY

ST	1981.4	SR	440.4	SS	1262.6		
CRT	.8113	CRS	-.4440	CST	-.8826		
LSA	2315.4	MSA	593.1	SSA	31.4		
EL1	2013.9	EL2	253.3	ALF	10.39		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 775.865 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.925	GAL	-2.32	AZL	88.05	HCA	234.09	SMA	186.82	ECC	.21199	INC	1.9468	V1	30.121
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.201	GAP	-9.36	AZP	91.14	TAL	346.65	TAP	220.73	RCA	147.22	APO	226.43	V2	25.815
RC	299.061	GL	20.93	GP	-1.12	ZAL	107.89	ZAP	53.81	ETS	178.48	ZAE	81.50	ETE	178.95	ZAC	82.80	ETC	258.14	CLP	53.80

PLANETOCENTRIC CONIC

C3	9.790	VHL	3.129	DLA	25.92	RAL	172.96	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.556	DPA	7.78	RAP	163.21	ECC	1.1611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 31	3044.08	-27.71	99.63	31.44	83.93	15 44 15	2444.1	-28.26	91.00
90.00	11 29 24	3715.54	-14.93	144.27	27.72	65.66	12 31 19	3115.5	-18.09	137.02
100.00	16 41 35	2695.71	-29.74	74.18	31.62	86.83	17 26 30	2095.7	-29.86	65.38
100.00	12 24 1	3539.14	-13.10	130.40	26.81	62.89	13 23 1	2939.1	-16.63	123.39
110.00	18 37 48	2332.07	-34.05	46.56	31.62	93.17	19 16 40	1732.1	-33.24	37.42
110.00	12 44 17	3475.55	-9.36	123.39	24.60	56.97	13 42 13	2875.5	-13.65	116.91

DIFFERENTIAL CORRECTIONS

TDE	.7130	TRA	2.3795	TC-14.7087	BAU	1.9254	
RDE	.2395	RRA	.1255	RC3 .2176	FAU	.36434	
FDE	.4845	FRA	6.3477	FC-32.2183	BSP	36291	
BDE	.7521	BRA	2.3828	BC314.7103	FSP	6956	

MID-COURSE EXECUTION ACCURACY

SGT10483.1	SGR	525.6	SG3	2070.5			
RRT	.1011	RRF	.0751	RTF	.9925		
SGB10496.3	R23	-.0256	R13	.9925			
SG110483.3	SG2	522.9	THA	.29			

ORBIT DETERMINATION ACCURACY

ST	1973.1	SR	445.3	SS	1236.0		
CRT	.7773	CRS	-.3818	CST	-.8768		
LSA	2291.2	MSA	606.9	SSA	31.2		
EL1	2003.8	EL2	275.8	ALF	10.14		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 780.087 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.929	GAL	-2.42	AZL	88.06	HCA	235.29	SMA	186.89	ECC	.21258	INC	1.9423	V1	30.121
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.242	GAP	-9.50	AZP	91.11	TAL	346.13	TAP	221.41	RCA	147.16	APO	226.62	V2	25.847
RC	300.120	GL	20.75	GP	-1.09	ZAL	108.84	ZAP	52.63	ETS	178.47	ZAE	80.03	ETE	178.96	ZAC	82.83	ETC	258.14	CLP	52.62

PLANETOCENTRIC CONIC

C3	9.903	VHL	3.147	DLA	25.37	RAL	173.82	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	3.615	DPA	7.80	RAP	163.25	ECC	1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 3	3008.62	-27.94	97.06	32.36	85.20	15 58 11	2408.6	-28.31	88.41
90.00	11 21 44	3755.52	-13.80	146.66	28.35	65.02	12 24 19	3155.5	-17.05	139.49
100.00	16 53 35	2668.36	-29.82	72.15	32.49	87.89	17 38 3	2068.4	-29.80	63.35
100.00	12 18 52	3571.02	-12.10	132.25	27.49	62.46	13 18 23	2971.0	-15.70	125.30
110.00	18 46 52	2313.91	-33.98	45.15	32.41	94.00	19 25 26	1713.9	-33.05	36.04
110.00	12 42 4	3498.24	-8.52	124.60	25.35	56.77	13 40 22	2898.2	-12.83	118.16

DIFFERENTIAL CORRECTIONS

TDE	.6858	TRA	2.5329	TC-14.7936	BAU	1.9587	
RDE	.2439	RRA	.1262	RC3 .2333	FAU	.34787	
FDE	.3873	FRA	6.3346	FC-30.4128	BSP	37481	
BDE	.7279	BRA	2.5361	BC314.7954	FSP	6805	

MID-COURSE EXECUTION ACCURACY

SGT10691.0	SGR	532.4	SG3	1988.7			
RRT	.0852	RRF	.0610	RTF	.9925		
SGB10704.2	R23	-.0239	R13	.9925			
SG110691.0	SG2	530.4	THA	.24			

ORBIT DETERMINATION ACCURACY

ST	1995.4	SR	450.6	SS	1229.2		
CRT	.7452	CRS	-.3398	CST	-.8791		
LSA	2306.6	MSA	611.9	SSA	31.1		
EL1	2024.1	EL2	296.3	ALF	9.76		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 784.320 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.933	GAL	-2.52	AZL	88.06	HCA	236.49	SMA	186.96	ECC	.21320	INC	1.9380	V1	30.121
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.283	GAP	-9.63	AZP	91.07	TAL	345.59	TAP	222.08	RCA	147.10	APO	226.82	V2	25.879
RC	301.167	GL	20.57	GP	-1.06	ZAL	109.81	ZAP	51.48	ETS	178.45	ZAE	78.60	ETE	178.97	ZAC	82.87	ETC	258.13	CLP	51.47

PLANETOCENTRIC CONIC

C3	10.025	VHL	3.166	DLA	24.80	RAL	174.69	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	3.675	DPA	7.81	RAP	163.31	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 49	2975.69	-28.10	94.66	33.28	86.39	16 11 25	2375.7	-28.31	86.00
90.00	11 14 53	3793.34	-12.70	148.89	29.02	64.48	12 18 6	3193.3	-16.03	141.80
100.00	17 5 17	2642.08	-29.87	70.20	33.36	88.92	17 49 19	2042.1	-29.71	61.40
100.00	12 14 5	3602.18	-11.11	134.03	28.21	62.07	13 14 7	3002.2	-14.76	127.14
110.00	18 55 55	2295.95	-33.88	43.76	33.21	94.82	19 34 11	1695.9	-32.84	34.67
110.00	12 39 57	3521.08	-7.67	125.82	26.13	56.59	13 38 38	2921.1	-12.01	119.41

DIFFERENTIAL CORRECTIONS

TDE	.6198	TRA	2.6545	TC-14.9878	BAU	2.0090	
RDE	.2481	RRA	.1264	RC3 .2464	FAU	.33697	
FDE	.1906	FRA	6.2182	FC-29.1010	BSP	37812	
BDE	.6676	BRA	2.6575	BC314.9898	FSP	6452	

MID-COURSE EXECUTION ACCURACY

SGT10924.1	SGR	538.0	SG3	1919.1			
RRT	.0606	RRF	.0338	RTF	.9927		
SGB10937.4	R23	-.0266	R13	.9927			
SG110924.2	SG2	537.0	THA	.17			

ORBIT DETERMINATION ACCURACY

ST	1964.5	SR	455.3	SS	1198.8		
CRT	.6957	CRS	-.2521	CST	-.8694		
LSA	2258.9	MSA	632.5	SSA	30.6		
EL1	1990.5	EL2	322.8	ALF	9.41		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 788.554 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.937	GAL	-2.62	AZL	88.07	HCA	237.70	SMA	187.03	ECC	.21385	INC	1.9338
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.324	GAP	-9.77	AZP	91.03	TAL	345.04	TAP	222.74	RCA	147.04	APO	227.03
RC	302.203	GL	20.39	GP	-1.03	ZAL	110.79	ZAP	50.36	ETS	178.44	ZAE	77.20	ETE	178.98	ZAC	82.92	ETC	258.12

V1	30.121	V2	25.911	CLP	50.35														

PLANETOCENTRIC CONIC

C3	10.158	VHL	3.187	DLA	24.22	RAL	175.57	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	3.737	DPA	7.80	RAP	163.41
ECC	1.1672																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 4	2944.59	-28.22	92.39	34.20	87.52	16 24 9	2344.6	-28.26	83.73
90.00	11 8 39	3829.70	-11.62	151.02	29.74	64.00	12 12 28	3229.7	-15.02	144.00
100.00	17 16 47	2616.63	-29.89	68.31	34.25	89.91	18 0 24	2016.6	-29.58	59.52
100.00	12 9 37	3632.89	-10.13	135.78	28.96	61.73	13 10 10	3032.9	-13.83	128.95
110.00	19 4 59	2278.11	-33.77	42.38	34.03	95.63	19 42 57	1678.1	-32.62	33.33
110.00	12 37 54	3544.17	-6.80	127.04	26.94	56.42	13 36 58	2944.2	-11.17	120.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5676	TRA	2.7991	TC	-15.0891	BAU	2.0494	SGT	11135.3	SGR	544.3	SG3	1845.8	ST	1965.9	SR	460.5	SS	1187.3
RDE	.2527	RRA	.1268	RC3	.2593	FAU	.32374	RRT	.0418	RRF	.0145	RTF	.9928	CRT	.6477	CRS	-.1858	CST	-.8679
FDE	.0543	FRA	6.1515	FC	-27.5924	BSP	38546	SGB	11148.6	R23	-.0271	R13	.9928	LSA	2251.8	MSA	644.1	SSA	30.3
BDE	.6213	BRA	2.8020	BC	315.0913	FSP	6211	SG	111135.3	SG2	543.8	THA	.12	EL1	1989.1	EL2	346.7	ALF	8.90

LAUNCH DATE NOV 16 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 792.792 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.941	GAL	-2.72	AZL	88.07	HCA	238.91	SMA	187.11	ECC	.21454	INC	1.9296
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.364	GAP	-9.90	AZP	91.00	TAL	344.47	TAP	223.38	RCA	146.96	APO	227.25
RC	303.228	GL	20.19	GP	-1.00	ZAL	111.80	ZAP	49.28	ETS	178.43	ZAE	75.83	ETE	178.99	ZAC	82.98	ETC	258.10

V1	30.121	V2	25.941	CLP	49.27														

PLANETOCENTRIC CONIC

C3	10.301	VHL	3.210	DLA	23.63	RAL	176.46	RAD	6567.4	VEL	11.476	PTH	1.99	VHP	3.801	DPA	7.77	RAP	163.54
ECC	1.1695																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 54	2915.00	-28.29	90.23	35.13	88.60	16 36 29	2315.0	-28.18	81.57
90.00	11 2 56	3864.94	-10.56	153.07	30.50	63.57	12 7 20	3264.9	-14.03	146.10
100.00	17 28 6	2591.93	-29.88	66.47	35.14	90.88	18 11 18	1991.9	-29.44	57.69
100.00	12 5 25	3663.24	-9.15	137.50	29.75	61.42	13 6 28	3063.2	-12.89	130.71
110.00	19 14 3	2260.44	-33.64	41.01	34.86	96.43	19 51 44	1660.4	-32.39	32.00
110.00	12 35 57	3567.50	-5.92	128.27	27.78	56.27	13 35 24	2967.5	-10.31	121.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5106	TRA	2.9476	TC	-15.1651	BAU	2.0889	SGT	11339.4	SGR	550.4	SG3	1773.6	ST	1971.0	SR	465.6	SS	1179.7
RDE	.2575	RRA	.1272	RC3	.2713	FAU	.31074	RRT	.0235	RRF	-.0042	RTF	.9928	CRT	.5944	CRS	-.1183	CST	-.8678
FDE	-.0776	FRA	6.0805	FC	-26.1142	BSP	39256	SGB	11352.8	R23	-.0276	R13	.9928	LSA	2250.2	MSA	654.9	SSA	29.9
BDE	.5718	BRA	2.9504	BC	315.1675	FSP	5976	SG	111339.4	SG2	550.3	THA	.07	EL1	1991.0	EL2	370.7	ALF	8.28

LAUNCH DATE NOV 16 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 797.033 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.946	GAL	-2.83	AZL	88.07	HCA	240.12	SMA	187.18	ECC	.21526	INC	1.9256
RP	211.28	LAP	-1.67	LOP	293.79	VP	23.404	GAP	-10.04	AZP	90.96	TAL	343.89	TAP	224.02	RCA	146.89	APO	227.48
RC	304.242	GL	19.99	GP	-.97	ZAL	112.82	ZAP	48.23	ETS	178.42	ZAE	74.50	ETE	179.00	ZAC	83.03	ETC	258.08

V1	30.121	V2	25.971	CLP	48.22														

PLANETOCENTRIC CONIC

C3	10.457	VHL	3.234	DLA	23.02	RAL	177.36	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	3.866	DPA	7.74	RAP	163.70
ECC	1.1721																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 0 22	2886.68	-28.31	88.16	36.07	89.64	16 48 29	2286.7	-28.07	79.50
90.00	10 57 38	3899.30	-9.51	155.05	31.30	63.20	12 2 37	3299.3	-13.03	148.14
100.00	17 39 14	2567.91	-29.84	64.69	36.05	91.82	18 22 2	1967.9	-29.27	55.93
100.00	12 1 27	3693.31	-8.16	139.19	30.57	61.14	13 3 0	3093.3	-11.95	132.45
110.00	19 23 7	2242.93	-33.50	39.66	35.71	97.22	20 0 30	1642.9	-32.14	30.70
110.00	12 34 4	3591.05	-5.03	129.52	28.65	56.14	13 33 55	2991.1	-9.44	123.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4499	TRA	3.1010	TC	-15.2192	BAU	2.1281	SGT	11539.5	SGR	556.5	SG3	1703.7	ST	1982.4	SR	470.8	SS	1175.9
RDE	.2624	RRA	.1275	RC3	.2823	FAU	.29820	RRT	.0060	RRF	-.0222	RTF	.9929	CRT	.5366	CRS	-.0518	CST	-.8695
FDE	-.2026	FRA	6.0073	FC	-24.6876	BSP	39938	SGB	11552.9	R23	-.0282	R13	.9929	LSA	2256.6	MSA	664.2	SSA	29.4
BDE	.5208	BRA	3.1036	BC	315.2218	FSP	5742	SG	111539.5	SG2	556.5	THA	.02	EL1	1999.1	EL2	394.0	ALF	7.56

LAUNCH DATE NOV 16 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 801.278 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	32.950	GAL	-2.94	AZL	88.08	HCA	241.34	SMA	187.26	ECC	.21602	INC	1.9217
RP	210.95	LAP	-1.69	LOP	295.00	VP	23.443	GAP	-10.17	AZP	90.92	TAL	343.30	TAP	224.64	RCA	146.81	APO	227.71
RC	305.247	GL	19.79	GP	-.94	ZAL	113.86	ZAP	47.21	ETS	178.41	ZAE	73.19	ETE	179.01	ZAC	83.10	ETC	258.05

V1	30.121	V2	26.001	CLP	47.20														

PLANETOCENTRIC CONIC

C3	10.626	VHL	3.260	DLA	22.40	RAL	178.27	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	3.932	DPA	7.68	RAP	163.89
ECC	1.1749																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 33	2859.45	-28.31	86.17	37.02	90.64	17 0 13	2259.5	-27.92	77.52
90.00	10 52 41	3933.01	-8.47	156.98	32.13	62.88	11 58 14	3333.0	-12.04	150.12
100.00	17 50 14	2544.51	-29.78	62.95	36.97	92.73	18 32 38	1944.5	-29.08	54.21
100.00	11 57 42	3723.19	-7.18	140.86	31.43	60.90	12 59 45	3123.2	-11.00	134.16
110.00	19 32 10	2225.60	-33.35	38.34	36.58	97.99	20 9 15	1625.6	-31.88	29.41
110.00	12 32 15	3614.85	-4.12	130.76	29.55	56.04	13 32 30	3014.9	-8.55	124.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3862	TRA	3.2597	TC	-15.2448	BAU	2.1660	SGT	11732.2	SGR	562.6	SG3	1635.1	ST	2001.6	SR	476.1	SS	1175.8
RDE	.2676	RRA	.1277	RC3	.2923	FAU	.28584	RRT	-.0107	RRF	-.0393	RTF	.9929	CRT	.4754	CRS	.0119	CST	-.8731
FDE	-.3187	FRA	5.9342	FC	-23.2895	BSP	40613	SGB	11745.7	R23	.0287	R13	-.9929	LSA	2272.4	MSA	671.3	SSA	29.0
BDE	.4699	BRA	3.2622	BC	315.2476	FSP	5520	SG	111732.2	SG2	562.6	THA	179.97	EL1	2014.9	EL2	416.1	ALF	6.74

LAUNCH DATE NOV 16 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 805.526 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.955 GAL -3.06 AZL 88.08 HCA 242.56 SMA 187.34 ECC .21681 INC 1.9178 V1 30.121
RP 210.70 LAP -1.70 LOP 296.23 VP 23.481 GAP -10.30 AZP 90.88 TAL 342.69 TAP 225.25 RCA 146.72 APO 227.96 V2 26.029
RC 306.243 GL 19.57 GP -.92 ZAL 114.92 ZAP 46.22 ETS 178.39 ZAE 71.91 ETE 179.02 ZAC 83.17 ETC 258.02 CLP 46.21

PLANETOCENTRIC CONIC

C3 10.807 VHL 3.287 DLA 21.77 RAL 179.18 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 4.000 DPA 7.61 RAP 164.12 ECC 1.1779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 29	2833.18	-28.28	84.25	37.98	91.60	17 11 42	2233.2	-27.75	75.62
90.00	10 48 4	3966.19	-7.44	158.87	33.00	62.60	11 54 10	3366.2	-11.05	152.05
100.00	18 1 5	2521.68	-29.69	61.26	37.91	93.62	18 43 7	1921.7	-28.88	52.55
100.00	11 54 9	3752.92	-6.19	142.51	32.32	60.70	12 56 41	3152.9	-10.05	135.85
110.00	19 41 12	2208.47	-33.18	37.03	37.46	98.75	20 18 1	1608.5	-31.61	28.15
110.00	12 30 31	3638.89	-3.21	132.02	30.47	55.95	13 31 10	3038.9	-7.65	125.76

DIFFERENTIAL CORRECTIONS
TDE .3183 TRA 3.4238 TC-15.2458 BAU 2.2032
RDE .2731 RRA .1278 RC3 .3015 FAU .27375
FDE -.4299 FRA 5.8590 FC-21.9294 BSP 41257
BDE .4193 BRA 3.4261 BC315.2488 FSP 5301

MID-COURSE EXECUTION ACCURACY
SGT11919.5 SGR 568.6 SG3 1568.0
RRT -.0269 RRF -.0560 RTF .9928
SGB11933.0 R23 .0293 R13 -.9928
SG111919.5 SG2 568.4 THA 179.93

ORBIT DETERMINATION ACCURACY
ST 2028.3 SR 481.3 SS 1178.7
CRT .4106 CRS .0742 CST -.8780
LSA 2296.9 MSA 676.9 SSA 28.5
EL1 2038.3 EL2 436.7 ALF 5.83

LAUNCH DATE NOV 16 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 809.777 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.960 GAL -3.18 AZL 88.09 HCA 243.78 SMA 187.43 ECC .21765 INC 1.9140 V1 30.121
RP 210.46 LAP -1.72 LOP 297.45 VP 23.519 GAP -10.43 AZP 90.85 TAL 342.06 TAP 225.84 RCA 146.63 APO 228.22 V2 26.057
RC 307.229 GL 19.35 GP -.89 ZAL 115.99 ZAP 45.26 ETS 178.38 ZAE 70.66 ETE 179.04 ZAC 83.24 ETC 257.99 CLP 45.25

PLANETOCENTRIC CONIC

C3 11.003 VHL 3.317 DLA 21.13 RAL 180.10 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.070 DPA 7.53 RAP 164.37 ECC 1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 11	2807.75	-28.21	82.39	38.95	92.53	17 22 59	2207.8	-27.56	73.78
90.00	10 43 42	3998.96	-6.41	160.72	33.90	62.36	11 50 21	3399.0	-10.06	153.95
100.00	18 11 49	2499.39	-29.59	59.61	38.85	94.48	18 53 29	1899.4	-28.65	50.93
100.00	11 50 46	3782.55	-5.20	144.16	33.24	60.52	12 53 48	3182.6	-9.09	137.53
110.00	19 50 13	2191.54	-32.99	35.74	38.37	99.49	20 26 45	1591.5	-31.33	26.91
110.00	12 28 51	3663.18	-2.28	133.29	31.42	55.88	13 29 54	3063.2	-6.74	127.05

DIFFERENTIAL CORRECTIONS
TDE .2475 TRA 3.5937 TC-15.2206 BAU 2.2394
RDE .2787 RRA .1278 RC3 .3097 FAU .26205
FDE -.5319 FRA 5.7832 FC-20.6189 BSP 41923
BDE .3728 BRA 3.5960 BC315.2237 FSP 5094

MID-COURSE EXECUTION ACCURACY
SGT12100.8 SGR 574.4 SG3 1503.1
RRT -.0423 RRF -.0719 RTF .9928
SGB12114.4 R23 .0298 R13 -.9928
SG112100.8 SG2 573.9 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 2064.0 SR 486.7 SS 1183.9
CRT .3441 CRS .1323 CST -.8844
LSA 2331.5 MSA 679.8 SSA 28.0
EL1 2071.2 EL2 455.4 ALF 4.88

LAUNCH DATE NOV 16 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 814.030 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.965 GAL -3.30 AZL 88.09 HCA 245.01 SMA 187.51 ECC .21852 INC 1.9103 V1 30.121
RP 210.22 LAP -1.73 LOP 298.67 VP 23.556 GAP -10.56 AZP 90.81 TAL 341.42 TAP 226.43 RCA 146.54 APO 228.49 V2 26.085
RC 308.206 GL 19.12 GP -.87 ZAL 117.08 ZAP 44.32 ETS 178.36 ZAE 69.44 ETE 179.05 ZAC 83.32 ETC 257.95 CLP 44.32

PLANETOCENTRIC CONIC

C3 11.214 VHL 3.349 DLA 20.47 RAL 181.03 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 4.141 DPA 7.44 RAP 164.65 ECC 1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 42	2783.11	-28.13	80.59	39.93	93.43	17 34 5	2183.1	-27.35	72.01
90.00	10 39 35	4031.42	-5.38	162.55	34.83	62.16	11 46 47	3431.4	-9.06	155.81
100.00	18 22 26	2477.62	-29.46	58.00	39.82	95.31	19 3 44	1877.6	-28.41	49.36
100.00	11 47 32	3812.14	-4.21	145.79	34.19	60.38	12 51 4	3212.1	-8.12	139.19
110.00	19 59 13	2174.82	-32.80	34.47	39.29	100.21	20 35 28	1574.8	-31.04	25.69
110.00	12 27 15	3687.70	-1.34	134.57	32.40	55.84	13 28 42	3087.7	-5.82	128.34

DIFFERENTIAL CORRECTIONS
TDE .1728 TRA 3.7680 TC-15.1761 BAU 2.2757
RDE .2846 RRA .1277 RC3 .3170 FAU .25067
FDE -.6277 FRA 5.7045 FC-19.3523 BSP 42540
BDE .3330 BRA 3.7702 BC315.1795 FSP 4888

MID-COURSE EXECUTION ACCURACY
SGT12278.2 SGR 580.2 SG3 1439.8
RRT -.0574 RRF -.0874 RTF .9927
SGB12291.9 R23 .0303 R13 -.9927
SG112278.2 SG2 579.3 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 2107.8 SR 492.0 SS 1190.6
CRT .2762 CRS .1874 CST -.8916
LSA 2374.6 MSA 680.5 SSA 27.5
EL1 2112.4 EL2 471.9 ALF 3.88

LAUNCH DATE NOV 16 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 818.286 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.970 GAL -3.43 AZL 88.09 HCA 246.24 SMA 187.60 ECC .21943 INC 1.9067 V1 30.121
RP 209.99 LAP -1.75 LOP 299.90 VP 23.592 GAP -10.69 AZP 90.77 TAL 340.76 TAP 227.00 RCA 146.43 APO 228.76 V2 26.111
RC 309.174 GL 18.89 GP -.85 ZAL 118.17 ZAP 43.42 ETS 178.35 ZAE 68.24 ETE 179.06 ZAC 83.41 ETC 257.91 CLP 43.41

PLANETOCENTRIC CONIC

C3 11.440 VHL 3.382 DLA 19.81 RAL 181.96 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 4.214 DPA 7.33 RAP 164.96 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 1	2759.19	-28.02	78.85	40.93	94.29	17 45 0	2159.2	-27.13	70.30
90.00	10 35 41	4063.62	-4.35	164.36	35.80	61.99	11 43 25	3463.6	-8.06	157.65
100.00	18 32 56	2456.36	-29.32	56.44	40.80	96.13	19 13 52	1856.4	-28.16	47.83
100.00	11 44 28	3841.69	-3.21	147.42	35.17	60.26	12 48 29	3241.7	-7.14	140.84
110.00	20 8 11	2158.35	-32.59	33.23	40.22	100.92	20 44 9	1558.3	-30.75	24.50
110.00	12 25 42	3712.47	-.40	135.86	33.41	55.82	13 27 34	3112.5	-4.88	129.65

DIFFERENTIAL CORRECTIONS
TDE .0952 TRA 3.9490 TC-15.1045 BAU 2.3107
RDE .2908 RRA .1275 RC3 .3235 FAU .23958
FDE -.7172 FRA 5.6255 FC-18.1297 BSP 43174
BDE .3060 BRA 3.9510 BC315.1080 FSP 4692

MID-COURSE EXECUTION ACCURACY
SGT12449.2 SGR 585.8 SG3 1378.3
RRT -.0719 RRF -.1024 RTF .9926
SGB12463.0 R23 .0310 R13 -.9926
SG112449.3 SG2 584.3 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 2161.0 SR 497.4 SS 1198.9
CRT .2087 CRS .2391 CST -.8991
LSA 2427.3 MSA 679.7 SSA 27.0
EL1 2163.6 EL2 485.9 ALF 2.90

LAUNCH DATE NOV 16 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 822.542 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.975 GAL -3.56 AZL 88.10 HCA 247.47 SMA 187.69 ECC .22039 INC 1.9031 V1 30.121
RP 209.77 LAP -1.76 LOP 301.13 VP 23.627 GAP -10.82 AZP 90.73 TAL 340.09 TAP 227.56 RCA 146.32 APO 229.05 V2 26.137
RC 310.132 GL 18.65 GP -.83 ZAL 119.28 ZAP 42.54 ETS 178.33 ZAE 67.07 ETE 179.07 ZAC 83.50 ETC 257.87 CLP 42.53

PLANETOCENTRIC CONIC

C3 11.684 VHL 3.418 DLA 19.14 RAL 182.90 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 4.288 DPA 7.21 RAP 165.29 ECC 1.1923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 10	2735.95	-27.89	77.16	41.94	95.13	17 55 46	2135.9	-26.88	68.64
90.00	10 31 59	4095.64	-3.33	166.16	36.80	61.86	11 40 15	3495.6	-7.06	159.47
100.00	18 43 19	2435.58	-29.15	54.92	41.79	96.91	19 23 55	1835.6	-27.89	46.34
100.00	11 41 31	3871.24	-2.21	149.04	36.18	60.18	12 46 3	3271.2	-6.16	142.48
110.00	20 17 7	2142.12	-32.38	32.02	41.18	101.61	20 52 49	1542.1	-30.44	23.34
110.00	12 24 13	3737.47	.56	137.17	34.45	55.82	13 26 30	3137.5	-3.93	130.96

DIFFERENTIAL CORRECTIONS
TDE .0136 TRA 4.1355 TC-15.0108 BAU 2.3452
RDE .2972 RRA .1271 RC3 .3290 FAU .22878
FDE -.8004 FRA 5.5439 FC-16.9519 BSP 43783
BDE .2975 BRA 4.1374 BC315.0144 FSP 4503

MID-COURSE EXECUTION ACCURACY
SGT12615.2 SGR 591.3 SG3 1318.4
RRT -.0860 RRF -.1170 RTF .9925
SGB12629.0 R23 .0316 R13 -.9925
SG112615.3 SG2 589.1 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 2222.8 SR 502.8 SS 1207.8
CRT .1416 CRS .2874 CST -.9069
LSA 2488.7 MSA 676.8 SSA 26.4
EL1 2224.0 EL2 497.5 ALF 1.93

LAUNCH DATE NOV 16 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 826.801 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.980 GAL -3.69 AZL 88.10 HCA 248.70 SMA 187.78 ECC .22139 INC 1.8995 V1 30.121
RP 209.55 LAP -1.77 LOP 302.37 VP 23.662 GAP -10.95 AZP 90.69 TAL 339.41 TAP 228.11 RCA 146.21 APO 229.35 V2 26.162
RC 311.080 GL 18.40 GP -.81 ZAL 120.40 ZAP 41.68 ETS 178.32 ZAE 65.92 ETE 179.08 ZAC 83.59 ETC 257.82 CLP 41.68

PLANETOCENTRIC CONIC

C3 11.945 VHL 3.456 DLA 18.46 RAL 183.83 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 4.363 DPA 7.08 RAP 165.65 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 10	2713.36	-27.74	75.53	42.97	95.94	18 6 24	2113.4	-26.63	67.04
90.00	10 28 27	4127.51	-2.30	167.94	37.83	61.77	11 37 15	3527.5	-6.06	161.27
100.00	18 53 36	2415.28	-28.98	53.43	42.80	97.67	19 33 52	1815.3	-27.61	44.90
100.00	11 38 42	3900.81	-1.21	150.67	37.22	60.13	12 43 43	3300.8	-5.17	144.12
110.00	20 26 1	2126.16	-32.15	30.83	42.15	102.28	21 1 27	1526.2	-30.13	22.20
110.00	12 22 47	3762.70	1.53	138.48	35.51	55.85	13 25 30	3162.7	-2.97	132.28

DIFFERENTIAL CORRECTIONS
TDE -.0709 TRA 4.3282 TC-14.8938 BAU 2.3790
RDE .3039 RRA .1266 RC3 .3337 FAU .21829
FDE -.8770 FRA 5.4614 FC-15.8210 BSP 44394
BDE .3121 BRA 4.3300 BC314.8975 FSP 4319

MID-COURSE EXECUTION ACCURACY
SGT12775.7 SGR 596.7 SG3 1260.4
RRT -.0997 RRF -.1313 RTF .9924
SGB12789.6 R23 .0323 R13 -.9924
SG112775.8 SG2 593.7 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 2293.2 SR 508.2 SS 1217.0
CRT .0767 CRS .3320 CST -.9145
LSA 2558.3 MSA 672.6 SSA 25.9
EL1 2293.6 EL2 506.7 ALF 1.02

LAUNCH DATE NOV 16 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 831.060 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.985 GAL -3.83 AZL 88.10 HCA 249.94 SMA 187.87 ECC .22243 INC 1.8960 V1 30.121
RP 209.34 LAP -1.78 LOP 303.60 VP 23.696 GAP -11.07 AZP 90.65 TAL 338.71 TAP 228.64 RCA 146.08 APO 229.66 V2 26.186
RC 312.019 GL 18.15 GP -.79 ZAL 121.52 ZAP 40.85 ETS 178.30 ZAE 64.79 ETE 179.10 ZAC 83.69 ETC 257.77 CLP 40.85

PLANETOCENTRIC CONIC

C3 12.225 VHL 3.496 DLA 17.77 RAL 184.77 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 4.440 DPA 6.94 RAP 166.03 ECC 1.2012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 1	2691.38	-27.57	73.94	44.01	96.72	18 16 53	2091.4	-26.36	65.48
90.00	10 25 5	4159.26	-1.28	169.71	38.89	61.71	11 34 24	3559.3	-5.05	163.06
100.00	19 3 47	2395.47	-28.79	51.99	43.83	98.41	19 43 43	1795.5	-27.33	43.49
100.00	11 36 0	3930.41	-.20	152.29	38.29	60.11	12 41 31	3330.4	-4.18	145.76
110.00	20 34 52	2110.49	-31.92	29.66	43.14	102.93	21 10 3	1510.5	-29.81	21.09
110.00	12 21 25	3788.15	2.50	139.81	36.60	55.90	13 24 33	3188.2	-1.99	133.61

DIFFERENTIAL CORRECTIONS
TDE -.1580 TRA 4.5276 TC-14.7577 BAU 2.4126
RDE .3109 RRA .1260 RC3 .3375 FAU .20814
FDE -.9456 FRA 5.3777 FC-14.7401 BSP 44987
BDE .3487 BRA 4.5293 BC314.7615 FSP 4141

MID-COURSE EXECUTION ACCURACY
SGT12933.0 SGR 601.9 SG3 1204.3
RRT -.1129 RRF -.1450 RTF .9922
SGB12947.0 R23 .0329 R13 -.9923
SG112933.2 SG2 598.0 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 2371.8 SR 513.7 SS 1225.4
CRT .0147 CRS .3725 CST -.9220
LSA 2635.5 MSA 666.7 SSA 25.4
EL1 2371.9 EL2 513.6 ALF .19

LAUNCH DATE NOV 16 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 835.319 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.990 GAL -3.97 AZL 88.11 HCA 251.18 SMA 187.96 ECC .22352 INC 1.8926 V1 30.121
RP 209.14 LAP -1.79 LOP 304.84 VP 23.730 GAP -11.20 AZP 90.61 TAL 337.99 TAP 229.17 RCA 145.95 APO 229.98 V2 26.209
RC 312.950 GL 17.89 GP -.77 ZAL 122.66 ZAP 40.05 ETS 178.29 ZAE 63.69 ETE 179.11 ZAC 83.80 ETC 257.72 CLP 40.04

PLANETOCENTRIC CONIC

C3 12.525 VHL 3.539 DLA 17.07 RAL 185.71 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 4.519 DPA 6.78 RAP 166.44 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 44	2670.02	-27.39	72.40	45.07	97.47	18 27 14	2070.0	-26.08	63.98
90.00	10 21 52	4190.94	-.25	171.48	39.98	61.68	11 31 43	3590.9	-4.04	164.84
100.00	19 13 52	2376.13	-28.59	50.59	44.87	99.12	19 53 28	1776.1	-27.03	42.13
100.00	11 33 25	3960.06	.80	153.92	39.39	60.12	12 39 25	3360.1	-3.18	147.39
110.00	20 43 41	2095.12	-31.68	28.53	44.15	103.57	21 18 36	1495.1	-29.49	20.01
110.00	12 20 5	3813.83	3.48	141.16	37.72	55.97	13 23 39	3213.8	-1.01	134.95

DIFFERENTIAL CORRECTIONS
TDE -.2488 TRA 4.7330 TC-14.6007 BAU 2.4455
RDE .3182 RRA .1251 RC3 .3406 FAU .19827
FDE-1.0095 FRA 5.2926 FC-13.7042 BSP 45581
BDE .4039 BRA 4.7346 BC314.6047 FSP 3970

MID-COURSE EXECUTION ACCURACY
SGT13084.9 SGR 606.9 SG3 1149.8
RRT -.1260 RRF -.1586 RTF .9921
SGB13099.0 R23 .0336 R13 -.9921
SG113085.2 SG2 602.1 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 2457.8 SR 519.1 SS 1233.8
CRT -.0446 CRS .4103 CST -.9289
LSA 2719.6 MSA 660.0 SSA 24.9
EL1 2457.9 EL2 518.5 ALF 179.44

LAUNCH DATE NOV 16 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 839.579 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 32.996 GAL -4.12 AZL 88.11 HCA 252.42 SMA 188.06 ECC .22466 INC 1.8892 V1 30.121
RP 208.94 LAP -1.80 LOP 306.09 VP 23.762 GAP -11.33 AZP 90.57 TAL 337.26 TAP 229.67 RCA 145.81 APO 230.31 V2 26.232
RC 313.871 GL 17.62 GP -.75 ZAL 123.80 ZAP 39.26 ETS 178.27 ZAE 62.61 ETE 179.12 ZAC 83.91 ETC 257.66 CLP 39.26

PLANETOCENTRIC CONIC

C3 12.846 VHL 3.584 DLA 16.37 RAL 186.65 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 4.599 DPA 6.62 RAP 166.87 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 18	2649.25	-27.20	70.91	46.14	98.19	18 37 27	2049.2	-25.79	62.53
90.00	10 18 47	4222.56	.77	173.24	41.10	61.69	11 29 9	3622.6	-3.02	166.61
100.00	19 23 50	2357.28	-28.38	49.23	45.93	99.81	20 3 8	1757.3	-26.73	40.81
100.00	11 30 56	3989.76	1.81	155.55	40.52	60.16	12 37 26	3389.8	-2.18	149.02
110.00	20 52 26	2080.07	-31.44	27.42	45.18	104.18	21 27 6	1480.1	-29.17	18.95
110.00	12 18 49	3839.73	4.46	142.51	38.87	56.07	13 22 49	3239.7	-.02	136.30

DIFFERENTIAL CORRECTIONS
TDE -.3431 TRA 4.9445 TC-14.4256 BAU 2.4782
RDE .3258 RRA .1241 RC3 .3428 FAU .18870
FDE-1.0674 FRA 5.2048 FC-12.7166 BSP 46140
BDE .4732 BRA 4.9461 BC314.4297 FSP 3803

MID-COURSE EXECUTION ACCURACY
SGT13232.5 SGR 611.8 SG3 1097.0
RRT -.1388 RRF -.1720 RTF .9918
SGB13246.6 R23 .0344 R13 -.9918
SG113232.8 SG2 605.9 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 2550.5 SR 524.5 SS 1240.9
CRT -.1007 CRS .4452 CST -.9353
LSA 2809.6 MSA 652.5 SSA 24.4
EL1 2551.1 EL2 521.7 ALF 178.76

LAUNCH DATE NOV 16 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 843.838 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.001 GAL -4.26 AZL 88.11 HCA 253.66 SMA 188.16 ECC .22585 INC 1.8858 V1 30.121
RP 208.76 LAP -1.81 LOP 307.33 VP 23.794 GAP -11.46 AZP 90.53 TAL 336.51 TAP 230.17 RCA 145.66 APO 230.65 V2 26.254
RC 314.784 GL 17.35 GP -.73 ZAL 124.94 ZAP 38.50 ETS 178.25 ZAE 61.55 ETE 179.13 ZAC 84.02 ETC 257.61 CLP 38.49

PLANETOCENTRIC CONIC

C3 13.190 VHL 3.632 DLA 15.66 RAL 187.58 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 4.680 DPA 6.44 RAP 167.32 ECC 1.2171

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 44	2629.06	-27.00	69.47	47.23	98.88	18 47 34	2029.1	-25.49	61.13
90.00	10 15 49	4254.16	1.79	175.00	42.25	61.73	11 26 44	3654.2	-2.01	168.37
100.00	19 33 43	2338.91	-28.16	47.90	47.01	100.47	20 12 42	1738.9	-26.42	39.53
100.00	11 28 32	4019.52	2.82	157.18	41.68	60.23	12 35 32	3419.5	-1.17	150.66
110.00	21 1 8	2065.36	-31.19	26.35	46.23	104.77	21 35 34	1465.4	-28.84	17.93
110.00	12 17 36	3865.83	5.45	143.89	40.04	56.20	13 22 2	3265.8	.98	137.66

DIFFERENTIAL CORRECTIONS
TDE -.4403 TRA 5.1629 TC-14.2334 BAU 2.5107
RDE .3337 RRA .1228 RC3 .3443 FAU .17948
FDE-1.1211 FRA 5.1155 FC-11.7802 BSP 46716
BDE .5525 BRA 5.1644 BC314.2376 FSP 3642

MID-COURSE EXECUTION ACCURACY
SGT13376.3 SGR 616.5 SG3 1046.1
RRT -.1514 RRF -.1854 RTF .9916
SGB13390.5 R23 .0354 R13 -.9916
SG113376.7 SG2 609.4 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 2649.3 SR 529.9 SS 1247.4
CRT -.1530 CRS .4778 CST -.9408
LSA 2905.0 MSA 645.0 SSA 23.9
EL1 2650.6 EL2 523.4 ALF 178.18

LAUNCH DATE NOV 16 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 848.096 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.007 GAL -4.42 AZL 88.12 HCA 254.91 SMA 188.25 ECC .22710 INC 1.8825 V1 30.121
RP 208.58 LAP -1.82 LOP 308.57 VP 23.824 GAP -11.59 AZP 90.49 TAL 335.75 TAP 230.65 RCA 145.50 APO 231.01 V2 26.274
RC 315.690 GL 17.07 GP -.72 ZAL 126.09 ZAP 37.76 ETS 178.23 ZAE 60.51 ETE 179.15 ZAC 84.14 ETC 257.55 CLP 37.75

PLANETOCENTRIC CONIC

C3 13.558 VHL 3.682 DLA 14.95 RAL 188.52 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.763 DPA 6.25 RAP 167.79 ECC 1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 3	2609.45	-26.78	68.07	48.34	99.55	18 57 32	2009.5	-25.19	59.77
90.00	10 12 59	4285.69	2.80	176.76	43.43	61.81	11 24 25	3685.7	-.99	170.13
100.00	19 43 29	2321.04	-27.93	46.62	48.10	101.11	20 22 10	1721.0	-26.11	38.29
100.00	11 26 14	4049.34	3.82	158.82	42.87	60.33	12 33 43	3449.3	-.16	152.29
110.00	21 9 47	2051.01	-30.93	25.31	47.29	105.33	21 43 58	1451.0	-28.52	16.94
110.00	12 16 25	3892.13	6.45	145.27	41.24	56.36	13 21 18	3292.1	1.98	139.03

DIFFERENTIAL CORRECTIONS
TDE -.5401 TRA 5.3877 TC-14.0224 BAU 2.5424
RDE .3419 RRA .1214 RC3 .3450 FAU .17046
FDE-1.1674 FRA 5.0240 FC-10.8847 BSP 47276
BDE .6392 BRA 5.3891 BC314.0266 FSP 3486

MID-COURSE EXECUTION ACCURACY
SGT13514.3 SGR 621.1 SG3 996.5
RRT -.1637 RRF -.1984 RTF .9913
SGB13528.6 R23 .0362 R13 -.9913
SG113514.7 SG2 612.7 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 2752.9 SR 535.3 SS 1251.7
CRT -.2014 CRS .5073 CST -.9459
LSA 3004.3 MSA 636.9 SSA 23.4
EL1 2755.1 EL2 523.9 ALF 177.67

LAUNCH DATE NOV 16 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 852.352 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.013 GAL -4.58 AZL 88.12 HCA 256.15 SMA 188.36 ECC .22839 INC 1.8792 V1 30.121
RP 208.40 LAP -1.82 LOP 309.82 VP 23.854 GAP -11.73 AZP 90.45 TAL 334.97 TAP 231.12 RCA 145.34 APO 231.37 V2 26.294
RC 316.588 GL 16.79 GP -.70 ZAL 127.25 ZAP 37.04 ETS 178.22 ZAE 59.49 ETE 179.16 ZAC 84.26 ETC 257.49 CLP 37.03

PLANETOCENTRIC CONIC

C3 13.951 VHL 3.735 DLA 14.23 RAL 189.45 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 4.848 DPA 6.05 RAP 168.28 ECC 1.2296

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 14	2590.42	-26.56	66.73	49.46	100.19	19 7 24	1990.4	-24.88	58.46
90.00	10 10 15	4317.23	3.81	178.53	44.65	61.92	11 22 12	3717.2	.03	171.89
100.00	19 53 9	2303.66	-27.70	45.39	49.21	101.72	20 31 33	1703.7	-25.80	37.10
100.00	11 24 1	4079.22	4.83	160.47	44.09	60.46	12 32 0	3479.2	.86	153.93
110.00	21 18 22	2037.03	-30.68	24.30	48.38	105.88	21 52 19	1437.0	-28.19	15.98
110.00	12 15 18	3918.62	7.44	146.68	42.48	56.54	13 20 36	3318.6	2.99	140.42

DIFFERENTIAL CORRECTIONS
TDE -.6429 TRA 5.6206 TC-13.7993 BAU 2.5746
RDE .3504 RRA .1197 RC3 .3450 FAU .16177
FDE-1.2087 FRA 4.9321 FC-10.0387 BSP 47833
BDE .7322 BRA 5.6219 BC313.8036 FSP 3334

MID-COURSE EXECUTION ACCURACY
SGT13651.2 SGR 625.5 SG3 948.8
RRT -.1759 RRF -.2112 RTF .9910
SGB13665.5 R23 .0371 R13 -.9910
SG113651.6 SG2 615.7 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 2861.6 SR 540.6 SS 1254.6
CRT -.2462 CRS .5344 CST -.9509
LSA 3108.0 MSA 628.6 SSA 22.9
EL1 2864.8 EL2 523.4 ALF 177.24

LAUNCH DATE NOV 16 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 856.606 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.018	GAL	-4.74	AZL	88.12	HCA	257.40	SMA	188.46	ECC	.22975	INC	1.8760
RP	208.24	LAP	-1.83	LOP	311.07	VP	23.883	GAP	-11.86	AZP	90.41	TAL	334.18	TAP	231.58	RCA	145.16	APO	231.75
RC	317.480	GL	16.51	GP	-.68	ZAL	128.40	ZAP	36.34	ETS	178.20	ZAE	58.50	ETE	179.17	ZAC	84.39	ETC	257.42

V1 30.121 V2 26.314 CLP 36.33

PLANETOCENTRIC CONIC

C3	14.371	VHL	3.791	DLA	13.52	RAL	190.38	RAD	6567.6	VEL	11.651	PTH	2.05	VHP	4.934	DPA	5.85	RAP	168.79

ECC 1.2365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 17	2571.97	-26.33	65.42	50.60	100.81	19 17 9	1972.0	-24.57	57.20
90.00	10 7 38	4348.76	4.82	180.30	45.89	62.06	11 20 6	3748.8	1.05	173.65
100.00	20 2 43	2286.79	-27.46	44.19	50.34	102.31	20 40 49	1686.8	-25.49	35.94
100.00	11 21 53	4109.18	5.83	162.13	45.34	60.63	12 30 22	3509.2	1.87	155.58
110.00	21 26 52	2023.44	-30.42	23.33	49.48	106.41	22 0 36	1423.4	-27.87	15.06
110.00	12 14 13	3945.29	8.44	148.10	43.73	56.75	13 19 58	3345.3	4.01	141.81

DIFFERENTIAL CORRECTIONS

TDE	-.7493	TRA	5.8592	TC-13.5608	BAU	2.6063	
RDE	.3593	RRA	.1177	RC3 .3443	FAU	.15338	
FDE	-1.2455	FRA	4.8362	FC3-9.2396	BSP	48354	
BDE	.8310	BRA	5.8604	BC313.5652	FSP	3186	

MID-COURSE EXECUTION ACCURACY

SGT13782.1	SGR	629.7	SG3	902.6			
RRT -.1880	RRF	-.2242	RTF	.9906			
SGB13796.5	R23	.0383	R13	-.9906			
SG113782.6	SG2	618.5	THA	179.51			

ORBIT DETERMINATION ACCURACY

ST	2973.8	SR	545.9	SS	1255.6		
CRT	-.2879	CRS	.5599	CST	-.9544		
LSA	3214.4	MSA	620.4	SSA	22.5		
EL1	2978.0	EL2	522.0	ALF	176.88		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 860.858 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.024	GAL	-4.91	AZL	88.13	HCA	258.65	SMA	188.56	ECC	.23116	INC	1.8728
RP	208.08	LAP	-1.84	LOP	312.32	VP	23.912	GAP	-11.99	AZP	90.37	TAL	333.37	TAP	232.02	RCA	144.97	APO	232.15
RC	318.367	GL	16.22	GP	-.67	ZAL	129.55	ZAP	35.66	ETS	178.18	ZAE	57.51	ETE	179.18	ZAC	84.52	ETC	257.36

V1 30.121 V2 26.332 CLP 35.65

PLANETOCENTRIC CONIC

C3	14.820	VHL	3.850	DLA	12.80	RAL	191.31	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	5.022	DPA	5.63	RAP	169.32

ECC 1.2439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 13	2554.09	-26.10	64.17	51.76	101.40	19 26 47	1954.1	-24.26	55.98
90.00	10 5 6	4380.29	5.83	182.07	47.16	62.24	11 18 6	3780.3	2.06	175.41
100.00	20 12 10	2270.42	-27.21	43.03	51.49	102.87	20 50 1	1670.4	-25.17	34.83
100.00	11 19 50	4139.19	6.83	163.80	46.61	60.83	12 28 49	3539.2	2.89	157.23
110.00	21 35 19	2010.25	-30.16	22.38	50.60	106.91	22 8 49	1410.3	-27.55	14.16
110.00	12 13 10	3972.13	9.44	149.53	45.02	56.99	13 19 22	3372.1	5.03	143.22

DIFFERENTIAL CORRECTIONS

TDE	-.8581	TRA	6.1062	TC-13.3087	BAU	2.6377	
RDE	.3686	RRA	.1155	RC3 .3430	FAU	.14522	
FDE	-1.2768	FRA	4.7396	FC3-8.4833	BSP	48891	
BDE	.9339	BRA	6.1073	BC313.3131	FSP	3045	

MID-COURSE EXECUTION ACCURACY

SGT13909.8	SGR	633.8	SG3	857.9			
RRT -.2000	RRF	-.2370	RTF	.9902			
SGB13924.2	R23	.0394	R13	-.9902			
SG113910.4	SG2	621.0	THA	179.48			

ORBIT DETERMINATION ACCURACY

ST	3089.1	SR	551.2	SS	1254.6		
CRT	-.3261	CRS	.5831	CST	-.9578		
LSA	3323.4	MSA	612.3	SSA	22.0		
EL1	3094.5	EL2	520.1	ALF	176.57		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 865.106 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.030	GAL	-5.08	AZL	88.13	HCA	259.91	SMA	188.67	ECC	.23264	INC	1.8696
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.939	GAP	-12.13	AZP	90.33	TAL	332.55	TAP	232.45	RCA	144.77	APO	232.56
RC	319.247	GL	15.93	GP	-.66	ZAL	130.71	ZAP	35.00	ETS	178.16	ZAE	56.55	ETE	179.20	ZAC	84.65	ETC	257.30

V1 30.121 V2 26.349 CLP 34.99

PLANETOCENTRIC CONIC

C3	15.298	VHL	3.911	DLA	12.08	RAL	192.24	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	5.112	DPA	5.40	RAP	169.87

ECC 1.2518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 1	2536.79	-25.86	62.96	52.94	101.96	19 36 18	1936.8	-23.95	54.81
90.00	10 2 40	4411.83	6.82	183.85	48.46	62.45	11 16 12	3811.8	3.08	177.17
100.00	20 21 31	2254.58	-26.97	41.92	52.66	103.41	20 59 6	1654.6	-24.86	33.76
100.00	11 17 51	4169.27	7.82	165.48	47.92	61.06	12 27 20	3569.3	3.90	158.88
110.00	21 43 41	1997.48	-29.90	21.48	51.74	107.39	22 16 59	1397.5	-27.24	13.31
110.00	12 12 10	3999.14	10.44	150.99	46.34	57.26	13 18 49	3399.1	6.05	144.64

DIFFERENTIAL CORRECTIONS

TDE	-.9702	TRA	6.3594	TC-13.0496	BAU	2.6699	
RDE	.3782	RRA	.1131	RC3 .3410	FAU	.13738	
FDE	-1.3039	FRA	4.6402	FC3-7.7745	BSP	49396	
BDE	1.0413	BRA	6.3604	BC313.0540	FSP	2905	

MID-COURSE EXECUTION ACCURACY

SGT14035.1	SGR	637.7	SG3	814.9			
RRT -.2119	RRF	-.2499	RTF	.9898			
SGB14049.5	R23	.0406	R13	-.9888			
SG114035.7	SG2	623.2	THA	179.45			

ORBIT DETERMINATION ACCURACY

ST	3206.5	SR	556.3	SS	1251.6		
CRT	-.3613	CRS	.6049	CST	-.9608		
LSA	3434.0	MSA	604.3	SSA	21.6		
EL1	3213.0	EL2	517.7	ALF	176.32		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 869.350 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.036	GAL	-5.26	AZL	88.13	HCA	261.16	SMA	188.77	ECC	.23418	INC	1.8664
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.965	GAP	-12.27	AZP	90.29	TAL	331.71	TAP	232.87	RCA	144.57	APO	232.98
RC	320.122	GL	15.63	GP	-.64	ZAL	131.86	ZAP	34.35	ETS	178.14	ZAE	55.61	ETE	179.21	ZAC	84.79	ETC	257.23

V1 30.121 V2 26.366 CLP 34.35

PLANETOCENTRIC CONIC

C3	15.809	VHL	3.976	DLA	11.36	RAL	193.16	RAD	6567.6	VEL	11.713	PTH	2.06	VHP	5.203	DPA	5.17	RAP	170.44

ECC 1.2602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 42	2520.08	-25.62	61.79	54.13	102.50	19 45 42	1920.1	-23.64	53.68
90.00	10 0 19	4443.38	7.81	185.64	49.80	62.70	11 14 22	3843.4	4.09	178.94
100.00	20 30 46	2239.27	-26.72	40.85	53.84	103.92	21 8 6	1639.3	-24.54	32.73
100.00	11 15 56	4199.42	8.81	167.17	49.26	61.32	12 25 55	3599.4	4.92	160.55
110.00	21 51 59	1985.15	-29.65	20.61	52.90	107.85	22 25 4	1385.2	-26.93	12.48
110.00	12 11 13	4026.30	11.43	152.46	47.69	57.56	13 18 19	3426.3	7.07	146.08

DIFFERENTIAL CORRECTIONS

TDE	-1.0858	TRA	6.6207	TC-12.7782	BAU	2.7017	
RDE	.3881	RRA	.1103	RC3 .3385	FAU	.12977	
FDE	-1.3271	FRA	4.5388	FC3-7.1062	BSP	49890	
BDE	1.1531	BRA	6.6216	BC312.7826	FSP	2770	

MID-COURSE EXECUTION ACCURACY

SGT14156.2	SGR	641.5	SG3	773.2			
RRT -.2239	RRF	-.2629	RTF	.9893			
SGB14170.7	R23	.0421	R13	-.9893			
SG114156.9	SG2	625.2	THA	179.42			

ORBIT DETERMINATION ACCURACY

ST	3326.2	SR	561.4	SS	1246.8		
CRT	-.3939	CRS	.6253	CST	-.9634		
LSA	3546.4	MSA	596.6	SSA	21.2		
EL1	3333.8	EL2	514.9	ALF	176.10		

LAUNCH DATE NOV 16 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 873.590 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.042	GAL	-5.44	AZL	88.14	HCA	262.42	SMA	188.88	ECC	.23578	INC	1.8632
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.991	GAP	-12.41	AZP	90.25	TAL	330.85	TAP	233.27	RCA	144.34	APO	233.41
RC	320.992	GL	15.34	GP	-.63	ZAL	133.01	ZAP	33.73	ETS	178.12	ZAE	54.68	ETE	179.22	ZAC	84.93	ETC	257.16

V1 30.121 V2 26.381 CLP 33.72

PLANETOCENTRIC CONIC

C3	16.354	VHL	4.044	DLA	10.64	RAL	194.07	RAD	6567.7	VEL	11.736	PTH	2.07	VHP	5.296	DPA	4.92	RAP	171.02

ECC 1.2691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 16	2503.94	-25.38	60.67	55.34	103.01	19 55 0	1903.9	-23.33	52.60
90.00	9 58 3	4474.93	8.79	187.44	51.16	62.97	11 12 38	3874.9	5.10	180.71
100.00	20 39 55	2224.48	-26.48	39.82	55.04	104.41	21 16 59	1624.5	-24.24	31.74
100.00	11 14 5	4229.62	9.80	168.87	50.62	61.62	12 24 34	3629.6	5.93	162.22
110.00	22 0 12	1973.26	-29.40	19.77	54.07	108.28	22 33 5	1373.3	-26.62	11.69
110.00	12 10 17	4053.60	12.43	153.95	49.06	57.90	13 17 51	3453.6	8.10	147.53

DIFFERENTIAL CORRECTIONS

TDE-1.2045	TRA 6.8885	TC-12.5000	BAU 2.7340				
RDE .3984	RRA .1072	RC3 .3355	FAU .12242				
FDE-1.3457	FRA 4.4347	FC3-6.4804	BSP 50359				
BDE 1.2687	BRA 6.8893	BC312.5045	FSP 2639				

MID-COURSE EXECUTION ACCURACY

SGT14273.7	SGR 645.1	SG3 733.0					
RRT -.2358	RRF -.2759	RTF .9887					
SGB14288.3	R23 .0435	R13 -.9887					
SG114274.5	SG2 626.9	THA 179.39					

ORBIT DETERMINATION ACCURACY

ST 3446.7	SR 566.5	SS 1239.6					
CRT -.4239	CRS .6443	CST -.9656					
LSA 3659.2	MSA 589.0	SSA 20.8					
EL1 3455.2	EL2 511.8	ALF 175.93					

LAUNCH DATE NOV 16 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 877.824 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.048	GAL	-5.63	AZL	88.14	HCA	263.68	SMA	188.99	ECC	.23746	INC	1.8600
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.015	GAP	-12.55	AZP	90.20	TAL	329.98	TAP	233.66	RCA	144.11	APO	233.87
RC	321.856	GL	15.04	GP	-.62	ZAL	134.15	ZAP	33.12	ETS	178.10	ZAE	53.77	ETE	179.23	ZAC	85.08	ETC	257.10

V1 30.121 V2 26.396 CLP 33.11

PLANETOCENTRIC CONIC

C3	16.935	VHL	4.115	DLA	9.92	RAL	194.98	RAD	6567.7	VEL	11.761	PTH	2.08	VHP	5.391	DPA	4.67	RAP	171.62

ECC 1.2787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 43	2488.39	-25.13	59.60	56.57	103.49	20 4 11	1888.4	-23.03	51.56
90.00	9 55 51	4506.49	9.76	189.25	52.55	63.29	11 10 58	3906.5	6.10	182.49
100.00	20 48 57	2210.24	-26.23	38.83	56.26	104.87	21 25 47	1610.2	-23.93	30.79
100.00	11 12 18	4259.88	10.77	170.59	52.02	61.95	12 23 18	3659.9	6.93	163.90
110.00	22 8 20	1961.83	-29.15	18.98	55.26	108.70	22 41 2	1361.8	-26.32	10.94
110.00	12 9 24	4081.04	13.41	155.47	50.47	58.26	13 17 25	3481.0	9.12	149.00

DIFFERENTIAL CORRECTIONS

TDE-1.3258	TRA 7.1647	TC-12.2151	BAU 2.7666				
RDE .4091	RRA .1038	RC3 .3319	FAU .11530				
FDE-1.3594	FRA 4.3286	FC3-5.8944	BSP 50813				
BDE 1.3875	BRA 7.1655	BC312.2196	FSP 2511				

MID-COURSE EXECUTION ACCURACY

SGT14388.7	SGR 648.6	SG3 694.2					
RRT -.2477	RRF -.2889	RTF .9881					
SGB14403.3	R23 .0451	R13 -.9881					
SG114389.6	SG2 628.3	THA 179.36					

ORBIT DETERMINATION ACCURACY

ST 3567.6	SR 571.4	SS 1230.0					
CRT -.4514	CRS .6618	CST -.9675					
LSA 3772.1	MSA 581.6	SSA 20.4					
EL1 3577.1	EL2 508.5	ALF 175.78					

LAUNCH DATE NOV 16 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 882.053 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.055	GAL	-5.82	AZL	88.14	HCA	264.93	SMA	189.10	ECC	.23921	INC	1.8569
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.039	GAP	-12.69	AZP	90.16	TAL	329.10	TAP	234.03	RCA	143.87	APO	234.33
RC	322.714	GL	14.73	GP	-.61	ZAL	135.30	ZAP	32.52	ETS	178.08	ZAE	52.87	ETE	179.24	ZAC	85.23	ETC	257.03

V1 30.121 V2 26.409 CLP 32.52

PLANETOCENTRIC CONIC

C3	17.554	VHL	4.190	DLA	9.21	RAL	195.88	RAD	6567.7	VEL	11.787	PTH	2.08	VHP	5.488	DPA	4.40	RAP	172.24

ECC 1.2889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 2	2473.42	-24.89	58.57	57.81	103.95	20 13 16	1873.4	-22.73	50.56
90.00	9 53 44	4538.06	10.72	191.07	53.97	63.64	11 9 22	3938.1	7.10	184.27
100.00	20 57 53	2196.54	-25.99	37.89	57.50	105.31	21 34 30	1596.5	-23.63	29.88
100.00	11 10 34	4290.17	11.73	172.32	53.45	62.31	12 22 5	3690.2	7.94	165.59
110.00	22 16 23	1950.87	-28.91	18.21	56.48	109.09	22 48 54	1350.9	-26.03	10.21
110.00	12 8 34	4108.60	14.40	157.00	51.90	58.66	13 17 2	3508.6	10.14	150.48

DIFFERENTIAL CORRECTIONS

TDE-1.4501	TRA 7.4488	TC-11.9251	BAU 2.7997				
RDE .4202	RRA .1001	RC3 .3279	FAU .10846				
FDE-1.3697	FRA 4.2197	FC3-5.3490	BSP 51259				
BDE 1.5097	BRA 7.4494	BC311.9296	FSP 2385				

MID-COURSE EXECUTION ACCURACY

SGT14500.8	SGR 651.9	SG3 656.7					
RRT -.2596	RRF -.3021	RTF .9874					
SGB14515.5	R23 .0470	R13 -.9874					
SG114501.8	SG2 629.5	THA 179.33					

ORBIT DETERMINATION ACCURACY

ST 3688.6	SR 576.2	SS 1218.4					
CRT -.4767	CRS .6785	CST -.9690					
LSA 3884.8	MSA 574.7	SSA 20.0					
EL1 3699.0	EL2 505.1	ALF 175.66					

LAUNCH DATE NOV 16 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 886.274 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.061	GAL	-6.02	AZL	88.15	HCA	266.20	SMA	189.21	ECC	.24103	INC	1.8538
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.061	GAP	-12.84	AZP	90.12	TAL	328.20	TAP	234.39	RCA	143.61	APO	234.82
RC	323.566	GL	14.43	GP	-.59	ZAL	136.43	ZAP	31.95	ETS	178.05	ZAE	51.99	ETE	179.25	ZAC	85.38	ETC	256.97

V1 30.121 V2 26.422 CLP 31.94

PLANETOCENTRIC CONIC

C3	18.214	VHL	4.268	DLA	8.50	RAL	196.78	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	5.587	DPA	4.13	RAP	172.87

ECC 1.2998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 15	2459.04	-24.65	57.58	59.08	104.39	20 22 14	1859.0	-22.43	49.61
90.00	9 51 41	4569.63	11.67	192.91	55.43	64.02	11 7 51	3969.6	8.08	186.07
100.00	21 6 43	2183.38	-25.75	36.98	58.75	105.73	21 43 6	1583.4	-23.34	29.01
100.00	11 8 55	4320.52	12.69	174.07	54.91	62.71	12 20 55	3720.5	8.93	167.30
110.00	22 24 22	1940.39	-28.68	17.49	57.71	109.46	22 56 42	1340.4	-25.75	9.53
110.00	12 7 45	4136.27	15.37	158.55	53.37	59.09	13 16 41	3536.3	11.16	151.98

DIFFERENTIAL CORRECTIONS

TDE-1.5784	TRA 7.7411	TC-11.6302	BAU 2.8331				
RDE .4317	RRA .0961	RC3 .3235	FAU .10179				
FDE-1.3763	FRA 4.1084	FC3-4.8383	BSP 51680				
BDE 1.6364	BRA 7.7417	BC311.6347	FSP 2263				

MID-COURSE EXECUTION ACCURACY

SGT14610.1	SGR 655.0	SG3 620.5					
RRT -.2716	RRF -.3155	RTF .9866					
SGB14624.8	R23 .0489	R13 -.9866					
SG114611.2	SG2 630.4	THA 179.30					

ORBIT DETERMINATION ACCURACY

ST 3810.1	SR 580.9	SS 1204.6					
CRT -.5003	CRβ .6942	CST -.9703					
LSA 3997.8	MSA 567.8	SSA 19.7					
EL1 3821.3	EL2 501.5	ALF 175.56					

LAUNCH DATE NOV 16 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 890.487 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.067 GAL -6.22 AZL 88.15 HCA 267.46 SMA 189.32 ECC .24293 INC 1.8507 V1 30.121
RP 207.21 LAP -1.85 LOP 321.13 VP 24.083 GAP -12.99 AZP 90.08 TAL 327.28 TAP 234.74 RCA 143.33 APO 235.32 V2 26.434
RC 324.413 GL 14.13 GP -.58 ZAL 137.56 ZAP 31.39 ETS 178.03 ZAE 51.13 ETE 179.26 ZAC 85.54 ETC 256.90 CLP 31.38

PLANETOCENTRIC CONIC

C3 18.918 VHL 4.349 DLA 7.79 RAL 197.67 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 5.687 DPA 3.86 RAP 173.51 ECC 1.3113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 20	2445.25	-24.42	56.64	60.36	104.81	20 31 5	1845.2	-22.14	48.71
90.00	9 49 43	4601.21	12.61	194.76	56.91	64.43	11 6 24	4001.2	9.06	187.87
100.00	21 15 26	2170.78	-25.51	36.12	60.02	106.13	21 51 37	1570.8	-23.06	28.18
100.00	11 7 18	4350.90	13.63	175.83	56.39	63.14	12 19 49	3750.9	9.92	169.01
110.00	22 32 15	1930.40	-28.45	16.80	58.95	109.81	23 4 25	1330.4	-25.48	8.88
110.00	12 6 59	4164.05	16.34	160.13	54.86	59.55	13 16 23	3564.1	12.17	153.49

DIFFERENTIAL CORRECTIONS
TDE-1.7092 TRA 8.0407 TC-11.3333 BAU 2.8675
RDE .4435 RRA .0916 RC3 .3187 FAU .09538
FDE-1.3789 FRA 3.9945 FC3-4.3648 BSP 52070
BDE 1.7658 BRA 8.0412 BC311.3378 FSP 2144

MID-COURSE EXECUTION ACCURACY
SGT14715.9 SGR 658.1 SG3 585.5
RRT -.2835 RRF -.3289 RTF .9857
SGB14730.6 R23 .0510 R13 -.9858
SG114717.1 SG2 631.0 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 3929.8 SR 585.5 SS 1188.6
CRT -.5219 CRS .7090 CST -.9714
LSA 4109.0 MSA 561.2 SSA 19.3
EL1 3941.9 EL2 497.9 ALF 175.48

LAUNCH DATE NOV 16 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 894.692 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.074 GAL -6.43 AZL 88.15 HCA 268.72 SMA 189.44 ECC .24491 INC 1.8475 V1 30.121
RP 207.12 LAP -1.85 LOP 322.40 VP 24.103 GAP -13.15 AZP 90.04 TAL 326.35 TAP 235.07 RCA 143.04 APO 235.83 V2 26.444
RC 325.253 GL 13.82 GP -.57 ZAL 138.69 ZAP 30.84 ETS 178.01 ZAE 50.28 ETE 179.27 ZAC 85.70 ETC 256.83 CLP 30.84

PLANETOCENTRIC CONIC

C3 19.667 VHL 4.435 DLA 7.09 RAL 198.56 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 5.790 DPA 3.57 RAP 174.17 ECC 1.3237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 19	2432.04	-24.18	55.74	61.65	105.20	20 39 51	1832.0	-21.86	47.84
90.00	9 47 48	4632.78	13.53	196.62	58.43	64.88	11 5 1	4032.8	10.03	189.68
100.00	21 24 3	2158.74	-25.28	35.30	61.31	106.50	22 0 1	1558.7	-22.78	27.40
100.00	11 5 45	4381.32	14.56	177.62	57.91	63.60	12 18 46	3781.3	10.90	170.74
110.00	22 40 3	1920.89	-28.23	16.15	60.22	110.13	23 12 4	1320.9	-25.22	8.26
110.00	12 6 14	4191.93	17.29	161.72	56.39	60.04	13 16 6	3591.9	13.18	155.03

DIFFERENTIAL CORRECTIONS
TDE-1.8431 TRA 8.3488 TC-11.0361 BAU 2.9029
RDE .4558 RRA .0868 RC3 .3135 FAU .08921
FDE-1.3778 FRA 3.8780 FC3-3.9268 BSP 52421
BDE 1.8986 BRA 8.3492 BC311.0406 FSP 2028

MID-COURSE EXECUTION ACCURACY
SGT14820.0 SGR 660.9 SG3 551.8
RRT -.2956 RRF -.3425 RTF .9848
SGB14834.7 R23 .0533 R13 -.9848
SG114821.3 SG2 631.4 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 4048.4 SR 589.9 SS 1170.4
CRT -.5419 CRS .7229 CST -.9722
LSA 4218.9 MSA 554.9 SSA 19.0
EL1 4061.2 EL2 494.2 ALF 175.42

LAUNCH DATE NOV 16 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 898.887 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.080 GAL -6.65 AZL 88.16 HCA 269.99 SMA 189.55 ECC .24698 INC 1.8444 V1 30.121
RP 207.04 LAP -1.84 LOP 323.66 VP 24.123 GAP -13.30 AZP 90.00 TAL 325.40 TAP 235.39 RCA 142.74 APO 236.37 V2 26.454
RC 326.088 GL 13.52 GP -.56 ZAL 139.80 ZAP 30.31 ETS 177.99 ZAE 49.44 ETE 179.28 ZAC 85.86 ETC 256.77 CLP 30.31

PLANETOCENTRIC CONIC

C3 20.465 VHL 4.524 DLA 6.40 RAL 199.44 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 5.895 DPA 3.28 RAP 174.85 ECC 1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 10	2419.42	-23.95	54.89	62.97	105.57	20 48 30	1819.4	-21.59	47.02
90.00	9 45 57	4664.35	14.43	198.50	59.97	65.37	11 3 41	4064.4	10.99	191.51
100.00	21 32 33	2147.24	-25.06	34.52	62.61	106.85	22 8 21	1547.2	-22.51	26.65
100.00	11 4 15	4411.76	15.47	179.42	59.46	64.10	12 17 47	3811.8	11.86	172.48
110.00	22 47 46	1911.88	-28.01	15.54	61.50	110.44	23 19 38	1311.9	-24.97	7.68
110.00	12 5 32	4219.89	18.23	163.34	57.95	60.57	13 15 52	3619.9	14.18	156.58

DIFFERENTIAL CORRECTIONS
TDE-1.9805 TRA 8.6661 TC-10.7352 BAU 2.9384
RDE .4684 RRA .0816 RC3 .3081 FAU .08318
FDE-1.3735 FRA 3.7587 FC3-3.5188 BSP 52768
BDE 2.0352 BRA 8.6665 BC310.7396 FSP 1915

MID-COURSE EXECUTION ACCURACY
SGT14920.3 SGR 663.7 SG3 519.2
RRT -.3077 RRF -.3563 RTF .9837
SGB14935.0 R23 .0559 R13 -.9837
SG114921.7 SG2 631.5 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 4166.0 SR 594.2 SS 1150.2
CRT -.5604 CRS .7363 CST -.9728
LSA 4327.8 MSA 548.7 SSA 18.7
EL1 4179.5 EL2 490.5 ALF 175.37

LAUNCH DATE NOV 16 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 903.072 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.087 GAL -6.87 AZL 88.16 HCA 271.25 SMA 189.67 ECC .24914 INC 1.8413 V1 30.121
RP 206.96 LAP -1.84 LOP 324.93 VP 24.141 GAP -13.46 AZP 89.96 TAL 324.44 TAP 235.69 RCA 142.42 APO 236.92 V2 26.463
RC 326.917 GL 13.22 GP -.55 ZAL 140.91 ZAP 29.80 ETS 177.96 ZAE 48.62 ETE 179.29 ZAC 86.03 ETC 256.70 CLP 29.79

PLANETOCENTRIC CONIC

C3 21.315 VHL 4.617 DLA 5.71 RAL 200.31 RAD 6567.9 VEL 11.946 PTH 2.13 VHP 6.002 DPA 2.97 RAP 175.54 ECC 1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 55	2407.38	-23.73	54.08	64.30	105.92	20 57 2	1807.4	-21.32	46.23
90.00	9 44 9	4695.92	15.32	200.39	61.55	65.89	11 2 25	4095.9	11.93	193.35
100.00	21 40 58	2136.31	-24.84	33.78	63.94	107.19	22 16 34	1536.3	-22.25	25.94
100.00	11 2 48	4442.22	16.37	181.23	61.04	64.63	12 16 50	3842.2	12.82	174.24
110.00	22 55 23	1903.38	-27.81	14.96	62.80	110.73	23 27 7	1303.4	-24.74	7.14
110.00	12 4 51	4247.91	19.16	164.98	59.54	61.14	13 15 39	3647.9	15.16	158.15

DIFFERENTIAL CORRECTIONS
TDE-2.1212 TRA 8.9914 TC-10.4363 BAU 2.9753
RDE .4815 RRA .0760 RC3 .3023 FAU .07737
FDE-1.3657 FRA 3.6366 FC3-3.1424 BSP 53088
BDE 2.1752 BRA 8.9918 BC310.4406 FSP 1804

MID-COURSE EXECUTION ACCURACY
SGT15018.3 SGR 666.3 SG3 487.7
RRT -.3198 RRF -.3703 RTF .9824
SGB15033.0 R23 .0587 R13 -.9825
SG115019.8 SG2 631.3 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 4281.5 SR 598.3 SS 1127.9
CRT -.5777 CRS .7490 CST -.9733
LSA 4434.7 MSA 542.8 SSA 18.4
EL1 4295.6 EL2 486.8 ALF 175.32

LAUNCH DATE NOV 16 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 907.245 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.093 GAL -7.10 AZL 88.16 HCA 272.52 SMA 189.79 ECC .25139 INC 1.8382 V1 30.121
RP 206.89 LAP -1.84 LOP 326.20 VP 24.159 GAP -13.63 AZP 89.92 TAL 323.46 TAP 235.98 RCA 142.08 APO 237.50 V2 26.471
RC 327.742 GL 12.91 GP -.54 ZAL 142.01 ZAP 29.30 ETS 177.94 ZAE 47.81 ETE 179.30 ZAC 86.20 ETC 256.64 CLP 29.29

PLANETOCENTRIC CONIC

C3 22.221 VHL 4.714 DLA 5.02 RAL 201.17 RAD 6567.9 VEL 11.983 PTH 2.14 VHP 6.111 DPA 2.67 RAP 176.24 ECC 1.3657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 33	2395.92	-23.52	53.31	65.64	106.25	21 5 29	1795.9	-21.06	45.49
90.00	9 42 25	4727.47	16.19	202.30	63.15	66.44	11 1 13	4127.5	12.86	195.20
100.00	21 49 16	2125.93	-24.63	33.08	65.27	107.50	22 24 42	1525.9	-22.00	25.27
100.00	11 1 24	4472.70	17.25	183.07	62.66	65.20	12 15 56	3872.7	13.76	176.01
110.00	23 2 56	1895.37	-27.62	14.42	64.11	111.00	23 34 31	1295.4	-24.51	6.62
110.00	12 4 13	4276.02	20.08	166.65	61.17	61.74	13 15 29	3676.0	16.14	159.74

DIFFERENTIAL CORRECTIONS
TDE-2.2645 TRA 9.3265 TC-10.1369 BAU 3.0127
RDE .4950 RRA .0700 RC3 .2964 FAU .07174
FDE-1.3544 FRA 3.5120 FC3-2.7949 BSP 53382
BDE 2.3180 BRA 9.3267 BC310.1412 FSP 1697

MID-COURSE EXECUTION ACCURACY
SGT15113.1 SGR 668.8 SG3 457.3
RRT -.3319 RRF -.3844 RTF .9810
SGB15127.9 R23 .0617 R13 -.9811
SG115114.7 SG2 630.9 THA 179.16

ORBIT DETERMINATION ACCURACY
ST 4394.6 SR 602.2 SS 1103.6
CRT -.5936 CRS .7612 CST -.9735
LSA 4539.2 MSA 537.1 SSA 18.1
EL1 4409.3 EL2 483.1 ALF 175.29

LAUNCH DATE NOV 16 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 911.405 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.100 GAL -7.33 AZL 88.16 HCA 273.78 SMA 189.91 ECC .25373 INC 1.8350 V1 30.121
RP 206.84 LAP -1.83 LOP 327.46 VP 24.175 GAP -13.80 AZP 89.88 TAL 322.47 TAP 236.25 RCA 141.72 APO 238.09 V2 26.477
RC 328.562 GL 12.61 GP -.53 ZAL 143.10 ZAP 28.81 ETS 177.92 ZAE 47.02 ETE 179.30 ZAC 86.38 ETC 256.58 CLP 28.81

PLANETOCENTRIC CONIC

C3 23.185 VHL 4.815 DLA 4.35 RAL 202.03 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 6.222 DPA 2.35 RAP 176.95 ECC 1.3816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 5	2385.04	-23.31	52.58	67.01	106.55	21 13 50	1785.0	-20.82	44.79
90.00	9 40 44	4759.00	17.03	204.23	64.79	67.03	11 0 3	4159.0	13.78	197.06
100.00	21 57 28	2116.10	-24.43	32.42	66.63	107.79	22 32 44	1516.1	-21.77	24.63
100.00	11 0 2	4503.18	18.11	184.92	64.30	65.80	12 15 6	3903.2	14.69	177.80
110.00	23 10 23	1887.87	-27.43	13.91	65.45	111.24	23 41 51	1287.9	-24.30	6.15
110.00	12 3 37	4304.17	20.98	168.34	62.82	62.37	13 15 21	3704.2	17.11	161.35

DIFFERENTIAL CORRECTIONS
TDE-2.4121 TRA 9.6696 TC3-9.8416 BAU 3.0519
RDE .5089 RRA .0635 RC3 .2903 FAU .06628
FDE-1.3404 FRA 3.3843 FC3-2.4749 BSP 53632
BDE 2.4652 BRA 9.6698 BC3 9.8459 FSP 1592

MID-COURSE EXECUTION ACCURACY
SGT15205.8 SGR 671.2 SG3 428.0
RRT -.3442 RRF -.3988 RTF .9794
SGB15220.6 R23 .0651 R13 -.9795
SG115207.6 SG2 630.2 THA 179.13

ORBIT DETERMINATION ACCURACY
ST 4505.8 SR 606.0 SS 1077.4
CRT -.6085 CRS .7730 CST -.9736
LSA 4642.0 MSA 531.5 SSA 17.8
EL1 4521.1 EL2 479.3 ALF 175.27

LAUNCH DATE NOV 16 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 915.550 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.106 GAL -7.57 AZL 88.17 HCA 275.05 SMA 190.03 ECC .25618 INC 1.8319 V1 30.121
RP 206.79 LAP -1.82 LOP 328.73 VP 24.191 GAP -13.97 AZP 89.84 TAL 321.46 TAP 236.51 RCA 141.35 APO 238.71 V2 26.483
RC 329.378 GL 12.31 GP -.52 ZAL 144.18 ZAP 28.34 ETS 177.89 ZAE 46.24 ETE 179.31 ZAC 86.56 ETC 256.52 CLP 28.33

PLANETOCENTRIC CONIC

C3 24.212 VHL 4.921 DLA 3.68 RAL 202.88 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 6.336 DPA 2.03 RAP 177.68 ECC 1.3985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 30	2374.73	-23.11	51.89	68.39	106.84	21 22 5	1774.7	-20.58	44.13
90.00	9 39 7	4790.51	17.86	206.17	66.46	67.65	10 58 57	4190.5	14.68	198.94
100.00	22 5 34	2106.81	-24.23	31.80	68.00	108.06	22 40 41	1506.8	-21.54	24.04
100.00	10 58 44	4533.66	18.95	186.80	65.97	66.44	12 14 18	3933.7	15.60	179.60
110.00	23 17 45	1880.87	-27.26	13.44	66.79	111.47	23 49 6	1280.9	-24.09	5.70
110.00	12 3 2	4332.36	21.86	170.05	64.51	63.04	13 15 14	3732.4	18.06	162.98

DIFFERENTIAL CORRECTIONS
TDE-2.5617 TRA10.0228 TC3-9.5472 BAU 3.0917
RDE .5232 RRA .0566 RC3 .2839 FAU .06099
FDE-1.3224 FRA 3.2537 FC3-2.1808 BSP 53865
BDE 2.6146 BRA10.0229 BC3 9.5514 FSP 1490

MID-COURSE EXECUTION ACCURACY
SGT15295.1 SGR 673.5 SG3 399.6
RRT -.3563 RRF -.4132 RTF .9776
SGB15309.9 R23 .0688 R13 -.9777
SG115297.0 SG2 629.2 THA 179.10

ORBIT DETERMINATION ACCURACY
ST 4613.7 SR 609.6 SS 1049.0
CRT -.6223 CRS .7842 CST -.9735
LSA 4741.4 MSA 526.1 SSA 17.5
EL1 4629.4 EL2 475.6 ALF 175.25

LAUNCH DATE NOV 16 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 919.681 EARTH TO MARS

RL 147.92 LAL .00 LOL 53.68 VL 33.113 GAL -7.82 AZL 88.17 HCA 276.32 SMA 190.15 ECC .25873 INC 1.8287 V1 30.121
RP 206.75 LAP -1.82 LOP 330.00 VP 24.205 GAP -14.15 AZP 89.80 TAL 320.43 TAP 236.75 RCA 140.95 APO 239.35 V2 26.488
RC 330.190 GL 12.01 GP -.52 ZAL 145.25 ZAP 27.88 ETS 177.87 ZAE 45.47 ETE 179.32 ZAC 86.74 ETC 256.46 CLP 27.87

PLANETOCENTRIC CONIC

C3 25.305 VHL 5.030 DLA 3.01 RAL 203.73 RAD 6568.0 VEL 12.111 PTH 2.17 VHP 6.452 DPA 1.70 RAP 178.42 ECC 1.4165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 49	2364.98	-22.91	51.24	69.78	107.11	21 30 14	1765.0	-20.35	43.50
90.00	9 37 32	4821.99	18.66	208.13	68.15	68.31	10 57 54	4222.0	15.56	200.83
100.00	22 13 34	2098.07	-24.05	31.22	69.39	108.31	22 48 32	1498.1	-21.32	23.48
100.00	10 57 28	4564.13	19.77	188.69	67.68	67.11	12 13 32	3964.1	16.50	181.42
110.00	23 25 2	1874.37	-27.10	13.00	68.16	111.69	23 56 17	1274.4	-23.91	5.29
110.00	12 2 29	4360.59	22.72	171.79	66.23	63.74	13 15 10	3760.6	19.00	164.63

DIFFERENTIAL CORRECTIONS
TDE-2.7159 TRA10.3849 TC3-9.2593 BAU 3.1339
RDE .5379 RRA .0492 RC3 .2775 FAU .05588
FDE-1.3022 FRA 3.1198 FC3-1.9116 BSP 54049
BDE 2.7687 BRA10.3850 BC3 9.2634 FSP 1390

MID-COURSE EXECUTION ACCURACY
SGT15383.2 SGR 675.7 SG3 372.2
RRT -.3687 RRF -.4281 RTF .9755
SGB15398.1 R23 .0730 R13 -.9756
SG115385.3 SG2 628.0 THA 179.07

ORBIT DETERMINATION ACCURACY
ST 4719.5 SR 613.0 SS 1019.2
CRT -.6353 CRS .7953 CST -.9732
LSA 4839.1 MSA 520.8 SSA 17.2
EL1 4735.7 EL2 471.8 ALF 175.24

LAUNCH DATE NOV 16 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 923.794 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.120	GAL	-8.08	AZL	88.17	HCA	277.59	SMA	190.27	ECC	.26139	INC	1.8256	V1	30.121
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.219	GAP	-14.34	AZP	89.76	TAL	319.39	TAP	236.98	RCA	140.54	APO	240.01	V2	26.492
RC	331.000	GL	11.71	GP	-.51	ZAL	146.31	ZAP	27.43	ETS	177.85	ZAE	44.72	ETE	179.32	ZAC	86.92	ETC	256.40	CLP	27.43

PLANETOCENTRIC CONIC

C3	26.470	VHL	5.145	DLA	2.36	RAL	204.56	RAD	6568.1	VEL	12.159	PTH	2.18	VHP	6.571	DPA	1.36	RAP	179.17	ECC	1.4356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 1	2355.79	-22.73	50.63	71.19	107.36	21 38 17	1755.8	-20.14	42.91
90.00	9 36 0	4853.43	19.44	210.11	69.88	69.00	10 56 54	4253.4	16.41	202.74
100.00	22 21 28	2089.87	-23.87	30.67	70.79	108.55	22 56 18	1489.9	-21.12	22.96
100.00	10 56 15	4594.59	20.56	190.60	69.41	67.81	12 12 49	3994.6	17.37	183.26
110.00	23 32 14	1868.37	-26.94	12.60	69.53	111.88	24 3 22	1268.4	-23.73	4.91
110.00	12 1 58	4388.85	23.56	173.36	67.98	64.48	13 15 7	3788.9	19.93	166.30

DIFFERENTIAL CORRECTIONS

TDE	-2.8727	TRA	10.7577	TC3	-8.9728	BAU	3.1767	SGT	15467.7	SGR	677.7	SG3	345.8	ST	4821.9	SR	616.2	SS	987.4
RDE	.5531	RRA	.0413	RC3	.2710	FAU	.05089	RRT	-.3810	RRF	-.4430	RTF	.9731	CRT	-.6473	CRS	.8059	CST	-.9727
FDE	-1.2784	FRA	2.9832	FC3	-1.6643	BSP	54217	SGB	15482.5	R23	.0775	R13	-.9731	LSA	4933.5	MSA	515.7	SSA	16.9
BDE	2.9255	BRA	10.7577	BC3	8.9769	FSP	1293	SG1	15469.9	SG2	626.5	THA	179.04	EL1	4838.5	EL2	468.0	ALF	175.23

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 16 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 927.890 EARTH TO MARS

RL	147.92	LAL	.00	LOL	53.68	VL	33.127	GAL	-8.34	AZL	88.18	HCA	278.86	SMA	190.40	ECC	.26416	INC	1.8224	V1	30.121
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.231	GAP	-14.53	AZP	89.72	TAL	318.34	TAP	237.19	RCA	140.10	APO	240.69	V2	26.494
RC	331.806	GL	11.42	GP	-.50	ZAL	147.36	ZAP	27.00	ETS	177.82	ZAE	43.98	ETE	179.33	ZAC	87.11	ETC	256.34	CLP	27.00

PLANETOCENTRIC CONIC

C3	27.710	VHL	5.264	DLA	1.72	RAL	205.39	RAD	6568.1	VEL	12.210	PTH	2.19	VHP	6.693	DPA	1.02	RAP	179.93	ECC	1.4560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 8	2347.14	-22.55	50.06	72.61	107.60	21 46 15	1747.1	-19.93	42.36
90.00	9 34 31	4884.84	20.20	212.10	71.64	69.72	10 55 56	4284.8	17.25	204.66
100.00	22 29 16	2082.19	-23.70	30.16	72.20	108.77	23 3 59	1482.2	-20.92	22.47
100.00	10 55 4	4625.02	21.33	192.53	71.17	68.55	12 12 9	4025.0	18.23	185.11
110.00	23 39 21	1862.85	-26.80	12.24	70.93	112.06	24 10 24	1262.8	-23.57	4.56
110.00	12 1 29	4417.12	24.37	175.35	69.77	65.26	13 15 6	3817.1	20.83	167.99

DIFFERENTIAL CORRECTIONS

TDE	-3.0333	TRA	11.1404	TC3	-8.6915	BAU	3.2213	SGT	15549.7	SGR	679.6	SG3	320.2	ST	4921.4	SR	619.1	SS	953.9
RDE	.5687	RRA	.0329	RC3	.2644	FAU	.04603	RRT	-.3933	RRF	-.4582	RTF	.9702	CRT	-.6586	CRS	.8164	CST	-.9720
FDE	-1.2519	FRA	2.8432	FC3	-1.4380	BSP	54334	SGB	15564.6	R23	.0826	R13	-.9703	LSA	5025.2	MSA	510.6	SSA	16.6
BDE	3.0861	BRA	11.1404	BC3	8.6956	FSP	1198	SG1	15552.1	SG2	624.7	THA	179.01	EL1	4938.4	EL2	464.3	ALF	175.22

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 17 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 426.726 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	35.323	GAL	-5.77	AZL	88.33	HCA	135.15	SMA	242.56	ECC	.40115	INC	1.6670
RP	244.80	LAP	1.18	LOP	189.85	VP	23.176	GAP	23.64	AZP	91.18	TAL	339.70	TAP	114.85	RCA	145.26	APO	339.86
RC	127.239	GL	9.78	GP	.49	ZAL	121.95	ZAP	173.83	ETS	174.15	ZAE	155.25	ETE	358.53	ZAC	88.98	ETC	256.11

V1	30.128	V2	22.407	CLP	173.85														

PLANETOCENTRIC CONIC

C3	36.219	VHL	6.018	DLA	10.09	RAL	181.33	RAD	6568.4	VEL	12.553	PTH	2.27	VHP	10.635	DPA	.19	RAP	184.12
ECC	1.5961																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 0	2679.71	-27.48	73.10	56.89	97.13	19 7 40	2079.7	-26.21	64.66
90.00	8 58 50	4686.87	15.07	199.85	50.59	65.74	10 16 57	4086.9	11.66	192.82
100.00	19 49 20	2401.26	-28.85	52.41	56.68	98.20	20 29 21	1801.3	-27.41	43.90
100.00	10 15 11	4440.55	16.32	181.13	49.99	64.60	11 29 12	3840.6	12.77	174.14
110.00	21 8 55	2152.21	-32.51	32.77	55.95	101.18	21 44 48	1552.2	-30.63	24.06
110.00	11 12 5	4262.37	19.63	165.84	48.21	61.44	12 23 8	3662.4	15.67	158.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9504	TRA	-2.3731	TC3	.7189	BAU	.3493	SGT	2614.1	SGR	492.5	SG3	206.5	ST	1137.2	SR	458.4
RDE	-.4784	RRA	-.1785	RC3	-.0602	FAU	.06327	RRT	-.0610	RRF	.0457	RTF	-.8593	CRT	-.7222	CRS	-.5704
FDE	-.4158	FRA	1.5476	FC3	-1.5123	BSP	8779	SGB	2660.0	R23	.0087	R13	.8593	LSA	1302.5	MSA	333.4
BDE	1.0640	BRA	2.3798	BC3	.7214	FSP	563	SG1	2614.2	SG2	491.5	THA	179.32	EL1	1188.0	EL2	303.5

SS	552.3				
CST	.9783				
SSA	29.9				
ALF	162.60				

LAUNCH DATE NOV 17 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 428.784 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	35.212	GAL	-5.58	AZL	88.34	HCA	136.05	SMA	239.15	ECC	.39208	INC	1.6614
RP	244.57	LAP	1.15	LOP	190.75	VP	23.029	GAP	23.05	AZP	91.20	TAL	340.04	TAP	116.10	RCA	145.38	APO	332.92
RC	129.306	GL	9.97	GP	.51	ZAL	121.41	ZAP	173.35	ETS	174.31	ZAE	154.99	ETE	358.75	ZAC	89.09	ETC	256.09

V1	30.128	V2	22.429	CLP	173.37														

PLANETOCENTRIC CONIC

C3	34.442	VHL	5.869	DLA	10.48	RAL	180.92	RAD	6568.4	VEL	12.482	PTH	2.26	VHP	10.395	DPA	.03	RAP	184.52
ECC	1.5668																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 13	2679.71	-27.48	73.10	55.69	97.13	19 2 53	2079.7	-26.21	64.66
90.00	9 0 20	4661.46	14.35	198.32	49.34	65.32	10 18 1	4061.5	10.90	191.34
100.00	19 44 46	2400.56	-28.84	52.36	55.48	98.22	20 24 47	1800.6	-27.40	43.85
100.00	10 16 28	4415.85	15.59	179.66	48.73	64.17	11 30 3	3815.9	11.99	172.72
110.00	21 4 51	2149.98	-32.48	32.61	54.75	101.28	21 40 41	1550.0	-30.59	23.90
110.00	11 12 53	4239.19	18.87	164.47	46.95	60.96	12 23 32	3639.2	14.86	157.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9304	TRA	-2.3446	TC3	.7830	BAU	.3617	SGT	2662.5	SGR	485.5	SG3	216.8	ST	1146.1	SR	451.9
RDE	-.4600	RRA	-.1708	RC3	-.0622	FAU	.06507	RRT	-.0620	RRF	.0461	RTF	-.8642	CRT	-.7190	CRS	-.5611
FDE	-.4141	FRA	1.5762	FC3	-1.6357	BSP	8955	SGB	2706.4	R23	.0093	R13	.8642	LSA	1310.9	MSA	332.8
BDE	1.0379	BRA	2.3509	BC3	.7855	FSP	595	SG1	2662.7	SG2	484.6	THA	179.33	EL1	1194.6	EL2	301.3

SS	558.8				
CST	.9769				
SSA	30.2				
ALF	163.06				

LAUNCH DATE NOV 17 1964 FLIGHT TIME 164.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 430.964 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	35.106	GAL	-5.40	AZL	88.34	HCA	136.96	SMA	235.99	ECC	.38341	INC	1.6556
RP	244.34	LAP	1.13	LOP	191.66	VP	22.889	GAP	22.46	AZP	91.21	TAL	340.39	TAP	117.35	RCA	145.51	APO	326.47
RC	131.411	GL	10.16	GP	.53	ZAL	120.85	ZAP	172.87	ETS	174.45	ZAE	154.78	ETE	358.96	ZAC	89.20	ETC	256.07

V1	30.128	V2	22.451	CLP	172.88														

PLANETOCENTRIC CONIC

C3	32.775	VHL	5.725	DLA	10.87	RAL	180.49	RAD	6568.3	VEL	12.416	PTH	2.24	VHP	10.160	DPA	-.13	RAP	184.91
ECC	1.5394																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 17	2680.21	-27.48	73.14	54.49	97.11	18 57 57	2080.2	-26.21	64.70
90.00	9 1 50	4635.94	13.62	196.81	48.09	64.93	10 19 6	4035.9	10.13	189.87
100.00	19 40 4	2400.32	-28.84	52.34	54.28	98.23	20 20 4	1800.3	-27.40	43.83
100.00	10 17 44	4391.06	14.85	178.19	47.48	63.76	11 30 55	3791.1	11.21	171.30
110.00	21 0 38	2148.18	-32.46	32.47	53.55	101.35	21 36 26	1548.2	-30.56	23.77
110.00	11 13 39	4215.96	18.10	163.11	45.69	60.50	12 23 55	3616.0	14.04	156.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9100	TRA	-2.3158	TC3	.8509	BAU	.3739	SGT	2710.8	SGR	478.4	SG3	227.7	ST	1153.9	SR	445.2
RDE	-.4420	RRA	-.1634	RC3	-.0641	FAU	.06697	RRT	-.0627	RRF	.0463	RTF	-.8689	CRT	-.7155	CRS	-.5510
FDE	-.4116	FRA	1.6048	FC3	-1.7690	BSP	9138	SGB	2752.7	R23	.0099	R13	.8689	LSA	1318.1	MSA	332.2
BDE	1.0116	BRA	2.3215	BC3	.8533	FSP	630	SG1	2710.9	SG2	477.4	THA	179.35	EL1	1200.1	EL2	299.1

SS	564.9				
CST	.9754				
SSA	30.5				
ALF	163.51				

LAUNCH DATE NOV 17 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 433.258 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	35.005	GAL	-5.22	AZL	88.35	HCA	137.87	SMA	233.04	ECC	.37509	INC	1.6496
RP	244.11	LAP	1.11	LOP	192.57	VP	22.756	GAP	21.87	AZP	91.22	TAL	340.75	TAP	118.62	RCA	145.63	APO	320.45
RC	133.550	GL	10.35	GP	.55	ZAL	120.27	ZAP	172.37	ETS	174.56	ZAE	154.62	ETE	359.17	ZAC	89.31	ETC	256.06

V1	30.128	V2	22.475	CLP	172.39														

PLANETOCENTRIC CONIC

C3	31.211	VHL	5.587	DLA	11.27	RAL	180.04	RAD	6568.2	VEL	12.352	PTH	2.23	VHP	9.930	DPA	-.28	RAP	185.29
ECC	1.5137																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 11	2681.21	-27.49	73.21	53.29	97.07	18 52 53	2081.2	-26.23	64.77
90.00	9 3 21	4610.33	12.87	195.29	46.85	64.56	10 20 12	4010.3	9.34	188.39
100.00	19 35 13	2400.57	-28.84	52.36	53.08	98.22	20 15 13	1800.6	-27.40	43.85
100.00	10 19 1	4366.20	14.10	176.73	46.24	63.37	11 31 47	3766.2	10.41	169.88
110.00	20 56 18	2146.81	-32.44	32.37	52.36	101.41	21 32 5	1546.8	-30.53	23.67
110.00	11 14 25	4192.73	17.32	161.77	44.44	60.06	12 24 18	3592.7	13.21	155.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8889	TRA	-2.2863	TC3	.9226	BAU	.3859	SGT	2758.7	SGR	471.0	SG3	239.1	ST	1160.4	SR	438.3
RDE	-.4247	RRA	-.1563	RC3	-.0659	FAU	.06894	RRT	-.0631	RRF	.0462	RTF	-.8735	CRT	-.7117	CRS	-.5397
FDE	-.4080	FRA	1.6337	FC3	-1.9124	BSP	9312	SGB	2798.6	R23	.0106	R13	.8735	LSA	1324.0	MSA	331.8
BDE	.9851	BRA	2.2917	BC3	.9249	FSP	666	SG1	2758.8	SG2	470.0	THA	179.36	EL1	1204.4	EL2	296.7

SS	570.4				
CST	.9737				
SSA	30.7				
ALF	163.96				

LAUNCH DATE NOV 17 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 435.655 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.908 GAL -5.04 AZL 88.36 HCA 138.78 SMA 230.29 ECC .36713 INC 1.6434 V1 30.128
RP 243.87 LAP 1.08 LOP 193.48 VP 22.630 GAP 21.28 AZP 91.24 TAL 341.11 TAP 119.89 RCA 145.75 APO 314.84 V2 22.498
RC 135.719 GL 10.54 GP .57 ZAL 119.67 ZAP 171.87 ETS 174.65 ZAE 154.50 ETE 359.37 ZAC 89.43 ETC 256.04 CLP 171.89

PLANETOCENTRIC CONIC

C3 29.743 VHL 5.454 DLA 11.68 RAL 179.58 RAD 6568.2 VEL 12.293 PTH 2.21 VHP 9.707 DPA -.44 RAP 185.68 ECC 1.4895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 57	2682.72	-27.50	73.32	52.09	97.02	18 47 40	2082.7	-26.24	64.87
90.00	9 4 53	4584.64	12.12	193.79	45.62	64.21	10 21 18	3984.6	8.55	186.92
100.00	19 30 13	2401.29	-28.85	52.41	51.89	98.20	20 10 14	1801.3	-27.41	43.90
100.00	10 20 19	4341.30	13.33	175.28	45.00	63.00	11 32 40	3741.3	9.61	168.47
110.00	20 51 51	2145.86	-32.43	32.30	51.16	101.45	21 27 36	1545.9	-30.51	23.60
110.00	11 15 10	4169.50	16.52	160.44	43.20	59.64	12 24 40	3569.5	12.37	153.79

DIFFERENTIAL CORRECTIONS
TDE .8673 TRA-2.2565 TC3 .9979 BAU .3977
RDE -.4078 RRA -.1495 RC3 -.0675 FAU .07102
FDE -.4036 FRA 1.6626 FC3-2.0671 BSP 9493
BDE .9584 BRA 2.2614 BC3 1.0002 FSP 705

MID-COURSE EXECUTION ACCURACY
SGT 2806.2 SGR 463.4 SG3 251.1
RRT -.0633 RRF .0458 RTF -.8778
SGB 2844.2 R23 .0113 R13 .8778
SG1 2806.4 SG2 462.4 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 1165.6 SR 431.2 SS 575.4
CRT -.7074 CRS -.5276 CST .9718
LSA 1328.4 MSA 331.4 SSA 31.0
EL1 1207.5 EL2 294.2 ALF 164.39

LAUNCH DATE NOV 17 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 438.146 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.815 GAL -4.87 AZL 88.36 HCA 139.69 SMA 227.73 ECC .35949 INC 1.6368 V1 30.128
RP 243.63 LAP 1.06 LOP 194.39 VP 22.510 GAP 20.70 AZP 91.25 TAL 341.48 TAP 121.17 RCA 145.86 APO 309.59 V2 22.522
RC 137.915 GL 10.72 GP .60 ZAL 119.05 ZAP 171.37 ETS 174.73 ZAE 154.43 ETE 359.57 ZAC 89.54 ETC 256.02 CLP 171.39

PLANETOCENTRIC CONIC

C3 28.365 VHL 5.326 DLA 12.09 RAL 179.10 RAD 6568.1 VEL 12.237 PTH 2.20 VHP 9.488 DPA -.58 RAP 186.06 ECC 1.4668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 33	2684.76	-27.52	73.46	50.89	96.95	18 42 18	2084.8	-26.27	65.02
90.00	9 6 26	4558.86	11.35	192.28	44.40	63.88	10 22 25	3958.9	7.75	185.45
100.00	19 25 4	2402.52	-28.86	52.50	50.69	98.15	20 5 6	1802.5	-27.43	43.99
100.00	10 21 36	4316.34	12.56	173.83	43.77	62.65	11 33 32	3716.3	8.79	167.06
110.00	20 47 15	2145.36	-32.42	32.26	49.97	101.47	21 23 0	1545.4	-30.50	23.57
110.00	11 15 55	4146.26	15.72	159.11	41.96	59.25	12 25 1	3546.3	11.52	152.52

DIFFERENTIAL CORRECTIONS
TDE .8591 TRA-2.2123 TC3 1.0969 BAU .4168
RDE -.3918 RRA -.1433 RC3 -.0694 FAU .07303
FDE -.3949 FRA 1.6948 FC3-2.2291 BSP 9339
BDE .9442 BRA 2.2169 BC3 1.0991 FSP 752

MID-COURSE EXECUTION ACCURACY
SGT 2853.7 SGR 456.0 SG3 263.4
RRT -.0709 RRF .0437 RTF -.8856
SGB 2889.9 R23 .0208 R13 .8856
SG1 2853.9 SG2 454.9 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 1278.4 SR 424.1 SS 578.8
CRT -.7105 CRS -.5102 CST .9659
LSA 1338.7 MSA 332.1 SSA 30.5
EL1 1218.7 EL2 288.6 ALF 164.78

LAUNCH DATE NOV 17 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 440.724 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.725 GAL -4.70 AZL 88.37 HCA 140.61 SMA 225.33 ECC .35219 INC 1.6301 V1 30.128
RP 243.38 LAP 1.03 LOP 195.30 VP 22.397 GAP 20.12 AZP 91.26 TAL 341.85 TAP 122.46 RCA 145.97 APO 304.68 V2 22.547
RC 140.134 GL 10.91 GP .62 ZAL 118.42 ZAP 170.85 ETS 174.79 ZAE 154.41 ETE 359.78 ZAC 89.65 ETC 256.01 CLP 170.87

PLANETOCENTRIC CONIC

C3 27.073 VHL 5.203 DLA 12.51 RAL 178.60 RAD 6568.1 VEL 12.184 PTH 2.19 VHP 9.274 DPA -.73 RAP 186.43 ECC 1.4456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 2	2687.27	-27.54	73.64	49.70	96.86	18 36 49	2087.3	-26.30	65.19
90.00	9 7 59	4533.15	10.57	190.79	43.18	63.58	10 23 32	3933.1	6.94	183.99
100.00	19 19 48	2404.19	-28.88	52.62	49.50	98.09	19 59 53	1804.2	-27.46	44.11
100.00	10 22 94	4291.46	11.77	172.40	42.56	62.32	11 34 25	3691.5	7.98	165.66
110.00	20 42 33	2145.26	-32.42	32.25	48.79	101.48	21 18 19	1545.3	-30.50	23.56
110.00	11 16 38	4123.15	14.91	157.81	40.75	58.88	12 25 21	3523.1	10.68	151.27

DIFFERENTIAL CORRECTIONS
TDE .8294 TRA-2.1889 TC3 1.1708 BAU .4245
RDE -.3758 RRA -.1369 RC3 -.0705 FAU .07543
FDE -.3908 FRA 1.7219 FC3-2.4121 BSP 9691
BDE .9105 BRA 2.1932 BC3 1.1729 FSP 790

MID-COURSE EXECUTION ACCURACY
SGT 2900.7 SGR 447.8 SG3 276.7
RRT -.0664 RRF .0436 RTF -.8876
SGB 2935.0 R23 .0168 R13 .8876
SG1 2900.8 SG2 446.7 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 1176.4 SR 416.4 SS 583.6
CRT -.7016 CRS -.4988 CST .9657
LSA 1336.9 MSA 331.3 SSA 31.1
EL1 1214.4 EL2 287.4 ALF 165.20

LAUNCH DATE NOV 17 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 443.383 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.640 GAL -4.53 AZL 88.38 HCA 141.52 SMA 223.08 ECC .34519 INC 1.6230 V1 30.128
RP 243.12 LAP 1.01 LOP 196.22 VP 22.289 GAP 19.55 AZP 91.27 TAL 342.23 TAP 123.75 RCA 146.07 APO 300.08 V2 22.572
RC 142.373 GL 11.09 GP .65 ZAL 117.78 ZAP 170.33 ETS 174.84 ZAE 154.43 ETE 359.98 ZAC 89.76 ETC 255.99 CLP 170.35

PLANETOCENTRIC CONIC

C3 25.861 VHL 5.085 DLA 12.93 RAL 178.08 RAD 6568.0 VEL 12.134 PTH 2.17 VHP 9.066 DPA -.87 RAP 186.80 ECC 1.4256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 22	2690.28	-27.56	73.86	48.51	96.75	18 31 13	2090.3	-26.34	65.41
90.00	9 9 32	4507.42	9.79	189.31	41.98	63.30	10 24 40	3907.4	6.13	182.54
100.00	19 14 25	2406.34	-28.90	52.78	48.31	98.01	19 54 31	1806.3	-27.49	44.26
100.00	10 24 11	4266.60	10.98	170.97	41.36	62.02	11 35 17	3666.6	7.16	164.28
110.00	20 37 45	2145.59	-32.43	32.28	47.61	101.46	21 13 30	1545.6	-30.51	23.58
110.00	11 17 20	4100.11	14.09	156.52	39.54	58.53	12 25 40	3500.1	9.83	150.02

DIFFERENTIAL CORRECTIONS
TDE .8031 TRA-2.1611 TC3 1.2530 BAU .4339
RDE -.3604 RRA -.1308 RC3 -.0715 FAU .07787
FDE -.3848 FRA 1.7499 FC3-2.6067 BSP 9956
BDE .8803 BRA 2.1651 BC3 1.2551 FSP 833

MID-COURSE EXECUTION ACCURACY
SGT 2946.9 SGR 439.4 SG3 290.6
RRT -.0636 RRF .0426 RTF -.8905
SGB 2979.4 R23 .0153 R13 .8905
SG1 2947.0 SG2 438.5 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 1175.6 SR 408.6 SS 587.5
CRT -.6943 CRS -.4852 CST .9642
LSA 1335.5 MSA 330.8 SSA 31.5
EL1 1211.4 EL2 285.4 ALF 165.62

LAUNCH DATE NOV 17 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 446.115 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 34.558 GAL -4.37 AZL 88.38 HCA 142.44 SMA 220.97 ECC .33848 INC 1.6157 V1 30.128
RP 242.87 LAP .98 LOP 197.14 VP 22.188 GAP 18.98 AZP 91.28 TAL 342.61 TAP 125.05 RCA 146.18 APO 295.76 V2 22.598
RC 144.629 GL 11.27 GP .67 ZAL 117.12 ZAP 169.80 ETS 174.88 ZAE 154.49 ETE .18 ZAC 89.87 ETC 255.98 CLP 169.82
PLANETOCENTRIC CONIC
C3 24.724 VHL 4.972 DLA 13.36 RAL 177.55 RAD 6568.0 VEL 12.087 PTH 2.16 VHP 8.862 DPA -1.00 RAP 187.16 ECC 1.4069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 34	2693.79	-27.59	74.11	47.32	96.63	18 25 28	2093.8	-26.39	65.65
90.00	9 11 6	4481.72	9.00	187.83	40.79	63.04	10 25 48	3881.7	5.31	181.09
100.00	19 8 54	2408.95	-28.92	52.97	47.13	97.91	19 49 3	1809.0	-27.52	44.45
100.00	10 25 28	4241.79	10.19	169.56	40.16	61.75	11 36 10	3641.8	6.33	162.89
110.00	20 32 50	2146.33	-32.44	32.33	46.43	101.43	21 8 36	1546.3	-30.52	23.64
110.00	11 18 1	4077.18	13.28	155.25	38.34	58.21	12 25 59	3477.2	8.98	148.79

DIFFERENTIAL CORRECTIONS
TDE .7780 TRA-2.1313 TC3 1.3412 BAU .4440
RDE -.3455 RRA -.1251 RC3 -.0723 FAU .08038
FDE -.3766 FRA 1.7790 FC3-2.8147 BSP 10174
BDE .8513 BRA 2.1349 BC3 1.3431 FSP 880

MID-COURSE EXECUTION ACCURACY
SGT 2992.3 SGR 430.9 SG3 305.0
RRT -.0611 RRF .0406 RTF -.8937
SGB 3023.2 R23 .0152 R13 .8937
SG1 2992.4 SG2 430.1 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 1174.2 SR 400.6 SS 590.6
CRT -.6874 CRS -.4689 CST .9618
LSA 1333.3 MSA 330.8 SSA 31.8
EL1 1208.0 EL2 282.8 ALF 166.02

LAUNCH DATE NOV 17 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 448.917 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 34.479 GAL -4.21 AZL 88.39 HCA 143.36 SMA 218.99 ECC .33205 INC 1.6080 V1 30.128
RP 242.60 LAP .96 LOP 198.06 VP 22.092 GAP 18.42 AZP 91.29 TAL 343.00 TAP 126.36 RCA 146.27 APO 291.71 V2 22.624
RC 146.900 GL 11.44 GP .70 ZAL 116.45 ZAP 169.25 ETS 174.91 ZAE 154.59 ETE .39 ZAC 89.98 ETC 255.96 CLP 169.28
PLANETOCENTRIC CONIC
C3 23.656 VHL 4.864 DLA 13.78 RAL 177.01 RAD 6568.0 VEL 12.043 PTH 2.15 VHP 8.663 DPA -1.14 RAP 187.52 ECC 1.3893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 39	2697.78	-27.62	74.40	46.14	96.49	18 19 36	2097.8	-26.44	65.94
90.00	9 12 40	4456.08	8.21	186.37	39.61	62.80	10 26 56	3856.1	4.50	179.65
100.00	19 3 15	2412.01	-28.95	53.19	45.95	97.80	19 43 27	1812.0	-27.57	44.66
100.00	10 26 45	4217.08	9.39	168.16	38.98	61.49	11 37 2	3617.1	5.51	161.52
110.00	20 27 48	2147.46	-32.45	32.42	45.26	101.38	21 3 35	1547.5	-30.54	23.72
110.00	11 18 41	4054.39	12.46	154.00	37.16	57.91	12 26 16	3454.4	8.13	147.57

DIFFERENTIAL CORRECTIONS
TDE .7542 TRA-2.0993 TC3 1.4365 BAU .4549
RDE -.3311 RRA -.1197 RC3 -.0728 FAU .08304
FDE -.3676 FRA 1.8079 FC3-3.0391 BSP 10352
BDE .8237 BRA 2.1028 BC3 1.4383 FSP 929

MID-COURSE EXECUTION ACCURACY
SGT 3037.5 SGR 422.2 SG3 320.2
RRT -.0591 RRF .0382 RTF -.8972
SGB 3066.7 R23 .0159 R13 .8971
SG1 3037.6 SG2 421.5 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 1172.5 SR 392.5 SS 593.2
CRT -.6810 CRS -.4515 CST .9588
LSA 1330.5 MSA 330.9 SSA 32.0
EL1 1204.4 EL2 279.8 ALF 166.41

LAUNCH DATE NOV 17 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 451.782 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 34.404 GAL -4.06 AZL 88.40 HCA 144.28 SMA 217.13 ECC .32590 INC 1.6000 V1 30.128
RP 242.34 LAP .93 LOP 198.98 VP 22.002 GAP 17.85 AZP 91.30 TAL 343.39 TAP 127.67 RCA 146.37 APO 287.90 V2 22.651
RC 149.184 GL 11.61 GP .74 ZAL 115.76 ZAP 168.70 ETS 174.93 ZAE 154.73 ETE .61 ZAC 90.10 ETC 255.95 CLP 168.73
PLANETOCENTRIC CONIC
C3 22.654 VHL 4.760 DLA 14.21 RAL 176.44 RAD 6567.9 VEL 12.001 PTH 2.14 VHP 8.469 DPA -1.26 RAP 187.87 ECC 1.3728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 35	2702.23	-27.66	74.72	44.96	96.33	18 13 37	2102.2	-26.49	66.25
90.00	9 14 14	4430.53	7.41	184.91	38.45	62.59	10 28 4	3830.5	3.68	178.22
100.00	18 57 30	2415.51	-28.98	53.45	44.78	97.67	19 37 45	1815.5	-27.62	44.91
100.00	10 28 1	4192.48	8.59	166.78	37.81	61.26	11 37 53	3592.5	4.68	160.16
110.00	20 22 40	2148.98	-32.47	32.53	44.10	101.32	20 58 29	1549.0	-30.57	23.83
110.00	11 19 19	4031.77	11.63	152.76	35.98	57.63	12 26 31	3431.8	7.28	146.37

DIFFERENTIAL CORRECTIONS
TDE .7303 TRA-2.0667 TC3 1.5349 BAU .4654
RDE -.3172 RRA -.1146 RC3 -.0729 FAU .08580
FDE -.3569 FRA 1.8370 FC3-3.2790 BSP 10519
BDE .7962 BRA 2.0699 BC3 1.5366 FSP 980

MID-COURSE EXECUTION ACCURACY
SGT 3081.3 SGR 413.4 SG3 336.1
RRT -.0565 RRF .0349 RTF -.9005
SGB 3108.9 R23 .0169 R13 .9004
SG1 3081.3 SG2 412.7 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 1169.5 SR 384.2 SS 595.2
CRT -.6742 CRS -.4321 CST .9553
LSA 1326.2 MSA 331.4 SSA 32.2
EL1 1199.5 EL2 276.7 ALF 166.79

LAUNCH DATE NOV 17 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 454.706 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 34.331 GAL -3.91 AZL 88.41 HCA 145.21 SMA 215.38 ECC .32000 INC 1.5917 V1 30.128
RP 242.06 LAP .91 LOP 199.90 VP 21.917 GAP 17.30 AZP 91.31 TAL 343.78 TAP 128.99 RCA 146.46 APO 284.31 V2 22.678
RC 151.478 GL 11.78 GP .77 ZAL 115.06 ZAP 168.14 ETS 174.94 ZAE 154.91 ETE .83 ZAC 90.21 ETC 255.94 CLP 168.17
PLANETOCENTRIC CONIC
C3 21.714 VHL 4.660 DLA 14.64 RAL 175.86 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 8.279 DPA -1.38 RAP 188.22 ECC 1.3574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 25	2707.12	-27.69	75.08	43.79	96.16	18 7 32	2107.1	-26.55	66.60
90.00	9 15 47	4405.10	6.61	183.47	37.29	62.40	10 29 12	3805.1	2.86	176.80
100.00	18 51 38	2419.42	-29.02	53.73	43.61	97.52	19 31 57	1819.4	-27.67	45.19
100.00	10 29 16	4168.03	7.78	165.41	36.65	61.05	11 38 44	3568.0	3.86	158.81
110.00	20 17 27	2150.86	-32.50	32.67	42.94	101.24	20 53 18	1550.9	-30.61	23.96
110.00	11 19 55	4009.35	10.81	151.54	34.82	57.37	12 26 45	3409.4	6.44	145.18

DIFFERENTIAL CORRECTIONS
TDE .7065 TRA-2.0342 TC3 1.6376 BAU .4758
RDE -.3037 RRA -.1097 RC3 -.0726 FAU .08870
FDE -.3452 FRA 1.8667 FC3-3.5365 BSP 10693
BDE .7691 BRA 2.0371 BC3 1.6392 FSP 1036

MID-COURSE EXECUTION ACCURACY
SGT 3125.2 SGR 404.4 SG3 352.8
RRT -.0533 RRF .0308 RTF -.9037
SGB 3151.2 R23 .0182 R13 .9037
SG1 3125.2 SG2 403.8 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 1165.5 SR 375.8 SS 596.9
CRT -.6669 CRS -.4112 CST .9513
LSA 1320.8 MSA 332.1 SSA 32.3
EL1 1193.6 EL2 273.4 ALF 167.18

LAUNCH DATE NOV 17 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 457.685 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.262 GAL -3.77 AZL 88.42 HCA 146.13 SMA 213.74 ECC .31436 INC 1.5827 V1 30.128
RP 241.79 LAP .88 LOP 200.83 VP 21.837 GAP 16.75 AZP 91.31 TAL 344.18 TAP 130.31 RCA 146.55 APO 280.92 V2 22.706
RC 153.781 GL 11.94 GP .81 ZAL 114.35 ZAP 167.57 ETS 174.94 ZAE 155.13 ETE 1.05 ZAC 90.32 ETC 255.93 CLP 167.60

PLANETOCENTRIC CONIC

C3 20.831 VHL 4.564 DLA 15.07 RAL 175.27 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 8.093 DPA -1.50 RAP 188.56 ECC 1.3428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 8	2712.42	-27.73	75.46	42.62	95.97	18 1 21	2112.4	-26.61	66.97
90.00	9 17 20	4379.83	5.81	182.04	36.14	62.24	10 30 20	3779.8	2.05	175.38
100.00	18 45 40	2423.71	-29.05	54.05	42.45	97.36	19 26 3	1823.7	-27.73	45.49
100.00	10 30 30	4143.78	6.98	164.05	35.51	60.86	11 39 33	3543.8	3.04	157.48
110.00	20 12 9	2153.09	-32.53	32.84	41.79	101.15	20 48 2	1553.1	-30.65	24.12
110.00	11 20 29	3987.17	10.00	150.34	33.67	57.14	12 26 57	3387.2	5.60	144.01

DIFFERENTIAL CORRECTIONS
TDE .6821 TRA-2.0006 TC3 1.7444 BAU .4862
RDE -.2907 RRA -.1051 RC3 -.0718 FAU .09177
FDE -.3324 FRA 1.8956 FC3-3.8140 BSP 10857
BDE .7415 BRA 2.0034 BC3 1.7459 FSP 1093

MID-COURSE EXECUTION ACCURACY
SGT 3167.6 SGR 395.1 SG3 370.3
RRT -.0491 RRF .0259 RTF -.9068
SGB 3192.2 R23 .0194 R13 .9068
SG1 3167.7 SG2 394.7 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 1159.5 SR 367.2 SS 598.1
CRT -.6590 CRS -.3889 CST .9470
LSA 1313.4 MSA 332.9 SSA 32.5
EL1 1185.9 EL2 270.1 ALF 167.56

LAUNCH DATE NOV 17 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 460.716 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.196 GAL -3.62 AZL 88.43 HCA 147.06 SMA 212.18 ECC .30895 INC 1.5735 V1 30.128
RP 241.51 LAP .86 LOP 201.76 VP 21.762 GAP 16.20 AZP 91.32 TAL 344.58 TAP 131.64 RCA 146.63 APO 277.74 V2 22.734
RC 156.092 GL 12.09 GP .84 ZAL 113.63 ZAP 166.99 ETS 174.94 ZAE 155.38 ETE 1.29 ZAC 90.44 ETC 255.92 CLP 167.02

PLANETOCENTRIC CONIC

C3 20.003 VHL 4.472 DLA 15.50 RAL 174.66 RAD 6567.8 VEL 11.890 PTH 2.11 VHP 7.911 DPA -1.61 RAP 188.89 ECC 1.3292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 45	2718.12	-27.77	75.87	41.46	95.77	17 55 3	2118.1	-26.68	67.37
90.00	9 18 52	4354.74	5.01	180.63	35.01	62.09	10 31 27	3754.7	1.24	173.98
100.00	18 39 36	2428.37	-29.09	54.39	41.29	97.18	19 20 5	1828.4	-27.79	45.83
100.00	10 31 42	4119.73	6.18	162.71	34.37	60.70	11 40 22	3519.7	2.23	156.16
110.00	20 6 46	2155.63	-32.56	33.03	40.64	101.04	20 42 42	1555.6	-30.70	24.31
110.00	11 21 1	3965.24	9.18	149.16	32.54	56.93	12 27 6	3365.2	4.77	142.86

DIFFERENTIAL CORRECTIONS
TDE .6602 TRA-1.9644 TC3 1.8593 BAU .4976
RDE -.2781 RRA -.1008 RC3 -.0707 FAU .09495
FDE -.3179 FRA 1.9252 FC3-4.1097 BSP 10950
BDE .7163 BRA 1.9670 BC3 1.8606 FSP 1154

MID-COURSE EXECUTION ACCURACY
SGT 3209.5 SGR 385.9 SG3 388.6
RRT -.0455 RRF .0198 RTF -.9104
SGB 3232.6 R23 .0223 R13 .9104
SG1 3209.6 SG2 385.5 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 1153.9 SR 358.5 SS 598.9
CRT -.6523 CRS -.3643 CST .9412
LSA 1306.0 MSA 334.6 SSA 32.4
EL1 1178.7 EL2 266.0 ALF 167.92

LAUNCH DATE NOV 17 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 463.795 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.132 GAL -3.48 AZL 88.44 HCA 147.99 SMA 210.72 ECC .30377 INC 1.5637 V1 30.128
RP 241.22 LAP .83 LOP 202.69 VP 21.692 GAP 15.66 AZP 91.33 TAL 344.98 TAP 132.97 RCA 146.71 APO 274.73 V2 22.762
RC 158.408 GL 12.24 GP .89 ZAL 112.90 ZAP 166.40 ETS 174.92 ZAE 155.67 ETE 1.54 ZAC 90.55 ETC 255.91 CLP 166.42

PLANETOCENTRIC CONIC

C3 19.226 VHL 4.385 DLA 15.93 RAL 174.04 RAD 6567.8 VEL 11.858 PTH 2.10 VHP 7.734 DPA -1.71 RAP 189.21 ECC 1.3164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 17	2724.17	-27.81	76.31	40.30	95.55	17 48 42	2124.2	-26.75	67.80
90.00	9 20 22	4329.90	4.22	179.24	33.89	61.97	10 32 32	3729.9	.44	172.60
100.00	18 33 28	2433.35	-29.14	54.75	40.13	97.00	19 14 2	1833.4	-27.86	46.18
100.00	10 32 52	4095.96	5.39	161.40	33.25	60.55	11 41 8	3496.0	1.43	154.85
110.00	20 1 20	2158.45	-32.60	33.24	39.50	100.92	20 37 18	1558.4	-30.75	24.51
110.00	11 21 30	3943.62	8.38	148.01	31.41	56.74	12 27 14	3343.6	3.94	141.73

DIFFERENTIAL CORRECTIONS
TDE .6341 TRA-1.9322 TC3 1.9685 BAU .5063
RDE -.2658 RRA -.0967 RC3 -.0687 FAU .09834
FDE -.3030 FRA 1.9540 FC3-4.4284 BSP 11136
BDE .6876 BRA 1.9346 BC3 1.9697 FSP 1216

MID-COURSE EXECUTION ACCURACY
SGT 3249.7 SGR 376.3 SG3 407.9
RRT -.0381 RRF .0125 RTF -.9128
SGB 3271.4 R23 .0227 R13 .9128
SG1 3249.7 SG2 376.0 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 1144.4 SR 349.6 SS 599.5
CRT -.6420 CRS -.3390 CST .9365
LSA 1295.2 MSA 335.6 SSA 32.6
EL1 1167.4 EL2 262.8 ALF 168.30

LAUNCH DATE NOV 17 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 466.919 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.071 GAL -3.35 AZL 88.45 HCA 148.93 SMA 209.34 ECC .29882 INC 1.5534 V1 30.128
RP 240.93 LAP .80 LOP 203.62 VP 21.627 GAP 15.12 AZP 91.33 TAL 345.38 TAP 134.30 RCA 146.78 APO 271.89 V2 22.791
RC 160.729 GL 12.38 GP .93 ZAL 112.16 ZAP 165.79 ETS 174.91 ZAE 156.00 ETE 1.80 ZAC 90.67 ETC 255.90 CLP 165.82

PLANETOCENTRIC CONIC

C3 18.496 VHL 4.301 DLA 16.35 RAL 173.41 RAD 6567.7 VEL 11.827 PTH 2.09 VHP 7.560 DPA -1.81 RAP 189.53 ECC 1.3044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 45	2730.54	-27.85	76.77	39.15	95.32	17 42 15	2130.5	-26.82	68.26
90.00	9 21 50	4305.33	3.43	177.86	32.78	61.87	10 33 36	3705.3	-.35	171.23
100.00	18 27 16	2438.62	-29.18	55.14	38.99	96.80	19 7 55	1838.6	-27.93	46.56
100.00	10 34 0	4072.48	4.60	160.10	32.13	60.43	11 41 53	3472.5	.63	153.56
110.00	19 55 50	2161.52	-32.64	33.47	38.36	100.79	20 31 51	1561.5	-30.80	24.73
110.00	11 21 56	3922.34	7.58	146.87	30.30	56.57	12 27 18	3322.3	3.13	140.61

DIFFERENTIAL CORRECTIONS
TDE .6088 TRA-1.8986 TC3 2.0819 BAU .5151
RDE -.2540 RRA -.0929 RC3 -.0660 FAU .10181
FDE -.2853 FRA 1.9842 FC3-4.7655 BSP 11305
BDE .6597 BRA 1.9009 BC3 2.0829 FSP 1285

MID-COURSE EXECUTION ACCURACY
SGT 3288.3 SGR 366.6 SG3 428.0
RRT -.0299 RRF .0033 RTF -.9154
SGB 3308.7 R23 .0245 R13 .9154
SG1 3288.3 SG2 366.4 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 1134.1 SR 340.6 SS 599.6
CRT -.6316 CRS -.3097 CST .9303
LSA 1283.2 MSA 337.7 SSA 32.5
EL1 1155.4 EL2 259.2 ALF 168.68

LAUNCH DATE NOV 17 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 470.085 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 34.013 GAL -3.22 AZL 88.46 HCA 149.86 SMA 208.03 ECC .29407 INC 1.5424 V1 30.128
RP 240.64 LAP .77 LOP 204.56 VP 21.566 GAP 14.59 AZP 91.33 TAL 345.78 TAP 135.64 RCA 146.86 APO 269.21 V2 22.821
RC 163.052 GL 12.51 GP .98 ZAL 111.41 ZAP 165.17 ETS 174.88 ZAE 156.36 ETE 2.07 ZAC 90.78 ETC 255.89 CLP 165.20

PLANETOCENTRIC CONIC

C3 17.812 VHL 4.220 DLA 16.76 RAL 172.76 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 7.390 DPA -1.90 RAP 189.84 ECC 1.2931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 8	2737.19	-27.89	77.25	38.00	95.08	17 35 45	2137.2	-26.90	68.73
90.00	9 23 16	4281.05	2.65	176.50	31.68	61.80	10 34 37	3681.1	-1.14	169.87
100.00	18 21 0	2444.15	-29.22	55.54	37.84	96.59	19 1 44	1844.2	-28.00	46.95
100.00	10 35 5	4049.32	3.82	158.82	31.03	60.33	11 42 35	3449.3	-.16	152.29
110.00	19 50 17	2164.82	-32.68	33.72	37.23	100.64	20 26 22	1564.8	-30.86	24.97
110.00	11 22 18	3901.42	6.80	145.76	29.19	56.42	12 27 19	3301.4	2.34	139.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5890 TRA-1.8592 TC3 2.2108 BAU .5267 SGT 3327.3 SGR 357.0 SG3 449.1 ST 1126.1 SR 331.6 SS 599.6
RDE -.2426 RRA -.0895 RC3 -.0628 FAU .10553 RRT -.0234 RRF -.0070 RTF -.9189 CRT -.6250 CRS -.2800 CST .9218
FDE -.2674 FRA 2.0132 FC3-5.1293 BSP 11328 SGB 3346.4 R23 .0288 R13 .9189 LSA 1272.9 MSA 340.7 SSA 32.2
BDE .6370 BRA 1.8614 BC3 2.2117 FSP 1354 SG1 3327.3 SG2 356.9 THA 179.85 EL1 1146.0 EL2 254.3 ALF 169.02

LAUNCH DATE NOV 17 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 473.290 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.957 GAL -3.09 AZL 88.47 HCA 150.80 SMA 206.80 ECC .28953 INC 1.5308 V1 30.128
RP 240.34 LAP .75 LOP 205.49 VP 21.509 GAP 14.07 AZP 91.34 TAL 346.18 TAP 136.98 RCA 146.92 APO 266.67 V2 22.851
RC 165.375 GL 12.63 GP 1.03 ZAL 110.66 ZAP 164.54 ETS 174.84 ZAE 156.76 ETE 2.37 ZAC 90.90 ETC 255.88 CLP 164.57

PLANETOCENTRIC CONIC

C3 17.169 VHL 4.144 DLA 17.17 RAL 172.10 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 7.224 DPA -1.98 RAP 190.14 ECC 1.2826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 29	2744.03	-27.93	77.75	36.86	94.84	17 29 13	2144.0	-26.97	69.22
90.00	9 24 39	4257.19	1.88	175.17	30.59	61.74	10 35 36	3657.2	-1.91	168.54
100.00	18 14 42	2449.85	-29.27	55.96	36.71	96.37	18 55 32	1849.9	-28.08	47.36
100.00	10 36 7	4026.59	3.05	157.57	29.94	60.25	11 43 13	3426.6	-.93	151.05
110.00	19 44 42	2168.27	-32.72	33.98	36.11	100.50	20 20 51	1568.3	-30.93	25.22
110.00	11 22 36	3880.94	6.02	144.68	28.10	56.29	12 27 17	3280.9	1.55	138.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5597 TRA-1.8292 TC3 2.3205 BAU .5328 SGT 3362.4 SGR 346.9 SG3 471.4 ST 1110.4 SR 322.2 SS 599.5
RDE -.2315 RRA -.0861 RC3 -.0583 FAU .10942 RRT -.0091 RRF -.0200 RTF -.9204 CRT -.6095 CRS -.2479 CST .9164
FDE -.2478 FRA 2.0424 FC3-5.5175 BSP 11588 SGB 3380.2 R23 .0285 R13 .9204 LSA 1256.3 MSA 342.1 SSA 32.4
BDE .6057 BRA 1.8312 BC3 2.3212 FSP 1429 SG1 3362.4 SG2 346.8 THA 179.95 EL1 1128.6 EL2 251.4 ALF 169.44

LAUNCH DATE NOV 17 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 476.533 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.903 GAL -2.97 AZL 88.48 HCA 151.74 SMA 205.63 ECC .28518 INC 1.5184 V1 30.128
RP 240.04 LAP .72 LOP 206.43 VP 21.457 GAP 13.55 AZP 91.34 TAL 346.58 TAP 138.32 RCA 146.99 APO 264.28 V2 22.881
RC 167.697 GL 12.73 GP 1.08 ZAL 109.91 ZAP 163.90 ETS 174.80 ZAE 157.19 ETE 2.69 ZAC 91.02 ETC 255.88 CLP 163.93

PLANETOCENTRIC CONIC

C3 16.566 VHL 4.070 DLA 17.57 RAL 171.42 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 7.062 DPA -2.05 RAP 190.43 ECC 1.2726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 48	2751.05	-27.97	78.26	35.72	94.59	17 22 39	2151.0	-27.04	69.72
90.00	9 25 58	4233.71	1.13	173.86	29.51	61.70	10 36 32	3633.7	-2.66	167.23
100.00	18 8 23	2455.71	-29.31	56.39	35.58	96.15	18 49 19	1855.7	-28.15	47.78
100.00	10 37 4	4004.29	2.30	156.34	28.86	60.19	11 43 48	3404.3	-1.68	149.82
110.00	19 39 7	2171.85	-32.76	34.25	34.99	100.34	20 15 18	1571.8	-30.99	25.48
110.00	11 22 50	3860.91	5.27	143.63	27.02	56.18	12 27 11	3260.9	.79	137.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5358 TRA-1.7940 TC3 2.4440 BAU .5414 SGT 3397.7 SGR 336.9 SG3 494.6 ST 1097.3 SR 312.9 SS 599.5
RDE -.2207 RRA -.0832 RC3 -.0530 FAU .11351 RRT .0044 RRF -.0351 RTF -.9229 CRT -.5976 CRS -.2141 CST .9083
FDE -.2274 FRA 2.0716 FC3-5.9319 BSP 11704 SGB 3414.3 R23 -.0310 R13 -.9229 LSA 1241.5 MSA 344.9 SSA 32.3
BDE .5795 BRA 1.7959 BC3 2.4446 FSP 1505 SG1 3397.7 SG2 336.9 THA .02 EL1 1113.9 EL2 247.2 ALF 169.82

LAUNCH DATE NOV 17 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 479.811 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.852 GAL -2.84 AZL 88.49 HCA 152.68 SMA 204.53 ECC .28102 INC 1.5052 V1 30.128
RP 239.73 LAP .69 LOP 207.37 VP 21.408 GAP 13.03 AZP 91.34 TAL 346.98 TAP 139.66 RCA 147.05 APO 262.01 V2 22.912
RC 170.016 GL 12.83 GP 1.14 ZAL 109.15 ZAP 163.24 ETS 174.75 ZAE 157.66 ETE 3.03 ZAC 91.14 ETC 255.87 CLP 163.27

PLANETOCENTRIC CONIC

C3 16.000 VHL 4.000 DLA 17.96 RAL 170.74 RAD 6567.6 VEL 11.721 PTH 2.07 VHP 6.903 DPA -2.11 RAP 190.72 ECC 1.2633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 6	2758.16	-28.01	78.78	34.59	94.33	17 16 4	2158.2	-27.12	70.22
90.00	9 27 12	4210.73	.39	172.58	28.45	61.69	10 37 23	3610.7	-3.40	165.95
100.00	18 2 3	2461.64	-29.35	56.83	34.45	95.92	18 43 5	1861.6	-28.22	48.21
100.00	10 37 56	3982.48	1.56	155.15	27.79	60.14	11 44 19	3382.5	-2.42	148.62
110.00	19 33 31	2175.49	-32.81	34.53	33.88	100.18	20 9 46	1575.5	-31.06	25.74
110.00	11 22 58	3841.39	4.53	142.60	25.95	56.08	12 26 59	3241.4	.04	136.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5126 TRA-1.7584 TC3 2.5700 BAU .5498 SGT 3431.8 SGR 326.9 SG3 519.1 ST 1083.5 SR 303.5 SS 599.6
RDE -.2104 RRA -.0804 RC3 -.0466 FAU .11781 RRT .0202 RRF -.0530 RTF -.9252 CRT -.5853 CRS -.1784 CST .8992
FDE -.2056 FRA 2.1008 FC3-6.3746 BSP 11827 SGB 3447.3 R23 -.0341 R13 -.9252 LSA 1226.1 MSA 348.3 SSA 32.0
BDE .5541 BRA 1.7602 BC3 2.5705 FSP 1587 SG1 3431.8 SG2 326.9 THA .11 EL1 1098.7 EL2 242.7 ALF 170.21

LAUNCH DATE NOV 17 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 483.123 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.803 GAL -2.73 AZL 88.51 HCA 153.63 SMA 203.49 ECC .27704 INC 1.4912 V1 30.128
RP 239.42 LAP .66 LOP 208.32 VP 21.364 GAP 12.53 AZP 91.34 TAL 347.38 TAP 141.01 RCA 147.11 APO 259.86 V2 22.943
RC 172.331 GL 12.91 GP 1.21 ZAL 108.38 ZAP 162.56 ETS 174.70 ZAE 158.16 ETE 3.41 ZAC 91.26 ETC 255.87 CLP 162.60

PLANETOCENTRIC CONIC

C3 15.468 VHL 3.933 DLA 18.34 RAL 170.04 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 6.748 DPA -2.17 RAP 190.99 ECC 1.2546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 25	2765.29	-28.05	79.29	33.46	94.07	17 9 30	2165.3	-27.19	70.73
90.00	9 28 20	4188.30	-.34	171.33	27.39	61.68	10 38 9	3588.3	-4.12	164.69
100.00	17 35 44	2467.58	-29.39	57.26	33.33	95.70	18 36 52	1867.6	-28.29	48.63
100.00	10 38 42	3961.24	.84	153.98	26.73	60.12	11 44 44	3361.2	-3.14	147.46
110.00	19 27 55	2179.15	-32.85	34.80	32.77	100.03	20 4 14	1579.2	-31.12	26.01
110.00	11 23 0	3822.43	3.80	141.61	24.88	56.00	12 26 43	3222.4	-.68	135.40

DIFFERENTIAL CORRECTIONS
TDE .4898 TRA-1.7216 TC3 2.6987 BAU .5581
RDE -.2004 RRA -.0780 RC3 -.0390 FAU .12229
FDE -.1815 FRA 2.1303 FC3-6.8443 BSP 11907
BDE .5292 BRA 1.7233 BC3 2.6990 FSP 1674

MID-COURSE EXECUTION ACCURACY
SGT 3463.6 SGR 317.0 SG3 544.7
RRT .0391 RRF -.0745 RTF -.9277
SGB 3478.1 R23 -.0380 R13 -.9277
SG1 3463.7 SG2 316.8 THA .21

ORBIT DETERMINATION ACCURACY
ST 1068.4 SR 294.1 SS 599.7
CRT -.5724 CRS -.1392 CST .8885
LSA 1209.3 MSA 352.5 SSA 31.6
EL1 1082.3 EL2 238.1 ALF 170.59

LAUNCH DATE NOV 17 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 486.466 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.756 GAL -2.61 AZL 88.52 HCA 154.57 SMA 202.50 ECC .27324 INC 1.4760 V1 30.128
RP 239.11 LAP .63 LOP 209.27 VP 21.324 GAP 12.02 AZP 91.33 TAL 347.78 TAP 142.35 RCA 147.17 APO 257.83 V2 22.975
RC 174.639 GL 12.98 GP 1.28 ZAL 107.62 ZAP 161.87 ETS 174.63 ZAE 158.69 ETE 3.82 ZAC 91.39 ETC 255.86 CLP 161.91

PLANETOCENTRIC CONIC

C3 14.968 VHL 3.869 DLA 18.71 RAL 169.34 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 6.596 DPA -2.21 RAP 191.26 ECC 1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 45	2772.37	-28.08	79.81	32.33	93.82	17 2 57	2172.4	-27.26	71.24
90.00	9 29 22	4166.47	-1.04	170.11	26.33	61.70	10 38 48	3566.5	-4.82	163.46
100.00	17 49 26	2473.46	-29.43	57.70	32.21	95.47	18 30 40	1873.5	-28.36	49.06
100.00	10 39 21	3940.60	.14	152.85	25.67	60.11	11 45 2	3340.6	-3.84	146.32
110.00	19 22 21	2182.76	-32.89	35.07	31.66	99.87	19 58 44	1582.8	-31.18	26.27
110.00	11 22 56	3804.07	3.11	140.65	23.82	55.94	12 26 20	3204.1	-1.39	134.44

DIFFERENTIAL CORRECTIONS
TDE .4761 TRA-1.6763 TC3 2.8509 BAU .5705
RDE -.1908 RRA -.0760 RC3 -.0303 FAU .12713
FDE -.1596 FRA 2.1563 FC3-7.3531 BSP 11790
BDE .5129 BRA 1.6780 BC3 2.8511 FSP 1759

MID-COURSE EXECUTION ACCURACY
SGT 3497.5 SGR 307.4 SG3 571.8
RRT .0562 RRF -.0985 RTF -.9312
SGB 3511.0 R23 -.0458 R13 -.9313
SG1 3497.6 SG2 306.9 THA .29

ORBIT DETERMINATION ACCURACY
ST 1058.2 SR 284.8 SS 599.9
CRT -.5682 CRS -.1030 CST .8738
LSA 1196.3 MSA 358.8 SSA 30.7
EL1 1071.1 EL2 231.5 ALF 170.87

LAUNCH DATE NOV 17 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 489.837 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.710 GAL -2.50 AZL 88.54 HCA 155.52 SMA 201.56 ECC .26960 INC 1.4600 V1 30.128
RP 238.79 LAP .60 LOP 210.21 VP 21.287 GAP 11.53 AZP 91.33 TAL 348.17 TAP 143.69 RCA 147.22 APO 255.90 V2 23.007
RC 176.939 GL 13.02 GP 1.36 ZAL 106.86 ZAP 161.17 ETS 174.56 ZAE 159.25 ETE 4.28 ZAC 91.52 ETC 255.85 CLP 161.21

PLANETOCENTRIC CONIC

C3 14.499 VHL 3.808 DLA 19.06 RAL 168.62 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 6.448 DPA -2.24 RAP 191.52 ECC 1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 11	2779.21	-28.11	80.31	31.22	93.57	16 56 30	2179.2	-27.32	71.73
90.00	9 30 14	4145.45	-1.72	168.94	25.29	61.73	10 39 20	3545.4	-5.49	162.28
100.00	17 43 14	2479.13	-29.47	58.11	31.10	95.26	18 24 34	1879.1	-28.43	49.47
100.00	10 39 52	3920.77	-.53	151.76	24.63	60.11	11 45 13	3320.8	-4.50	145.23
110.00	19 16 52	2186.20	-32.93	35.33	30.56	99.72	19 53 18	1586.2	-31.24	26.52
110.00	11 22 44	3786.46	2.43	139.72	22.78	55.89	12 25 50	3186.5	-2.06	133.52

DIFFERENTIAL CORRECTIONS
TDE .4420 TRA-1.6528 TC3 2.9435 BAU .5706
RDE -.1812 RRA -.0739 RC3 -.0191 FAU .13190
FDE -.1314 FRA 2.1889 FC3-7.8755 BSP 12176
BDE .4777 BRA 1.6545 BC3 2.9435 FSP 1860

MID-COURSE EXECUTION ACCURACY
SGT 3520.0 SGR 297.4 SG3 599.5
RRT .0914 RRF -.1303 RTF -.9312
SGB 3532.6 R23 -.0448 R13 -.9312
SG1 3520.1 SG2 296.1 THA .45

ORBIT DETERMINATION ACCURACY
ST 1034.4 SR 275.0 SS 601.1
CRT -.5397 CRS -.0576 CST .8680
LSA 1173.1 MSA 360.1 SSA 31.1
EL1 1045.5 EL2 229.0 ALF 171.42

LAUNCH DATE NOV 17 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 493.238 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.667 GAL -2.40 AZL 88.56 HCA 156.47 SMA 200.67 ECC .26612 INC 1.4424 V1 30.128
RP 238.47 LAP .58 LOP 211.17 VP 21.254 GAP 11.04 AZP 91.32 TAL 348.56 TAP 145.04 RCA 147.27 APO 254.08 V2 23.040
RC 179.231 GL 13.05 GP 1.44 ZAL 106.10 ZAP 160.44 ETS 174.47 ZAE 159.85 ETE 4.79 ZAC 91.65 ETC 255.85 CLP 160.49

PLANETOCENTRIC CONIC

C3 14.058 VHL 3.749 DLA 19.39 RAL 167.90 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.303 DPA -2.26 RAP 191.76 ECC 1.2314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 42	2785.81	-28.14	80.79	30.10	93.33	16 50 7	2185.8	-27.38	72.21
90.00	9 30 57	4125.20	-2.37	167.81	24.26	61.77	10 39 42	3525.2	-6.13	161.14
100.00	17 37 7	2484.55	-29.50	58.51	29.98	95.05	18 18 32	1884.5	-28.49	49.86
100.00	10 40 13	3901.69	-1.18	150.71	23.59	60.13	11 45 14	3301.7	-5.14	144.17
110.00	19 11 27	2189.43	-32.97	35.58	29.46	99.58	19 47 56	1589.4	-31.30	26.76
110.00	11 22 22	3769.57	1.79	138.84	21.74	55.86	12 25 12	3169.6	-2.70	132.64

DIFFERENTIAL CORRECTIONS
TDE .4189 TRA-1.6164 TC3 3.0704 BAU .5771
RDE -.1721 RRA -.0724 RC3 -.0065 FAU .13714
FDE -.1046 FRA 2.2163 FC3-8.4457 BSP 12264
BDE .4529 BRA 1.6180 BC3 3.0705 FSP 1958

MID-COURSE EXECUTION ACCURACY
SGT 3545.1 SGR 288.0 SG3 629.2
RRT .1246 RRF -.1658 RTF -.9330
SGB 3556.8 R23 -.0491 R13 -.9330
SG1 3545.3 SG2 285.8 THA .58

ORBIT DETERMINATION ACCURACY
ST 1015.7 SR 265.4 SS 601.9
CRT -.5222 CRS -.0144 CST .8565
LSA 1153.6 MSA 364.2 SSA 30.7
EL1 1025.6 EL2 224.1 ALF 171.84

LAUNCH DATE NOV 17 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 496.665 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.626	GAL	-2.29	AZL	88.58	HCA	157.43	SMA	199.83	ECC	.26280	INC	1.4235	V1	30.128
RP	238.14	LAP	.55	LOP	212.12	VP	21.224	GAP	10.55	AZP	91.31	TAL	348.95	TAP	146.38	RCA	147.31	APO	252.35	V2	23.073
RC	181.513	GL	13.06	GP	1.53	ZAL	105.35	ZAP	159.70	ETS	174.38	ZAE	160.47	ETE	5.36	ZAC	91.79	ETC	255.85	CLP	159.76

PLANETOCENTRIC CONIC

C3	13.643	VHL	3.694	DLA	19.70	RAL	167.16	RAD	6567.5	VEL	11.620	PTH	2.04	VHP	6.161	DPA	-2.27	RAP	192.00	ECC	1.2245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 20	2791.98	-28.16	81.24	28.98	93.10	16 43 52	2192.0	-27.43	72.65
90.00	9 31 27	4105.90	-3.00	166.73	23.22	61.83	10 39 53	3505.9	-6.74	160.05
100.00	17 31 7	2489.58	-29.53	58.89	28.87	94.86	18 12 37	1889.6	-28.55	50.22
100.00	10 40 22	3883.53	-1.79	149.72	22.56	60.16	11 45 5	3283.5	-5.75	143.17
110.00	19 6 7	2192.36	-33.00	35.80	28.36	99.45	19 42 40	1592.4	-31.35	26.97
110.00	11 21 51	3753.51	1.17	138.01	20.70	55.83	12 24 25	3153.5	-3.32	131.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3975	TRA	-1.5804	TC3	3.1950	BAU	.5828	SGT	3568.0	SGR	279.2	SG3	660.0	ST	997.7	SR	255.8	SS	603.7
RDE	-.1634	RRA	-.0711	RC3	.0081	FAU	.14255	RRT	.1634	RRF	-.2077	RTF	-.9348	CRT	-.5046	CRS	.0304	CST	.8437
FDE	-.0769	FRA	2.2455	FC3	-9.0454	BSP	12347	SGB	3578.9	R23	-.0547	R13	-.9348	LSA	1134.9	MSA	369.2	SSA	30.1
BDE	.4298	BRA	1.5820	BC3	3.1950	FSP	2064	SG1	3568.3	SG2	275.4	THA	.74	EL1	1006.5	EL2	218.9	ALF	172.26

LAUNCH DATE NOV 17 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 500.118 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.586	GAL	-2.19	AZL	88.60	HCA	158.39	SMA	199.03	ECC	.25962	INC	1.4031	V1	30.128
RP	237.81	LAP	.52	LOP	213.08	VP	21.197	GAP	10.07	AZP	91.30	TAL	349.33	TAP	147.72	RCA	147.36	APO	250.71	V2	23.106
RC	183.786	GL	13.05	GP	1.64	ZAL	104.59	ZAP	158.94	ETS	174.27	ZAE	161.13	ETE	6.00	ZAC	91.93	ETC	255.84	CLP	159.00

PLANETOCENTRIC CONIC

C3	13.253	VHL	3.640	DLA	19.98	RAL	166.42	RAD	6567.5	VEL	11.603	PTH	2.03	VHP	6.022	DPA	-2.26	RAP	192.23	ECC	1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 9	2797.61	-28.18	81.65	27.86	92.90	16 37 47	2197.6	-27.48	73.05
90.00	9 31 43	4087.63	-3.58	165.71	22.19	61.89	10 39 51	3487.6	-7.31	159.02
100.00	17 25 16	2494.11	-29.56	59.22	27.76	94.68	18 6 50	1894.1	-28.59	50.55
100.00	10 40 17	3866.36	-2.37	148.77	21.52	60.19	11 44 43	3266.4	-6.32	142.21
110.00	19 0 55	2194.89	-33.03	35.99	27.26	99.34	19 37 30	1594.9	-31.39	27.15
110.00	11 21 8	3738.35	.59	137.21	19.67	55.82	12 23 26	3138.4	-3.89	131.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3846	TRA	-1.5368	TC3	3.3411	BAU	.5920	SGT	3592.7	SGR	271.4	SG3	692.6	ST	983.8	SR	246.4	SS	605.2
RDE	-.1550	RRA	-.0703	RC3	.0248	FAU	.14836	RRT	.2041	RRF	-.2551	RTF	-.9376	CRT	-.4964	CRS	.0720	CST	.8261
FDE	-.0515	FRA	2.2710	FC3	-9.6915	BSP	12217	SGB	3602.9	R23	-.0640	R13	-.9376	LSA	1119.0	MSA	376.9	SSA	29.0
BDE	.4147	BRA	1.5384	BC3	3.3412	FSP	2167	SG1	3593.1	SG2	265.6	THA	.89	EL1	991.8	EL2	212.2	ALF	172.57

LAUNCH DATE NOV 17 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 503.594 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.548	GAL	-2.10	AZL	88.62	HCA	159.35	SMA	198.28	ECC	.25659	INC	1.3806	V1	30.128
RP	237.48	LAP	.49	LOP	214.04	VP	21.174	GAP	9.60	AZP	91.29	TAL	349.70	TAP	149.05	RCA	147.40	APO	249.15	V2	23.140
RC	186.049	GL	13.01	GP	1.75	ZAL	103.85	ZAP	158.16	ETS	174.16	ZAE	161.81	ETE	6.74	ZAC	92.08	ETC	255.84	CLP	158.23

PLANETOCENTRIC CONIC

C3	12.886	VHL	3.590	DLA	20.24	RAL	165.67	RAD	6567.5	VEL	11.588	PTH	2.03	VHP	5.886	DPA	-2.23	RAP	192.44	ECC	1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 13	2802.44	-28.20	82.00	26.75	92.72	16 31 55	2202.4	-27.52	73.40
90.00	9 31 41	4070.68	-4.13	164.76	21.16	61.96	10 39 32	3470.7	-7.84	158.05
100.00	17 19 39	2497.91	-29.58	59.50	26.65	94.54	18 1 17	1897.9	-28.64	50.82
100.00	10 39 56	3850.43	-2.91	147.90	20.49	60.24	11 44 7	3250.4	-6.85	141.33
110.00	18 55 53	2196.83	-33.05	36.14	26.16	99.26	19 32 30	1596.8	-31.42	27.30
110.00	11 20 11	3724.28	.06	136.48	18.64	55.82	12 22 16	3124.3	-4.43	130.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3554	TRA	-1.5097	TC3	3.4350	BAU	.5918	SGT	3605.5	SGR	264.2	SG3	726.2	ST	959.6	SR	236.7	SS	608.5
RDE	-.1466	RRA	-.0696	RC3	.0448	FAU	.15417	RRT	.2629	RRF	-.3131	RTF	-.9377	CRT	-.4637	CRS	.1224	CST	.8182
FDE	-.0194	FRA	2.3024	FC3	-10.3582	BSP	12515	SGB	3615.2	R23	-.0677	R13	-.9378	LSA	1096.8	MSA	378.7	SSA	29.0
BDE	.3844	BRA	1.5113	BC3	3.4353	FSP	2291	SG1	3606.2	SG2	254.9	THA	1.11	EL1	966.2	EL2	208.3	ALF	173.16

LAUNCH DATE NOV 17 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 507.094 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.512	GAL	-2.00	AZL	88.64	HCA	160.31	SMA	197.56	ECC	.25369	INC	1.3562	V1	30.128
RP	237.15	LAP	.46	LOP	215.00	VP	21.154	GAP	9.14	AZP	91.28	TAL	350.08	TAP	150.38	RCA	147.44	APO	247.68	V2	23.174
RC	188.300	GL	12.93	GP	1.87	ZAL	103.11	ZAP	157.36	ETS	174.02	ZAE	162.53	ETE	7.58	ZAC	92.24	ETC	255.83	CLP	157.43

PLANETOCENTRIC CONIC

C3	12.539	VHL	3.541	DLA	20.47	RAL	164.92	RAD	6567.5	VEL	11.573	PTH	2.02	VHP	5.754	DPA	-2.19	RAP	192.65	ECC	1.2064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 33	2806.35	-28.21	82.29	25.63	92.58	16 26 19	2206.3	-27.55	73.68
90.00	9 31 19	4055.09	-4.62	163.88	20.13	62.03	10 38 54	3455.1	-8.33	157.16
100.00	17 14 16	2500.88	-29.59	59.72	25.53	94.42	17 55 57	1900.9	-28.67	51.04
100.00	10 39 17	3835.79	-3.41	147.09	19.46	60.28	11 43 12	3235.8	-7.34	140.51
110.00	18 51 3	2198.12	-33.07	36.24	25.04	99.20	19 27 41	1598.1	-31.44	27.39
110.00	11 19 0	3711.32	-.44	135.80	17.61	55.82	12 20 51	3111.3	-4.92	129.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3357	TRA	-1.4742	TC3	3.5534	BAU	.5958	SGT	3620.9	SGR	258.8	SG3	761.7	ST	940.3	SR	227.2	SS	611.7
RDE	-.1387	RRA	-.0693	RC3	.0676	FAU	.16041	RRT	.3239	RRF	-.3774	RTF	-.9391	CRT	-.4414	CRS	.1696	CST	.8049
FDE	.0102	FRA	2.3309	FC3	-11.0754	BSP	12581	SGB	3630.1	R23	-.0760	R13	-.9392	LSA	1078.0	MSA	383.6	SSA	28.3
BDE	.3632	BRA	1.4759	BC3	3.5540	FSP	2415	SG1	3621.8	SG2	244.8	THA	1.33	EL1	945.9	EL2	202.7	ALF	173.62

LAUNCH DATE NOV 17 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 510.616 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.477 GAL -1.91 AZL 88.67 HCA 161.27 SMA 196.88 ECC .25093 INC 1.3286 V1 30.128
RP 236.81 LAP .43 LOP 215.96 VP 21.137 GAP 8.68 AZP 91.26 TAL 350.44 TAP 151.72 RCA 147.47 APO 246.28 V2 23.209
RC 190.540 GL 12.83 GP 2.01 ZAL 102.39 ZAP 156.54 ETS 173.87 ZAE 163.27 ETE 8.57 ZAC 92.41 ETC 255.83 CLP 156.62

PLANETOCENTRIC CONIC

C3 12.212 VHL 3.495 DLA 20.66 RAL 164.15 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 5.625 DPA -2.12 RAP 192.84 ECC 1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 13	2809.08	-28.22	82.49	24.50	92.48	16 21 2	2209.1	-27.57	73.88
90.00	9 30 33	4041.13	-5.07	163.10	19.09	62.10	10 37 54	3441.1	-8.76	156.37
100.00	17 9 12	2502.80	-29.60	59.86	24.41	94.35	17 50 55	1902.8	-28.69	51.18
100.00	10 38 15	3822.65	-3.85	146.37	18.42	60.33	11 41 57	3222.7	-7.77	139.78
110.00	18 46 26	2198.57	-33.07	36.27	23.93	99.18	19 23 5	1598.6	-31.45	27.42
110.00	11 17 30	3699.64	-.89	135.20	16.58	55.83	12 19 9	3099.6	-5.36	128.97

DIFFERENTIAL CORRECTIONS
TDE .3194 TRA-1.4358 TC3 3.6712 BAU .5996
RDE -.1309 RRA -.0695 RC3 .0941 FAU .16709
FDE .0341 FRA 2.3530 FC-11.8449 BSP 12579
BDE .3452 BRA 1.4375 BC3 3.6724 FSP 2534

MID-COURSE EXECUTION ACCURACY
SGT 3631.4 SGR 255.4 SG3 799.1
RRT .3910 RRF -.4481 RTF -.9404
SGB 3640.4 R23 -.0856 R13 -.9406
SG1 3632.8 SG2 235.0 THA 1.58

ORBIT DETERMINATION ACCURACY
ST 921.8 SR 217.8 SS 613.7
CRT -.4218 CRS .2098 CST .7932
LSA 1060.0 MSA 386.6 SSA 27.7
EL1 926.6 EL2 196.4 ALF 174.04

LAUNCH DATE NOV 17 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 514.160 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.444 GAL -1.83 AZL 88.70 HCA 162.24 SMA 196.23 ECC .24829 INC 1.2988 V1 30.128
RP 236.46 LAP .40 LOP 216.93 VP 21.123 GAP 8.23 AZP 91.24 TAL 350.80 TAP 153.04 RCA 147.51 APO 244.95 V2 23.244
RC 192.768 GL 12.69 GP 2.17 ZAL 101.67 ZAP 155.69 ETS 173.71 ZAE 164.04 ETE 9.72 ZAC 92.59 ETC 255.83 CLP 155.78

PLANETOCENTRIC CONIC

C3 11.904 VHL 3.450 DLA 20.82 RAL 163.38 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 5.498 DPA -2.04 RAP 193.03 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 18	2810.36	-28.22	82.58	23.37	92.43	16 16 8	2210.4	-27.59	73.97
90.00	9 29 17	4029.05	-5.45	162.42	18.05	62.17	10 36 26	3429.0	-9.14	155.68
100.00	17 4 30	2503.41	-29.61	59.91	23.28	94.32	17 46 13	1903.4	-28.69	51.22
100.00	10 36 47	3811.23	-4.24	145.74	17.38	60.38	11 40 18	3211.2	-8.15	139.14
110.00	18 42 7	2198.00	-33.07	36.23	22.80	99.21	19 18 45	1598.0	-31.44	27.38
110.00	11 15 39	3689.40	-1.28	134.66	15.54	55.84	12 17 8	3089.4	-5.75	128.43

DIFFERENTIAL CORRECTIONS
TDE .3025 TRA-1.4004 TC3 3.7828 BAU .6023
RDE -.1235 RRA -.0701 RC3 .1247 FAU .17393
FDE .0613 FRA 2.3802 FC-12.6500 BSP 12633
BDE .3267 BRA 1.4022 BC3 3.7848 FSP 2670

MID-COURSE EXECUTION ACCURACY
SGT 3640.9 SGR 254.9 SG3 838.1
RRT .4650 RRF -.5253 RTF -.9416
SGB 3649.8 R23 -.0969 R13 -.9418
SG1 3642.8 SG2 225.5 THA 1.87

ORBIT DETERMINATION ACCURACY
ST 903.1 SR 208.4 SS 617.2
CRT -.3979 CRS .2546 CST .7808
LSA 1042.5 MSA 390.4 SSA 26.9
EL1 907.1 EL2 190.4 ALF 174.51

LAUNCH DATE NOV 17 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 517.723 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.412 GAL -1.74 AZL 88.73 HCA 163.21 SMA 195.62 ECC .24577 INC 1.2654 V1 30.128
RP 236.12 LAP .37 LOP 217.90 VP 21.111 GAP 7.78 AZP 91.21 TAL 351.15 TAP 154.36 RCA 147.54 APO 243.69 V2 23.279
RC 194.983 GL 12.50 GP 2.34 ZAL 100.96 ZAP 154.82 ETS 173.52 ZAE 164.82 ETE 11.08 ZAC 92.79 ETC 255.82 CLP 154.92

PLANETOCENTRIC CONIC

C3 11.611 VHL 3.408 DLA 20.92 RAL 162.60 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 5.375 DPA -1.92 RAP 193.20 ECC 1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 53	2809.86	-28.22	82.54	22.22	92.45	16 11 43	2209.9	-27.58	73.94
90.00	9 27 27	4019.13	-5.77	161.86	16.99	62.23	10 34 26	3419.1	-9.44	155.11
100.00	17 0 14	2502.43	-29.60	59.83	22.13	94.36	17 41 56	1902.4	-28.68	51.15
100.00	10 34 48	3801.79	-4.55	145.22	16.32	60.42	11 38 9	3201.8	-8.46	138.61
110.00	18 38 7	2196.19	-33.05	36.09	21.65	99.28	19 14 43	1596.2	-31.41	27.25
110.00	11 13 24	3680.80	-1.61	134.21	14.49	55.85	12 14 45	3080.8	-6.08	127.98

DIFFERENTIAL CORRECTIONS
TDE .2856 TRA-1.3661 TC3 3.8803 BAU .6029
RDE -.1162 RRA -.0712 RC3 .1602 FAU .18096
FDE .0877 FRA 2.4071 FC-13.4922 BSP 12694
BDE .3083 BRA 1.3679 BC3 3.8837 FSP 2815

MID-COURSE EXECUTION ACCURACY
SGT 3643.0 SGR 258.0 SG3 878.3
RRT .5429 RRF -.6057 RTF -.9424
SGB 3652.1 R23 -.1098 R13 -.9427
SG1 3645.7 SG2 216.5 THA 2.21

ORBIT DETERMINATION ACCURACY
ST 883.8 SR 199.2 SS 620.9
CRT -.3703 CRS .2993 CST .7702
LSA 1025.3 MSA 393.0 SSA 26.2
EL1 887.0 EL2 184.4 ALF 175.01

LAUNCH DATE NOV 17 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 521.306 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.382 GAL -1.66 AZL 88.77 HCA 164.19 SMA 195.03 ECC .24337 INC 1.2282 V1 30.128
RP 235.77 LAP .33 LOP 218.88 VP 21.103 GAP 7.34 AZP 91.18 TAL 351.49 TAP 155.68 RCA 147.57 APO 242.50 V2 23.315
RC 197.185 GL 12.26 GP 2.54 ZAL 100.27 ZAP 153.92 ETS 173.30 ZAE 165.63 ETE 12.71 ZAC 93.00 ETC 255.82 CLP 154.04

PLANETOCENTRIC CONIC

C3 11.334 VHL 3.367 DLA 20.98 RAL 161.80 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 5.254 DPA -1.78 RAP 193.37 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 4	2807.23	-28.21	82.35	21.06	92.55	16 7 51	2207.2	-27.56	73.75
90.00	9 24 56	4011.71	-6.00	161.44	15.91	62.28	10 31 48	3411.7	-9.67	154.68
100.00	16 56 29	2499.56	-29.59	59.62	20.97	94.47	17 38 8	1899.6	-28.65	50.94
100.00	10 32 12	3794.62	-4.79	144.82	15.25	60.46	11 35 27	3194.6	-8.69	138.20
110.00	18 34 30	2192.89	-33.01	35.84	20.48	99.43	19 11 3	1592.9	-31.36	27.01
110.00	11 10 40	3674.05	-1.86	133.86	13.42	55.86	12 11 55	3074.0	-6.33	127.62

DIFFERENTIAL CORRECTIONS
TDE .2719 TRA-1.3295 TC3 3.9838 BAU .6044
RDE -.1092 RRA -.0729 RC3 .2016 FAU .18842
FDE .1107 FRA 2.4311 FC-14.3920 BSP 12660
BDE .2930 BRA 1.3315 BC3 3.9889 FSP 2960

MID-COURSE EXECUTION ACCURACY
SGT 3644.4 SGR 265.7 SG3 920.8
RRT .6196 RRF -.6847 RTF -.9435
SGB 3654.0 R23 -.1251 R13 -.9438
SG1 3648.1 SG2 208.3 THA 2.60

ORBIT DETERMINATION ACCURACY
ST 865.5 SR 190.1 SS 623.7
CRT -.3446 CRS .3415 CST .7591
LSA 1008.6 MSA 395.3 SSA 25.4
EL1 868.1 EL2 177.9 ALF 175.48

LAUNCH DATE NOV 17 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 524.908 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.353 GAL -1.58 AZL 88.81 HCA 165.16 SMA 194.48 ECC .24108 INC 1.1857 V1 30.128
RP 235.42 LAP .30 LOP 219.85 VP 21.097 GAP 6.90 AZP 91.15 TAL 351.83 TAP 156.99 RCA 147.59 APO 241.37 V2 23.351
RC 199.372 GL 11.97 GP 2.77 ZAL 99.59 ZAP 153.00 ETS 173.06 ZAE 166.46 ETE 14.69 ZAC 93.24 ETC 255.82 CLP 153.13

PLANETOCENTRIC CONIC

C3 11.070 VHL 3.327 DLA 20.97 RAL 160.99 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.137 DPA -1.60 RAP 193.52 ECC 1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 57	2802.01	-28.20	81.97	19.88	92.74	16 4 39	2202.0	-27.52	73.37
90.00	9 21 37	4007.22	-6.15	161.19	14.80	62.30	10 28 24	3407.2	-9.81	154.42
100.00	16 53 21	2494.38	-29.56	59.24	19.78	94.67	17 34 55	1894.4	-28.60	50.57
100.00	10 28 54	3790.09	-4.95	144.57	14.15	60.48	11 32 4	3190.1	-8.84	137.95
110.00	18 31 21	2187.77	-32.95	35.45	19.28	99.65	19 7 49	1587.8	-31.27	26.63
110.00	11 7 23	3669.45	-2.04	133.62	12.34	55.87	12 8 33	3069.5	-6.50	127.38

DIFFERENTIAL CORRECTIONS
TDE .2602 TRA-1.2936 TC3 4.0820 BAU .6053
RDE -.1023 RRA -.0751 RC3 .2501 FAU .19628
FDE .1274 FRA 2.4531 FC-15.3495 BSP 12678
BDE .2796 BRA 1.2958 BC3 4.0897 FSP 3116

MID-COURSE EXECUTION ACCURACY
SGT 3642.9 SGR 279.1 SG3 965.4
RRT .6922 RRF -.7585 RTF -.9444
SGB 3653.6 R23 -.1425 R13 -.9448
SG1 3648.0 SG2 201.2 THA 3.05

ORBIT DETERMINATION ACCURACY
ST 848.3 SR 181.0 SS 625.2
CRT -.3175 CRS .3788 CST .7515
LSA 993.3 MSA 394.9 SSA 24.6
EL1 850.3 EL2 171.2 ALF 175.96

LAUNCH DATE NOV 17 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 528.527 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.325 GAL -1.51 AZL 88.86 HCA 166.14 SMA 193.96 ECC .23890 INC 1.1368 V1 30.128
RP 235.06 LAP .27 LOP 220.83 VP 21.093 GAP 6.48 AZP 91.10 TAL 352.16 TAP 158.30 RCA 147.62 APO 240.29 V2 23.387
RC 201.544 GL 11.60 GP 3.03 ZAL 98.92 ZAP 152.05 ETS 172.78 ZAE 167.29 ETE 17.11 ZAC 93.50 ETC 255.81 CLP 152.20

PLANETOCENTRIC CONIC

C3 10.819 VHL 3.289 DLA 20.89 RAL 160.17 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 5.023 DPA -1.38 RAP 193.68 ECC 1.1781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 39	2793.68	-28.17	81.36	18.66	93.04	16 2 13	2193.7	-27.45	72.77
90.00	9 17 21	4006.14	-6.18	161.13	13.67	62.31	10 24 7	3406.1	-9.84	154.36
100.00	16 50 57	2486.41	-29.51	58.65	18.55	94.98	17 32 23	1886.4	-28.51	49.99
100.00	10 24 44	3788.64	-4.99	144.49	13.02	60.49	11 27 53	3188.6	-8.89	137.87
110.00	18 28 44	2180.46	-32.87	34.90	18.04	99.97	19 5 5	1580.5	-31.14	26.10
110.00	11 3 26	3667.36	-2.12	133.51	11.23	55.87	12 4 33	3067.4	-6.58	127.27

DIFFERENTIAL CORRECTIONS
TDE .2506 TRA-1.2574 TC3 4.1716 BAU .6050
RDE -.0954 RRA -.0781 RC3 .3074 FAU .20449
FDE .1364 FRA 2.4704 FC-16.3632 BSP 12636
BDE .2682 BRA 1.2598 BC3 4.1829 FSP 3271

MID-COURSE EXECUTION ACCURACY
SGT 3635.6 SGR 299.5 SG3 1011.8
RRT .7565 RRF -.8231 RTF -.9450
SGB 3647.9 R23 -.1623 R13 -.9456
SG1 3642.7 SG2 195.5 THA 3.58

ORBIT DETERMINATION ACCURACY
ST 831.9 SR 171.9 SS 624.4
CRT -.2890 CRS .4115 CST .7475
LSA 978.6 MSA 391.4 SSA 24.0
EL1 833.4 EL2 164.3 ALF 176.44

LAUNCH DATE NOV 17 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 532.164 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.299 GAL -1.44 AZL 88.92 HCA 167.13 SMA 193.46 ECC .23683 INC 1.0808 V1 30.128
RP 234.71 LAP .24 LOP 221.81 VP 21.092 GAP 6.06 AZP 91.05 TAL 352.48 TAP 159.60 RCA 147.64 APO 239.27 V2 23.424
RC 203.699 GL 11.14 GP 3.33 ZAL 98.27 ZAP 151.07 ETS 172.46 ZAE 168.11 ETE 20.12 ZAC 93.81 ETC 255.81 CLP 151.24

PLANETOCENTRIC CONIC

C3 10.579 VHL 3.253 DLA 20.71 RAL 159.33 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.912 DPA -1.12 RAP 193.82 ECC 1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 21	2781.59	-28.12	80.48	17.40	93.48	16 0 42	2181.6	-27.34	71.90
90.00	9 11 55	4009.08	-6.09	161.29	12.49	62.29	10 18 44	3409.1	-9.75	154.53
100.00	16 49 24	2475.08	-29.44	57.82	17.28	95.41	17 30 39	1875.1	-28.38	49.17
100.00	10 19 33	3790.83	-4.92	144.61	11.85	60.48	11 22 44	3190.8	-8.82	137.99
110.00	18 26 46	2170.45	-32.75	34.14	16.75	100.40	19 2 57	1570.5	-30.97	25.38
110.00	10 58 40	3668.22	-2.09	133.56	10.09	55.87	11 59 48	3068.2	-6.55	127.31

DIFFERENTIAL CORRECTIONS
TDE .2421 TRA-1.2214 TC3 4.2476 BAU .6031
RDE -.0886 RRA -.0818 RC3 .3750 FAU .21290
FDE .1399 FRA 2.4857 FC-17.4227 BSP 12629
BDE .2577 BRA 1.2241 BC3 4.2641 FSP 3441

MID-COURSE EXECUTION ACCURACY
SGT 3620.4 SGR 328.0 SG3 1059.7
RRT .8100 RRF -.8761 RTF -.9454
SGB 3635.3 R23 -.1844 R13 -.9461
SG1 3630.2 SG2 191.8 THA 4.21

ORBIT DETERMINATION ACCURACY
ST 815.4 SR 162.9 SS 622.1
CRT -.2561 CRS .4433 CST .7465
LSA 964.0 MSA 385.4 SSA 23.4
EL1 816.5 EL2 157.2 ALF 176.96

LAUNCH DATE NOV 17 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 535.818 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.274 GAL -1.37 AZL 88.98 HCA 168.11 SMA 192.99 ECC .23485 INC 1.0159 V1 30.128
RP 234.35 LAP .21 LOP 222.80 VP 21.094 GAP 5.64 AZP 90.99 TAL 352.79 TAP 160.90 RCA 147.66 APO 238.31 V2 23.461
RC 205.837 GL 10.57 GP 3.69 ZAL 97.64 ZAP 150.05 ETS 172.08 ZAE 168.91 ETE 23.88 ZAC 94.15 ETC 255.80 CLP 150.26

PLANETOCENTRIC CONIC

C3 10.348 VHL 3.217 DLA 20.43 RAL 158.46 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.804 DPA -.79 RAP 193.97 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 11	2764.96	-28.05	79.27	16.08	94.08	16 0 16	2165.0	-27.18	70.71
90.00	9 5 8	4016.79	-5.84	161.73	11.25	62.24	10 12 5	3416.8	-9.51	154.97
100.00	16 48 53	2459.65	-29.34	56.68	15.95	96.00	17 29 52	1859.6	-28.20	48.06
100.00	10 13 8	3797.34	-4.70	144.97	10.63	60.45	11 16 25	3197.3	-8.60	138.36
110.00	18 25 34	2157.15	-32.58	33.14	15.39	100.97	19 1 31	1557.1	-30.72	24.42
110.00	10 52 56	3672.60	-1.92	133.78	8.89	55.86	11 54 8	3072.6	-6.39	127.55

DIFFERENTIAL CORRECTIONS
TDE .2389 TRA-1.1849 TC3 4.3265 BAU .6019
RDE -.0816 RRA -.0866 RC3 .4559 FAU .22171
FDE .1291 FRA 2.4983 FC-18.5488 BSP 12558
BDE .2525 BRA 1.1880 BC3 4.3505 FSP 3614

MID-COURSE EXECUTION ACCURACY
SGT 3605.7 SGR 366.4 SG3 1109.9
RRT .8519 RRF -.9169 RTF -.9459
SGB 3624.3 R23 -.2078 R13 -.9469
SG1 3619.2 SG2 191.2 THA 4.96

ORBIT DETERMINATION ACCURACY
ST 802.8 SR 153.7 SS 617.1
CRT -.2247 CRS .4678 CST .7494
LSA 952.2 MSA 376.5 SSA 22.7
EL1 803.6 EL2 149.6 ALF 177.45

LAUNCH DATE NOV 17 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 539.488 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.250 GAL -1.31 AZL 89.06 HCA 169.10 SMA 192.54 ECC .23297 INC .9379 V1 30.128
RP 233.98 LAP .18 LOP 223.79 VP 21.097 GAP 5.23 AZP 90.92 TAL 353.08 TAP 162.19 RCA 147.68 APO 237.39 V2 23.498
RC 207.958 GL 9.86 GP 4.11 ZAL 97.02 ZAP 148.99 ETS 171.63 ZAE 169.65 ETE 28.64 ZAC 94.56 ETC 255.79 CLP 149.24

PLANETOCENTRIC CONIC

C3 10.126 VHL 3.182 DLA 20.01 RAL 157.55 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.699 DPA -.39 RAP 194.12 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 25	2742.78	-27.93	77.66	14.68	94.88	16 1 8	2142.8	-26.96	69.13
90.00	8 56 41	4030.24	-5.42	162.49	9.95	62.16	10 3 51	3430.2	-9.10	155.74
100.00	16 49 34	2439.17	-29.18	55.18	14.54	96.78	17 30 13	1839.2	-27.94	46.60
100.00	10 5 12	3809.09	-4.31	145.62	9.34	60.39	11 8 41	3209.1	-8.22	139.02
110.00	18 25 17	2139.72	-32.35	31.84	13.94	101.71	19 0 57	1539.7	-30.39	23.16
110.00	10 45 59	3681.30	-1.59	134.24	7.64	55.85	11 47 20	3081.3	-6.06	128.01

DIFFERENTIAL CORRECTIONS
TDE .2402 TRA-1.1467 TC3 4.3945 BAU .5996
RDE -.0739 RRA -.0923 RC3 .5544 FAU .23102
FDE .0949 FRA 2.4970 FC-19.7517 BSP 12474
BDE .2513 BRA 1.1504 BC3 4.4293 FSP 3783

MID-COURSE EXECUTION ACCURACY
SGT 3582.9 SGR 416.5 SG3 1162.2
RRT .8830 RRF -.9467 RTF -.9461
SGB 3607.0 R23 -.2318 R13 -.9474
SG1 3601.8 SG2 194.5 THA 5.88

ORBIT DETERMINATION ACCURACY
ST 792.9 SR 143.7 SS 606.6
CRT -.1905 CRS .4793 CST .7632
LSA 942.2 MSA 359.0 SSA 22.5
EL1 793.3 EL2 141.0 ALF 177.96

LAUNCH DATE NOV 17 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 543.175 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.227 GAL -1.24 AZL 89.15 HCA 170.09 SMA 192.11 ECC .23118 INC .8458 V1 30.128
RP 233.62 LAP .15 LOP 224.78 VP 21.103 GAP 4.83 AZP 90.83 TAL 353.37 TAP 163.47 RCA 147.70 APO 236.52 V2 23.536
RC 210.060 GL 8.97 GP 4.62 ZAL 96.43 ZAP 147.90 ETS 171.10 ZAE 170.29 ETE 34.64 ZAC 95.05 ETC 255.78 CLP 148.19

PLANETOCENTRIC CONIC

C3 9.910 VHL 3.148 DLA 19.42 RAL 156.59 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.598 DPA .09 RAP 194.28 ECC 1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 17	2713.75	-27.74	75.56	13.18	95.92	16 3 30	2113.7	-26.63	67.06
90.00	8 46 11	4050.71	-4.76	163.64	8.55	62.05	9 53 42	3450.7	-8.47	156.91
100.00	16 51 44	2412.38	-28.95	53.22	13.01	97.78	17 31 56	1812.4	-27.57	44.69
100.00	9 55 25	3827.31	-3.69	146.63	7.96	60.32	10 59 12	3227.3	-7.62	140.04
110.00	18 26 8	2117.07	-32.02	30.15	12.37	102.66	19 1 25	1517.1	-29.95	21.55
110.00	10 37 31	3695.39	-1.05	134.97	6.31	55.83	11 39 6	3095.4	-5.52	128.75

DIFFERENTIAL CORRECTIONS
TDE .2415 TRA-1.1114 TC3 4.4482 BAU .5961
RDE -.0659 RRA -.0997 RC3 .6739 FAU .24023
FDE .0505 FRA 2.4993 FC-20.9856 BSP 12430
BDE .2503 BRA 1.1158 BC3 4.4989 FSP 3979

MID-COURSE EXECUTION ACCURACY
SGT 3554.8 SGR 481.1 SG3 1215.3
RRT .9054 RRF -.9673 RTF -.9461
SGB 3587.2 R23 -.2540 R13 -.9479
SG1 3581.4 SG2 202.7 THA 7.01

ORBIT DETERMINATION ACCURACY
ST 783.7 SR 133.7 SS 597.1
CRT -.1382 CRS .4957 CST .7843
LSA 935.1 MSA 337.1 SSA 22.3
EL1 784.0 EL2 132.4 ALF 178.61

LAUNCH DATE NOV 17 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 546.874 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.205 GAL -1.18 AZL 89.27 HCA 171.09 SMA 191.71 ECC .22948 INC .7339 V1 30.128
RP 233.25 LAP .11 LOP 225.77 VP 21.111 GAP 4.44 AZP 90.72 TAL 353.65 TAP 164.74 RCA 147.72 APO 235.70 V2 23.574
RC 212.144 GL 7.84 GP 5.25 ZAL 95.85 ZAP 146.75 ETS 170.44 ZAE 170.76 ETE 42.11 ZAC 95.64 ETC 255.77 CLP 147.12

PLANETOCENTRIC CONIC

C3 9.702 VHL 3.115 DLA 18.58 RAL 155.57 RAD 6567.3 VEL 11.450 PTH 1.99 VHP 4.501 DPA .70 RAP 194.46 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 9	2676.08	-27.45	72.84	11.52	97.25	16 7 45	2076.1	-26.16	64.41
90.00	8 33 9	4079.97	-3.83	165.28	7.05	61.92	9 41 9	3480.0	-7.55	158.58
100.00	16 55 42	2377.58	-28.61	50.69	11.33	99.07	17 35 20	1777.6	-27.06	42.23
100.00	9 43 16	3853.70	-2.80	148.08	6.48	60.23	10 47 30	3253.7	-6.75	141.51
110.00	18 28 22	2087.65	-31.56	27.98	10.64	103.87	19 3 10	1487.7	-29.33	19.48
110.00	10 27 6	3716.39	-.25	136.07	4.88	55.82	11 29 2	3116.4	-4.73	129.85

DIFFERENTIAL CORRECTIONS
TDE .2491 TRA-1.0739 TC3 4.4956 BAU .5928
RDE -.0564 RRA -.1090 RC3 .8224 FAU .24958
FDE -.0244 FRA 2.4902 FC-22.2705 BSP 12361
BDE .2554 BRA 1.0794 BC3 4.5702 FSP 4183

MID-COURSE EXECUTION ACCURACY
SGT 3520.9 SGR 563.9 SG3 1269.3
RRT .9207 RRF -.9808 RTF -.9463
SGB 3565.7 R23 -.2722 R13 -.9488
SG1 3559.1 SG2 217.7 THA 8.42

ORBIT DETERMINATION ACCURACY
ST 779.7 SR 122.6 SS 586.8
CRT -.0689 CRS .5066 CST .8176
LSA 934.3 MSA 306.2 SSA 22.3
EL1 779.7 EL2 122.3 ALF 179.36

LAUNCH DATE NOV 17 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 550.589 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.184 GAL -1.13 AZL 89.41 HCA 172.09 SMA 191.33 ECC .22786 INC .5873 V1 30.128
RP 232.88 LAP .08 LOP 226.77 VP 21.121 GAP 4.05 AZP 90.59 TAL 353.92 TAP 166.01 RCA 147.73 APO 234.92 V2 23.612
RC 214.210 GL 6.38 GP 6.04 ZAL 95.29 ZAP 145.53 ETS 169.63 ZAE 170.96 ETE 51.06 ZAC 96.39 ETC 255.75 CLP 146.00

PLANETOCENTRIC CONIC

C3 9.501 VHL 3.082 DLA 17.43 RAL 154.45 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 4.408 DPA 1.47 RAP 194.68 ECC 1.1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 30	2627.22	-26.98	69.34	9.66	98.95	16 14 17	2027.2	-25.46	61.00
90.00	8 16 51	4120.61	-2.52	167.55	5.40	61.79	9 25 31	3520.6	-6.28	160.88
100.00	17 1 57	2332.29	-28.08	47.43	9.45	100.71	17 40 49	1732.3	-26.31	39.07
100.00	9 28 4	3890.77	-1.55	150.11	4.86	60.14	10 32 55	3290.8	-5.51	143.57
110.00	18 32 25	2049.23	-30.90	25.18	8.69	105.40	19 6 34	1449.2	-28.48	16.82
110.00	10 14 5	3746.59	.91	137.64	3.33	55.83	11 16 32	3146.6	-3.58	131.44

DIFFERENTIAL CORRECTIONS
TDE .2708 TRA-1.0330 TC3 4.5495 BAU .5921
RDE -.0428 RRA -.1194 RC3 1.0156 FAU .26019
FDE -.1771 FRA 2.4414 FC-23.7076 BSP 12176
BDE .2742 BRA 1.0399 BC3 4.6614 FSP 4334

MID-COURSE EXECUTION ACCURACY
SGT 3488.6 SGR 672.6 SG3 1328.3
RRT .9307 RRF -.9894 RTF -.9459
SGB 3552.8 R23 -.2863 R13 -.9495
SG1 3544.6 SG2 242.1 THA 10.22

ORBIT DETERMINATION ACCURACY
ST 790.6 SR 107.5 SS 582.2
CRT .0426 CRS .4963 CST .8806
LSA 955.1 MSA 250.4 SSA 24.3
EL1 790.6 EL2 107.4 ALF .34

LAUNCH DATE NOV 17 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 554.318 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.164 GAL -1.07 AZL 89.59 HCA 173.09 SMA 190.96 ECC .22632 INC .4110 V1 30.128
RP 232.51 LAP .05 LOP 227.77 VP 21.133 GAP 3.66 AZP 90.41 TAL 354.18 TAP 167.27 RCA 147.75 APO 234.18 V2 23.650
RC 216.258 GL 4.44 GP 7.06 ZAL 94.75 ZAP 144.24 ETS 168.59 ZAE 170.75 ETE 61.12 ZAC 97.35 ETC 255.72 CLP 144.85

PLANETOCENTRIC CONIC

C3 9.311 VHL 3.051 DLA 15.82 RAL 153.18 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 4.321 DPA 2.46 RAP 194.97 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 3	2563.32	-26.22	64.81	7.52	101.09	16 23 47	1963.3	-24.42	56.61
90.00	7 56 11	4176.62	-.72	170.68	3.58	61.69	9 5 47	3576.6	-4.50	164.03
100.00	17 11 9	2272.76	-27.25	43.20	7.27	102.79	17 49 2	1672.8	-25.22	34.99
100.00	9 8 46	3942.41	.20	152.95	3.07	60.11	10 14 28	3342.4	-3.78	146.42
110.00	18 38 51	1998.39	-29.92	21.54	6.45	107.35	19 12 9	1398.4	-27.26	13.37
110.00	9 57 34	3789.54	2.55	139.89	1.60	55.90	11 0 43	3189.5	-1.94	133.68

DIFFERENTIAL CORRECTIONS
TDE .2895 TRA -.9984 TC3 4.5467 BAU .5872
RDE -.0264 RRA -.1345 RC3 1.2565 FAU .26845
FDE -.3430 FRA 2.4144 FC-24.9590 BSP 12237
BDE .2907 BRA 1.0074 BC3 4.7171 FSP 4589

MID-COURSE EXECUTION ACCURACY
SGT 3433.9 SGR 812.1 SG3 1378.7
RRT .9369 RRF -.9944 RTF -.9453
SGB 3528.6 R23 -.2945 R13 -.9506
SG1 3517.7 SG2 277.1 THA 12.57

ORBIT DETERMINATION ACCURACY
ST 802.5 SR 95.8 SS 604.5
CRT .2737 CRS .5799 CST .9345
LSA 990.2 MSA 193.7 SSA 26.7
EL1 803.0 EL2 92.1 ALF 1.90

LAUNCH DATE NOV 17 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 558.063 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.145 GAL -1.02 AZL 89.84 HCA 174.09 SMA 190.62 ECC .22486 INC .1645 V1 30.128
RP 232.14 LAP .02 LOP 228.78 VP 21.147 GAP 3.29 AZP 90.16 TAL 354.43 TAP 168.52 RCA 147.76 APO 233.49 V2 23.689
RC 218.287 GL 1.78 GP 8.43 ZAL 94.23 ZAP 142.82 ETS 167.23 ZAE 169.96 ETE 71.36 ZAC 98.64 ETC 255.68 CLP 143.66

PLANETOCENTRIC CONIC

C3 9.144 VHL 3.024 DLA 13.52 RAL 151.69 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 4.242 DPA 3.78 RAP 195.36 ECC 1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 57	2478.26	-24.97	58.90	4.98	103.81	16 37 15	1878.3	-22.83	50.89
90.00	7 29 24	4254.64	1.80	175.03	1.55	61.74	8 40 19	3654.6	-1.99	168.40
100.00	17 24 23	2193.06	-25.93	37.65	4.71	105.43	18 0 56	1593.1	-23.56	29.65
100.00	8 43 39	4015.05	2.66	156.93	1.07	60.22	9 50 34	3415.1	-1.32	150.41
110.00	18 48 33	1929.69	-28.43	16.75	3.81	109.83	19 20 43	1329.7	-25.46	8.83
110.00	9 35 58	3851.19	4.90	143.12	359.68	56.13	10 40 10	3251.2	.42	136.90

DIFFERENTIAL CORRECTIONS
TDE .3430 TRA -.9462 TC3 4.6030 BAU .5954
RDE .0036 RRA -.1505 RC3 1.5919 FAU .27870
FDE -.6722 FRA 2.2969 FC-26.3879 BSP 11897
BDE .3430 BRA .9581 BC3 4.8705 FSP 4721

MID-COURSE EXECUTION ACCURACY
SGT 3401.8 SGR 1006.4 SG3 1436.4
RRT .9420 RRF -.9973 RTF -.9463
SGB 3547.5 R23 -.2910 R13 -.9541
SG1 3532.6 SG2 325.2 THA 15.71

ORBIT DETERMINATION ACCURACY
ST 857.5 SR 92.8 SS 701.0
CRT .6968 CRS .7923 CST .9824
LSA 1105.0 MSA 114.1 SSA 35.2
EL1 860.0 EL2 66.4 ALF 4.34

LAUNCH DATE NOV 17 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 561.819 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.127 GAL -.97 AZL 90.18 HCA 175.10 SMA 190.30 ECC .22348 INC .1692 V1 30.128
RP 231.76 LAP -.02 LOP 229.78 VP 21.163 GAP 2.92 AZP 89.82 TAL 354.66 TAP 169.76 RCA 147.77 APO 232.82 V2 23.728
RC 220.299 GL -2.04 GP 10.35 ZAL 93.72 ZAP 141.21 ETS 165.36 ZAE 168.37 ETE 80.57 ZAC 100.46 ETC 255.60 CLP 142.41

PLANETOCENTRIC CONIC

C3 9.030 VHL 3.005 DLA 10.12 RAL 149.85 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 4.176 DPA 5.63 RAP 195.94 ECC 1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 12	2361.28	-22.84	50.99	1.91	107.21	16 56 33	1761.3	-20.27	43.26
90.00	6 53 27	4366.76	5.40	181.31	359.28	62.16	8 6 14	3766.8	1.63	174.85
100.00	17 43 33	2082.78	-23.72	30.20	1.60	108.75	18 18 16	1482.8	-20.94	22.51
100.00	8 9 47	4120.49	6.21	162.76	358.84	60.70	9 18 28	3520.5	2.26	156.20
110.00	19 3 10	1833.63	-26.04	10.31	.63	112.97	19 33 44	1233.6	-22.70	2.74
110.00	9 6 39	3942.40	8.33	147.94	357.54	56.73	10 42 22	3342.4	3.90	141.66

DIFFERENTIAL CORRECTIONS
TDE .4078 TRA -.9001 TC3 4.5662 BAU .6043
RDE .0564 RRA -.1692 RC3 2.0521 FAU .28743
FDE-1.1663 FRA 2.1194 FC-27.5575 BSP 11987
BDE .4116 BRA .9159 BC3 5.0061 FSP 4851

MID-COURSE EXECUTION ACCURACY
SGT 3342.9 SGR 1280.6 SG3 1486.7
RRT .9436 RRF -.9988 RTF -.9446
SGB 3579.8 R23 -.2856 R13 -.9571
SG1 3557.6 SG2 398.4 THA 20.14

ORBIT DETERMINATION ACCURACY
ST 940.7 SR 150.3 SS 934.6
CRT .9764 CRS .9723 CST .9908
LSA 1331.1 MSA 90.1 SSA 31.8
EL1 952.1 EL2 32.1 ALF 8.88

LAUNCH DATE NOV 17 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 565.587 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.110 GAL -.93 AZL 90.71 HCA 176.11 SMA 189.99 ECC .22217 INC .7159 V1 30.128
RP 231.38 LAP -.05 LOP 230.79 VP 21.180 GAP 2.55 AZP 89.29 TAL 354.89 TAP 170.99 RCA 147.78 APO 232.20 V2 23.768
RC 222.292 GL -7.87 GP 13.22 ZAL 93.21 ZAP 130.24 ETS 162.67 ZAE 165.60 ETE 87.85 ZAC 103.19 ETC 255.46 CLP 141.09

PLANETOCENTRIC CONIC

C3 9.065 VHL 3.011 DLA 4.80 RAL 147.39 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 4.135 DPA 8.36 RAP 196.86 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 46	2191.94	-19.01	40.05	358.18	111.39	17 25 18	1591.9	-15.94	32.73
90.00	6 2 14	4537.59	10.71	191.05	356.90	63.63	7 17 52	3937.6	7.08	184.25
100.00	18 12 22	1922.30	-19.82	19.87	357.83	112.84	18 44 24	1322.3	-16.56	12.60
100.00	7 21 19	4282.47	11.49	171.88	356.49	62.21	8 32 42	3682.5	7.68	165.16
110.00	19 25 47	1692.52	-21.98	1.36	356.76	116.86	19 54 0	1092.5	-18.20	354.27
110.00	8 24 24	4085.01	13.56	155.69	355.28	58.32	9 32 29	3485.0	9.27	149.21

DIFFERENTIAL CORRECTIONS
TDE .5011 TRA -.8611 TC3 4.3908 BAU .6227
RDE .1567 RRA -.1959 RC3 2.6695 FAU .29001
FDE-1.8771 FRA 1.9000 FC-27.6969 BSP 12571
BDE .5250 BRA .8831 BC3 5.1386 FSP 5055

MID-COURSE EXECUTION ACCURACY
SGT 3256.4 SGR 1677.2 SG3 1506.6
RRT .9429 RRF -.9995 RTF -.9416
SGB 3662.9 R23 -.2699 R13 -.9624
SG1 3628.4 SG2 501.3 THA 26.45

ORBIT DETERMINATION ACCURACY
ST 1076.6 SR 322.3 SS 1346.1
CRT .9903 CRS .9978 CST .9820
LSA 1746.2 MSA 159.7 SSA 11.3
EL1 1123.0 EL2 43.0 ALF 16.54

LAUNCH DATE NOV 17 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 569.369 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.094	GAL	-.89	AZL	91.62	HCA	177.12	SMA	189.70	ECC	.22093	INC	1.6090
RP	231.01	LAP	-.08	LOP	231.81	VP	21.199	GAP	2.19	AZP	88.39	TAL	355.10	TAP	172.22	RCA	147.79	APO	231.61
RC	224.266	GL	-17.53	GP	17.94	ZAL	92.66	ZAP	136.45	ETS	158.55	ZAE	160.83	ETE	92.81	ZAC	107.68	ETC	255.14

V1	30.128	V2	23.807	CLP	139.62														

PLANETOCENTRIC CONIC

C3	9.602	VHL	3.099	DLA	-4.15	RAL	143.72	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	4.154	DPA	12.83	RAP	198.48
ECC	1.1580																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 43	1925.22	-11.66	23.93	353.97	115.99	18 12 48	1325.2	-8.07	17.09
90.00	4 41 0	4826.75	18.78	208.43	355.12	68.41	6 1 27	4226.7	15.69	201.12
100.00	19 0 7	1669.09	-12.46	4.69	353.56	117.39	19 27 56	1069.1	-8.69	357.93
100.00	6 4 17	4558.11	19.61	188.31	354.77	66.97	7 20 16	3958.1	16.32	181.06
110.00	20 3 54	1469.39	-14.57	348.31	352.34	121.27	20 28 23	869.4	-10.32	341.79
110.00	7 17 0	4330.58	21.80	169.95	353.67	62.99	8 29 10	3730.6	18.00	162.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7177	TRA	-.7738	TC3	4.1231	BAU	.7006	SGT	3216.9	SGR	2378.9	SG3	1517.6	ST	1397.2	SR	798.0	SS	2194.7
RDE	.4262	RRA	-.1922	RC3	3.5759	FAU	.29201	RRT	.9434	RRF	-.9998	RTF	-.9404	CRT	.9837	CRS	.9998	CST	.9806
FDE	-3.2741	FRA	1.2829	FC	-26.3276	BSP	12781	SGB	4001.0	R23	-.2268	R13	-.9738	LSA	2711.2	MSA	234.1	SSA	4.1
BDE	.8347	BRA	.7973	BC3	5.4578	FSP	4740	SG1	3949.1	SG2	642.5	THA	36.00	EL1	1604.2	EL2	124.8	ALF	29.52

LAUNCH DATE NOV 17 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 573.162 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.079	GAL	-.85	AZL	93.51	HCA	178.14	SMA	189.42	ECC	.21976	INC	3.5020
RP	230.62	LAP	-.11	LOP	232.82	VP	21.220	GAP	1.84	AZP	86.50	TAL	355.30	TAP	173.44	RCA	147.80	APO	231.05
RC	226.222	GL	-34.98	GP	26.85	ZAL	91.95	ZAP	131.30	ETS	151.95	ZAE	151.76	ETE	95.69	ZAC	116.15	ETC	254.21

V1	30.128	V2	23.847	CLP	137.72														

PLANETOCENTRIC CONIC

C3	12.443	VHL	3.528	DLA	-20.41	RAL	137.20	RAD	6567.5	VEL	11.569	PTH	2.02	VHP	4.378	DPA	21.22	RAP	201.75
ECC	1.2048																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 8	1411.85	4.60	354.97	352.30	117.97	20 1 40	811.9	8.31	348.26
90.00	1 51 36	5446.32	28.20	250.95	357.76	87.27	3 22 22	4846.3	27.52	242.34
100.00	20 46 9	1192.32	3.39	338.17	351.63	119.72	21 6 2	592.3	7.32	331.59
100.00	3 26 15	5141.09	29.57	228.39	357.66	85.43	4 51 56	4541.1	28.63	219.72
110.00	21 26 0	1067.43	.43	326.86	349.79	124.18	21 43 48	467.4	4.92	320.64
110.00	5 2 54	4830.74	33.03	204.93	357.17	80.65	6 23 32	4238.7	31.39	196.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1686	TRA	-.6554	TC3	3.1120	BAU	.8769	SGT	3116.6	SGR	3625.0	SG3	1356.9	ST	1929.5	SR	2027.5	SS	3347.7
RDE	1.2466	RRA	-.1031	RC3	4.2545	FAU	.26423	RRT	.9414	RRF	-.9998	RTF	-.9364	CRT	.9886	CRS	1.0000	CST	.9871
FDE	-5.4429	FRA	.2923	FC	-18.3836	BSP	14755	SGB	4780.8	R23	-.1590	R13	-.9872	LSA	4355.0	MSA	273.6	SSA	1.8
BDE	1.7087	BRA	.6634	BC3	5.2711	FSP	4145	SG1	4711.7	SG2	808.6	THA	49.58	EL1	2790.9	EL2	211.4	ALF	46.44

LAUNCH DATE NOV 17 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 576.956 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.064	GAL	-.81	AZL	99.92	HCA	179.15	SMA	189.16	ECC	.21864	INC	9.9096
RP	230.24	LAP	-.15	LOP	233.84	VP	21.242	GAP	1.49	AZP	80.09	TAL	355.51	TAP	174.65	RCA	147.80	APO	230.52
RC	228.159	GL	-66.77	GP	46.69	ZAL	90.90	ZAP	117.76	ETS	144.02	ZAE	131.53	ETE	99.41	ZAC	134.40	ETC	250.12

V1	30.128	V2	23.887	CLP	132.77														

PLANETOCENTRIC CONIC

C3	38.383	VHL	6.195	DLA	-49.24	RAL	120.43	RAD	6568.5	VEL	12.639	PTH	2.29	VHP	5.947	DPA	40.05	RAP	209.94
ECC	1.6317																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.87	17 27 19	1806.56	25.12	40.40	6.58	133.86	17 57 25	1206.6	30.51	34.13
132.13	1 48 37	5589.36	25.13	259.93	6.59	133.85	3 21 46	4989.4	30.52	253.65
47.87	17 27 19	1806.56	25.12	40.40	6.58	133.86	17 57 25	1206.6	30.51	34.13
132.13	1 48 37	5589.36	25.13	259.93	6.59	133.85	3 21 46	4989.4	30.52	253.65
47.87	17 27 19	1806.56	25.12	40.40	6.58	133.86	17 57 25	1206.6	30.51	34.13
132.13	1 48 37	5589.36	25.13	259.93	6.59	133.85	3 21 46	4989.4	30.52	253.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6108	TRA	-.3084	TC3	.9797	BAU	1.5049	SGT	2737.5	SGR	6287.2	SG3	690.5	ST	2418.3	SR	5107.1	SS	3312.1
RDE	5.5031	RRA	.9723	RC3	2.7642	FAU	.15454	RRT	.9206	RRF	-.9994	RTF	-.9077	CRT	.9909	CRS	.9999	CST	.9891
FDE	-6.9384	FRA	-1.4187	FC3	-3.4857	BSP	16792	SGB	6857.3	R23	-.0915	R13	-.9958	LSA	6542.3	MSA	313.8	SSA	1.4
BDE	6.0910	BRA	1.0200	BC3	2.9327	FSP	1631	SG1	6785.4	SG2	990.8	THA	67.66	EL1	5643.0	EL2	295.2	ALF	64.79

LAUNCH DATE NOV 17 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 584.649 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	33.037	GAL	-.75	AZL	80.04	HCA	181.23	SMA	188.69	ECC	.21661	INC	9.9629
RP	229.47	LAP	-.21	LOP	235.90	VP	21.292	GAP	.83	AZP	99.96	TAL	355.78	TAP	177.01	RCA	147.81	APO	229.56
RC	231.973	GL	67.12	GP	-38.59	ZAL	90.60	ZAP	121.75	ETS	207.84	ZAE	141.65	ETE	253.19	ZAC	52.02	ETC	252.09

V1	30.128	V2	23.968	CLP	132.32														

PLANETOCENTRIC CONIC

C3	38.485	VHL	6.204	DLA	68.64	RAL	207.51	RAD	6568.5	VEL	12.643	PTH	2.30	VHP	4.824	DPA	-36.58	RAP	169.17
ECC	1.6334																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.44	10 14 54	4570.79	-31.43	234.36	103.69	25.27	11 31 5	3970.8	-38.60	230.42
155.56	20 35 46	2826.47	-31.43	85.99	103.67	25.27	21 22 52	2226.5	-38.59	82.05
24.44	10 14 54	4570.79	-31.43	234.36	103.69	25.27	11 31 5	3970.8	-38.60	230.42
155.56	20 35 46	2826.47	-31.43	85.99	103.67	25.27	21 22 52	2226.5	-38.59	82.05
24.44	10 14 54	4570.79	-31.43	234.36	103.69	25.27	11 31 5	3970.8	-38.60	230.42
155.56	20 35 46	2826.47	-31.43	85.99	103.67	25.27	21 22 52	2226.5	-38.59	82.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8428	TRA	-.7374	TC3	.7701	BAU	1.2377	SGT	2239.2	SGR	5435.8	SG3	1063.2	ST	959.8	SR	1496.0	SS	1463.8
RDE	.6123	RRA	1.8175	RC3	-2.2790	FAU	.23409	RRT	-.8935	RRF	.9994	RTF	-.8781	CRT	-.2350	CRS	-.9945	CST	.1319
FDE	1.7984	FRA	4.0607	FC3	-5.2659	BSP	19709	SGB	5878.9	R23	-.0946	R13	.9955	LSA	2099.5	MSA	945.4	SSA	1.3
BDE	1.0418	BRA	1.9614	BC3	2.4056	FSP	3493	SG1	5803.0	SG2	941.7	THA	110.78	EL1	1523.0	EL2	916.4	ALF	103.57

LAUNCH DATE NOV 17 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 588.483 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.025 GAL -.72 AZL 83.74 HCA 182.26 SMA 188.47 ECC .21568 INC 6.2496 V1 30.128
RP 229.09 LAP -.25 LOP 236.93 VP 21.318 GAP .50 AZP 96.25 TAL 355.94 TAP 178.19 RCA 147.82 APO 229.12 V2 24.009
RC 233.848 GL 53.12 GP -24.59 ZAL 90.60 ZAP 127.85 ETS 199.28 ZAE 154.93 ETE 246.03 ZAC 65.80 ETC 254.53 CLP 132.44

PLANETOCENTRIC CONIC

C3 20.253 VHL 4.500 DLA 60.28 RAL 180.90 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 3.948 DPA -24.82 RAP 178.11 ECC 1.3333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.27	8 51 40	4375.03	-37.81	216.98	64.62	38.86	10 4 36	3775.0	-43.84	210.44
145.73	18 26 42	2703.77	-37.80	79.80	64.61	38.86	19 11 46	2103.8	-43.83	73.26
34.27	8 51 40	4375.03	-37.81	216.98	64.62	38.86	10 4 36	3775.0	-43.84	210.44
145.73	18 26 42	2703.77	-37.80	79.80	64.61	38.86	19 11 46	2103.8	-43.83	73.26
34.27	8 51 40	4375.03	-37.81	216.98	64.62	38.86	10 4 36	3775.0	-43.84	210.44
145.73	18 26 42	2703.77	-37.80	79.80	64.61	38.86	19 11 46	2103.8	-43.83	73.26

DIFFERENTIAL CORRECTIONS
TDE .0542 TRA -.7441 TC3 1.5601 BAU .8751
RDE .9834 RRA .8573 RC3-2.8306 FAU .35228
FDE 5.3650 FRA 4.3475 FC-15.0582 BSP 12571
BDE .9849 BRA 1.1352 BC3 3.2321 FSP 4566

MID-COURSE EXECUTION ACCURACY
SGT 2372.3 SGR 3592.6 SG3 1627.9
RRT -.9033 RRF .9996 RTF -.8925
SGB 4305.2 R23 -.1532 R13 .9881
SG1 4216.9 SG2 867.2 THA 122.35

ORBIT DETERMINATION ACCURACY
ST 578.9 SR 1417.6 SS 2598.8
CRT -.3600 CRS -.9996 CST .3323
LSA 2966.8 MSA 544.7 SSA 1.5
EL1 1435.4 EL2 533.5 ALF 99.72

LAUNCH DATE NOV 17 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 592.335 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.014 GAL -.69 AZL 85.13 HCA 183.29 SMA 188.26 ECC .21480 INC 4.8664 V1 30.128
RP 228.70 LAP -.28 LOP 237.96 VP 21.346 GAP .17 AZP 94.86 TAL 356.08 TAP 179.36 RCA 147.82 APO 228.70 V2 24.049
RC 235.703 GL 45.36 GP -17.88 ZAL 90.46 ZAP 128.91 ETS 193.62 ZAE 160.31 ETE 235.41 ZAC 72.29 ETC 255.20 CLP 131.30

PLANETOCENTRIC CONIC

C3 15.500 VHL 3.937 DLA 54.27 RAL 171.77 RAD 6567.6 VEL 11.700 PTH 2.06 VHP 3.676 DPA -18.78 RAP 181.24 ECC 1.2551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.56	8 34 47	4273.92	-37.87	204.78	47.77	47.71	9 46 1	3673.9	-42.98	197.10
138.44	17 30 45	2680.62	-37.86	77.07	47.76	47.70	18 15 25	2080.6	-42.97	69.40
41.56	8 34 47	4273.92	-37.87	204.78	47.77	47.71	9 46 1	3673.9	-42.98	197.10
138.44	17 30 45	2680.62	-37.86	77.07	47.76	47.70	18 15 25	2080.6	-42.97	69.40
41.56	8 34 47	4273.92	-37.87	204.78	47.77	47.71	9 46 1	3673.9	-42.98	197.10
138.44	17 30 45	2680.62	-37.86	77.07	47.76	47.70	18 15 25	2080.6	-42.97	69.40

DIFFERENTIAL CORRECTIONS
TDE -.0770 TRA -.7553 TC3 1.8195 BAU .6480
RDE .7544 RRA .6226 RC3-2.5430 FAU .37673
FDE 6.2182 FRA 4.8488 FC-21.0411 BSP 12363
BDE .7583 BRA .9788 BC3 3.1269 FSP 6452

MID-COURSE EXECUTION ACCURACY
SGT 2368.0 SGR 2760.8 SG3 1936.6
RRT -.9043 RRF .9996 RTF -.8948
SGB 3637.3 R23 -.2046 R13 .9787
SG1 3551.4 SG2 785.9 THA 130.17

ORBIT DETERMINATION ACCURACY
ST 577.3 SR 1194.0 SS 3099.8
CRT -.5636 CRS -.9998 CST .5470
LSA 3337.2 MSA 480.7 SSA 1.9
EL1 1244.8 EL2 457.4 ALF 107.71

LAUNCH DATE NOV 17 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 596.199 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.003 GAL -.67 AZL 85.86 HCA 184.33 SMA 188.07 ECC .21398 INC 4.1407 V1 30.128
RP 228.31 LAP -.31 LOP 239.00 VP 21.376 GAP -.14 AZP 94.13 TAL 356.20 TAP 180.52 RCA 147.83 APO 228.31 V2 24.090
RC 237.537 GL 40.51 GP -14.09 ZAL 90.28 ZAP 128.46 ETS 190.06 ZAE 162.34 ETE 224.52 ZAC 75.90 ETC 255.48 CLP 129.89

PLANETOCENTRIC CONIC

C3 13.451 VHL 3.668 DLA 50.28 RAL 167.23 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.530 DPA -15.21 RAP 182.63 ECC 1.2214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.54	8 31 47	4208.49	-36.87	196.74	38.70	53.01	9 41 55	3608.5	-41.39	188.64
133.46	16 57 35	2683.20	-36.86	76.31	38.70	53.00	17 42 18	2083.2	-41.38	68.21
46.54	8 31 47	4208.49	-36.87	196.74	38.70	53.01	9 41 55	3608.5	-41.39	188.64
133.46	16 57 35	2683.20	-36.86	76.31	38.70	53.00	17 42 18	2083.2	-41.38	68.21
46.54	8 31 47	4208.49	-36.87	196.74	38.70	53.01	9 41 55	3608.5	-41.39	188.64
133.46	16 57 35	2683.20	-36.86	76.31	38.70	53.00	17 42 18	2083.2	-41.38	68.21

DIFFERENTIAL CORRECTIONS
TDE -.0720 TRA -.7227 TC3 1.9337 BAU .5400
RDE .5709 RRA .4758 RC3-2.2973 FAU .39980
FDE 6.2103 FRA 4.9311 FC-25.7318 BSP 11089
BDE .5754 BRA .8653 BC3 3.0028 FSP 7290

MID-COURSE EXECUTION ACCURACY
SGT 2268.6 SGR 2233.4 SG3 2108.8
RRT -.8972 RRF .9995 RTF -.8879
SGB 3183.5 R23 -.2497 R13 .9680
SG1 3100.6 SG2 721.7 THA 135.50

ORBIT DETERMINATION ACCURACY
ST 543.6 SR 959.1 SS 3162.6
CRT -.5514 CRS -.9999 CST .5380
LSA 3318.0 MSA 456.2 SSA 2.6
EL1 1015.9 EL2 428.1 ALF 111.32

LAUNCH DATE NOV 17 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 600.075 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.992 GAL -.65 AZL 86.31 HCA 185.37 SMA 187.89 ECC .21320 INC 3.6920 V1 30.128
RP 227.92 LAP -.35 LOP 240.04 VP 21.406 GAP -.45 AZP 93.68 TAL 356.30 TAP 181.67 RCA 147.83 APO 227.95 V2 24.132
RC 239.350 GL 37.23 GP -11.68 ZAL 90.09 ZAP 127.44 ETS 187.69 ZAE 162.69 ETE 214.97 ZAC 78.14 ETC 255.62 CLP 128.37

PLANETOCENTRIC CONIC

C3 12.330 VHL 3.511 DLA 47.53 RAL 164.50 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 3.428 DPA -12.83 RAP 183.26 ECC 1.2029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.08	8 32 42	4161.15	-35.84	191.13	33.13	56.40	9 42 3	3561.1	-39.96	182.85
129.92	16 34 51	2693.13	-35.83	76.39	33.12	56.39	17 19 44	2093.1	-39.95	68.11
50.08	8 32 42	4161.15	-35.84	191.13	33.13	56.40	9 42 3	3561.1	-39.96	182.85
129.92	16 34 51	2693.13	-35.83	76.39	33.12	56.39	17 19 44	2093.1	-39.95	68.11
50.08	8 32 42	4161.15	-35.84	191.13	33.13	56.40	9 42 3	3561.1	-39.96	182.85
129.92	16 34 51	2693.13	-35.83	76.39	33.12	56.39	17 19 44	2093.1	-39.95	68.11

DIFFERENTIAL CORRECTIONS
TDE -.0360 TRA -.6816 TC3 1.9381 BAU .4711
RDE .4510 RRA .3805 RC3-2.1003 FAU .42300
FDE 6.0070 FRA 4.8759 FC-29.7008 BSP 9810
BDE .4525 BRA .7806 BC3 2.8579 FSP 7682

MID-COURSE EXECUTION ACCURACY
SGT 2137.5 SGR 1887.5 SG3 2236.4
RRT -.8840 RRF .9991 RTF -.8745
SGB 2851.6 R23 -.2900 R13 .9563
SG1 2769.0 SG2 681.3 THA 139.02

ORBIT DETERMINATION ACCURACY
ST 499.4 SR 787.1 SS 3091.6
CRT -.4638 CRS -.9999 CST .4529
LSA 3198.4 MSA 444.1 SSA 3.4
EL1 833.2 EL2 418.0 ALF 112.29

LAUNCH DATE NOV 17 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 603.962 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.983	GAL	-.63	AZL	86.61	HCA	186.41	SMA	187.72	ECC	.21248	INC	3.3875	V1	30.128
RP	227.53	LAP	-.38	LOP	241.09	VP	21.438	GAP	-.76	AZP	93.37	TAL	356.40	TAP	182.81	RCA	147.83	APO	227.61	V2	24.173
RC	241.142	GL	34.87	GP	-10.02	ZAL	89.92	ZAP	126.13	ETS	186.01	ZAE	162.12	ETE	207.32	ZAC	79.64	ETC	255.72	CLP	126.78

PLANETOCENTRIC CONIC

C3	11.624	VHL	3.409	DLA	45.54	RAL	162.66	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	3.346	DPA	-11.10	RAP	183.49	ECC	1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.72	8 34 50	4124.72	-34.95	186.98	29.36	58.72	9 43 35	3524.7	-38.79	178.62
127.28	16 18 2	2704.74	-34.94	76.79	29.35	58.70	17 3 7	2104.7	-38.79	68.43
52.72	8 34 50	4124.72	-34.95	186.98	29.36	58.72	9 43 35	3524.7	-38.79	178.62
127.28	16 18 2	2704.74	-34.94	76.79	29.35	58.70	17 3 7	2104.7	-38.79	68.43
52.72	8 34 50	4124.72	-34.95	186.98	29.36	58.72	9 43 35	3524.7	-38.79	178.62
127.28	16 18 2	2704.74	-34.94	76.79	29.35	58.70	17 3 7	2104.7	-38.79	68.43

DIFFERENTIAL CORRECTIONS

TDE	.0024	TRA	-.6396	TC3	1.8722	BAU	.4183
RDE	.3753	RRA	.3186	RC3	-1.9342	FAU	.44448
FDE	5.8372	FRA	4.8297	FC	-33.1040	BSP	8671
BDE	.3753	BRA	.7146	BC3	2.6919	FSP	7973

MID-COURSE EXECUTION ACCURACY

SGT	1996.1	SGR	1649.7	SG3	2350.4		
RRT	-.8667	RRF	.9986	RTF	-.8574		
SGB	2589.6	R23	-.3249	R13	.9444		
SG1	2505.2	SG2	655.7	THA	141.24		

ORBIT DETERMINATION ACCURACY

ST	462.0	SR	672.2	SS	3015.2
CRT	-.3366	CRS	-.9999	CST	.3294
LSA	3093.1	MSA	435.6	SSA	4.3
EL1	700.9	EL2	417.2	ALF	110.62

LAUNCH DATE NOV 17 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 607.859 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.974	GAL	-.62	AZL	86.83	HCA	187.46	SMA	187.56	ECC	.21180	INC	3.1686	V1	30.128
RP	227.14	LAP	-.41	LOP	242.13	VP	21.470	GAP	-1.06	AZP	93.14	TAL	356.48	TAP	183.94	RCA	147.84	APO	227.29	V2	24.214
RC	242.914	GL	33.10	GP	-8.80	ZAL	89.76	ZAP	124.66	ETS	184.76	ZAE	161.03	ETE	201.43	ZAC	80.70	ETC	255.78	CLP	125.14

PLANETOCENTRIC CONIC

C3	11.137	VHL	3.337	DLA	44.03	RAL	161.33	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	3.276	DPA	-9.75	RAP	183.47	ECC	1.1833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.75	8 37 18	4095.54	-34.21	183.78	26.66	60.39	9 45 34	3495.5	-37.86	175.38
125.25	16 4 58	2716.16	-34.20	77.31	26.65	60.37	16 50 14	2116.2	-37.85	68.92
54.75	8 37 18	4095.54	-34.21	183.78	26.66	60.39	9 45 34	3495.5	-37.86	175.38
125.25	16 4 58	2716.16	-34.20	77.31	26.65	60.37	16 50 14	2116.2	-37.85	68.92
54.75	8 37 18	4095.54	-34.21	183.78	26.66	60.39	9 45 34	3495.5	-37.86	175.38
125.25	16 4 58	2716.16	-34.20	77.31	26.65	60.37	16 50 14	2116.2	-37.85	68.92

DIFFERENTIAL CORRECTIONS

TDE	.0370	TRA	-.6041	TC3	1.7186	BAU	.3681
RDE	.3292	RRA	.2802	RC3	-1.7775	FAU	.46061
FDE	5.7900	FRA	4.8860	FC	-35.8212	BSP	7880
BDE	.3313	BRA	.6659	BC3	2.4725	FSP	8425

MID-COURSE EXECUTION ACCURACY

SGT	1844.3	SGR	1474.6	SG3	2453.8		
RRT	-.8421	RRF	.9978	RTF	-.8329		
SGB	2361.3	R23	-.3594	R13	.9310		
SG1	2271.3	SG2	645.8	THA	142.50		

ORBIT DETERMINATION ACCURACY

ST	438.8	SR	600.9	SS	2990.0
CRT	-.1977	CRS	-1.0000	CST	.1958
LSA	3051.0	MSA	430.1	SSA	5.2
EL1	613.1	EL2	421.6	ALF	105.88

LAUNCH DATE NOV 17 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 611.767 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.965	GAL	-.60	AZL	87.00	HCA	188.51	SMA	187.41	ECC	.21116	INC	3.0021	V1	30.128
RP	226.75	LAP	-.44	LOP	243.19	VP	21.504	GAP	-1.35	AZP	92.97	TAL	356.54	TAP	185.06	RCA	147.84	APO	226.99	V2	24.256
RC	244.666	GL	31.73	GP	-7.88	ZAL	89.63	ZAP	123.09	ETS	183.80	ZAE	159.61	ETE	196.95	ZAC	81.46	ETC	255.84	CLP	123.45

PLANETOCENTRIC CONIC

C3	10.779	VHL	3.283	DLA	42.86	RAL	160.33	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	3.214	DPA	-8.64	RAP	183.29	ECC	1.1774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.37	8 39 46	4071.54	-33.61	181.22	24.62	61.65	9 47 38	3471.5	-37.09	172.81
123.63	15 54 30	2726.75	-33.59	77.85	24.61	61.64	16 39 57	2126.7	-37.08	69.44
56.37	8 39 46	4071.54	-33.61	181.22	24.62	61.65	9 47 38	3471.5	-37.09	172.81
123.63	15 54 30	2726.75	-33.59	77.85	24.61	61.64	16 39 57	2126.7	-37.08	69.44
56.37	8 39 46	4071.54	-33.61	181.22	24.62	61.65	9 47 38	3471.5	-37.09	172.81
123.63	15 54 30	2726.75	-33.59	77.85	24.61	61.64	16 39 57	2126.7	-37.08	69.44

DIFFERENTIAL CORRECTIONS

TDE	.0753	TRA	-.5867	TC3	1.5267	BAU	.3242
RDE	.2950	RRA	.2502	RC3	-1.6521	FAU	.47844
FDE	5.7231	FRA	4.9097	FC	-38.4275	BSP	7005
BDE	.3045	BRA	.6195	BC3	2.2495	FSP	8733

MID-COURSE EXECUTION ACCURACY

SGT	1686.0	SGR	1340.5	SG3	2552.9		
RRT	-.8069	RRF	.9967	RTF	-.7980		
SGB	2153.9	R23	-.3959	R13	.9148		
SG1	2053.5	SG2	650.0	THA	143.00		

ORBIT DETERMINATION ACCURACY

ST	426.6	SR	546.0	SS	2946.8
CRT	-.0245	CRS	-.9999	CST	.0288
LSA	2997.0	MSA	426.4	SSA	6.2
EL1	546.3	EL2	426.3	ALF	92.80

LAUNCH DATE NOV 17 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 615.685 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.957	GAL	-.59	AZL	87.13	HCA	189.57	SMA	187.28	ECC	.21057	INC	2.8724	V1	30.128
RP	226.36	LAP	-.48	LOP	244.24	VP	21.539	GAP	-1.64	AZP	92.83	TAL	356.59	TAP	186.16	RCA	147.84	APO	226.71	V2	24.297
RC	246.398	GL	30.64	GP	-7.15	ZAL	89.51	ZAP	121.44	ETS	183.04	ZAE	158.00	ETE	193.54	ZAC	82.03	ETC	255.88	CLP	121.71

PLANETOCENTRIC CONIC

C3	10.503	VHL	3.241	DLA	41.93	RAL	159.56	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	3.157	DPA	-7.70	RAP	182.99	ECC	1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.69	8 42 9	4051.36	-33.10	179.13	23.04	62.64	9 49 41	3451.4	-36.46	170.70
122.31	15 45 56	2736.3[illegible]	-33.09	78.38	23.03	62.62	16 31 32	2136.4	-36.46	69.96
57.69	8 42 9	4051.36	-33.10	179.13	23.04	62.64	9 49 41	3451.4	-36.46	170.70
122.31	15 45 56	2736.38	-33.09	78.38	23.03	62.62	16 31 32	2136.4	-36.46	69.96
57.69	8 42 9	4051.36	-33.10	179.13	23.04	62.64	9 49 41	3451.4	-36.46	170.70
122.31	15 45 56	2736.38	-33.09	78.38	23.03	62.62	16 31 32	2136.4	-36.46	69.96

DIFFERENTIAL CORRECTIONS

TDE	.1146	TRA	-.5271	TC3	1.2882	BAU	.2817
RDE	.2716	RRA	.2286	RC3	-1.5379	FAU	.49360
FDE	5.7108	FRA	4.9702	FC	-40.6878	BSP	6202
BDE	.2948	BRA	.5746	BC3	2.0061	FSP	9108

MID-COURSE EXECUTION ACCURACY

SGT	1519.0	SGR	1232.6	SG3	2644.6		
RRT	-.7560	RRF	.8953	RTF	-.7478		
SGB	1956.2	R23	-.4349	R13	.8953		
SG1	1839.1	SG2	666.4	THA	142.78		

ORBIT DETERMINATION ACCURACY

ST	427.7	SR	508.0	SS	2927.0
CRT	.1627	CRS	-.9998	CST	-.1515
LSA	2971.4	MSA	422.7	SSA	7.1
EL1	521.7	EL2	411.0	ALF	68.38

LAUNCH DATE NOV 17 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 619.614 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.950 GAL -.58 AZL 87.23 HCA 190.63 SMA 187.15 ECC .21002 INC 2.7671 V1 30.128
RP 225.97 LAP -.51 LOP 245.30 VP 21.575 GAP -1.92 AZP 92.72 TAL 356.63 TAP 187.26 RCA 147.84 APO 226.45 V2 24.339
RC 248.110 GL 29.75 GP -6.55 ZAL 89.43 ZAP 119.73 ETS 182.43 ZAE 156.24 ETE 190.90 ZAC 82.45 ETC 255.93 CLP 119.94

PLANETOCENTRIC CONIC

C3 10.282 VHL 3.207 DLA 41.16 RAL 158.95 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 3.106 DPA -6.87 RAP 182.59 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.79	8 44 29	4033.96	-32.67	177.36	21.78	63.43	9 51 43	3434.0	-35.94	168.93
121.21	15 38 44	2745.22	-32.66	78.89	21.77	63.42	16 24 30	2145.2	-35.93	70.46
58.79	8 44 29	4033.96	-32.67	177.36	21.78	63.43	9 51 43	3434.0	-35.94	168.93
121.21	15 38 44	2745.22	-32.66	78.89	21.77	63.42	16 24 30	2145.2	-35.93	70.46
58.79	8 44 29	4033.96	-32.67	177.36	21.78	63.43	9 51 43	3434.0	-35.94	168.93
121.21	15 38 44	2745.22	-32.66	78.89	21.77	63.42	16 24 30	2145.2	-35.93	70.46

DIFFERENTIAL CORRECTIONS
TDE .1521 TRA -.4888 TC3 1.0225 BAU .2433
RDE .2537 RRA .2108 RC3-1.4443 FAU .51026
FDE 5.6897 FRA 5.0087 FC-42.9626 BSP 5450
BDE .2958 BRA .5323 BC3 1.7696 FSP 9418

MID-COURSE EXECUTION ACCURACY
SGT 1360.0 SGR 1146.2 SG3 2737.4
RRT -.6829 RRF .9934 RTF -.6752
SGB 1778.6 R23 -.4795 R13 .8701
SG1 1636.9 SG2 695.6 THA 142.06

ORBIT DETERMINATION ACCURACY
ST 442.0 SR 478.3 SS 2899.6
CRT .3330 CRS -.9997 CST -.3153
LSA 2942.2 MSA 419.0 SSA 8.1
EL1 533.3 EL2 373.8 ALF 51.67

LAUNCH DATE NOV 17 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 623.552 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.943 GAL -.58 AZL 87.32 HCA 191.69 SMA 187.03 ECC .20952 INC 2.6813 V1 30.128
RP 225.58 LAP -.54 LOP 246.36 VP 21.612 GAP -2.20 AZP 92.63 TAL 356.65 TAP 188.35 RCA 147.84 APO 226.21 V2 24.381
RC 249.803 GL 29.00 GP -6.06 ZAL 89.37 ZAP 117.96 ETS 181.92 ZAE 154.38 ETE 188.84 ZAC 82.76 ETC 255.97 CLP 118.13

PLANETOCENTRIC CONIC

C3 10.101 VHL 3.178 DLA 40.51 RAL 158.46 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.059 DPA -6.11 RAP 182.12 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.73	8 46 43	4018.79	-32.30	175.84	20.76	64.09	9 53 42	3418.8	-35.49	167.41
120.27	15 32 39	2753.26	-32.29	79.36	20.75	64.08	16 18 32	2153.3	-35.48	70.94
59.73	8 46 43	4018.79	-32.30	175.84	20.76	64.09	9 53 42	3418.8	-35.49	167.41
120.27	15 32 39	2753.26	-32.29	79.36	20.75	64.08	16 18 32	2153.3	-35.48	70.94
59.73	8 46 43	4018.79	-32.30	175.84	20.76	64.09	9 53 42	3418.8	-35.49	167.41
120.27	15 32 39	2753.26	-32.29	79.36	20.75	64.08	16 18 32	2153.3	-35.48	70.94

DIFFERENTIAL CORRECTIONS
TDE .1915 TRA -.4506 TC3 .7183 BAU .2070
RDE .2414 RRA .1983 RC3-1.3542 FAU .52390
FDE 5.7184 FRA 5.1050 FC-44.9014 BSP 4684
BDE .3081 BRA .4923 BC3 1.5329 FSP 9767

MID-COURSE EXECUTION ACCURACY
SGT 1212.0 SGR 1073.0 SG3 2822.8
RRT -.5729 RRF .9911 RTF -.5658
SGB 1618.8 R23 -.5338 R13 .8351
SG1 1439.5 SG2 740.5 THA 141.02

ORBIT DETERMINATION ACCURACY
ST 471.2 SR 458.2 SS 2897.4
CRT .4847 CRS -.9994 CST -.4612
LSA 2941.6 MSA 417.0 SSA 9.0
EL1 566.4 EL2 333.4 ALF 43.34

LAUNCH DATE NOV 17 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 627.501 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.937 GAL -.58 AZL 87.39 HCA 192.76 SMA 186.92 ECC .20905 INC 2.6090 V1 30.128
RP 225.19 LAP -.58 LOP 247.43 VP 21.649 GAP -2.47 AZP 92.54 TAL 356.66 TAP 189.42 RCA 147.84 APO 225.99 V2 24.423
RC 251.477 GL 28.38 GP -5.65 ZAL 89.34 ZAP 116.15 ETS 181.49 ZAE 152.44 ETE 187.21 ZAC 83.00 ETC 256.02 CLP 116.29

PLANETOCENTRIC CONIC

C3 9.950 VHL 3.154 DLA 39.95 RAL 158.08 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.016 DPA -5.41 RAP 181.59 ECC 1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.55	8 48 55	4005.37	-31.97	174.52	19.92	64.64	9 55 40	3405.4	-35.09	166.09
119.45	15 27 26	2760.65	-31.96	79.81	19.92	64.63	16 13 27	2160.7	-35.09	71.38
60.55	8 48 55	4005.37	-31.97	174.52	19.92	64.64	9 55 40	3405.4	-35.09	166.09
119.45	15 27 26	2760.65	-31.96	79.81	19.92	64.63	16 13 27	2160.7	-35.09	71.38
60.55	8 48 55	4005.37	-31.97	174.52	19.92	64.64	9 55 40	3405.4	-35.09	166.09
119.45	15 27 26	2760.65	-31.96	79.81	19.92	64.63	16 13 27	2160.7	-35.09	71.38

DIFFERENTIAL CORRECTIONS
TDE .2314 TRA -.4114 TC3 .3901 BAU .1776
RDE .2313 RRA .1874 RC3-1.2769 FAU .53837
FDE 5.7260 FRA 5.1778 FC-46.8450 BSP 3995
BDE .3272 BRA .4521 BC3 1.3352 FSP 10063

MID-COURSE EXECUTION ACCURACY
SGT 1089.8 SGR 1011.3 SG3 2907.0
RRT -.4124 RRF .9882 RTF -.4053
SGB 1486.7 R23 -.6036 R13 .7825
SG1 1251.8 SG2 802.0 THA 140.15

ORBIT DETERMINATION ACCURACY
ST 512.1 SR 441.5 SS 2884.1
CRT .6081 CRS -.9991 CST -.5802
LSA 2933.1 MSA 415.0 SSA 10.0
EL1 608.4 EL2 295.0 ALF 38.12

LAUNCH DATE NOV 17 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 631.459 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.931 GAL -.58 AZL 87.45 HCA 193.83 SMA 186.82 ECC .20862 INC 2.5476 V1 30.128
RP 224.80 LAP -.61 LOP 248.50 VP 21.687 GAP -2.73 AZP 92.47 TAL 356.66 TAP 190.49 RCA 147.84 APO 225.79 V2 24.465
RC 253.132 GL 27.84 GP -5.30 ZAL 89.33 ZAP 114.30 ETS 181.12 ZAE 150.43 ETE 185.90 ZAC 83.17 ETC 256.06 CLP 114.41

PLANETOCENTRIC CONIC

C3 9.820 VHL 3.134 DLA 39.47 RAL 157.79 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.977 DPA -4.75 RAP 181.01 ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.27	8 51 7	3993.22	-31.69	173.33	19.24	65.12	9 57 40	3393.2	-34.75	164.91
118.73	15 22 54	2767.62	-31.67	80.23	19.24	65.11	16 9 1	2167.6	-34.74	71.81
61.27	8 51 7	3993.22	-31.69	173.33	19.24	65.12	9 57 40	3393.2	-34.75	164.91
118.73	15 22 54	2767.62	-31.67	80.23	19.24	65.11	16 9 1	2167.6	-34.74	71.81
61.27	8 51 7	3993.22	-31.69	173.33	19.24	65.12	9 57 40	3393.2	-34.75	164.91
118.73	15 22 54	2767.62	-31.67	80.23	19.24	65.11	16 9 1	2167.6	-34.74	71.81

DIFFERENTIAL CORRECTIONS
TDE .2714 TRA -.3709 TC3 .0286 BAU .1581
RDE .2240 RRA .1786 RC3-1.2039 FAU .55125
FDE 5.7483 FRA 5.2610 FC-48.5969 BSP 3427
BDE .3519 BRA .4116 BC3 1.2043 FSP 10362

MID-COURSE EXECUTION ACCURACY
SGT 1009.0 SGR 957.0 SG3 2984.7
RRT -.1883 RRF .9847 RTF -.1800
SGB 1390.6 R23 -.7271 R13 .6641
SG1 1075.1 SG2 882.1 THA 142.84

ORBIT DETERMINATION ACCURACY
ST 561.8 SR 429.3 SS 2878.5
CRT .7038 CRS -.9987 CST -.6726
LSA 2935.3 MSA 412.2 SSA 10.9
EL1 657.3 EL2 260.7 ALF 34.42

LAUNCH DATE NOV 17 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 635.426 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.925 GAL -.58 AZL 87.51 HCA 194.91 SMA 186.72 ECC .20822 INC 2.4943 V1 30.128
RP 224.41 LAP -.64 LOP 249.58 VP 21.726 GAP -3.00 AZP 92.41 TAL 356.64 TAP 191.54 RCA 147.84 APO 225.60 V2 24.506
RC 254.766 GL 27.38 GP -4.99 ZAL 89.36 ZAP 112.41 ETS 180.80 ZAE 148.38 ETE 184.83 ZAC 83.28 ETC 256.11 CLP 112.50

PLANETOCENTRIC CONIC

C3 9.709 VHL 3.116 DLA 39.03 RAL 157.57 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 2.941 DPA -4.12 RAP 180.38 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.93	8 53 20	3982.16	-31.43	172.27	18.69	65.55	9 59 42	3382.2	-34.44	163.85
118.07	15 18 56	2774.16	-31.41	80.64	18.68	65.53	16 5 10	2174.2	-34.43	72.23
61.93	8 53 20	3982.16	-31.43	172.27	18.69	65.55	9 59 42	3382.2	-34.44	163.85
118.07	15 18 56	2774.16	-31.41	80.64	18.68	65.53	16 5 10	2174.2	-34.43	72.23
61.93	8 53 20	3982.16	-31.43	172.27	18.69	65.55	9 59 42	3382.2	-34.44	163.85
118.07	15 18 56	2774.16	-31.41	80.64	18.68	65.53	16 5 10	2174.2	-34.43	72.23

DIFFERENTIAL CORRECTIONS
TDE .3132 TRA -.3317 TC3 -.3469 BAU .1547
RDE .2176 RRA .1714 RC3-1.1400 FAU .56481
FDE 5.7441 FRA 5.3506 FC-50.3635 BSP 3075
BDE .3814 BRA .3734 BC3 1.1916 FSP 10615

MID-COURSE EXECUTION ACCURACY
SGT 997.5 SGR 910.7 SG3 3063.3
RRT .0720 RRF .9806 RTF .0826
SGB 1350.7 R23 .9092 R13 .3675
SG1 1008.8 SG2 898.2 THA 19.15

ORBIT DETERMINATION ACCURACY
ST 622.2 SR 418.8 SS 2862.7
CRT .7748 CRS -.9982 CST -.7410
LSA 2930.4 MSA 412.6 SSA 11.9
EL1 713.6 EL2 230.9 ALF 31.16

LAUNCH DATE NOV 17 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 639.404 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.920 GAL -.58 AZL 87.55 HCA 195.98 SMA 186.64 ECC .20787 INC 2.4485 V1 30.128
RP 224.02 LAP -.67 LOP 250.65 VP 21.766 GAP -3.25 AZP 92.35 TAL 356.60 TAP 192.58 RCA 147.84 APO 225.43 V2 24.548
RC 256.380 GL 26.97 GP -4.72 ZAL 89.41 ZAP 110.50 ETS 180.53 ZAE 146.28 ETE 183.95 ZAC 83.36 ETC 256.16 CLP 110.57

PLANETOCENTRIC CONIC

C3 9.612 VHL 3.100 DLA 38.64 RAL 157.42 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 2.910 DPA -3.52 RAP 179.72 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.52	8 55 35	3971.93	-31.19	171.29	18.23	65.92	10 1 47	3371.9	-34.15	162.87
117.48	15 15 27	2780.43	-31.17	81.04	18.23	65.90	16 1 47	2180.4	-34.14	72.62
62.52	8 55 35	3971.93	-31.19	171.29	18.23	65.92	10 1 47	3371.9	-34.15	162.87
117.48	15 15 27	2780.43	-31.17	81.04	18.23	65.90	16 1 47	2180.4	-34.14	72.62
62.52	8 55 35	3971.93	-31.19	171.29	18.23	65.92	10 1 47	3371.9	-34.15	162.87
117.48	15 15 27	2780.43	-31.17	81.04	18.23	65.90	16 1 47	2180.4	-34.14	72.62

DIFFERENTIAL CORRECTIONS
TDE .3562 TRA -.2883 TC3 -.7559 BAU .1689
RDE .2131 RRA .1653 RC3-1.0757 FAU .57558
FDE 5.7551 FRA 5.4393 FC-51.8439 BSP 3061
BDE .4150 BRA .3323 BC3 1.3147 FSP 10901

MID-COURSE EXECUTION ACCURACY
SGT 1057.5 SGR 867.7 SG3 3129.7
RRT .3325 RRF .9756 RTF .3469
SGB 1367.9 R23 .7295 R13 .6481
SG1 1136.3 SG2 761.6 THA 29.54

ORBIT DETERMINATION ACCURACY
ST 689.5 SR 411.4 SS 2854.9
CRT .8303 CRS -.9976 CST -.7950
LSA 2937.0 MSA 410.8 SSA 12.8
EL1 776.6 EL2 203.6 ALF 28.49

LAUNCH DATE NOV 17 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 643.390 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.916 GAL -.59 AZL 87.59 HCA 197.07 SMA 186.56 ECC .20754 INC 2.4077 V1 30.128
RP 223.63 LAP -.71 LOP 251.74 VP 21.807 GAP -3.50 AZP 92.30 TAL 356.55 TAP 193.62 RCA 147.84 APO 225.28 V2 24.590
RC 257.974 GL 26.62 GP -4.48 ZAL 89.48 ZAP 108.55 ETS 180.29 ZAE 144.14 ETE 183.22 ZAC 83.41 ETC 256.22 CLP 108.61

PLANETOCENTRIC CONIC

C3 9.526 VHL 3.086 DLA 38.28 RAL 157.32 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.881 DPA -2.94 RAP 179.03 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.08	8 57 56	3962.30	-30.96	170.38	17.87	66.26	10 3 58	3362.3	-33.88	161.97
116.92	15 12 20	2786.54	-30.95	81.43	17.86	66.24	15 58 46	2186.5	-33.87	73.02
63.08	8 57 56	3962.30	-30.96	170.38	17.87	66.26	10 3 58	3362.3	-33.88	161.97
116.92	15 12 20	2786.54	-30.95	81.43	17.86	66.24	15 58 46	2186.5	-33.87	73.02
63.08	8 57 56	3962.30	-30.96	170.38	17.87	66.26	10 3 58	3362.3	-33.88	161.97
116.92	15 12 20	2786.54	-30.95	81.43	17.86	66.24	15 58 46	2186.5	-33.87	73.02

DIFFERENTIAL CORRECTIONS
TDE .3998 TRA -.2457 TC3-1.1761 BAU .1982
RDE .2090 RRA .1600 RC3-1.0190 FAU .58721
FDE 5.7323 FRA 5.5244 FC-53.3662 BSP 3399
BDE .4511 BRA .2932 BC3 1.5561 FSP 11106

MID-COURSE EXECUTION ACCURACY
SGT 1189.8 SGR 830.2 SG3 3196.9
RRT .5311 RRF .9698 RTF .5502
SGB 1450.9 R23 .6359 R13 .7333
SG1 1300.2 SG2 643.7 THA 27.65

ORBIT DETERMINATION ACCURACY
ST 762.7 SR 404.6 SS 2833.9
CRT .8701 CRS -.9969 CST -.8335
LSA 2933.8 MSA 411.3 SSA 13.8
EL1 844.4 EL2 180.1 ALF 26.05

LAUNCH DATE NOV 17 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 647.386 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.912 GAL -.60 AZL 87.63 HCA 198.15 SMA 186.49 ECC .20725 INC 2.3715 V1 30.128
RP 223.24 LAP -.74 LOP 252.82 VP 21.848 GAP -3.75 AZP 92.25 TAL 356.49 TAP 194.64 RCA 147.84 APO 225.14 V2 24.632
RC 259.547 GL 26.30 GP -4.26 ZAL 89.59 ZAP 106.59 ETS 180.08 ZAE 141.97 ETE 182.61 ZAC 83.43 ETC 256.28 CLP 106.63

PLANETOCENTRIC CONIC

C3 9.450 VHL 3.074 DLA 37.95 RAL 157.28 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.857 DPA -2.37 RAP 178.31 ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.60	9 0 21	3953.23	-30.75	169.52	17.58	66.57	10 6 15	3353.2	-33.63	161.11
116.40	15 9 34	2792.49	-30.74	81.81	17.58	66.56	15 56 7	2192.5	-33.62	73.41
63.60	9 0 21	3953.23	-30.75	169.52	17.58	66.57	10 6 15	3353.2	-33.63	161.11
116.40	15 9 34	2792.49	-30.74	81.81	17.58	66.56	15 56 7	2192.5	-33.62	73.41
63.60	9 0 21	3953.23	-30.75	169.52	17.58	66.57	10 6 15	3353.2	-33.63	161.11
116.40	15 9 34	2792.49	-30.74	81.81	17.58	66.56	15 56 7	2192.5	-33.62	73.41

DIFFERENTIAL CORRECTIONS
TDE .4425 TRA -.2009 TC3-1.6218 BAU .2383
RDE .2060 RRA .1554 RC3 -.9632 FAU .59697
FDE 5.7142 FRA 5.6058 FC-54.6870 BSP 4027
BDE .4881 BRA .2540 BC3 1.8863 FSP 11313

MID-COURSE EXECUTION ACCURACY
SGT 1378.4 SGR 795.6 SG3 3255.2
RRT .6681 RRF .9630 RTF .6936
SGB 1591.5 R23 .5481 R13 .7947
SG1 1495.0 SG2 545.8 THA 24.58

ORBIT DETERMINATION ACCURACY
ST 837.5 SR 399.8 SS 2817.0
CRT .9003 CRS -.9960 CST -.8629
LSA 2937.4 MSA 410.0 SSA 14.8
EL1 914.2 EL2 159.4 ALF 24.04

LAUNCH DATE NOV 17 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 651.391 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.908 GAL -.62 AZL 87.66 HCA 199.24 SMA 186.42 ECC .20699 INC 2.3394 V1 30.128
RP 222.85 LAP -.77 LOP 253.91 VP 21.889 GAP -3.99 AZP 92.21 TAL 356.41 TAP 195.65 RCA 147.84 APO 225.01 V2 24.674
RC 261.100 GL 26.01 GP -4.06 ZAL 89.72 ZAP 104.60 ETS 179.89 ZAE 139.78 ETE 182.09 ZAC 83.42 ETC 256.34 CLP 104.64

PLANETOCENTRIC CONIC

C3 9.383 VHL 3.063 DLA 37.63 RAL 157.29 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.836 DPA -1.81 RAP 177.57 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.11	9 2 55	3944.46	-30.54	168.70	17.37	66.86	10 8 40	3344.5	-33.39	160.30
115.89	15 7 4	2798.48	-30.53	82.20	17.36	66.84	15 53 42	2198.5	-33.38	73.80
64.11	9 2 55	3944.46	-30.54	168.70	17.37	66.86	10 8 40	3344.5	-33.39	160.30
115.89	15 7 4	2798.48	-30.53	82.20	17.36	66.84	15 53 42	2198.5	-33.38	73.80
64.11	9 2 55	3944.46	-30.54	168.70	17.37	66.86	10 8 40	3344.5	-33.39	160.30
115.89	15 7 4	2798.48	-30.53	82.20	17.36	66.84	15 53 42	2198.5	-33.38	73.80

DIFFERENTIAL CORRECTIONS
TDE .4866 TRA -.1548 TC3-2.0838 BAU .2852
RDE .2036 RRA .1517 RC3 -.9094 FAU .60546
FDE 5.6825 FRA 5.6948 FC-55.8618 BSP 4882
BDE .5274 BRA .2167 BC3 2.2736 FSP 11478

MID-COURSE EXECUTION ACCURACY
SGT 1609.9 SGR 764.0 SG3 3307.1
RRT .7536 RRF .9552 RTF .7862
SGB 1782.0 R23 .4650 R13 .8404
SG1 1718.8 SG2 470.4 THA 21.36

ORBIT DETERMINATION ACCURACY
ST 917.5 SR 396.0 SS 2797.0
CRT .9231 CRS -.9950 CST -.8851
LSA 2941.6 MSA 410.2 SSA 15.7
EL1 989.3 EL2 141.2 ALF 22.20

LAUNCH DATE NOV 17 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 655.405 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.905 GAL -.63 AZL 87.69 HCA 200.34 SMA 186.37 ECC .20676 INC 2.3106 V1 30.128
RP 222.47 LAP -.80 LOP 255.00 VP 21.932 GAP -4.23 AZP 92.17 TAL 356.32 TAP 196.65 RCA 147.83 APO 224.90 V2 24.716
RC 262.633 GL 25.75 GP -3.88 ZAL 89.88 ZAP 102.60 ETS 179.72 ZAE 137.57 ETE 181.65 ZAC 83.40 ETC 256.41 CLP 102.63

PLANETOCENTRIC CONIC

C3 9.323 VHL 3.053 DLA 37.33 RAL 157.34 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 2.818 DPA -1.27 RAP 176.82 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.59	9 5 36	3936.00	-30.34	167.91	17.21	67.13	10 11 12	3336.0	-33.16	159.52
115.41	15 4 48	2804.44	-30.33	82.58	17.21	67.12	15 51 33	2204.4	-33.15	74.19
64.59	9 5 36	3936.00	-30.34	167.91	17.21	67.13	10 11 12	3336.0	-33.16	159.52
115.41	15 4 48	2804.44	-30.33	82.58	17.21	67.12	15 51 33	2204.4	-33.15	74.19
64.59	9 5 36	3936.00	-30.34	167.91	17.21	67.13	10 11 12	3336.0	-33.16	159.52
115.41	15 4 48	2804.44	-30.33	82.58	17.21	67.12	15 51 33	2204.4	-33.15	74.19

DIFFERENTIAL CORRECTIONS
TDE .5300 TRA -.1065 TC3-2.5616 BAU .3367
RDE .2020 RRA .1485 RC3 -.8565 FAU .61215
FDE 5.6536 FRA 5.7881 FC-56.8409 BSP 5852
BDE .5672 BRA .1827 BC3 2.7010 FSP 11665

MID-COURSE EXECUTION ACCURACY
SGT 1870.7 SGR 734.9 SG3 3350.7
RRT .8054 RRF .9461 RTF .8466
SGB 2009.9 R23 .3855 R13 .8757
SG1 1966.7 SG2 414.4 THA 18.40

ORBIT DETERMINATION ACCURACY
ST 998.5 SR 393.6 SS 2780.9
CRT .9408 CRS -.9939 CST -.9025
LSA 2952.5 MSA 409.3 SSA 16.7
EL1 1066.0 EL2 125.0 ALF 20.64

LAUNCH DATE NOV 17 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 659.429 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.902 GAL -.65 AZL 87.72 HCA 201.43 SMA 186.32 ECC .20657 INC 2.2842 V1 30.128
RP 222.08 LAP -.83 LOP 256.10 VP 21.974 GAP -4.46 AZP 92.13 TAL 356.21 TAP 197.65 RCA 147.83 APO 224.80 V2 24.758
RC 264.145 GL 25.51 GP -3.72 ZAL 90.07 ZAP 100.59 ETS 179.57 ZAE 135.34 ETE 181.28 ZAC 83.37 ETC 256.48 CLP 100.62

PLANETOCENTRIC CONIC

C3 9.270 VHL 3.045 DLA 37.03 RAL 157.44 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.804 DPA -.74 RAP 176.05 ECC 1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.07	9 8 27	3927.67	-30.15	167.14	17.12	67.39	10 13 54	3327.7	-32.93	158.75
114.93	15 2 44	2810.54	-30.14	82.98	17.11	67.38	15 49 34	2210.5	-32.92	74.60
65.07	9 8 27	3927.67	-30.15	167.14	17.12	67.39	10 13 54	3327.7	-32.93	158.75
114.93	15 2 44	2810.54	-30.14	82.98	17.11	67.38	15 49 34	2210.5	-32.92	74.60
65.07	9 8 27	3927.67	-30.15	167.14	17.12	67.39	10 13 54	3327.7	-32.93	158.75
114.93	15 2 44	2810.54	-30.14	82.98	17.11	67.38	15 49 34	2210.5	-32.92	74.60

DIFFERENTIAL CORRECTIONS
TDE .5730 TRA -.0583 TC3-3.0567 BAU .3918
RDE .1999 RRA .1453 RC3 -.8079 FAU .61916
FDE 5.5652 FRA 5.8477 FC-57.8223 BSP 6898
BDE .6069 BRA .1565 BC3 3.1617 FSP 11722

MID-COURSE EXECUTION ACCURACY
SGT 2155.5 SGR 707.7 SG3 3390.0
RRT .8354 RRF .9357 RTF .8860
SGB 2268.8 R23 .3134 R13 .9019
SG1 2237.6 SG2 374.7 THA 15.79

ORBIT DETERMINATION ACCURACY
ST 1080.5 SR 390.3 SS 2740.1
CRT .9539 CRS -.9925 CST -.9150
LSA 2942.7 MSA 410.2 SSA 17.7
EL1 1143.5 EL2 110.7 ALF 19.20

LAUNCH DATE NOV 17 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 663.460 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.899 GAL -.67 AZL 87.74 HCA 202.53 SMA 186.27 ECC .20640 INC 2.2605 V1 30.128
RP 221.70 LAP -.87 LOP 257.20 VP 22.018 GAP -4.68 AZP 92.09 TAL 356.09 TAP 198.63 RCA 147.83 APO 224.72 V2 24.799
RC 265.639 GL 25.29 GP -3.56 ZAL 90.29 ZAP 98.58 ETS 179.44 ZAE 133.10 ETE 180.95 ZAC 83.32 ETC 256.56 CLP 98.60

PLANETOCENTRIC CONIC

C3 9.223 VHL 3.037 DLA 36.75 RAL 157.58 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 2.794 DPA -.22 RAP 175.28 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.54	9 11 29	3919.36	-29.95	166.37	17.08	67.64	10 16 48	3319.4	-32.70	157.99
114.46	15 0 48	2816.85	-29.94	83.40	17.07	67.62	15 47 45	2216.9	-32.69	75.02
65.54	9 11 29	3919.36	-29.95	166.37	17.08	67.64	10 16 48	3319.4	-32.70	157.99
114.46	15 0 48	2816.85	-29.94	83.40	17.07	67.62	15 47 45	2216.9	-32.69	75.02
65.54	9 11 29	3919.36	-29.95	166.37	17.08	67.64	10 16 48	3319.4	-32.70	157.99
114.46	15 0 48	2816.85	-29.94	83.40	17.07	67.62	15 47 45	2216.9	-32.69	75.02

DIFFERENTIAL CORRECTIONS
TDE .6163 TRA -.0068 TC3-3.5611 BAU .4489
RDE .1993 RRA .1433 RC3 -.7568 FAU .62246
FDE 5.5206 FRA 5.9580 FC-58.4296 BSP 8015
BDE .6477 BRA .1435 BC3 3.6406 FSP 11889

MID-COURSE EXECUTION ACCURACY
SGT 2455.7 SGR 683.1 SG3 3417.7
RRT .8502 RRF .9239 RTF .9126
SGB 2548.9 R23 .2505 R13 .9215
SG1 2524.8 SG2 349.8 THA 13.57

ORBIT DETERMINATION ACCURACY
ST 1164.6 SR 389.7 SS 2723.7
CRT .9644 CRS -.9910 CST -.9253
LSA 2959.3 MSA 410.8 SSA 18.5
EL1 1224.1 EL2 98.0 ALF 18.00

LAUNCH DATE NOV 17 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 667.501 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.897 GAL -.69 AZL 87.76 HCA 203.64 SMA 186.24 ECC .20626 INC 2.2386 V1 30.128
RP 221.32 LAP -.90 LOP 258.31 VP 22.061 GAP -4.91 AZP 92.05 TAL 355.96 TAP 199.60 RCA 147.82 APO 224.65 V2 24.841
RC 267.114 GL 25.09 GP -3.42 ZAL 90.54 ZAP 96.57 ETS 179.32 ZAE 130.86 ETE 180.67 ZAC 83.27 ETC 256.63 CLP 96.58

PLANETOCENTRIC CONIC

C3 9.181 VHL 3.030 DLA 36.46 RAL 157.75 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.786 DPA .29 RAP 174.51 ECC 1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.00	9 14 41	3911.13	-29.75	165.61	17.09	67.88	10 19 52	3311.1	-32.48	157.24
114.00	14 59 2	2823.31	-29.74	83.83	17.08	67.86	15 46 5	2223.3	-32.47	75.46
66.00	9 14 41	3911.13	-29.75	165.61	17.09	67.88	10 19 52	3311.1	-32.48	157.24
114.00	14 59 2	2823.31	-29.74	83.83	17.08	67.86	15 46 5	2223.3	-32.47	75.46
66.00	9 14 41	3911.13	-29.75	165.61	17.09	67.88	10 19 52	3311.1	-32.48	157.24
114.00	14 59 2	2823.31	-29.74	83.83	17.08	67.86	15 46 5	2223.3	-32.47	75.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6579 TRA .0452 TC3-4.0778 BAU .5080 SGT 2768.7 SGR 659.5 SG3 3440.5 ST 1246.7 SR 387.5 SS 2675.6
RDE .1980 RRA .1408 RC3 -.7103 FAU .62646 RRT .8568 RRF .9105 RTF .9313 CRT .9725 CRS -.9891 CST -.9329
FDE 5.4028 FRA 6.0117 FC-59.0740 BSP 9162 SGB 2846.1 R23 .1955 R13 .9363 LSA 2948.4 MSA 412.1 SSA 19.5
BDE .6870 BRA .1479 BC3 4.1392 FSP 11887 SG1 2826.6 SG2 333.1 THA 11.70 EL1 1302.6 EL2 86.3 ALF 16.90

LAUNCH DATE NOV 17 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 671.551 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.895 GAL -.72 AZL 87.78 HCA 204.75 SMA 186.20 ECC .20615 INC 2.2187 V1 30.128
RP 220.94 LAP -.93 LOP 259.42 VP 22.105 GAP -5.13 AZP 92.02 TAL 355.81 TAP 200.55 RCA 147.82 APO 224.59 V2 24.883
RC 268.570 GL 24.91 GP -3.29 ZAL 90.82 ZAP 94.55 ETS 179.21 ZAE 128.62 ETE 180.43 ZAC 83.21 ETC 256.71 CLP 94.56

PLANETOCENTRIC CONIC

C3 9.144 VHL 3.024 DLA 36.18 RAL 157.97 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.783 DPA .79 RAP 173.74 ECC 1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.48	9 18 5	3902.79	-29.56	164.85	17.15	68.11	10 23 8	3302.8	-32.25	156.49
113.52	14 57 21	2830.09	-29.55	84.28	17.14	68.10	15 44 31	2230.1	-32.24	75.92
66.48	9 18 5	3902.79	-29.56	164.85	17.15	68.11	10 23 8	3302.8	-32.25	156.49
113.52	14 57 21	2830.09	-29.55	84.28	17.14	68.10	15 44 31	2230.1	-32.24	75.92
66.48	9 18 5	3902.79	-29.56	164.85	17.15	68.11	10 23 8	3302.8	-32.25	156.49
113.52	14 57 21	2830.09	-29.55	84.28	17.14	68.10	15 44 31	2230.1	-32.24	75.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6987 TRA .1000 TC3-4.5995 BAU .5681 SGT 3089.5 SGR 638.2 SG3 3455.4 ST 1328.3 SR 386.8 SS 2637.7
RDE .1974 RRA .1388 RC3 -.6639 FAU .62848 RRT .8563 RRF .8954 RTF .9449 CRT .9791 CRS -.9870 CST -.9393
FDE 5.3009 FRA 6.0772 FC-59.5061 BSP 10340 SGB 3154.7 R23 .1496 R13 .9478 LSA 2949.7 MSA 412.4 SSA 20.4
BDE .7260 BRA .1711 BC3 4.6471 FSP 11923 SG1 3138.0 SG2 324.5 THA 10.14 EL1 1381.4 EL2 75.6 ALF 15.96

LAUNCH DATE NOV 17 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 675.609 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.894 GAL -.74 AZL 87.80 HCA 205.86 SMA 186.18 ECC .20607 INC 2.2001 V1 30.128
RP 220.56 LAP -.96 LOP 260.53 VP 22.149 GAP -5.34 AZP 91.98 TAL 355.64 TAP 201.50 RCA 147.81 APO 224.55 V2 24.924
RC 270.009 GL 24.73 GP -3.16 ZAL 91.12 ZAP 92.55 ETS 179.11 ZAE 126.38 ETE 180.22 ZAC 83.14 ETC 256.79 CLP 92.55

PLANETOCENTRIC CONIC

C3 9.111 VHL 3.018 DLA 35.90 RAL 158.22 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.782 DPA 1.27 RAP 172.98 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.96	9 21 43	3894.29	-29.35	164.08	17.25	68.34	10 26 38	3294.3	-32.02	155.72
113.04	14 55 44	2837.21	-29.34	84.76	17.24	68.33	15 43 2	2237.2	-32.01	76.40
66.96	9 21 43	3894.29	-29.35	164.08	17.25	68.34	10 26 38	3294.3	-32.02	155.72
113.04	14 55 44	2837.21	-29.34	84.76	17.24	68.33	15 43 2	2237.2	-32.01	76.40
66.96	9 21 43	3894.29	-29.35	164.08	17.25	68.34	10 26 38	3294.3	-32.02	155.72
113.04	14 55 44	2837.21	-29.34	84.76	17.24	68.33	15 43 2	2237.2	-32.01	76.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7377 TRA .1563 TC3-5.1318 BAU .6296 SGT 3419.5 SGR 618.3 SG3 3459.5 ST 1407.7 SR 386.5 SS 2597.0
RDE .1971 RRA .1372 RC3 -.6174 FAU .62834 RRT .8497 RRF .8784 RTF .9547 CRT .9842 CRS -.9846 CST -.9442
FDE 5.1862 FRA 6.1426 FC-59.7051 BSP 11540 SGB 3474.9 R23 .1136 R13 .9565 LSA 2950.3 MSA 413.1 SSA 21.3
BDE .7636 BRA .2080 BC3 5.1688 FSP 11901 SG1 3459.9 SG2 322.2 THA 8.81 EL1 1458.3 EL2 66.0 ALF 15.15

LAUNCH DATE NOV 17 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 679.675 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.893 GAL -.77 AZL 87.82 HCA 206.98 SMA 186.16 ECC .20602 INC 2.1830 V1 30.128
RP 220.18 LAP -.99 LOP 261.64 VP 22.194 GAP -5.55 AZP 91.95 TAL 355.46 TAP 202.44 RCA 147.81 APO 224.51 V2 24.965
RC 271.430 GL 24.56 GP -3.04 ZAL 91.45 ZAP 90.55 ETS 179.02 ZAE 124.15 ETE 180.04 ZAC 83.07 ETC 256.88 CLP 90.55

PLANETOCENTRIC CONIC

C3 9.083 VHL 3.014 DLA 35.61 RAL 158.51 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.785 DPA 1.74 RAP 172.22 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.45	9 25 36	3885.54	-29.15	163.29	17.40	68.57	10 30 22	3285.5	-31.78	154.94
112.55	14 54 10	2844.76	-29.13	85.27	17.39	68.55	15 41 35	2244.8	-31.77	76.92
67.45	9 25 36	3885.54	-29.15	163.29	17.40	68.57	10 30 22	3285.5	-31.78	154.94
112.55	14 54 10	2844.76	-29.13	85.27	17.39	68.55	15 41 35	2244.8	-31.77	76.92
67.45	9 25 36	3885.54	-29.15	163.29	17.40	68.57	10 30 22	3285.5	-31.78	154.94
112.55	14 54 10	2844.76	-29.13	85.27	17.39	68.55	15 41 35	2244.8	-31.77	76.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7757 TRA .2148 TC3-5.6678 BAU .6917 SGT 3754.8 SGR 599.8 SG3 3454.3 ST 1486.0 SR 386.4 SS 2550.5
RDE .1969 RRA .1358 RC3 -.5716 FAU .62648 RRT .8386 RRF .8594 RTF .9620 CRT .9883 CRS -.9817 CST -.9479
FDE 5.0517 FRA 6.2079 FC-59.7125 BSP 12749 SGB 3802.4 R23 .0854 R13 .9631 LSA 2947.8 MSA 415.1 SSA 22.2
BDE .8003 BRA .2542 BC3 5.6966 FSP 11886 SG1 3788.6 SG2 323.8 THA 7.69 EL1 1534.3 EL2 57.1 ALF 14.43

LAUNCH DATE NOV 17 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 683.746 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.892 GAL -.81 AZL 87.83 HCA 208.10 SMA 186.14 ECC .20599 INC 2.1672 V1 30.128
RP 219.81 LAP -1.02 LOP 262.76 VP 22.239 GAP -5.75 AZP 91.91 TAL 355.27 TAP 203.37 RCA 147.80 APO 224.49 V2 25.006
RC 272.833 GL 24.41 GP -2.93 ZAL 91.82 ZAP 88.58 ETS 178.95 ZAE 121.93 ETE 179.88 ZAC 83.00 ETC 256.96 CLP 88.58

PLANETOCENTRIC CONIC

C3 9.059 VHL 3.010 DLA 35.32 RAL 158.84 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.791 DPA 2.20 RAP 171.49 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.95	9 29 44	3876.55	-28.93	162.48	17.58	68.80	10 34 21	3276.5	-31.54	154.14
112.05	14 52 39	2852.73	-28.92	85.80	17.58	68.78	15 40 11	2252.7	-31.53	77.47
67.95	9 29 44	3876.55	-28.93	162.48	17.58	68.80	10 34 21	3276.5	-31.54	154.14
112.05	14 52 39	2852.73	-28.92	85.80	17.58	68.78	15 40 11	2252.7	-31.53	77.47
67.95	9 29 44	3876.55	-28.93	162.48	17.58	68.80	10 34 21	3276.5	-31.54	154.14
112.05	14 52 39	2852.73	-28.92	85.80	17.58	68.78	15 40 11	2252.7	-31.53	77.47

DIFFERENTIAL CORRECTIONS
TDE .8159 TRA .2795 TC3-6.1927 BAU .7526
RDE .1985 RRA .1363 RC3 -.5206 FAU .61848
FDE 5.0177 FRA 6.3859 FC-59.1065 BSP 14073
BDE .8397 BRA .3110 BC3 6.2145 FSP 12065

MID-COURSE EXECUTION ACCURACY
SGT 4090.6 SGR 584.8 SG3 3433.4
RRT .8203 RRF .8389 RTF .9669
SGB 4132.2 R23 .0708 R13 .9677
SG1 4118.9 SG2 332.2 THA 6.73

ORBIT DETERMINATION ACCURACY
ST 1569.4 SR 389.8 SS 2555.8
CRT .9915 CRS -.9791 CST -.9515
LSA 2995.4 MSA 417.5 SSA 22.8
EL1 1616.3 EL2 49.3 ALF 13.85

LAUNCH DATE NOV 17 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 687.831 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.891 GAL -.84 AZL 87.85 HCA 209.22 SMA 186.13 ECC .20599 INC 2.1523 V1 30.128
RP 219.44 LAP -1.05 LOP 263.89 VP 22.284 GAP -5.95 AZP 91.88 TAL 355.06 TAP 204.28 RCA 147.79 APO 224.48 V2 25.047
RC 274.220 GL 24.26 GP -2.82 ZAL 92.20 ZAP 86.62 ETS 178.87 ZAE 119.73 ETE 179.74 ZAC 82.93 ETC 257.05 CLP 86.61

PLANETOCENTRIC CONIC

C3 9.039 VHL 3.007 DLA 35.02 RAL 159.20 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.800 DPA 2.64 RAP 170.77 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.47	9 34 8	3867.19	-28.71	161.64	17.81	69.02	10 38 35	3267.2	-31.30	153.31
111.53	14 51 6	2861.25	-28.70	86.38	17.80	69.01	15 38 47	2261.2	-31.29	78.05
68.47	9 34 8	3867.19	-28.71	161.64	17.81	69.02	10 38 35	3267.2	-31.30	153.31
111.53	14 51 6	2861.25	-28.70	86.38	17.80	69.01	15 38 47	2261.2	-31.29	78.05
68.47	9 34 8	3867.19	-28.71	161.64	17.81	69.02	10 38 35	3267.2	-31.30	153.31
111.53	14 51 6	2861.25	-28.70	86.38	17.80	69.01	15 38 47	2261.2	-31.29	78.05

DIFFERENTIAL CORRECTIONS
TDE .8479 TRA .3404 TC3-6.7313 BAU .8155
RDE .1977 RRA .1342 RC3 -.4814 FAU .61733
FDE 4.7893 FRA 6.3605 FC-59.1262 BSP 15237
BDE .8706 BRA .3659 BC3 6.7485 FSP 11844

MID-COURSE EXECUTION ACCURACY
SGT 4429.6 SGR 568.5 SG3 3419.5
RRT .8052 RRF .8156 RTF .9718
SGB 4465.9 R23 .0482 R13 .9722
SG1 4453.3 SG2 335.3 THA 5.93

ORBIT DETERMINATION ACCURACY
ST 1637.7 SR 388.3 SS 2468.8
CRT .9939 CRS -.9750 CST -.9532
LSA 2958.3 MSA 419.3 SSA 23.8
EL1 1682.6 EL2 41.7 ALF 13.27

LAUNCH DATE NOV 17 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 691.922 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.891 GAL -.88 AZL 87.86 HCA 210.35 SMA 186.13 ECC .20602 INC 2.1385 V1 30.128
RP 219.07 LAP -1.08 LOP 265.02 VP 22.329 GAP -6.15 AZP 91.85 TAL 354.84 TAP 205.19 RCA 147.78 APO 224.47 V2 25.088
RC 275.589 GL 24.11 GP -2.72 ZAL 92.62 ZAP 84.68 ETS 178.81 ZAE 117.54 ETE 179.62 ZAC 82.87 ETC 257.13 CLP 84.67

PLANETOCENTRIC CONIC

C3 9.023 VHL 3.004 DLA 34.72 RAL 159.59 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.812 DPA 3.06 RAP 170.07 ECC 1.1485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.01	9 38 46	3857.50	-28.48	160.78	18.07	69.25	10 43 4	3257.5	-31.04	152.46
110.99	14 49 33	2870.26	-28.48	86.99	18.07	69.23	15 37 23	2270.3	-31.03	78.67
69.01	9 38 46	3857.50	-28.48	160.78	18.07	69.25	10 43 4	3257.5	-31.04	152.46
110.99	14 49 33	2870.26	-28.48	86.99	18.07	69.23	15 37 23	2270.3	-31.03	78.67
69.01	9 38 46	3857.50	-28.48	160.78	18.07	69.25	10 43 4	3257.5	-31.04	152.46
110.99	14 49 33	2870.26	-28.48	86.99	18.07	69.23	15 37 23	2270.3	-31.03	78.67

DIFFERENTIAL CORRECTIONS
TDE .8786 TRA .4047 TC3-7.2648 BAU .8780
RDE .1977 RRA .1331 RC3 -.4408 FAU .61312
FDE 4.5929 FRA 6.3883 FC-58.8260 BSP 16438
BDE .9006 BRA .4261 BC3 7.2782 FSP 11676

MID-COURSE EXECUTION ACCURACY
SGT 4768.7 SGR 554.7 SG3 3396.7
RRT .7856 RRF .7907 RTF .9754
SGB 4800.8 R23 .0331 R13 .9756
SG1 4788.6 SG2 341.8 THA 5.25

ORBIT DETERMINATION ACCURACY
ST 1704.5 SR 388.3 SS 2400.8
CRT .9957 CRS -.9703 CST -.9543
LSA 2939.5 MSA 422.8 SSA 24.6
EL1 1747.8 EL2 35.3 ALF 12.79

LAUNCH DATE NOV 17 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 696.022 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.891 GAL -.92 AZL 87.87 HCA 211.48 SMA 186.13 ECC .20607 INC 2.1255 V1 30.128
RP 218.70 LAP -1.11 LOP 266.15 VP 22.375 GAP -6.34 AZP 91.81 TAL 354.60 TAP 206.08 RCA 147.77 APO 224.48 V2 25.128
RC 276.940 GL 23.97 GP -2.62 ZAL 93.07 ZAP 82.76 ETS 178.75 ZAE 115.38 ETE 179.51 ZAC 82.80 ETC 257.21 CLP 82.76

PLANETOCENTRIC CONIC

C3 9.011 VHL 3.002 DLA 34.41 RAL 160.01 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.827 DPA 3.47 RAP 169.39 ECC 1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.57	9 43 46	3847.19	-28.25	159.87	18.37	69.47	10 47 54	3247.2	-30.78	151.56
110.43	14 47 55	2880.07	-28.24	87.66	18.37	69.46	15 35 55	2280.1	-30.77	79.35
69.57	9 43 46	3847.19	-28.25	159.87	18.37	69.47	10 47 54	3247.2	-30.78	151.56
110.43	14 47 55	2880.07	-28.24	87.66	18.37	69.46	15 35 55	2280.1	-30.77	79.35
69.57	9 43 46	3847.19	-28.25	159.87	18.37	69.47	10 47 54	3247.2	-30.78	151.56
110.43	14 47 55	2880.07	-28.24	87.66	18.37	69.46	15 35 55	2280.1	-30.77	79.35

DIFFERENTIAL CORRECTIONS
TDE .9070 TRA .4714 TC3-7.7962 BAU .9405
RDE .1981 RRA .1322 RC3 -.3996 FAU .60646
FDE 4.4007 FRA 6.4169 FC-58.2632 BSP 17625
BDE .9284 BRA .4896 BC3 7.8065 FSP 11528

MID-COURSE EXECUTION ACCURACY
SGT 5108.4 SGR 542.3 SG3 3362.5
RRT .7621 RRF .7634 RTF .9782
SGB 5137.1 R23 .0222 R13 .9783
SG1 5125.1 SG2 349.9 THA 4.65

ORBIT DETERMINATION ACCURACY
ST 1767.4 SR 389.1 SS 2336.2
CRT .9968 CRS -.9651 CST -.9551
LSA 2924.2 MSA 426.0 SSA 25.4
EL1 1809.5 EL2 30.3 ALF 12.38

LAUNCH DATE NOV 17 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 700.129 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.891 GAL -.96 AZL 87.89 HCA 212.62 SMA 186.13 ECC .20615 INC 2.1132 V1 30.128
RP 218.34 LAP -1.14 LOP 267.28 VP 22.420 GAP -6.53 AZP 91.78 TAL 354.35 TAP 206.97 RCA 147.76 APO 224.50 V2 25.168
RC 278.273 GL 23.84 GP -2.52 ZAL 93.54 ZAP 80.88 ETS 178.70 ZAE 113.25 ETE 179.42 ZAC 82.74 ETC 257.30 CLP 80.87

PLANETOCENTRIC CONIC

C3 9.004 VHL 3.001 DLA 34.10 RAL 160.46 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.845 DPA 3.86 RAP 168.74 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.16	9 49 6	3836.29	-28.01	158.91	18.71	69.70	10 53 3	3236.3	-30.51	150.62
109.84	14 46 12	2890.63	-27.99	88.38	18.70	69.69	15 34 23	2290.6	-30.50	80.09
70.16	9 49 6	3836.29	-28.01	158.91	18.71	69.70	10 53 3	3236.3	-30.51	150.62
109.84	14 46 12	2890.63	-27.99	88.38	18.70	69.69	15 34 23	2290.6	-30.50	80.09
110.00	15 5 29	2831.83	-29.32	84.33	19.24	71.59	15 52 41	2231.8	-31.55	75.83
110.00	14 28 59	2943.09	-26.69	91.91	18.13	67.81	15 18 3	2343.1	-29.46	83.81

DIFFERENTIAL CORRECTIONS
TDE .9323 TRA .5406 TC3-8.3202 BAU 1.0024
RDE .1986 RRA .1314 RC3 -.3596 FAU .59876
FDE 4.2010 FRA 6.4345 FC-57.5734 BSP 18800
BDE .9532 BRA .5563 BC3 8.3280 FSP 11335

MID-COURSE EXECUTION ACCURACY
SGT 5445.6 SGR 531.3 SG3 3321.9
RRT .7364 RRF .7341 RTF .9805
SGB 5471.4 R23 .0132 R13 .9806
SG1 5459.7 SG2 358.5 THA 4.13

ORBIT DETERMINATION ACCURACY
ST 1825.2 SR 390.1 SS 2269.4
CRT .9975 CRS -.9591 CST -.9554
LSA 2906.7 MSA 428.9 SSA 26.1
EL1 1866.3 EL2 27.2 ALF 12.04

LAUNCH DATE NOV 17 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 704.243 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.892 GAL -1.01 AZL 87.90 HCA 213.75 SMA 186.14 ECC .20625 INC 2.1017 V1 30.128
RP 217.98 LAP -1.17 LOP 268.42 VP 22.466 GAP -6.72 AZP 91.75 TAL 354.09 TAP 207.84 RCA 147.75 APO 224.53 V2 25.208
RC 279.589 GL 23.71 GP -2.43 ZAL 94.05 ZAP 79.02 ETS 178.65 ZAE 111.14 ETE 179.33 ZAC 82.68 ETC 257.38 CLP 79.01

PLANETOCENTRIC CONIC

C3 9.000 VHL 3.000 DLA 33.77 RAL 160.94 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.866 DPA 4.23 RAP 168.12 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.78	9 54 47	3824.74	-27.75	157.91	19.08	69.93	10 58 32	3224.7	-30.22	149.62
109.22	14 44 23	2902.01	-27.74	89.16	19.07	69.92	15 32 45	2302.0	-30.21	80.88
70.78	9 54 47	3824.74	-27.75	157.91	19.08	69.93	10 58 32	3224.7	-30.22	149.62
109.22	14 44 23	2902.01	-27.74	89.16	19.07	69.92	15 32 45	2302.0	-30.21	80.88
110.00	15 29 16	2764.83	-30.67	79.57	20.16	74.11	16 15 21	2164.8	-32.54	70.85
110.00	14 9 4	3009.92	-24.90	96.27	17.78	65.78	14 59 14	2409.9	-27.95	88.43

DIFFERENTIAL CORRECTIONS
TDE .9560 TRA .6132 TC3-8.8311 BAU 1.0632
RDE .1995 RRA .1310 RC3 -.3207 FAU .58998
FDE 4.0061 FRA 6.4618 FC-56.7530 BSP 19988
BDE .9766 BRA .6271 BC3 8.8370 FSP 11172

MID-COURSE EXECUTION ACCURACY
SGT 5778.8 SGR 522.3 SG3 3276.9
RRT .7088 RRF .7035 RTF .9824
SGB 5802.3 R23 .0061 R13 .9824
SG1 5790.7 SG2 367.6 THA 3.68

ORBIT DETERMINATION ACCURACY
ST 1880.9 SR 391.6 SS 2206.7
CRT .9975 CRS -.9522 CST -.9554
LSA 2893.5 MSA 432.7 SSA 26.8
EL1 1921.0 EL2 26.8 ALF 11.74

LAUNCH DATE NOV 17 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 708.366 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.892 GAL -1.06 AZL 87.91 HCA 214.90 SMA 186.16 ECC .20638 INC 2.0908 V1 30.128
RP 217.62 LAP -1.20 LOP 269.56 VP 22.512 GAP -6.90 AZP 91.72 TAL 353.81 TAP 208.70 RCA 147.74 APO 224.57 V2 25.248
RC 280.887 GL 23.57 GP -2.35 ZAL 94.58 ZAP 77.20 ETS 178.61 ZAE 109.06 ETE 179.26 ZAC 82.63 ETC 257.46 CLP 77.19

PLANETOCENTRIC CONIC

C3 9.000 VHL 3.000 DLA 33.44 RAL 161.46 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.889 DPA 4.58 RAP 167.53 ECC 1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.43	10 0 51	3812.43	-27.49	156.85	19.48	70.17	11 4 23	3212.4	-29.93	148.57
108.57	14 42 24	2914.34	-27.48	90.01	19.48	70.15	15 30 59	2314.3	-29.92	81.74
71.43	10 0 51	3812.43	-27.49	156.85	19.48	70.17	11 4 23	3212.4	-29.93	148.57
108.57	14 42 24	2914.34	-27.48	90.01	19.48	70.15	15 30 59	2314.3	-29.92	81.74
110.00	15 45 13	2721.89	-31.43	76.46	20.87	75.81	16 30 35	2121.9	-33.06	67.61
110.00	13 57 12	3052.87	-23.67	99.01	17.72	64.59	14 48 5	2452.9	-26.89	91.32

DIFFERENTIAL CORRECTIONS
TDE .9755 TRA .6878 TC3-9.3358 BAU 1.1238
RDE .2005 RRA .1305 RC3 -.2818 FAU .57921
FDE 3.8034 FRA 6.4755 FC-55.7157 BSP 21149
BDE .9959 BRA .7001 BC3 9.3400 FSP 10969

MID-COURSE EXECUTION ACCURACY
SGT 6109.5 SGR 514.3 SG3 3221.1
RRT .6781 RRF .6707 RTF .9840
SGB 6131.1 R23 .0013 R13 .9840
SG1 6119.5 SG2 377.4 THA 3.28

ORBIT DETERMINATION ACCURACY
ST 1929.4 SR 393.4 SS 2140.8
CRT .9971 CRS -.9443 CST -.9551
LSA 2875.7 MSA 436.1 SSA 27.5
EL1 1968.9 EL2 29.5 ALF 11.49

LAUNCH DATE NOV 17 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 712.496 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.893 GAL -1.11 AZL 87.92 HCA 216.04 SMA 186.17 ECC .20653 INC 2.0804 V1 30.128
RP 217.27 LAP -1.22 LOP 270.71 VP 22.557 GAP -7.08 AZP 91.68 TAL 353.51 TAP 209.56 RCA 147.72 APO 224.62 V2 25.287
RC 282.167 GL 23.45 GP -2.27 ZAL 95.14 ZAP 75.42 ETS 178.57 ZAE 107.02 ETE 179.20 ZAC 82.58 ETC 257.53 CLP 75.41

PLANETOCENTRIC CONIC

C3 9.005 VHL 3.001 DLA 33.09 RAL 162.00 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.916 DPA 4.91 RAP 166.98 ECC 1.1482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.12	10 7 21	3799.16	-27.21	155.71	19.92	70.40	11 10 40	3199.2	-29.63	147.45
107.88	14 40 13	2927.80	-27.20	90.94	19.92	70.39	15 29 1	2327.8	-29.62	82.68
72.12	10 7 21	3799.16	-27.21	155.71	19.92	70.40	11 10 40	3199.2	-29.63	147.45
107.88	14 40 13	2927.80	-27.20	90.94	19.92	70.39	15 29 1	2327.8	-29.62	82.68
110.00	15 58 40	2686.88	-31.98	73.86	21.51	77.24	16 43 27	2086.9	-33.41	64.94
110.00	13 48 5	3088.07	-22.62	101.20	17.78	63.66	14 39 33	2488.1	-25.97	93.65

DIFFERENTIAL CORRECTIONS
TDE .9920 TRA .7652 TC3-9.8285 BAU 1.1835
RDE .2016 RRA .1302 RC3 -.2449 FAU .56846
FDE 3.5846 FRA 6.4867 FC-54.6548 BSP 22279
BDE 1.0122 BRA .7762 BC3 9.8316 FSP 10732

MID-COURSE EXECUTION ACCURACY
SGT 6436.0 SGR 507.8 SG3 3164.3
RRT .6467 RRF .6368 RTF .9852
SGB 6456.0 R23 -.0035 R13 .9852
SG1 6444.4 SG2 386.8 THA 2.93

ORBIT DETERMINATION ACCURACY
ST 1972.9 SR 395.1 SS 2069.5
CRT .9960 CRS -.9347 CST -.9538
LSA 2852.2 MSA 441.8 SSA 28.1
EL1 2011.8 EL2 34.5 ALF 11.28

LAUNCH DATE NOV 17 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 716.633 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.895 GAL -1.16 AZL 87.93 HCA 217.19 SMA 186.20 ECC .20671 INC 2.0706 V1 30.128
RP 216.91 LAP -1.25 LOP 271.86 VP 22.603 GAP -7.25 AZP 91.65 TAL 353.20 TAP 210.40 RCA 147.71 APO 224.68 V2 25.327
RC 283.431 GL 23.32 GP -2.19 ZAL 95.72 ZAP 73.67 ETS 178.54 ZAE 105.01 ETE 179.15 ZAC 82.53 ETC 257.61 CLP 73.66

PLANETOCENTRIC CONIC

C3 9.013 VHL 3.002 DLA 32.73 RAL 162.57 RAD 6567.3 VEL 11.419 PTH 1.98 VHP 2.945 DPA 5.22 RAP 166.46 ECC 1.1483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.85	10 14 20	3784.77	-26.93	154.49	20.39	70.64	11 17 25	3184.8	-29.31	146.25
107.15	14 37 47	2942.57	-26.91	91.96	20.39	70.63	15 26 49	2342.6	-29.30	83.72
72.85	10 14 20	3784.77	-26.93	154.49	20.39	70.64	11 17 25	3184.8	-29.31	146.25
107.15	14 37 47	2942.57	-26.91	91.96	20.39	70.63	15 26 49	2342.6	-29.30	83.72
110.00	16 10 47	2656.15	-32.42	71.59	22.13	78.53	16 55 4	2056.1	-33.66	62.58
110.00	13 40 30	3119.18	-21.67	103.12	17.92	62.89	14 32 29	2519.2	-25.13	95.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0051 TRA .8454 TC-10.3061 BAU 1.2421 SGT 6756.6 SGR 502.8 SG3 3101.8 ST 2011.3 SR 397.3 SS 2002.9
RDE .2029 RRA .1301 RC3 -.2089 FAU .55654 RRT .6137 RRF .6021 RTF .9863 CRT .9943 CRS -.9240 CST -.9525
FDE 3.3758 FRA 6.4948 FC-53.4563 BSP 23403 SGB 6775.3 R23 -.0067 R13 .9863 LSA 2830.9 MSA 446.7 SSA 28.8
BDE 1.0254 BRA .8553 BC310.3082 FSP 10518 SG1 6763.7 SG2 396.6 THA 2.62 EL1 2049.7 EL2 41.4 ALF 11.12

LAUNCH DATE NOV 17 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 720.778 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.896 GAL -1.22 AZL 87.94 HCA 218.35 SMA 186.22 ECC .20691 INC 2.0613 V1 30.128
RP 216.57 LAP -1.28 LOP 273.02 VP 22.649 GAP -7.43 AZP 91.62 TAL 352.88 TAP 211.23 RCA 147.69 APO 224.75 V2 25.365
RC 284.679 GL 23.19 GP -2.11 ZAL 96.34 ZAP 71.96 ETS 178.51 ZAE 103.04 ETE 179.10 ZAC 82.50 ETC 257.68 CLP 71.95

PLANETOCENTRIC CONIC

C3 9.027 VHL 3.004 DLA 32.36 RAL 163.16 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.976 DPA 5.52 RAP 165.98 ECC 1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.64	10 21 48	3769.23	-26.62	153.18	20.89	70.89	11 24 38	3169.2	-28.98	144.95
106.36	14 35 3	2958.67	-26.62	93.08	20.89	70.87	15 24 22	2358.7	-28.97	84.85
73.64	10 21 48	3769.23	-26.62	153.18	20.89	70.89	11 24 38	3169.2	-28.98	144.95
106.36	14 35 3	2958.67	-26.62	93.08	20.89	70.87	15 24 22	2358.7	-28.97	84.85
110.00	16 22 7	2628.13	-32.78	69.48	22.75	79.73	17 5 55	2028.1	-33.85	60.41
110.00	13 33 55	3147.77	-20.77	104.85	18.12	62.22	14 26 23	2547.8	-24.32	97.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0150 TRA .9285 TC-10.7684 BAU 1.2997 SGT 7071.7 SGR 498.9 SG3 3035.6 ST 2044.4 SR 399.6 SS 1932.0
RDE .2044 RRA .1299 RC3 -.1742 FAU .54420 RRT .5801 RRF .5663 RTF .9873 CRT .9920 CRS -.9115 CST -.9506
FDE 3.1577 FRA 6.4876 FC-52.1940 BSP 24497 SGB 7089.3 R23 -.0102 R13 .9872 LSA 2804.7 MSA 452.2 SSA 29.3
BDE 1.0353 BRA .9376 BC310.7698 FSP 10261 SG1 7077.7 SG2 406.0 THA 2.35 EL1 2082.5 EL2 49.6 ALF 10.98

LAUNCH DATE NOV 17 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 724.929 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.898 GAL -1.28 AZL 87.95 HCA 219.51 SMA 186.25 ECC .20714 INC 2.0524 V1 30.128
RP 216.22 LAP -1.31 LOP 274.17 VP 22.694 GAP -7.59 AZP 91.58 TAL 352.54 TAP 212.05 RCA 147.67 APO 224.83 V2 25.404
RC 285.910 GL 23.06 GP -2.04 ZAL 96.98 ZAP 70.29 ETS 178.48 ZAE 101.11 ETE 179.07 ZAC 82.46 ETC 257.74 CLP 70.27

PLANETOCENTRIC CONIC

C3 9.045 VHL 3.007 DLA 31.98 RAL 163.78 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 3.010 DPA 5.79 RAP 165.53 ECC 1.1489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.48	10 29 54	3752.11	-26.31	151.76	21.42	71.13	11 32 26	3152.1	-28.64	143.54
105.52	14 31 55	2976.56	-26.31	94.32	21.42	71.12	15 21 32	2376.6	-28.63	86.11
74.48	10 29 54	3752.11	-26.31	151.76	21.42	71.13	11 32 26	3152.1	-28.64	143.54
105.52	14 31 55	2976.56	-26.31	94.32	21.42	71.12	15 21 32	2376.6	-28.63	86.11
110.00	16 32 55	2601.99	-33.08	67.50	23.37	80.86	17 16 17	2002.0	-33.99	58.38
110.00	13 28 5	3174.68	-19.91	106.46	18.38	61.62	14 21 0	2574.7	-23.54	99.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0218 TRA 1.0155 TC-11.2126 BAU 1.3559 SGT 7380.8 SGR 496.5 SG3 2966.8 ST 2073.4 SR 402.3 SS 1867.4
RDE .2061 RRA .1300 RC3 -.1406 FAU .53109 RRT .5459 RRF .5308 RTF .9880 CRT .9888 CRS -.8973 CST -.9484
FDE 2.9502 FRA 6.4919 FC-50.8349 BSP 25588 SGB 7397.5 R23 -.0123 R13 .9880 LSA 2781.5 MSA 458.4 SSA 29.8
BDE 1.0424 BRA 1.0238 BC311.2134 FSP 10018 SG1 7385.8 SG2 415.7 THA 2.11 EL1 2111.2 EL2 58.9 ALF 10.87

LAUNCH DATE NOV 17 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 729.088 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.900 GAL -1.34 AZL 87.96 HCA 220.67 SMA 186.28 ECC .20739 INC 2.0439 V1 30.128
RP 215.88 LAP -1.33 LOP 275.34 VP 22.740 GAP -7.76 AZP 91.55 TAL 352.19 TAP 212.86 RCA 147.65 APO 224.92 V2 25.442
RC 287.127 GL 22.93 GP -1.97 ZAL 97.65 ZAP 68.65 ETS 178.46 ZAE 99.21 ETE 179.03 ZAC 82.44 ETC 257.80 CLP 68.64

PLANETOCENTRIC CONIC

C3 9.067 VHL 3.011 DLA 31.59 RAL 164.43 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 3.046 DPA 6.04 RAP 165.13 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.39	10 38 41	3733.18	-25.99	150.20	21.99	71.39	11 40 54	3133.2	-28.29	142.00
104.61	14 28 18	2996.46	-25.98	95.71	21.99	71.38	15 18 14	2396.5	-28.28	87.52
75.39	10 38 41	3733.18	-25.99	150.20	21.99	71.39	11 40 54	3133.2	-28.29	142.00
104.61	14 28 18	2996.46	-25.98	95.71	21.99	71.38	15 18 14	2396.5	-28.28	87.52
110.00	16 43 20	2577.24	-33.34	65.61	23.99	81.95	17 26 18	1977.2	-34.09	56.45
110.00	13 22 49	3200.40	-19.07	107.98	18.69	61.08	14 16 9	2600.4	-22.78	100.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0245 TRA 1.1049 TC-11.6402 BAU 1.4111 SGT 7683.3 SGR 494.9 SG3 2893.3 ST 2095.7 SR 405.0 SS 1798.5
RDE .2078 RRA .1300 RC3 -.1081 FAU .51733 RRT .5112 RRF .4945 RTF .9887 CRT .9848 CRS -.8806 CST -.9455
FDE 2.7337 FRA 6.4795 FC-49.3934 BSP 26648 SGB 7699.2 R23 -.0145 R13 .9887 LSA 2751.9 MSA 465.4 SSA 30.2
BDE 1.0453 BRA 1.1125 BC311.6407 FSP 9767 SG1 7687.5 SG2 425.2 THA 1.89 EL1 2133.4 EL2 69.1 ALF 10.79

LAUNCH DATE NOV 17 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 733.254 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.902	GAL	-1.40	AZL	87.96	HCA	221.83	SMA	186.32	ECC	.20767	INC	2.0358	V1	30.128
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.785	GAP	-7.92	AZP	91.52	TAL	351.82	TAP	213.65	RCA	147.63	APO	225.01	V2	25.480
RC	288.329	GL	22.80	GP	-1.91	ZAL	98.35	ZAP	67.06	ETS	178.43	ZAE	97.35	ETE	179.00	ZAC	82.42	ETC	257.86	CLP	67.05

PLANETOCENTRIC CONIC

C3	9.095	VHL	3.016	DLA	31.18	RAL	165.10	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	3.084	DPA	6.27	RAP	164.76	ECC	1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.38	10 48 17	3712.01	-25.65	148.47	22.58	71.65	11 50 9	3112.0	-27.92	140.29
103.62	14 24 3	3018.82	-25.64	97.28	22.58	71.63	15 14 22	2418.8	-27.91	89.10
76.38	10 48 17	3712.01	-25.65	148.47	22.58	71.65	11 50 9	3112.0	-27.92	140.29
103.62	14 24 3	3018.82	-25.64	97.28	22.58	71.63	15 14 22	2418.8	-27.91	89.10
110.00	16 53 30	2553.54	-33.55	63.80	24.62	83.01	17 36 4	1953.5	-34.15	54.61
110.00	13 18 0	3225.28	-18.25	109.44	19.05	60.58	14 11 46	2625.3	-22.02	102.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0232	TRA	1.1975	TC-12.0489	BAU 1.4651	SGT	7979.1	SGR	494.5	SG3	2818.2	ST	2112.5	SR	407.9	SS	1731.3
RDE	.2098	RRA	.1301	RC3 -.0769	FAU .50329	RRT	.4765	RRF	.4585	RTF	.9893	CRT	.9798	CRS	-.8613	CST	-.9420
FDE	2.5195	FRA	6.4647	FC-47.9055	BSP 27676	SGB	7994.4	R23	-.0162	R13	.9893	LSA	2720.6	MSA	473.2	SSA	30.6
BDE	1.0445	BRA	1.2045	BC312.0492	FSP 9498	SG1	7982.6	SG2	434.5	THA	1.70	EL1	2150.0	EL2	80.2	ALF	10.73

LAUNCH DATE NOV 17 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 737.426 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.904	GAL	-1.47	AZL	87.97	HCA	223.00	SMA	186.36	ECC	.20797	INC	2.0280	V1	30.128
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.830	GAP	-8.08	AZP	91.48	TAL	351.44	TAP	214.44	RCA	147.60	APO	225.12	V2	25.517
RC	289.516	GL	22.66	GP	-1.84	ZAL	99.07	ZAP	65.51	ETS	178.41	ZAE	95.54	ETE	178.98	ZAC	82.41	ETC	257.91	CLP	65.50

PLANETOCENTRIC CONIC

C3	9.129	VHL	3.021	DLA	30.76	RAL	165.80	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.125	DPA	6.48	RAP	164.43	ECC	1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.47	10 58 51	3688.10	-25.30	146.55	23.20	71.91	12 0 19	3088.1	-27.54	138.38
102.53	14 19 2	3044.14	-25.29	99.05	23.20	71.89	15 9 46	2444.1	-27.53	90.89
77.47	10 58 51	3688.10	-25.30	146.55	23.20	71.91	12 0 19	3088.1	-27.54	138.38
102.53	14 19 2	3044.14	-25.29	99.05	23.20	71.89	15 9 46	2444.1	-27.53	90.89
110.00	17 3 29	2530.68	-33.72	62.03	25.26	84.04	17 45 39	1930.7	-34.18	52.82
110.00	13 13 34	3249.56	-17.43	110.85	19.45	60.12	14 7 44	2649.6	-21.27	103.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0174	TRA	1.2925	TC-12.4416	BAU 1.5184	SGT	8269.2	SGR	494.9	SG3	2741.4	ST	2122.6	SR	410.9	SS	1664.5
RDE	.2119	RRA	.1303	RC3 -.0469	FAU .48906	RRT	.4419	RRF	.4228	RTF	.9898	CRT	.9736	CRS	-.8388	CST	-.9379
FDE	2.3052	FRA	6.4424	FC-46.3810	BSP 28677	SGB	8284.0	R23	-.0177	R13	.9898	LSA	2685,5	MSA	481.7	SSA	31.0
BDE	1.0392	BRA	1.2990	BC312.4417	FSP 9233	SG1	8272.1	SG2	443.8	THA	1.52	EL1	2160.1	EL2	92.2	ALF	10.69

LAUNCH DATE NOV 17 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 741.601 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.907	GAL	-1.54	AZL	87.98	HCA	224.17	SMA	186.40	ECC	.20830	INC	2.0205	V1	30.128
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.875	GAP	-8.24	AZP	91.45	TAL	351.04	TAP	215.22	RCA	147.57	APO	225.23	V2	25.554
RC	290.691	GL	22.52	GP	-1.78	ZAL	99.83	ZAP	64.00	ETS	178.39	ZAE	93.76	ETE	178.96	ZAC	82.40	ETC	257.95	CLP	63.99

PLANETOCENTRIC CONIC

C3	9.167	VHL	3.028	DLA	30.32	RAL	166.52	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	3.168	DPA	6.66	RAP	164.14	ECC	1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.69	11 10 40	3660.57	-24.94	144.35	23.86	72.18	12 11 40	3060.6	-27.14	136.21
101.31	14 12 58	3073.32	-24.93	101.11	23.86	72.16	15 4 11	2473.3	-27.13	92.96
78.69	11 10 40	3660.57	-24.94	144.35	23.86	72.18	12 11 40	3060.6	-27.14	136.21
101.31	14 12 58	3073.32	-24.93	101.11	23.86	72.16	15 4 11	2473.3	-27.13	92.96
110.00	17 13 20	2508.43	-33.87	60.31	25.92	85.05	17 55 9	1908.4	-34.18	51.08
110.00	13 9 27	3273.46	-16.61	112.22	19.89	59.69	14 4 1	2673.5	-20.51	105.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0262	TRA	1.4098	TC-12.7395	BAU 1.5614	SGT	8534.4	SGR	498.2	SG3	2653.5	ST	2164.3	SR	415.6	SS	1645.5
RDE	.2149	RRA	.1313	RC3 -.0150	FAU .47002	RRT	.4113	RRF	.3944	RTF	.9901	CRT	.9667	CRS	-.8223	CST	-.9379
FDE	2.1905	FRA	6.5081	FC-44.3868	BSP 30084	SGB	8548.9	R23	-.0153	R13	.9900	LSA	2707.1	MSA	485.1	SSA	31.2
BDE	1.0484	BRA	1.4159	BC312.7395	FSP 9153	SG1	8536.9	SG2	454.0	THA	1.38	EL1	2201.3	EL2	104.6	ALF	10.54

LAUNCH DATE NOV 17 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 745.788 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.909	GAL	-1.61	AZL	87.99	HCA	225.35	SMA	186.45	ECC	.20866	INC	2.0133	V1	30.128
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.919	GAP	-8.39	AZP	91.42	TAL	350.63	TAP	215.98	RCA	147.55	APO	225.35	V2	25.590
RC	291.851	GL	22.38	GP	-1.72	ZAL	100.60	ZAP	62.53	ETS	178.37	ZAE	92.02	ETE	178.95	ZAC	82.40	ETC	257.99	CLP	62.52

PLANETOCENTRIC CONIC

C3	9.212	VHL	3.035	DLA	29.87	RAL	167.25	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	3.212	DPA	6.83	RAP	163.89	ECC	1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.08	11 24 6	3628.09	-24.56	141.80	24.54	72.45	12 24 34	3028.1	-26.73	133.68
99.92	14 5 25	3107.69	-24.55	103.53	24.53	72.43	14 57 12	2507.7	-26.72	95.41
100.00	14 16 12	3073.23	-25.22	101.20	24.76	73.40	15 7 25	2473.2	-27.26	92.99
100.00	13 55 59	3137.78	-23.90	105.54	24.30	71.49	14 48 17	2537.8	-26.20	97.50
110.00	17 23 3	2486.80	-33.98	58.63	26.59	86.04	18 4 30	1886.8	-34.16	49.39
110.00	13 5 38	3296.97	-15.80	113.56	20.36	59.29	14 0 34	2697.0	-19.76	106.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0052	TRA	1.5047	TC-13.1171	BAU 1.6155	SGT	8816.6	SGR	499.4	SG3	2579.2	ST	2150.2	SR	418.4	SS	1564.5
RDE	.2169	RRA	.1312	RC3 .0110	FAU .45749	RRT	.3770	RRF	.3579	RTF	.9905	CRT	.9574	CRS	-.7901	CST	-.9310
FDE	1.9444	FRA	6.4404	FC-42.9928	BSP 30848	SGB	8830.7	R23	-.0179	R13	.9905	LSA	2645.5	MSA	496.9	SSA	31.6
BDE	1.0284	BRA	1.5104	BC313.1171	FSP 8785	SG1	8818.6	SG2	462.4	THA	1.23	EL1	2187.3	EL2	118.8	ALF	10.58

LAUNCH DATE NOV 17 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 749.981 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.912 GAL -1.69 AZL 87.99 HCA 226.53 SMA 186.50 ECC .20904 INC 2.0064 V1 30.128
RP 214.24 LAP -1.46 LOP 281.20 VP 22.963 GAP -8.54 AZP 91.38 TAL 350.21 TAP 216.74 RCA 147.51 APO 225.49 V2 25.626
RC 292.998 GL 22.24 GP -1.67 ZAL 101.41 ZAP 61.10 ETS 178.36 ZAE 90.31 ETE 178.94 ZAC 82.41 ETC 258.03 CLP 61.09

PLANETOCENTRIC CONIC

C3 9.263 VHL 3.044 DLA 29.40 RAL 168.01 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.259 DPA 6.98 RAP 163.68 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.73	11 39 54	3588.23	-24.17	138.71	25.25	72.73	12 39 43	2988.2	-26.31	130.61
98.27	13 55 39	3149.70	-24.16	106.51	25.24	72.71	14 48 9	2549.7	-26.30	98.41
100.00	14 54 31	2961.19	-27.17	93.45	26.15	77.04	15 43 52	2361.2	-28.69	84.97
100.00	13 23 44	3251.96	-21.23	112.97	24.12	68.45	14 17 56	2652.0	-23.97	105.24
110.00	17 32 42	2465.62	-34.07	56.99	27.27	87.01	18 13 47	1865.6	-34.11	47.74
110.00	13 2 2	3320.30	-14.99	114.87	20.88	58.91	13 57 22	2720.3	-18.99	108.05

DIFFERENTIAL CORRECTIONS
TDE .9839 TRA 1.6056 TC-13.4607 BAU 1.6670
RDE .2193 RRA .1314 RC3 .0365 FAU .44391
FDE 1.7243 FRA 6.3813 FC-41.4865 BSP 31653
BDE 1.0081 BRA 1.6110 BC313.4607 FSP 8461

MID-COURSE EXECUTION ACCURACY
SGT 9088.8 SGR 501.6 SG3 2501.8
RRT .3439 RRF .3232 RTF .9909
SGB 9102.6 R23 -.0197 R13 .9909
SG1 9090.4 SG2 470.9 THA 1.09

ORBIT DETERMINATION ACCURACY
ST 2138.8 SR 421.6 SS 1495.9
CRT .9463 CRS -.7555 CST -.9245
LSA 2594.4 MSA 508.0 SSA 31.8
EL1 2175.8 EL2 134.0 ALF 10.61

LAUNCH DATE NOV 17 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 754.179 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.915 GAL -1.77 AZL 88.00 HCA 227.71 SMA 186.55 ECC .20945 INC 1.9997 V1 30.128
RP 213.93 LAP -1.48 LOP 282.38 VP 23.007 GAP -8.69 AZP 91.35 TAL 349.77 TAP 217.48 RCA 147.48 APO 225.63 V2 25.662
RC 294.131 GL 22.09 GP -1.61 ZAL 102.24 ZAP 59.71 ETS 178.34 ZAE 88.65 ETE 178.93 ZAC 82.42 ETC 258.05 CLP 59.70

PLANETOCENTRIC CONIC

C3 9.321 VHL 3.053 DLA 28.92 RAL 168.79 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.308 DPA 7.11 RAP 163.51 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.85	11 59 53	3535.19	-23.76	134.66	25.98	73.01	12 58 48	2935.2	-25.87	126.57
96.15	13 41 53	3205.15	-23.75	110.47	25.98	72.99	14 35 18	2605.2	-25.86	102.38
100.00	15 16 4	2902.67	-28.00	89.29	27.15	79.07	16 4 27	2302.7	-29.22	80.70
100.00	13 8 23	3312.91	-19.66	116.81	24.37	67.01	14 3 36	2712.9	-22.60	109.25
110.00	17 42 17	2444.82	-34.13	55.36	27.96	87.97	18 23 2	1844.8	-34.04	46.12
110.00	12 58 39	3343.52	-14.17	116.17	21.42	58.56	13 54 23	2743.5	-18.22	109.41

DIFFERENTIAL CORRECTIONS
TDE .9601 TRA 1.7127 TC-13.7746 BAU 1.7165
RDE .2220 RRA .1316 RC3 .0611 FAU .42994
FDE 1.5162 FRA 6.3323 FC-39.9320 BSP 32494
BDE .9855 BRA 1.7177 BC313.7747 FSP 8166

MID-COURSE EXECUTION ACCURACY
SGT 9352.8 SGR 504.6 SG3 2423.8
RRT .3122 RRF .2902 RTF .9912
SGB 9366.4 R23 -.0211 R13 .9912
SG1 9354.1 SG2 479.3 THA .97

ORBIT DETERMINATION ACCURACY
ST 2127.0 SR 425.1 SS 1435.3
CRT .9330 CRS -.7164 CST -.9173
LSA 2548.1 MSA 520.3 SSA 31.9
EL1 2163.8 EL2 150.4 ALF 10.62

LAUNCH DATE NOV 17 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 758.383 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.919 GAL -1.85 AZL 88.01 HCA 228.90 SMA 186.61 ECC .20989 INC 1.9933 V1 30.128
RP 213.62 LAP -1.50 LOP 283.57 VP 23.051 GAP -8.84 AZP 91.31 TAL 349.31 TAP 218.21 RCA 147.44 APO 225.78 V2 25.697
RC 295.251 GL 21.93 GP -1.56 ZAL 103.09 ZAP 58.36 ETS 178.32 ZAE 87.02 ETE 178.92 ZAC 82.44 ETC 258.08 CLP 58.35

PLANETOCENTRIC CONIC

C3 9.386 VHL 3.064 DLA 28.43 RAL 169.59 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.358 DPA 7.23 RAP 163.38 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.37	12 32 3	3442.87	-23.34	127.75	26.74	73.30	13 29 26	2842.9	-25.41	119.68
92.63	13 16 5	3300.17	-23.33	117.30	26.74	73.28	14 11 5	2700.2	-25.40	109.23
100.00	15 33 49	2856.41	-28.55	85.97	28.08	80.74	16 21 25	2256.4	-29.53	77.30
100.00	12 57 0	3361.87	-18.33	119.84	24.75	65.96	13 53 2	2761.9	-21.42	112.41
110.00	17 51 50	2424.35	-34.17	53.77	28.67	88.91	18 32 14	1824.4	-33.94	44.53
110.00	12 55 28	3366.68	-13.34	117.46	22.01	58.23	13 51 35	2766.7	-17.44	110.75

DIFFERENTIAL CORRECTIONS
TDE .9336 TRA 1.8245 TC-14.0585 BAU 1.7641
RDE .2248 RRA .1320 RC3 .0847 FAU .41564
FDE 1.3206 FRA 6.2843 FC-38.3376 BSP 33335
BDE .9603 BRA 1.8293 BC314.0588 FSP 7882

MID-COURSE EXECUTION ACCURACY
SGT 9607.6 SGR 508.2 SG3 2344.8
RRT .2818 RRF .2588 RTF .9915
SGB 9621.0 R23 -.0222 R13 .9915
SG1 9608.7 SG2 487.6 THA .86

ORBIT DETERMINATION ACCURACY
ST 2114.3 SR 428.9 SS 1381.5
CRT .9174 CRS -.6734 CST -.9100
LSA 2505.6 MSA 532.7 SSA 32.0
EL1 2150.8 EL2 167.8 ALF 10.61

LAUNCH DATE NOV 17 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 762.592 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.922 GAL -1.93 AZL 88.01 HCA 230.09 SMA 186.67 ECC .21036 INC 1.9870 V1 30.128
RP 213.31 LAP -1.52 LOP 284.76 VP 23.094 GAP -8.98 AZP 91.28 TAL 348.84 TAP 218.93 RCA 147.40 APO 225.93 V2 25.731
RC 296.356 GL 21.78 GP -1.51 ZAL 103.97 ZAP 57.05 ETS 178.31 ZAE 85.43 ETE 178.92 ZAC 82.46 ETC 258.09 CLP 57.03

PLANETOCENTRIC CONIC

C3 9.458 VHL 3.075 DLA 27.92 RAL 170.40 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.411 DPA 7.32 RAP 163.29 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 57	3237.69	-25.56	113.37	28.29	77.37	14 32 55	2637.7	-27.04	105.02
90.00	12 15 40	3508.34	-20.30	131.44	26.61	69.82	13 14 9	2908.3	-22.87	123.71
100.00	15 49 38	2816.42	-28.95	83.06	28.97	82.22	16 36 34	2216.4	-29.73	74.34
100.00	12 47 41	3404.84	-17.11	122.45	25.21	65.11	13 44 26	2804.8	-20.33	115.14
110.00	18 1 21	2404.17	-34.18	52.19	29.40	89.84	18 41 25	1804.2	-33.83	42.96
110.00	12 52 27	3389.85	-12.50	118.74	22.63	57.92	13 48 57	2789.9	-16.65	112.08

DIFFERENTIAL CORRECTIONS
TDE .9040 TRA 1.9413 TC-14.3155 BAU 1.8102
RDE .2279 RRA .1323 RC3 .1073 FAU .40131
FDE 1.1352 FRA 6.2371 FC-36.7344 BSP 34179
BDE .9323 BRA 1.9458 BC314.3159 FSP 7613

MID-COURSE EXECUTION ACCURACY
SGT 9855.0 SGR 512.4 SG3 2266.1
RRT .2528 RRF .2289 RTF .9917
SGB 9868.3 R23 -.0231 R13 .9917
SG1 9855.9 SG2 495.7 THA .75

ORBIT DETERMINATION ACCURACY
ST 2101.1 SR 432.8 SS 1334.1
CRT .8990 CRS -.6262 CST -.9026
LSA 2466.3 MSA 545.6 SSA 31.9
EL1 2137.1 EL2 186.4 ALF 10.57

LAUNCH DATE NOV 17 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 766.807 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.926	GAL	-2.02	AZL	88.02	HCA	231.28	SMA	186.73	ECC	.21085	INC	1.9809
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.137	GAP	-9.12	AZP	91.24	TAL	348.36	TAP	219.64	RCA	147.36	APO	226.10
RC	297.448	GL	21.61	GP	-1.47	ZAL	104.87	ZAP	55.77	ETS	178.30	ZAE	83.88	ETE	178.91	ZAC	82.49	ETC	258.11

V1	30.128	V2	25.765	CLP	55.76

PLANETOCENTRIC CONIC

C3	9.538	VHL	3.088	DLA	27.39	RAL	171.23	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.465	DPA	7.39	RAP	163.23
ECC	1.1570																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 1	3168.00	-26.50	108.49	29.39	79.64	14 56 49	2568.0	-27.66	100.02
90.00	11 57 15	3581.33	-18.52	136.06	26.91	68.19	12 56 56	2981.3	-21.32	128.50
100.00	16 4 16	2780.38	-29.26	80.43	29.85	83.57	16 50 36	2180.4	-29.84	71.67
100.00	12 39 41	3444.18	-15.97	124.82	25.73	64.39	13 37 5	2844.2	-19.29	117.59
110.00	18 10 51	2384.25	-34.18	50.64	30.14	90.76	18 50 35	1784.3	-33.69	41.42
110.00	12 49 36	3413.07	-11.66	120.01	23.28	57.64	13 46 29	2813.1	-15.85	113.40

DIFFERENTIAL CORRECTIONS

TDE	.8693	TRA	2.0614	TC-14.5518	BAU	1.8556	
RDE	.2311	RRA	.1327	RC3 .1287	FAU	.38718	
FDE	.9526	FRA	6.1865	FC-35.1440	BSP	34969	
BDE	.8995	BRA	2.0656	BC314.5524	FSP	7341	

MID-COURSE EXECUTION ACCURACY

SGT10096.6	SGR	516.8	SG3	2188.2			
RRT .2245	RRF	.2000	RTF	.9919			
SGB10109.8	R23	-.0239	R13	.9919			
SG110097.3	SG2	503.6	THA	.66			

ORBIT DETERMINATION ACCURACY

ST	2084.0	SR	436.8	SS	1290.5		
CRT	.8770	CRS	-.5729	CST	-.8945		
LSA	2425.9	MSA	559.8	SSA	31.9		
EL1	2119.3	EL2	206.4	ALF	10.52		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 771.027 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.929	GAL	-2.11	AZL	88.02	HCA	232.48	SMA	186.79	ECC	.21138	INC	1.9751
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.180	GAP	-9.26	AZP	91.20	TAL	347.86	TAP	220.34	RCA	147.31	APO	226.28
RC	298.526	GL	21.44	GP	-1.42	ZAL	105.79	ZAP	54.54	ETS	178.28	ZAE	82.36	ETE	178.91	ZAC	82.53	ETC	258.11

V1	30.128	V2	25.798	CLP	54.52														

PLANETOCENTRIC CONIC

C3	9.626	VHL	3.103	DLA	26.86	RAL	172.08	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.520	DPA	7.45	RAP	163.21
ECC	1.1584																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 46	3115.57	-27.09	104.77	30.40	81.42	15 15 42	2515.6	-28.00	96.22
90.00	11 44 15	3637.37	-17.07	139.53	27.35	67.06	12 44 52	3037.4	-20.03	132.10
100.00	16 18 4	2747.10	-29.48	77.98	30.73	84.84	17 3 51	2147.1	-29.89	69.20
100.00	12 32 38	3481.08	-14.87	127.01	26.31	63.77	13 30 39	2881.1	-18.28	119.87
110.00	18 20 19	2364.58	-34.15	49.10	30.90	91.67	18 59 44	1764.6	-33.54	39.91
110.00	12 46 53	3436.37	-10.81	121.27	23.96	57.37	13 44 9	2836.4	-15.04	114.72

DIFFERENTIAL CORRECTIONS

TDE	.8329	TRA	2.1871	TC-14.7570	BAU	1.8992	
RDE	.2346	RRA	.1332	RC3 .1490	FAU	.37309	
FDE	.7869	FRA	6.1391	FC-33.5542	BSP	35788	
BDE	.8653	BRA	2.1912	BC314.7577	FSP	7082	

MID-COURSE EXECUTION ACCURACY

SGT10330.1	SGR	521.7	SG3	2111.3			
RRT .1981	RRF	.1731	RTF	.9921			
SGB10343.3	R23	-.0244	R13	.9921			
SG110330.7	SG2	511.4	THA	.57			

ORBIT DETERMINATION ACCURACY

ST	2070.3	SR	441.1	SS	1255.4		
CRT	.8519	CRS	-.5180	CST	-.8876		
LSA	2393.2	MSA	572.9	SSA	31.8		
EL1	2104.5	EL2	227.2	ALF	10.41		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 775.251 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.933	GAL	-2.20	AZL	88.03	HCA	233.68	SMA	186.86	ECC	.21193	INC	1.9694
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.222	GAP	-9.40	AZP	91.17	TAL	347.34	TAP	221.02	RCA	147.26	APO	226.46
RC	299.592	GL	21.27	GP	-1.38	ZAL	106.74	ZAP	53.33	ETS	178.27	ZAE	80.88	ETE	178.91	ZAC	82.57	ETC	258.11

V1	30.128	V2	25.831	CLP	53.32														

PLANETOCENTRIC CONIC

C3	9.723	VHL	3.118	DLA	26.30	RAL	172.94	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.578	DPA	7.49	RAP	163.23
ECC	1.1600																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 4	3071.19	-27.50	101.58	31.37	82.97	15 32 15	2471.2	-28.19	92.98
90.00	11 33 50	3685.71	-15.76	142.47	27.89	66.17	12 35 15	3085.7	-18.85	135.16
100.00	16 31 17	2715.88	-29.65	75.67	31.61	86.04	17 16 33	2115.9	-29.89	66.88
100.00	12 26 18	3516.25	-13.80	129.07	26.93	63.22	13 24 54	2916.3	-17.29	122.01
110.00	18 29 47	2345.12	-34.10	47.58	31.67	92.57	19 8 52	1745.1	-33.37	38.42
110.00	12 44 18	3459.78	-9.95	122.54	24.68	57.13	13 41 58	2859.8	-14.21	116.03

DIFFERENTIAL CORRECTIONS

TDE	.7914	TRA	2.3165	TC-14.9380	BAU	1.9419	
RDE	.2382	RRA	.1335	RC3 .1682	FAU	.35914	
FDE	.6215	FRA	6.0844	FC-31.9778	BSP	36559	
BDE	.8265	BRA	2.3203	BC314.9389	FSP	6824	

MID-COURSE EXECUTION ACCURACY

SGT10556.7	SGR	526.8	SG3	2034.6			
RRT .1724	RRF	.1468	RTF	.9922			
SGB10569.8	R23	-.0251	R13	.9922			
SG110557.1	SG2	518.9	THA	.49			

ORBIT DETERMINATION ACCURACY

ST	2054.7	SR	445.3	SS	1223.2		
CRT	.8225	CRS	-.4568	CST	-.8802		
LSA	2360.1	MSA	587.5	SSA	31.6		
EL1	2087.6	EL2	249.3	ALF	10.26		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 779.477 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.937	GAL	-2.30	AZL	88.04	HCA	234.88	SMA	186.93	ECC	.21251	INC	1.9638
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.263	GAP	-9.54	AZP	91.13	TAL	346.81	TAP	221.70	RCA	147.20	APO	226.65
RC	300.645	GL	21.08	GP	-1.34	ZAL	107.71	ZAP	52.17	ETS	178.25	ZAE	79.43	ETE	178.92	ZAC	82.61	ETC	258.11

V1	30.128	V2	25.863	CLP	52.16														

PLANETOCENTRIC CONIC

C3	9.829	VHL	3.135	DLA	25.73	RAL	173.82	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.637	DPA	7.51	RAP	163.28
ECC	1.1618																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 56	3031.61	-27.80	98.72	32.32	84.37	15 47 27	2431.6	-28.29	90.09
90.00	11 24 58	3729.59	-14.53	145.11	28.49	65.43	12 27 8	3129.6	-17.73	137.89
100.00	16 44 4	2686.22	-29.77	73.48	32.49	87.20	17 28 50	2086.2	-29.84	64.67
100.00	12 20 32	3550.22	-12.75	131.05	27.60	62.73	13 19 42	2950.2	-16.31	124.06
110.00	18 39 14	2325.84	-34.03	46.08	32.46	93.46	19 18 0	1725.8	-33.18	36.94
110.00	12 41 50	3483.36	-9.07	123.80	25.42	56.90	13 39 53	2883.4	-13.37	117.34

DIFFERENTIAL CORRECTIONS

TDE	.7672	TRA	2.4722	TC-15.0121	BAU	1.9729	
RDE	.2423	RRA	.1342	RC3 .1875	FAU	.34245	
FDE	.5249	FRA	6.0898	FC-30.1615	BSP	37839	
BDE	.8046	BRA	2.4759	BC315.0132	FSP	6702	

MID-COURSE EXECUTION ACCURACY

SGT10757.6	SGR	533.0	SG3	1953.5			
RRT .1534	RRF	.1298	RTF	.9922			
SGB10770.8	R23	-.0230	R13	.9922			
SG110757.9	SG2	526.7	THA	.44			

ORBIT DETERMINATION ACCURACY

ST	2075.9	SR	450.4	SS	1216.1		
CRT	.7946	CRS	-.4163	CST	-.8814		
LSA	2374.4	MSA	593.5	SSA	31.6		
EL1	2107.0	EL2	269.4	ALF	9.94		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 783.711 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.941 GAL -2.40 AZL 88.04 HCA 236.09 SMA 187.00 ECC .21313 INC 1.9584 V1 30.128
RP 211.87 LAP -1.63 LOP 290.76 VP 23.304 GAP -9.67 AZP 91.09 TAL 346.27 TAP 222.36 RCA 147.14 APO 226.85 V2 25.895
RC 301.687 GL 20.90 GP -1.30 ZAL 108.70 ZAP 51.04 ETS 178.24 ZAE 78.02 ETE 178.92 ZAC 82.67 ETC 258.10 CLP 51.03

PLANETOCENTRIC CONIC

C3 9.946 VHL 3.154 DLA 25.15 RAL 174.71 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.697 DPA 7.52 RAP 163.36 ECC 1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 45	2995.44	-28.01	96.10	33.26	85.67	16 1 41	2395.4	-28.32	87.45
90.00	11 17 14	3770.43	-13.36	147.54	29.15	64.80	12 20 4	3170.4	-16.65	140.41
100.00	16 56 27	2657.91	-29.85	71.38	33.37	88.30	17 40 45	2057.9	-29.77	62.57
100.00	12 15 13	3583.19	-11.72	132.95	28.31	62.30	13 14 57	2983.2	-15.33	126.02
110.00	18 48 40	2306.81	-33.94	44.60	33.26	94.33	19 27 7	1706.8	-32.97	35.50
110.00	12 39 29	3507.06	-8.19	125.07	26.20	56.70	13 37 56	2907.1	-12.52	118.65

DIFFERENTIAL CORRECTIONS
TDE .7212 TRA 2.6138 TC-15.1308 BAU 2.0120
RDE .2464 RRA .1345 RC3 .2045 FAU .32876
FDE .3807 FRA 6.0360 FC-28.6180 BSP 38647
BDE .7621 BRA 2.6172 BC315.1322 FSP 6465

MID-COURSE EXECUTION ACCURACY
SGT10968.8 SGR 538.4 SG3 1879.2
RRT .1307 RRF .1070 RTF .9923
SGB10982.0 R23 -.0233 R13 .9922
SG110969.0 SG2 533.8 THA .37

ORBIT DETERMINATION ACCURACY
ST 2067.7 SR 454.9 SS 1194.4
CRT .7579 CRS -.3539 CST -.8771
LSA 2353.8 MSA 606.2 SSA 31.3
EL1 2096.8 EL2 292.6 ALF 9.66

LAUNCH DATE NOV 17 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 787.954 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.945 GAL -2.50 AZL 88.05 HCA 237.30 SMA 187.07 ECC .21378 INC 1.9532 V1 30.128
RP 211.60 LAP -1.64 LOP 291.97 VP 23.345 GAP -9.81 AZP 91.06 TAL 345.71 TAP 223.01 RCA 147.08 APO 227.06 V2 25.926
RC 302.717 GL 20.70 GP -1.26 ZAL 109.71 ZAP 49.94 ETS 178.23 ZAE 76.63 ETE 178.92 ZAC 82.73 ETC 258.09 CLP 49.92

PLANETOCENTRIC CONIC

C3 10.072 VHL 3.174 DLA 24.55 RAL 175.61 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 3.760 DPA 7.51 RAP 163.48 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 50	2961.81	-28.16	93.65	34.20	86.89	16 15 12	2361.8	-28.29	84.99
90.00	11 10 18	3809.11	-12.23	149.82	29.85	64.26	12 13 48	3209.1	-15.60	142.76
100.00	17 8 31	2630.76	-29.89	69.36	34.27	89.36	17 52 21	2030.8	-29.66	60.56
100.00	12 10 19	3615.39	-10.69	134.79	29.05	61.92	13 10 34	3015.4	-14.36	127.92
110.00	18 58 4	2288.01	-33.83	43.14	34.08	95.18	19 36 12	1688.0	-32.75	34.07
110.00	12 37 15	3530.90	-7.30	126.34	27.01	56.51	13 36 6	2930.9	-11.65	119.95

DIFFERENTIAL CORRECTIONS
TDE .6439 TRA 2.7318 TC-15.3307 BAU 2.0646
RDE .2503 RRA .1345 RC3 .2190 FAU .31906
FDE .1725 FRA 5.9120 FC-27.4241 BSP 38780
BDE .6908 BRA 2.7351 BC315.3323 FSP 6099

MID-COURSE EXECUTION ACCURACY
SGT11200.0 SGR 542.9 SG3 1814.0
RRT .1020 RRF .0750 RTF .9925
SGB11213.2 R23 -.0267 R13 .9925
SG111200.2 SG2 540.1 THA .28

ORBIT DETERMINATION ACCURACY
ST 2020.5 SR 458.9 SS 1160.4
CRT .7057 CRS -.2565 CST -.8646
LSA 2289.5 MSA 629.8 SSA 30.8
EL1 2047.0 EL2 320.9 ALF 9.34

LAUNCH DATE NOV 17 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 792.196 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.950 GAL -2.61 AZL 88.05 HCA 238.51 SMA 187.15 ECC .21446 INC 1.9481 V1 30.128
RP 211.33 LAP -1.66 LOP 293.18 VP 23.384 GAP -9.94 AZP 91.02 TAL 345.14 TAP 223.65 RCA 147.01 APO 227.28 V2 25.956
RC 303.736 GL 20.50 GP -1.23 ZAL 110.73 ZAP 48.87 ETS 178.21 ZAE 75.28 ETE 178.93 ZAC 82.79 ETC 258.07 CLP 48.86

PLANETOCENTRIC CONIC

C3 10.210 VHL 3.195 DLA 23.94 RAL 176.52 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.823 DPA 7.49 RAP 163.63 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 23	2930.04	-28.26	91.33	35.15	88.05	16 28 13	2330.0	-28.23	82.67
90.00	11 4 1	3846.31	-11.12	151.99	30.60	63.79	12 8 7	3246.3	-14.56	144.99
100.00	17 20 21	2604.49	-29.89	67.40	35.17	90.39	18 3 45	2004.5	-29.52	58.62
100.00	12 5 44	3647.09	-9.67	136.59	29.84	61.58	13 6 31	3047.1	-13.39	129.78
110.00	19 7 27	2269.39	-33.71	41.70	34.92	96.03	19 45 17	1669.4	-32.51	32.67
110.00	12 35 7	3554.96	-6.39	127.61	27.85	56.35	13 34 22	2955.0	-10.77	121.26

DIFFERENTIAL CORRECTIONS
TDE .5870 TRA 2.8797 TC-15.4073 BAU 2.1033
RDE .2547 RRA .1348 RC3 .2337 FAU .30623
FDE .0384 FRA 5.8507 FC-25.9664 BSP 39485
BDE .6399 BRA 2.8828 BC315.4091 FSP 5865

MID-COURSE EXECUTION ACCURACY
SGT11400.6 SGR 548.5 SG3 1743.3
RRT .0806 RRF .0532 RTF .9925
SGB11413.8 R23 -.0271 R13 .9925
SG111400.7 SG2 546.7 THA .22

ORBIT DETERMINATION ACCURACY
ST 2016.9 SR 463.6 SS 1149.6
CRT .6566 CRS -.1874 CST -.8628
LSA 2278.4 MSA 642.1 SSA 30.5
EL1 2040.4 EL2 345.7 ALF 8.84

LAUNCH DATE NOV 17 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 796.442 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 32.954 GAL -2.72 AZL 88.06 HCA 239.73 SMA 187.23 ECC .21518 INC 1.9431 V1 30.128
RP 211.08 LAP -1.68 LOP 294.40 VP 23.424 GAP -10.07 AZP 90.98 TAL 344.55 TAP 224.28 RCA 146.94 APO 227.51 V2 25.986
RC 304.746 GL 20.29 GP -1.19 ZAL 111.78 ZAP 47.83 ETS 178.20 ZAE 73.96 ETE 178.94 ZAC 82.86 ETC 258.05 CLP 47.82

PLANETOCENTRIC CONIC

C3 10.359 VHL 3.219 DLA 23.32 RAL 177.43 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.888 DPA 7.45 RAP 163.81 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 29	2899.84	-28.31	89.12	36.10	89.15	16 40 48	2299.8	-28.12	80.46
90.00	10 58 15	3882.36	-10.03	154.07	31.39	63.38	12 2 57	3282.4	-13.53	147.14
100.00	17 31 58	2579.05	-29.86	65.51	36.09	91.38	18 14 57	1979.0	-29.35	56.75
100.00	12 1 26	3678.38	-8.65	138.35	30.66	61.28	13 2 45	3078.4	-12.42	131.59
110.00	19 16 50	2250.98	-33.57	40.28	35.77	96.86	19 54 21	1651.0	-32.26	31.30
110.00	12 33 4	3579.22	-5.47	128.89	28.71	56.21	13 32 43	2979.2	-9.88	122.57

DIFFERENTIAL CORRECTIONS
TDE .5258 TRA 3.0323 TC-15.4637 BAU 2.1419
RDE .2594 RRA .1350 RC3 .2473 FAU .29378
FDE -.0918 FRA 5.7858 FC-24.5510 BSP 40164
BDE .5863 BRA 3.0353 BC315.4656 FSP 5640

MID-COURSE EXECUTION ACCURACY
SGT11598.0 SGR 554.1 SG3 1674.4
RRT .0599 RRF .0319 RTF .9925
SGB11611.2 R23 -.0278 R13 .9925
SG111598.1 SG2 553.1 THA .16

ORBIT DETERMINATION ACCURACY
ST 2018.6 SR 468.4 SS 1142.9
CRT .6020 CRS -.1170 CST -.8624
LSA 2274.1 MSA 654.0 SSA 30.0
EL1 2038.9 EL2 370.3 ALF 8.23

LAUNCH DATE NOV 17 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 800.692 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.959	GAL	-2.83	AZL	88.06	HCA	240.94	SMA	187.31	ECC	.21593	INC	1.9382	V1	30.128
RP	210.82	LAP	-1.69	LOP	295.61	VP	23.462	GAP	-10.20	AZP	90.94	TAL	343.95	TAP	224.89	RCA	146.86	APO	227.75	V2	26.015
RC	305.746	GL	20.07	GP	-1.16	ZAL	112.84	ZAP	46.83	ETS	178.18	ZAE	72.66	ETE	178.95	ZAC	82.93	ETC	258.02	CLP	46.82

PLANETOCENTRIC CONIC

C3	10.521	VHL	3.244	DLA	22.68	RAL	178.36	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	3.955	DPA	7.40	RAP	164.02	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 13	2870.94	-28.32	87.01	37.05	90.21	16 53 4	2270.9	-27.99	78.36
90.00	10 52 54	3917.52	-8.95	156.09	32.22	63.02	11 58 12	3317.5	-12.50	149.21
100.00	17 43 24	2554.34	-29.81	63.68	37.01	92.35	18 25 58	1954.3	-29.16	54.93
100.00	11 57 24	3709.36	-7.63	140.09	31.51	61.01	12 59 13	3109.4	-11.44	133.37
110.00	19 26 11	2232.78	-33.41	38.89	36.64	97.67	20 3 24	1632.8	-31.99	29.94
110.00	12 31 6	3603.68	-4.55	130.18	29.61	56.08	13 31 10	3003.7	-8.97	123.88

DIFFERENTIAL CORRECTIONS

TDE	.4614	TRA	3.1904	TC-15.4919	BAU	2.1794	
RDE	.2643	RRA	.1351	RC3 .2599	FAU	.28159	
FDE	-.2130	FRA	5.7202	FC-23.1701	BSP	40829	
BDE	.5317	BRA	3.1933	BC315.4940	FSP	5419	

MID-COURSE EXECUTION ACCURACY

SGT11788.7	SGR	559.7	SG3	1607.1			
RRT	.0402	RRF	.0117	RTF	.9925		
SGB11802.0	R23	-.0283	R13	.9925			
SG111788.7	SG2	559.2	THA	.11			

ORBIT DETERMINATION ACCURACY

ST	2028.0	SR	473.3	SS	1140.5		
CRT	.5429	CRS	-.0487	CST	-.8642		
LSA	2279.4	MSA	663.8	SSA	29.6		
EL1	2044.8	EL2	394.2	ALF	7.50		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 804.944 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.964	GAL	-2.95	AZL	88.07	HCA	242.16	SMA	187.39	ECC	.21672	INC	1.9334	V1	30.128
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.500	GAP	-10.33	AZP	90.90	TAL	343.33	TAP	225.50	RCA	146.78	APO	228.00	V2	26.043
RC	306.737	GL	19.85	GP	-1.13	ZAL	113.92	ZAP	45.85	ETS	178.17	ZAE	71.40	ETE	178.95	ZAC	83.01	ETC	257.99	CLP	45.84

PLANETOCENTRIC CONIC

C3	10.697	VHL	3.271	DLA	22.03	RAL	179.29	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.023	DPA	7.33	RAP	164.26	ECC	1.1760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 38	2843.18	-28.29	84.98	38.02	91.23	17 5 1	2243.2	-27.82	76.34
90.00	10 47 56	3951.99	-7.88	158.06	33.08	62.71	11 53 48	3352.0	-11.48	151.23
100.00	17 54 40	2530.31	-29.73	61.90	37.96	93.28	18 36 50	1930.3	-28.96	53.18
100.00	11 53 35	3740.09	-6.62	141.80	32.40	60.78	12 55 55	3140.1	-10.46	135.12
110.00	19 35 31	2214.81	-33.24	37.51	37.53	98.47	20 12 25	1614.8	-31.72	28.62
110.00	12 29 14	3628.36	-3.61	131.47	30.54	55.98	13 29 42	3028.4	-8.05	125.20

DIFFERENTIAL CORRECTIONS

TDE	.3928	TRA	3.3529	TC-15.4961	BAU	2.2163	
RDE	.2695	RRA	.1351	RC3 .2715	FAU	.26976	
FDE	-.3273	FRA	5.6519	FC-21.8332	BSP	41468	
BDE	.4764	BRA	3.3556	BC315.4984	FSP	5205	

MID-COURSE EXECUTION ACCURACY

SGT11973.6	SGR	565.3	SG3	1541.6			
RRT	.0211	RRF	-.0079	RTF	.9925		
SGB11986.9	R23	-.0289	R13	.9925			
SG111973.6	SG2	565.1	THA	.06			

ORBIT DETERMINATION ACCURACY

ST	2044.4	SR	478.2	SS	1141.3		
CRT	.4795	CRS	.0175	CST	-.8681		
LSA	2293.3	MSA	671.4	SSA	29.1		
EL1	2057.8	EL2	417.0	ALF	6.68		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 809.200 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.969	GAL	-3.07	AZL	88.07	HCA	243.39	SMA	187.47	ECC	.21754	INC	1.9287	V1	30.128
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.538	GAP	-10.46	AZP	90.86	TAL	342.70	TAP	226.09	RCA	146.69	APO	228.26	V2	26.071
RC	307.719	GL	19.62	GP	-1.10	ZAL	115.02	ZAP	44.90	ETS	178.16	ZAE	70.16	ETE	178.96	ZAC	83.09	ETC	257.95	CLP	44.89

PLANETOCENTRIC CONIC

C3	10.886	VHL	3.299	DLA	21.37	RAL	180.23	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	4.093	DPA	7.25	RAP	164.53	ECC	1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 47	2816.41	-28.24	83.02	39.00	92.21	17 16 44	2216.4	-27.63	74.41
90.00	10 43 17	3985.92	-6.82	159.98	33.98	62.45	11 49 43	3385.9	-10.46	153.19
100.00	18 5 46	2506.91	-29.62	60.16	38.91	94.19	18 47 33	1906.9	-28.73	51.48
100.00	11 49 59	3770.66	-5.60	143.50	33.32	60.59	12 52 49	3170.7	-9.47	136.85
110.00	19 44 48	2197.08	-33.06	36.16	38.44	99.25	20 21 26	1597.1	-31.43	27.31
110.00	12 27 26	3653.25	-2.66	132.77	31.49	55.91	13 28 19	3053.3	-7.11	126.52

DIFFERENTIAL CORRECTIONS

TDE	.3215	TRA	3.5222	TC-15.4725	BAU	2.2522	
RDE	.2749	RRA	.1350	RC3 .2820	FAU	.25817	
FDE	-.4332	FRA	5.5830	FC-20.5318	BSP	42117	
BDE	.4230	BRA	3.5248	BC315.4751	FSP	4999	

MID-COURSE EXECUTION ACCURACY

SGT12153.0	SGR	570.8	SG3	1477.7			
RRT	.0030	RRF	-.0265	RTF	.9925		
SGB12166.4	R23	-.0294	R13	.9925			
SG112153.0	SG2	570.8	THA	.01			

ORBIT DETERMINATION ACCURACY

ST	2070.8	SR	483.3	SS	1145.2		
CRT	.4133	CRS	.0802	CST	-.8737		
LSA	2318.3	MSA	676.7	SSA	28.6		
EL1	2080.8	EL2	437.9	ALF	5.77		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 813.458 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.973	GAL	-3.19	AZL	88.08	HCA	244.62	SMA	187.56	ECC	.21841	INC	1.9241	V1	30.128
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.574	GAP	-10.59	AZP	90.82	TAL	342.05	TAP	226.67	RCA	146.60	APO	228.53	V2	26.098
RC	308.691	GL	19.39	GP	-1.07	ZAL	116.12	ZAP	43.98	ETS	178.14	ZAE	68.95	ETE	178.97	ZAC	83.18	ETC	257.91	CLP	43.97

PLANETOCENTRIC CONIC

C3	11.090	VHL	3.330	DLA	20.70	RAL	181.18	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	4.164	DPA	7.15	RAP	164.82	ECC	1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 42	2790.53	-28.16	81.13	39.99	93.16	17 28 13	2190.5	-27.42	72.55
90.00	10 38 54	4019.42	-5.76	161.88	34.92	62.23	11 45 54	3419.4	-9.43	155.12
100.00	18 16 45	2484.09	-29.50	58.48	39.88	95.07	18 58 9	1884.1	-28.48	49.82
100.00	11 46 33	3801.10	-4.58	145.18	34.27	60.43	12 49 54	3201.1	-8.48	138.57
110.00	19 54 4	2179.59	-32.86	34.83	39.36	100.01	20 30 24	1579.6	-31.13	26.04
110.00	12 25 43	3678.36	-1.70	134.09	32.48	55.85	13 27 1	3078.4	-6.17	127.85

DIFFERENTIAL CORRECTIONS

TDE	.2463	TRA	3.6966	TC-15.4266	BAU	2.2876	
RDE	.2805	RRA	.1348	RC3 .2914	FAU	.24690	
FDE	-.5336	FRA	5.5126	FC-19.2743	BSP	42746	
BDE	.3733	BRA	3.6991	BC315.4293	FSP	4801	

MID-COURSE EXECUTION ACCURACY

SGT12327.7	SGR	576.3	SG3	1415.6			
RRT	-.0146	RRF	-.0445	RTF	.9924		
SGB12341.1	R23	.0300	R13	-.9924			
SG112327.7	SG2	576.2	THA	179.96			

ORBIT DETERMINATION ACCURACY

ST	2105.9	SR	488.4	SS	1151.5		
CRT	.3446	CRS	.1401	CST	-.8804		
LSA	2352.9	MSA	680.0	SSA	28.1		
EL1	2112.9	EL2	456.9	ALF	4.79		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 817.717 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.979	GAL	-3.32	AZL	88.08	HCA	245.85	SMA	187.65	ECC	.21931	INC	1.9196	V1	30.128
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.610	GAP	-10.71	AZP	90.79	TAL	341.39	TAP	227.24	RCA	146.49	APO	228.80	V2	26.124
RC	309.654	GL	19.14	GP	-1.04	ZAL	117.24	ZAP	43.09	ETS	178.12	ZAE	67.76	ETE	178.98	ZAC	83.28	ETC	257.87	CLP	43.08

PLANETOCENTRIC CONIC

C3	11.310	VHL	3.363	DLA	20.02	RAL	182.13	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.237	DPA	7.04	RAP	165.14	ECC	1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 25	2765.48	-28.05	79.31	41.00	94.06	17 39 30	2165.5	-27.19	70.75
90.00	10 34 46	4052.58	-4.70	163.74	35.89	62.04	11 42 19	3452.6	-8.41	157.02
100.00	18 27 34	2461.84	-29.35	56.84	40.86	95.92	19 8 36	1861.8	-28.22	48.22
100.00	11 43 18	3831.45	-3.55	146.85	35.25	60.30	12 47 9	3231.5	-7.48	140.27
110.00	20 3 18	2162.37	-32.65	33.54	40.30	100.75	20 39 20	1562.4	-30.82	24.79
110.00	12 24 4	3703.69	-.73	135.41	33.49	55.82	13 25 47	3103.7	-5.21	129.19

DIFFERENTIAL CORRECTIONS

TDE	.1669	TRA	3.8757	TC-15.3592	BAU	2.3228	
RDE	.2865	RRA	.1345	RC3 .2999	FAU	.23602	
FDE	-.6273	FRA	5.4390	FC-18.0666	BSP	43350	
BDE	.3315	BRA	3.8781	BC315.3621	FSP	4607	

MID-COURSE EXECUTION ACCURACY

SGT12497.6	SGR	581.7	SG3	1355.3			
RRT -.0318	RRF	-.0621	RTF	.9923			
SGB12511.2	R23	.0306	R13	-.9923			
SG112497.6	SG2	581.4	THA	179.92			

ORBIT DETERMINATION ACCURACY

ST	2149.8	SR	493.5	SS	1159.2		
CRT	.2744	CRS	.1966	CST	-.8882		
LSA	2396.9	MSA	680.7	SSA	27.6		
EL1	2154.3	EL2	473.6	ALF	3.79		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 821.979 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.984	GAL	-3.45	AZL	88.08	HCA	247.08	SMA	187.74	ECC	.22026	INC	1.9151	V1	30.128
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.646	GAP	-10.84	AZP	90.75	TAL	340.71	TAP	227.79	RCA	146.39	APO	229.09	V2	26.149
RC	310.607	GL	18.89	GP	-1.02	ZAL	118.38	ZAP	42.22	ETS	178.11	ZAE	66.60	ETE	178.99	ZAC	83.37	ETC	257.83	CLP	42.21

PLANETOCENTRIC CONIC

C3	11.546	VHL	3.398	DLA	19.33	RAL	183.08	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	4.311	DPA	6.92	RAP	165.49	ECC	1.1900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 55	2741.18	-27.92	77.54	42.01	94.94	17 50 37	2141.2	-26.94	69.01
90.00	10 30 52	4085.48	-3.65	165.59	36.89	61.90	11 38 57	3485.5	-7.38	158.89
100.00	18 38 17	2440.13	-29.19	55.25	41.87	96.74	19 18 57	1840.1	-27.95	46.67
100.00	11 40 11	3861.76	-2.53	148.52	36.27	60.20	12 44 33	3261.8	-6.48	141.96
110.00	20 12 29	2145.42	-32.42	32.26	41.26	101.47	20 48 14	1545.4	-30.50	23.57
110.00	12 22 29	3729.23	.25	136.74	34.53	55.82	13 24 38	3129.2	-4.24	130.53

DIFFERENTIAL CORRECTIONS

TDE	.0861	TRA	4.0629	TC-15.2619	BAU	2.3564	
RDE	.2927	RRA	.1341	RC3 .3074	FAU	.22537	
FDE	-.7131	FRA	5.3657	FC-16.8983	BSP	43981	
BDE	.3051	BRA	4.0651	BC315.2650	FSP	4423	

MID-COURSE EXECUTION ACCURACY

SGT12661.1	SGR	587.0	SG3	1296.7			
RRT -.0478	RRF	-.0789	RTF	.9922			
SGB12674.7	R23	.0314	R13	-.9922			
SG112661.2	SG2	586.3	THA	179.87			

ORBIT DETERMINATION ACCURACY

ST	2204.8	SR	498.7	SS	1168.2		
CRT	.2057	CRS	.2485	CST	-.8961		
LSA	2451.9	MSA	679.8	SSA	27.0		
EL1	2207.3	EL2	487.5	ALF	2.80		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 826.242 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.989	GAL	-3.58	AZL	88.09	HCA	248.31	SMA	187.83	ECC	.22125	INC	1.9107	V1	30.128
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.680	GAP	-10.97	AZP	90.71	TAL	340.02	TAP	228.33	RCA	146.27	APO	229.39	V2	26.174
RC	311.551	GL	18.64	GP	-.99	ZAL	119.52	ZAP	41.38	ETS	178.09	ZAE	65.46	ETE	179.00	ZAC	83.47	ETC.	257.78	CLP	41.37

PLANETOCENTRIC CONIC

C3	11.801	VHL	3.435	DLA	18.63	RAL	184.04	RAD	6567.4	VEL	11.541	PTH	2.01	VHP	4.386	DPA	6.79	RAP	165.86	ECC	1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 15	2717.59	-27.77	75.83	43.05	95.79	18 1 33	2117.6	-26.68	67.34
90.00	10 27 9	4118.17	-2.60	167.42	37.92	61.79	11 35 47	3518.2	-6.35	160.74
100.00	18 48 52	2418.96	-29.01	53.70	42.88	97.54	19 29 11	1819.0	-27.67	45.16
100.00	11 37 13	3892.04	-1.51	150.18	37.31	60.14	12 42 5	3292.0	-5.47	143.64
110.00	20 21 37	2128.77	-32.19	31.02	42.24	102.17	20 57 6	1528.8	-30.18	22.38
110.00	12 20 58	3754.99	1.23	138.08	35.60	55.84	13 23 33	3155.0	-3.26	131.88

DIFFERENTIAL CORRECTIONS

TDE	.0001	TRA	4.2540	TC-15.1490	BAU	2.3905	
RDE	.2992	RRA	.1335	RC3 .3139	FAU	.21510	
FDE	-.7927	FRA	5.2879	FC-15.7806	BSP	44553	
BDE	.2992	BRA	4.2561	BC315.1523	FSP	4241	

MID-COURSE EXECUTION ACCURACY

SGT12821.4	SGR	592.2	SG3	1239.8			
RRT -.0639	RRF	-.0954	RTF	.9921			
SGB12835.1	R23	.0320	R13	-.9921			
SG112821.5	SG2	591.0	THA	179.83			

ORBIT DETERMINATION ACCURACY

ST	2267.8	SR	504.0	SS	1177.2		
CRT	.1368	CRS	.2970	CST	-.9047		
LSA	2514.9	MSA	676.3	SSA	26.5		
EL1	2268.9	EL2	499.0	ALF	1.83		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 830.505 EARTH TO MARS

RL	147.89	LAL	.00	LOL	54.68	VL	32.994	GAL	-3.72	AZL	88.09	HCA	249.55	SMA	187.93	ECC	.22229	INC	1.9065	V1	30.128
RP	209.24	LAP	-1.79	LOP	304.22	VP	23.714	GAP	-11.09	AZP	90.67	TAL	339.31	TAP	228.86	RCA	146.15	APO	229.70	V2	26.198
RC	312.486	GL	18.37	GP	-.97	ZAL	120.67	ZAP	40.56	ETS	178.08	ZAE	64.35	ETE	179.01	ZAC	83.58	ETC	257.73	CLP	40.55

PLANETOCENTRIC CONIC

C3	12.074	VHL	3.475	DLA	17.92	RAL	184.99	RAD	6567.5	VEL	11.553	PTH	2.02	VHP	4.463	DPA	6.65	RAP	166.26	ECC	1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 25	2694.69	-27.60	74.18	44.09	96.60	18 12 20	2094.7	-26.40	65.72
90.00	10 23 37	4150.70	-1.55	169.23	38.99	61.72	11 32 47	3550.7	-5.32	162.58
100.00	18 59 20	2398.31	-28.82	52.20	43.91	98.31	19 39 18	1798.3	-27.37	43.69
100.00	11 34 23	3922.31	-.48	151.85	38.39	60.11	12 39 46	3322.3	-4.45	145.31
110.00	20 30 42	2112.43	-31.95	29.81	43.24	102.85	21 5 55	1512.4	-29.85	21.22
110.00	12 19 30	3780.96	2.22	139.44	36.70	55.88	13 22 31	3181.0	-2.27	133.23

DIFFERENTIAL CORRECTIONS

TDE	-.0882	TRA	4.4525	TC-15.0120	BAU	2.4237	
RDE	.3060	RRA	.1328	RC3 .3195	FAU	.20510	
FDE	-.8661	FRA	5.2107	FC-14.7066	BSP	45149	
BDE	.3185	BRA	4.4545	BC315.0154	FSP	4068	

MID-COURSE EXECUTION ACCURACY

SGT12976.9	SGR	597.3	SG3	1184.8			
RRT -.0793	RRF	-.1114	RTF	.9919			
SGB12990.6	R23	.0327	R13	-.9919			
SG112977.0	SG2	595.4	THA	179.79			

ORBIT DETERMINATION ACCURACY

ST	2340.4	SR	509.3	SS	1186.8		
CRT	.0707	CRS	.3417	CST	-.9127		
LSA	2587.2	MSA	671.6	SSA	25.9		
EL1	2340.7	EL2	508.0	ALF	.93		

LAUNCH DATE NOV 17 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 834.769 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.000 GAL -3.86 AZL 88.10 HCA 250.79 SMA 188.02 ECC .22337 INC 1.9022 V1 30.128
RP 209.04 LAP -1.80 LOP 305.46 VP 23.747 GAP -11.22 AZP 90.63 TAL 338.59 TAP 229.38 RCA 146.02 APO 230.02 V2 26.221
RC 313.411 GL 18.11 GP -.94 ZAL 121.83 ZAP 39.76 ETS 178.06 ZAE 63.25 ETE 179.02 ZAC 83.69 ETC 257.67 CLP 39.75

PLANETOCENTRIC CONIC

C3 12.367 VHL 3.517 DLA 17.21 RAL 185.95 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 4.541 DPA 6.49 RAP 166.67 ECC 1.2035

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 25	2672.45	-27.42	72.58	45.16	97.38	18 22 58	2072.4	-26.11	64.15
90.00	10 20 15	4183.10	-.51	171.04	40.09	61.69	11 29 58	3583.1	-4.29	164.40
100.00	19 9 40	2378.18	-28.61	50.74	44.96	99.05	19 49 19	1778.2	-27.06	42.27
100.00	11 31 41	3952.60	.55	153.51	39.50	60.11	12 37 33	3352.6	-3.43	146.98
110.00	20 39 44	2096.41	-31.70	28.62	44.25	103.51	21 14 40	1496.4	-29.52	20.10
110.00	12 18 6	3807.14	3.22	140.81	37.83	55.95	13 21 34	3207.1	-1.27	134.60

DIFFERENTIAL CORRECTIONS
TDE -.1794 TRA 4.6576 TC-14.8524 BAU 2.4562
RDE .3131 RRA .1318 RC3 .3241 FAU .19534
FDE -.9320 FRA 5.1316 FC-13.6746 BSP 45726
BDE .3609 BRA 4.6594 BC314.8559 FSP 3896

MID-COURSE EXECUTION ACCURACY
SGT13126.8 SGR 602.3 SG3 1131.2
RRT -.0941 RRF -.1267 RTF .9917
SGB13140.6 R23 .0333 R13 -.9917
SG113126.9 SG2 599.6 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 2421.4 SR 514.6 SS 1195.5
CRT .0076 CRS .3823 CST -.9206
LSA 2667.2 MSA 665.3 SSA 25.4
EL1 2421.4 EL2 514.6 ALF .10

LAUNCH DATE NOV 17 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 839.033 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.005 GAL -4.01 AZL 88.10 HCA 252.03 SMA 188.12 ECC .22450 INC 1.8980 V1 30.128
RP 208.85 LAP -1.81 LOP 306.71 VP 23.779 GAP -11.35 AZP 90.59 TAL 337.85 TAP 229.88 RCA 145.88 APO 230.35 V2 26.243
RC 314.329 GL 17.83 GP -.92 ZAL 122.99 ZAP 38.99 ETS 178.04 ZAE 62.18 ETE 179.03 ZAC 83.81 ETC 257.62 CLP 38.98

PLANETOCENTRIC CONIC

C3 12.681 VHL 3.561 DLA 16.49 RAL 186.91 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 4.621 DPA 6.32 RAP 167.12 ECC 1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 16	2650.85	-27.22	71.03	46.24	98.13	18 33 27	2050.8	-25.81	62.64
90.00	10 17 2	4215.40	.54	172.84	41.22	61.69	11 27 17	3615.4	-3.25	166.21
100.00	19 19 54	2358.57	-28.39	49.32	46.03	99.76	19 59 13	1758.6	-26.75	40.90
100.00	11 29 5	3982.91	1.58	155.17	40.64	60.15	12 35 28	3382.9	-2.41	148.65
110.00	20 48 42	2080.73	-31.45	27.47	45.28	104.15	21 23 23	1480.7	-29.18	19.00
110.00	12 16 46	3833.51	4.23	142.19	38.99	56.05	13 20 40	3233.5	-.26	135.98

DIFFERENTIAL CORRECTIONS
TDE -.2746 TRA 4.8686 TC-14.6741 BAU 2.4884
RDE .3205 RRA .1307 RC3 .3278 FAU .18593
FDE -.9945 FRA 5.0500 FC-12.6934 BSP 46303
BDE .4220 BRA 4.8704 BC314.6777 FSP 3735

MID-COURSE EXECUTION ACCURACY
SGT13272.4 SGR 607.1 SG3 1079.4
RRT -.1087 RRF -.1421 RTF .9915
SGB13286.3 R23 .0342 R13 -.9915
SG113272.5 SG2 603.5 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 2509.9 SR 520.0 SS 1204.2
CRT -.0527 CRS .4208 CST -.9276
LSA 2754.3 MSA 658.6 SSA 24.9
EL1 2510.1 EL2 519.2 ALF 179.35

LAUNCH DATE NOV 17 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 843.296 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.011 GAL -4.16 AZL 88.11 HCA 253.28 SMA 188.22 ECC .22568 INC 1.8939 V1 30.128
RP 208.67 LAP -1.81 LOP 307.95 VP 23.810 GAP -11.48 AZP 90.55 TAL 337.10 TAP 230.37 RCA 145.74 APO 230.69 V2 26.264
RC 315.238 GL 17.55 GP -.90 ZAL 124.16 ZAP 38.23 ETS 178.02 ZAE 61.13 ETE 179.04 ZAC 83.93 ETC 257.56 CLP 38.23

PLANETOCENTRIC CONIC

C3 13.018 VHL 3.608 DLA 15.76 RAL 187.86 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 4.703 DPA 6.14 RAP 167.58 ECC 1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 58	2629.87	-27.01	69.53	47.33	98.86	18 43 48	2029.9	-25.50	61.18
90.00	10 13 57	4247.62	1.58	174.64	42.38	61.72	11 24 44	3647.6	-2.22	168.01
100.00	19 30 1	2339.47	-28.17	47.95	47.11	100.45	20 9 1	1739.5	-26.43	39.57
100.00	11 26 35	4013.26	2.60	156.84	41.80	60.21	12 33 28	3413.3	-1.38	150.31
110.00	20 57 37	2065.41	-31.19	26.35	46.33	104.76	21 32 2	1465.4	-28.84	17.93
110.00	12 15 29	3860.08	5.23	143.58	40.17	56.17	13 19 49	3260.1	.76	137.36

DIFFERENTIAL CORRECTIONS
TDE -.3718 TRA 5.0865 TC-14.4788 BAU 2.5204
RDE .3283 RRA .1294 RC3 .3307 FAU .17681
FDE-1.0489 FRA 4.9663 FC-11.7586 BSP 46865
BDE .4960 BRA 5.0881 BC314.4826 FSP 3577

MID-COURSE EXECUTION ACCURACY
SGT13414.5 SGR 611.8 SG3 1029.3
RRT -.1229 RRF -.1569 RTF .9913
SGB13428.5 R23 .0350 R13 -.9913
SG113414.7 SG2 607.2 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 2605.1 SR 525.3 SS 1211.0
CRT -.1087 CRS .4552 CST -.9342
LSA 2846.9 MSA 650.9 SSA 24.3
EL1 2605.8 EL2 522.1 ALF 178.69

LAUNCH DATE NOV 17 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 847.559 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.017 GAL -4.31 AZL 88.11 HCA 254.52 SMA 188.32 ECC .22692 INC 1.8897 V1 30.128
RP 208.49 LAP -1.82 LOP 309.20 VP 23.840 GAP -11.61 AZP 90.50 TAL 336.33 TAP 230.85 RCA 145.58 APO 231.05 V2 26.285
RC 316.140 GL 17.27 GP -.88 ZAL 125.33 ZAP 37.50 ETS 178.00 ZAE 60.10 ETE 179.05 ZAC 84.05 ETC 257.50 CLP 37.49

PLANETOCENTRIC CONIC

C3 13.378 VHL 3.658 DLA 15.03 RAL 188.82 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 4.786 DPA 5.96 RAP 168.06 ECC 1.2202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 32	2609.52	-26.78	68.08	48.45	99.55	18 54 2	2009.5	-25.19	59.77
90.00	10 11 0	4279.80	2.61	176.43	43.57	61.79	11 22 20	3679.8	-1.18	169.80
100.00	19 40 2	2320.91	-27.93	46.62	48.21	101.11	20 18 43	1720.9	-26.11	38.29
100.00	11 24 11	4043.64	3.63	158.51	43.00	60.31	12 31 35	3443.6	-.35	151.98
110.00	21 6 28	2050.47	-30.92	25.27	47.40	105.36	21 40 38	1450.5	-28.51	16.90
110.00	12 14 15	3886.84	6.25	144.99	41.38	56.32	13 19 2	3286.8	1.78	138.76

DIFFERENTIAL CORRECTIONS
TDE -.4725 TRA 5.3115 TC-14.2655 BAU 2.5521
RDE .3364 RRA .1279 RC3 .3328 FAU .16792
FDE-1.0985 FRA 4.8808 FC-10.8665 BSP 47418
BDE .5800 BRA 5.3130 BC314.2694 FSP 3423

MID-COURSE EXECUTION ACCURACY
SGT13552.4 SGR 616.4 SG3 980.6
RRT -.1369 RRF -.1715 RTF .9910
SGB13566.4 R23 .0359 R13 -.9910
SG113552.7 SG2 610.6 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 2706.6 SR 530.6 SS 1216.7
CRT -.1612 CRS .4872 CST -.9400
LSA 2945.2 MSA 642.8 SSA 23.8
EL1 2708.0 EL2 523.4 ALF 178.12

LAUNCH DATE NOV 17 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 851.819 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.022 GAL -4.47 AZL 88.11 HCA 255.77 SMA 188.42 ECC .22821 INC 1.8857 V1 30.128
RP 208.32 LAP -1.83 LOP 310.45 VP 23.870 GAP -11.74 AZP 90.46 TAL 335.54 TAP 231.31 RCA 145.42 APO 231.42 V2 26.304
RC 317.035 GL 16.98 GP -.86 ZAL 126.51 ZAP 36.79 ETS 177.98 ZAE 59.09 ETE 179.06 ZAC 84.18 ETC 257.44 CLP 36.78

PLANETOCENTRIC CONIC

C3 13.763 VHL 3.710 DLA 14.30 RAL 189.77 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 4.870 DPA 5.76 RAP 168.56 ECC 1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 57	2589.78	-26.55	66.68	49.58	100.22	19 4 7	1989.8	-24.87	58.42
90.00	10 8 10	4311.92	3.64	178.23	44.79	61.90	11 20 2	3711.9	-.14	171.60
100.00	19 49 55	2302.87	-27.69	45.33	49.33	101.75	20 28 18	1702.9	-25.79	37.04
100.00	11 21 53	4074.07	4.65	160.19	44.23	60.44	12 29 47	3474.1	.68	153.65
110.00	21 15 14	2035.93	-30.65	24.22	48.49	105.92	21 49 10	1435.9	-28.17	15.91
110.00	12 13 4	3913.77	7.26	146.42	42.62	56.51	13 18 18	3313.8	2.81	140.16

DIFFERENTIAL CORRECTIONS
TDE -.5760 TRA 5.5439 TC-14.0372 BAU 2.5836
RDE .3448 RRA .1261 RC3 .3340 FAU .15935
FDE-1.1420 FRA 4.7943 FC-10.0232 BSP 47972
BDE .6713 BRA 5.5453 BC314.0411 FSP 3276

MID-COURSE EXECUTION ACCURACY
SGT13687.2 SGR 620.8 SG3 933.8
RRT -.1505 RRF -.1858 RTF .9906
SGB13701.3 R23 .0368 R13 -.9907
SG113687.5 SG2 613.7 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 2813.4 SR 536.0 SS 1220.6
CRT -.2097 CRS .5162 CST -.9453
LSA 3047.9 MSA 634.3 SSA 23.4
EL1 2815.7 EL2 523.6 ALF 177.63

LAUNCH DATE NOV 17 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 856.078 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.028 GAL -4.64 AZL 88.12 HCA 257.02 SMA 188.52 ECC .22955 INC 1.8817 V1 30.128
RP 208.16 LAP -1.83 LOP 311.70 VP 23.899 GAP -11.87 AZP 90.42 TAL 334.75 TAP 231.77 RCA 145.25 APO 231.80 V2 26.323
RC 317.924 GL 16.68 GP -.84 ZAL 127.68 ZAP 36.10 ETS 177.96 ZAE 58.10 ETE 179.07 ZAC 84.31 ETC 257.38 CLP 36.09

PLANETOCENTRIC CONIC

C3 14.175 VHL 3.765 DLA 13.57 RAL 190.72 RAD 6567.6 VEL 11.643 PTH 2.04 VHP 4.956 DPA 5.55 RAP 169.08 ECC 1.2333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 14	2570.65	-26.32	65.33	50.73	100.85	19 14 5	1970.7	-24.55	57.11
90.00	10 5 27	4344.02	4.67	180.03	46.04	62.04	11 17 51	3744.0	.89	173.39
100.00	19 59 42	2285.36	-27.44	44.09	50.47	102.36	20 37 47	1685.4	-25.46	35.85
100.00	11 19 40	4104.54	5.68	161.87	45.49	60.60	12 28 5	3504.5	1.72	155.32
110.00	21 23 56	2021.79	-30.39	23.21	49.60	106.47	21 57 38	1421.8	-27.83	14.95
110.00	12 11 56	3940.88	8.28	147.86	43.89	56.72	13 17 37	3340.9	3.84	141.58

DIFFERENTIAL CORRECTIONS
TDE -.6827 TRA 5.7824 TC-13.7956 BAU 2.6152
RDE .3536 RRA .1241 RC3 .3344 FAU .15106
FDE-1.1815 FRA 4.7042 FC3-9.2259 BSP 48497
BDE .7688 BRA 5.7837 BC313.7996 FSP 3131

MID-COURSE EXECUTION ACCURACY
SGT13817.8 SGR 625.0 SG3 888.4
RRT -.1640 RRF -.2001 RTF .9903
SGB13832.0 R23 .0379 R13 -.9903
SG113818.2 SG2 616.6 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 2924.2 SR 541.3 SS 1223.1
CRT -.2547 CRS .5436 CST -.9498
LSA 3154.0 MSA 626.0 SSA 22.9
EL1 2927.6 EL2 522.8 ALF 177.21

LAUNCH DATE NOV 17 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 860.334 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.034 GAL -4.80 AZL 88.12 HCA 258.27 SMA 188.63 ECC .23095 INC 1.8777 V1 30.128
RP 208.01 LAP -1.84 LOP 312.95 VP 23.926 GAP -12.00 AZP 90.38 TAL 333.93 TAP 232.20 RCA 145.06 APO 232.19 V2 26.341
RC 318.808 GL 16.39 GP -.82 ZAL 128.86 ZAP 35.43 ETS 177.94 ZAE 57.13 ETE 179.09 ZAC 84.45 ETC 257.31 CLP 35.42

PLANETOCENTRIC CONIC

C3 14.616 VHL 3.823 DLA 12.83 RAL 191.66 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 5.044 DPA 5.33 RAP 169.62 ECC 1.2405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 23	2552.13	-26.07	64.03	51.89	101.46	19 23 55	1952.1	-24.23	55.84
90.00	10 2 50	4376.09	5.69	181.83	47.32	62.21	11 15 46	3776.1	1.93	175.18
100.00	20 9 22	2268.39	-27.18	42.89	51.62	102.94	20 47 10	1668.4	-25.13	34.69
100.00	11 17 33	4135.06	6.69	163.57	46.78	60.80	12 26 28	3535.1	2.75	157.00
110.00	21 32 33	2008.08	-30.12	22.23	50.73	106.99	22 6 2	1408.1	-27.50	14.02
110.00	12 10 50	3968.14	9.29	149.32	45.19	56.96	13 16 59	3368.1	4.88	143.01

DIFFERENTIAL CORRECTIONS
TDE -.7923 TRA 6.0285 TC-13.5402 BAU 2.6466
RDE .3627 RRA .1218 RC3 .3341 FAU .14304
FDE-1.2149 FRA 4.6125 FC3-8.4726 BSP 49017
BDE .8714 BRA 6.0297 BC313.5443 FSP 2991

MID-COURSE EXECUTION ACCURACY
SGT13944.8 SGR 629.2 SG3 844.5
RRT -.1773 RRF -.2142 RTF .9899
SGB13958.9 R23 .0390 R13 -.9899
SG113945.2 SG2 619.2 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 3038.7 SR 546.5 SS 1223.1
CRT -.2960 CRS .5683 CST -.9539
LSA 3262.9 MSA 617.4 SSA 22.4
EL1 3043.2 EL2 521.3 ALF 176.86

LAUNCH DATE NOV 17 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 864.587 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.040 GAL -4.98 AZL 88.13 HCA 259.53 SMA 188.73 ECC .23242 INC 1.8737 V1 30.128
RP 207.86 LAP -1.84 LOP 314.21 VP 23.953 GAP -12.14 AZP 90.34 TAL 333.10 TAP 232.63 RCA 144.87 APO 232.60 V2 26.357
RC 319.685 GL 16.09 GP -.81 ZAL 130.04 ZAP 34.77 ETS 177.92 ZAE 56.18 ETE 179.10 ZAC 84.59 ETC 257.25 CLP 34.76

PLANETOCENTRIC CONIC

C3 15.086 VHL 3.884 DLA 12.09 RAL 192.60 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 5.133 DPA 5.10 RAP 170.18 ECC 1.2483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 24	2534.21	-25.82	62.78	53.07	102.04	19 33 38	1934.2	-23.90	54.63
90.00	10 0 19	4408.15	6.71	183.64	48.64	62.42	11 13 47	3808.2	2.96	176.97
100.00	20 18 55	2251.97	-26.93	41.74	52.80	103.49	20 56 27	1652.0	-24.80	33.58
100.00	11 15 30	4165.63	7.70	165.27	48.10	61.03	12 24 55	3565.6	3.78	158.68
110.00	21 41 6	1994.80	-29.85	21.29	51.87	107.49	22 14 21	1394.8	-27.17	13.13
110.00	12 9 48	3995.56	10.31	150.79	46.52	57.23	13 16 23	3395.6	5.91	144.46

DIFFERENTIAL CORRECTIONS
TDE -.9054 TRA 6.2813 TC-13.2762 BAU 2.6785
RDE .3722 RRA .1193 RC3 .3332 FAU .13532
FDE-1.2451 FRA 4.5177 FC3-7.7654 BSP 49504
BDE .9790 BRA 6.2824 BC313.2804 FSP 2854

MID-COURSE EXECUTION ACCURACY
SGT14069.2 SGR 633.1 SG3 802.2
RRT -.1905 RRF -.2285 RTF .9894
SGB14083.5 R23 .0403 R13 -.9894
SG114069.7 SG2 621.5 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 3156.2 SR 551.8 SS 1221.6
CRT -.3344 CRS .5918 CST -.9573
LSA 3374.4 MSA 609.3 SSA 22.0
EL1 3161.7 EL2 519.1 ALF 176.56

LAUNCH DATE NOV 17 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 868.835 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.046 GAL -5.16 AZL 88.13 HCA 260.78 SMA 188.84 ECC .23395 INC 1.8698 V1 30.128
RP 207.73 LAP -1.85 LOP 315.46 VP 23.979 GAP -12.27 AZP 90.30 TAL 332.26 TAP 233.04 RCA 144.66 APO 233.02 V2 26.373
RC 320.558 GL 15.78 GP -.79 ZAL 131.21 ZAP 34.14 ETS 177.90 ZAE 55.24 ETE 179.11 ZAC 84.73 ETC 257.18 CLP 34.13

PLANETOCENTRIC CONIC

C3 15.589 VHL 3.948 DLA 11.36 RAL 193.54 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 5.224 DPA 4.87 RAP 170.75 ECC 1.2566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 17	2516.91	-25.57	61.57	54.28	102.60	19 43 14	1916.9	-23.58	53.47
90.00	9 57 54	4440.19	7.71	185.46	49.98	62.67	11 11 54	3840.2	3.99	178.76
100.00	20 28 21	2236.10	-26.67	40.63	53.99	104.02	21 5 38	1636.1	-24.48	32.51
100.00	11 13 31	4196.24	8.71	166.99	49.45	61.29	12 23 27	3596.2	4.81	160.37
110.00	21 49 34	1981.98	-29.58	20.39	53.04	107.96	22 22 36	1382.0	-26.84	12.27
110.00	12 8 48	4023.12	11.32	152.29	47.88	57.53	13 15 51	3423.1	6.95	145.91

DIFFERENTIAL CORRECTIONS
TDE-1.0213 TRA 6.5423 TC-12.9995 BAU 2.7101
RDE .3821 RRA .1165 RC3 .3315 FAU .12781
FDE-1.2701 FRA 4.4215 FC3-7.0981 BSP 50002
BDE 1.0904 BRA 6.5434 BC313.0038 FSP 2721

MID-COURSE EXECUTION ACCURACY
SGT14189.5 SGR 636.9 SG3 761.3
RRT -.2035 RRF -.2425 RTF .9889
SGB14203.8 R23 .0417 R13 -.9889
SG114190.1 SG2 623.6 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 3275.8 SR 556.9 SS 1217.9
CRT -.3694 CRS .6134 CST -.9602
LSA 3487.5 MSA 601.2 SSA 21.5
EL1 3282.4 EL2 516.5 ALF 176.32

LAUNCH DATE NOV 17 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 873.080 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.052 GAL -5.34 AZL 88.13 HCA 262.04 SMA 188.95 ECC .23554 INC 1.8659 V1 30.128
RP 207.60 LAP -1.85 LOP 316.72 VP 24.004 GAP -12.41 AZP 90.26 TAL 331.40 TAP 233.44 RCA 144.44 APO 233.46 V2 26.388
RC 321.425 GL 15.48 GP -.77 ZAL 132.38 ZAP 33.52 ETS 177.88 ZAE 54.32 ETE 179.12 ZAC 84.88 ETC 257.12 CLP 33.51

PLANETOCENTRIC CONIC

C3 16.125 VHL 4.016 DLA 10.63 RAL 194.47 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 5.317 DPA 4.62 RAP 171.34 ECC 1.2654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 3	2500.21	-25.32	60.41	55.49	103.12	19 52 43	1900.2	-23.26	52.35
90.00	9 55 34	4472.23	8.71	187.29	51.36	62.95	11 10 6	3872.2	5.01	180.56
100.00	20 37 41	2220.78	-26.41	39.56	55.19	104.53	21 14 42	1620.8	-24.16	31.49
100.00	11 11 37	4226.89	9.71	168.72	50.83	61.59	12 22 4	3626.9	5.84	162.07
110.00	21 57 57	1969.63	-29.32	19.52	54.22	108.41	22 30 46	1369.6	-26.53	11.45
110.00	12 7 50	4050.81	12.33	153.80	49.27	57.86	13 15 21	3450.8	7.99	147.38

DIFFERENTIAL CORRECTIONS
TDE-1.1394 TRA 6.8106 TC-12.7141 BAU 2.7418
RDE .3923 RRA .1133 RC3 .3293 FAU .12052
FDE-1.2900 FRA 4.3223 FC3-6.4707 BSP 50483
BDE 1.2051 BRA 6.8115 BC312.7184 FSP 2593

MID-COURSE EXECUTION ACCURACY
SGT14306.0 SGR 640.6 SG3 721.7
RRT -.2164 RRF -.2564 RTF .9883
SGB14320.3 R23 .0432 R13 -.9883
SG114306.6 SG2 625.4 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 3396.3 SR 562.0 SS 1211.6
CRT -.4013 CRS .6333 CST -.9628
LSA 3600.8 MSA 593.4 SSA 21.1
EL1 3403.9 EL2 513.6 ALF 176.11

LAUNCH DATE NOV 17 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 877.318 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.059 GAL -5.53 AZL 88.14 HCA 263.30 SMA 189.06 ECC .23720 INC 1.8621 V1 30.128
RP 207.48 LAP -1.85 LOP 317.98 VP 24.028 GAP -12.55 AZP 90.22 TAL 330.52 TAP 233.82 RCA 144.21 APO 233.91 V2 26.402
RC 322.286 GL 15.17 GP -.76 ZAL 133.55 ZAP 32.92 ETS 177.86 ZAE 53.41 ETE 179.13 ZAC 85.03 ETC 257.05 CLP 32.91

PLANETOCENTRIC CONIC

C3 16.697 VHL 4.086 DLA 9.89 RAL 195.39 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 5.412 DPA 4.36 RAP 171.95 ECC 1.2748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 40	2484.12	-25.07	59.30	56.73	103.62	20 2 4	1884.1	-22.94	51.28
90.00	9 53 19	4504.25	9.69	189.12	52.76	63.26	11 8 23	3904.3	6.03	182.36
100.00	20 46 54	2206.03	-26.16	38.54	56.42	105.01	21 23 40	1606.0	-23.84	30.51
100.00	11 9 47	4257.59	10.70	170.46	52.24	61.92	12 20 44	3657.6	6.86	163.77
110.00	22 6 14	1957.75	-29.06	18.69	55.42	108.84	22 38 52	1357.7	-26.22	10.67
110.00	12 6 55	4078.62	13.33	155.33	50.69	58.23	13 14 54	3478.6	9.03	148.87

DIFFERENTIAL CORRECTIONS
TDE-1.2616 TRA 7.0866 TC-12.4237 BAU 2.7742
RDE .4029 RRA .1099 RC3 .3264 FAU .11352
FDE-1.3068 FRA 4.2211 FC3-5.8858 BSP 50934
BDE 1.3244 BRA 7.0875 BC312.4280 FSP 2467

MID-COURSE EXECUTION ACCURACY
SGT14420.7 SGR 644.1 SG3 683.6
RRT -.2294 RRF -.2706 RTF .9877
SGB14435.1 R23 -.0448 R13 -.9877
SG114421.5 SG2 626.9 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 3518.3 SR 567.0 SS 1203.7
CRT -.4311 CRS .6521 CST -.9649
LSA 3715.6 MSA 585.9 SSA 20.7
EL1 3527.0 EL2 510.4 ALF 175.94

LAUNCH DATE NOV 17 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 881.551 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.065 GAL -5.72 AZL 88.14 HCA 264.56 SMA 189.17 ECC .23894 INC 1.8582 V1 30.128
RP 207.36 LAP -1.85 LOP 319.24 VP 24.051 GAP -12.69 AZP 90.18 TAL 329.63 TAP 234.19 RCA 143.97 APO 234.37 V2 26.416
RC 323.141 GL 14.86 GP -.74 ZAL 134.71 ZAP 32.33 ETS 177.84 ZAE 52.52 ETE 179.13 ZAC 85.18 ETC 256.99 CLP 32.32

PLANETOCENTRIC CONIC

C3 17.307 VHL 4.160 DLA 9.17 RAL 196.31 RAD 6567.7 VEL 11.777 PTH 2.08 VHP 5.508 DPA 4.10 RAP 172.58 ECC 1.2848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 11	2468.65	-24.81	58.24	57.98	104.10	20 11 19	1868.6	-22.63	50.25
90.00	9 51 9	4536.27	10.67	190.97	54.20	63.61	11 6 45	3936.3	7.04	184.17
100.00	20 56 0	2191.85	-25.90	37.56	57.67	105.46	21 32 32	1591.8	-23.53	29.57
100.00	11 8 0	4288.30	11.67	172.21	53.68	62.29	12 19 29	3688.3	7.87	165.49
110.00	22 14 27	1946.36	-28.81	17.90	56.64	109.25	22 46 53	1346.4	-25.91	9.92
110.00	12 6 3	4106.55	14.32	156.88	52.14	58.63	13 14 29	3506.6	10.07	150.37

DIFFERENTIAL CORRECTIONS
TDE-1.3855 TRA 7.3711 TC-12.1251 BAU 2.8065
RDE .4140 RRA .1061 RC3 .3231 FAU .10672
FDE-1.3181 FRA 4.1168 FC3-5.3380 BSP 51390
BDE 1.4460 BRA 7.3718 BC312.1294 FSP 2346

MID-COURSE EXECUTION ACCURACY
SGT14531.3 SGR 647.5 SG3 646.6
RRT -.2421 RRF -.2845 RTF .9869
SGB14545.7 R23 .0465 R13 -.9870
SG114532.2 SG2 628.2 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 3639.9 SR 571.9 SS 1192.8
CRT -.4579 CRS .6694 CST -.9667
LSA 3829.3 MSA 578.6 SSA 20.3
EL1 3649.5 EL2 507.1 ALF 175.80

LAUNCH DATE NOV 17 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 885.777 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.071 GAL -5.92 AZL 88.15 HCA 265.82 SMA 189.29 ECC .24075 INC 1.8543 V1 30.128
RP 207.26 LAP -1.85 LOP 320.50 VP 24.073 GAP -12.84 AZP 90.14 TAL 328.72 TAP 234.54 RCA 143.72 APO 234.86 V2 26.428
RC 323.990 GL 14.55 GP -.73 ZAL 135.87 ZAP 31.76 ETS 177.82 ZAE 51.65 ETE 179.14 ZAC 85.34 ETC 256.92 CLP 31.75

PLANETOCENTRIC CONIC

C3 17.958 VHL 4.238 DLA 8.44 RAL 197.22 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 5.606 DPA 3.83 RAP 173.21 ECC 1.2955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 33	2453.78	-24.56	57.22	59.26	104.55	20 20 27	1853.8	-22.32	49.27
90.00	9 49 3	4568.27	11.63	192.83	55.67	64.00	11 5 11	3968.3	8.04	185.99
100.00	21 4 59	2178.23	-25.65	36.63	58.93	105.90	21 41 17	1578.2	-23.23	28.67
100.00	11 6 18	4319.05	12.64	173.99	55.15	62.69	12 18 17	3719.1	8.88	167.21
110.00	22 22 34	1935.46	-28.56	17.15	57.88	109.63	22 54 49	1335.5	-25.62	9.21
110.00	12 5 13	4134.59	15.31	158.46	53.61	59.06	13 14 7	3534.6	11.10	151.89

DIFFERENTIAL CORRECTIONS
TDE-1.5137 TRA 7.6623 TC-11.8249 BAU 2.8400
RDE .4254 RRA .1020 RC3 .3193 FAU .10016
FDE-1.3263 FRA 4.0098 FC3-4.8288 BSP 51800
BDE 1.5723 BRA 7.6630 BC311.8292 FSP 2226

MID-COURSE EXECUTION ACCURACY
SGT14639.7 SGR 650.7 SG3 611.0
RRT -.2549 RRF -.2987 RTF .9861
SGB14654.1 R23 .0485 R13 -.9862
SG114640.6 SG2 629.2 THA 179.35

ORBIT DETERMINATION ACCURACY
ST 3761.8 SR 576.7 SS 1180.0
CRT -.4831 CRS .6859 CST -.9683
LSA 3943.2 MSA 571.4 SSA 20.0
EL1 3772.3 EL2 503.5 ALF 175.69

LAUNCH DATE NOV 17 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 889.995 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.078 GAL -6.12 AZL 88.15 HCA 267.08 SMA 189.40 ECC .24264 INC 1.8505 V1 30.128
RP 207.16 LAP -1.85 LOP 321.77 VP 24.094 GAP -12.99 AZP 90.09 TAL 327.80 TAP 234.88 RCA 143.44 APO 235.36 V2 26.439
RC 324.833 GL 14.24 GP -.71 ZAL 137.02 ZAP 31.21 ETS 177.79 ZAE 50.79 ETE 179.15 ZAC 85.50 ETC 256.86 CLP 31.20

PLANETOCENTRIC CONIC

C3 18.652 VHL 4.319 DLA 7.72 RAL 198.13 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 5.707 DPA 3.55 RAP 173.87 ECC 1.3070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 48	2439.53	-24.32	56.25	60.55	104.98	20 29 28	1839.5	-22.02	48.33
90.00	9 47 1	4600.26	12.58	194.70	57.16	64.42	11 3 42	4000.3	9.03	187.82
100.00	21 13 52	2165.19	-25.41	35.74	60.21	106.30	21 49 57	1565.2	-22.93	27.82
100.00	11 4 39	4349.83	13.60	175.77	56.65	63.12	12 17 9	3749.8	9.88	168.95
110.00	22 30 35	1925.08	-28.32	16.44	59.14	109.99	23 2 41	1325.1	-25.34	8.53
110.00	12 4 25	4162.71	16.29	160.05	55.13	59.52	13 13 47	3562.7	12.12	153.42

DIFFERENTIAL CORRECTIONS
TDE-1.6447 TRA 7.9620 TC-11.5221 BAU 2.8742
RDE .4372 RRA .0975 RC3 .3150 FAU .09383
FDE-1.3308 FRA 3.9002 FC3-4.3553 BSP 52186
BDE 1.7018 BRA 7.9626 BC311.5265 FSP 2108

MID-COURSE EXECUTION ACCURACY
SGT14745.7 SGR 653.8 SG3 576.6
RRT -.2678 RRF -.3130 RTF .9852
SGB14760.2 R23 .0506 R13 -.9853
SG114746.7 SG2 629.9 THA 179.32

ORBIT DETERMINATION ACCURACY
ST 3882.8 SR 581.4 SS 1165.1
CRT -.5062 CRS .7014 CST -.9695
LSA 4056.2 MSA 564.6 SSA 19.6
EL1 3894.2 EL2 499.9 ALF 175.59

LAUNCH DATE NOV 17 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 894.204 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.084 GAL -6.33 AZL 88.15 HCA 268.35 SMA 189.52 ECC .24460 INC 1.8466 V1 30.128
RP 207.08 LAP -1.85 LOP 323.03 VP 24.115 GAP -13.14 AZP 90.05 TAL 326.86 TAP 235.21 RCA 143.16 APO 235.87 V2 26.449
RC 325.671 GL 13.92 GP -.70 ZAL 138.16 ZAP 30.67 ETS 177.77 ZAE 49.94 ETE 179.16 ZAC 85.67 ETC 256.79 CLP 30.66

PLANETOCENTRIC CONIC

C3 19.391 VHL 4.404 DLA 7.00 RAL 199.03 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 5.809 DPA 3.26 RAP 174.53 ECC 1.3191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 56	2425.89	-24.07	55.33	61.85	105.38	20 38 22	1825.9	-21.73	47.44
90.00	9 45 4	4632.23	13.51	196.59	58.69	64.88	11 2 16	4032.2	10.01	189.65
100.00	21 22 38	2152.73	-25.17	34.89	61.51	106.69	21 58 30	1552.7	-22.64	27.00
100.00	11 3 4	4380.63	14.54	177.58	58.18	63.59	12 16 4	3780.6	10.87	170.70
110.00	22 38 32	1915.20	-28.09	15.76	60.41	110.33	23 10 27	1315.2	-25.07	7.90
110.00	12 3 39	4190.92	17.26	161.66	56.67	60.02	13 13 30	3590.9	13.14	154.97

DIFFERENTIAL CORRECTIONS
TDE-1.7788 TRA 8.2706 TC-11.2156 BAU 2.9086
RDE .4494 RRA .0927 RC3 .3103 FAU .08769
FDE-1.3313 FRA 3.7877 FC3-3.9152 BSP 52559
BDE 1.8347 BRA 8.2711 BC311.2199 FSP 1995

MID-COURSE EXECUTION ACCURACY
SGT14848.4 SGR 656.8 SG3 543.3
RRT -.2805 RRF -.3273 RTF .9843
SGB14862.9 R23 .0529 R13 -.9843
SG114849.5 SG2 630.4 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 4003.0 SR 585.9 SS 1147.7
CRT -.5275 CRS .7160 CST -.9705
LSA 4168.1 MSA 558.0 SSA 19.3
EL1 4015.1 EL2 496.3 ALF 175.52

LAUNCH DATE NOV 17 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 898.404 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.090 GAL -6.55 AZL 88.16 HCA 269.61 SMA 189.63 ECC .24666 INC 1.8428 V1 30.128
RP 207.00 LAP -1.84 LOP 324.30 VP 24.134 GAP -13.30 AZP 90.01 TAL 325.91 TAP 235.52 RCA 142.86 APO 236.41 V2 26.459
RC 326.503 GL 13.61 GP -.69 ZAL 139.30 ZAP 30.14 ETS 177.75 ZAE 49.11 ETE 179.17 ZAC 85.84 ETC 256.73 CLP 30.14

PLANETOCENTRIC CONIC

C3 20.179 VHL 4.492 DLA 6.30 RAL 199.92 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 5.913 DPA 2.97 RAP 175.21 ECC 1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 57	2412.85	-23.83	54.45	63.17	105.76	20 47 10	1812.9	-21.44	46.59
90.00	9 43 10	4664.19	14.43	198.49	60.25	65.37	11 0 55	4064.2	10.98	191.50
100.00	21 31 17	2140.84	-24.93	34.09	62.82	107.05	22 6 58	1540.8	-22.36	26.23
100.00	11 1 31	4411.43	15.46	179.40	59.75	64.09	12 15 3	3811.4	11.85	172.46
110.00	22 46 22	1905.84	-27.87	15.12	61.70	110.65	23 18 8	1305.8	-24.80	7.29
110.00	12 2 55	4219.20	18.21	163.30	58.24	60.56	13 13 15	3619.2	14.15	156.54

DIFFERENTIAL CORRECTIONS
TDE-1.9166 TRA 8.5864 TC-10.9110 BAU 2.9446
RDE .4620 RRA .0874 RC3 .3053 FAU .08177
FDE-1.3292 FRA 3.6722 FC3-3.5082 BSP 52882
BDE 1.9716 BRA 8.5869 BC310.9153 FSP 1883

MID-COURSE EXECUTION ACCURACY
SGT14948.9 SGR 659.7 SG3 511.2
RRT -.2934 RRF -.3420 RTF .9831
SGB14963.5 R23 .0555 R13 -.9831
SG114950.2 SG2 630.6 THA 179.26

ORBIT DETERMINATION ACCURACY
ST 4121.8 SR 590.3 SS 1128.7
CRT -.5474 CRS .7301 CST -.9713
LSA 4278.7 MSA 551.8 SSA 18.9
EL1 4134.6 EL2 492.5 ALF 175.45

LAUNCH DATE NOV 17 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 902.593 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 33.097 GAL -6.77 AZL 88.16 HCA 270.88 SMA 189.75 ECC .24880 INC 1.8390 V1 30.128
RP 206.93 LAP -1.84 LOP 325.56 VP 24.152 GAP -13.46 AZP 89.97 TAL 324.94 TAP 235.82 RCA 142.54 APO 236.96 V2 26.467
RC 327.330 GL 13.30 GP -.68 ZAL 140.43 ZAP 29.63 ETS 177.73 ZAE 48.30 ETE 179.18 ZAC 86.01 ETC 256.66 CLP 29.63
PLANETOCENTRIC CONIC
C3 21.018 VHL 4.585 DLA 5.59 RAL 200.81 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 6.019 DPA 2.67 RAP 175.91 ECC 1.3459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 50	2400.42	-23.60	53.61	64.51	106.12	20 55 51	1800.4	-21.17	45.78
90.00	9 41 21	4696.12	15.32	200.40	61.84	65.89	10 59 37	4096.1	11.94	193.36
100.00	21 39 50	2129.53	-24.70	33.32	64.15	107.39	22 15 19	1529.5	-22.09	25.50
100.00	11 0 3	4442.25	16.37	181.23	61.34	64.63	12 14 5	3842.2	12.82	174.24
110.00	22 54 8	1896.99	-27.66	14.53	63.01	110.94	23 25 45	1297.0	-24.56	6.73
110.00	12 2 14	4247.54	19.15	164.96	59.85	61.13	13 13 1	3647.5	15.15	158.13

DIFFERENTIAL CORRECTIONS
TDE-2.0566 TRA 8.9122 TC-10.6039 BAU 2.9808
RDE .4751 RRA .0818 RC3 .3000 FAU .07602
FDE-1.3227 FRA 3.5541 FC3-3.1311 BSP 53210
BDE 2.1108 BRA 8.9126 BC310.6081 FSP 1775

MID-COURSE EXECUTION ACCURACY
SGT15046.1 SGR 662.4 SG3 480.2
RRT -.3062 RRF -.3566 RTF .9818
SGB15060.7 R23 .0583 R13 -.9819
SG115047.5 SG2 630.5 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 4238.4 SR 594.6 SS 1107.2
CRT -.5655 CRS .7433 CST -.9718
LSA 4386.9 MSA 545.7 SSA 18.6
EL1 4251.9 EL2 488.8 ALF 175.40

LAUNCH DATE NOV 17 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 906.770 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 33.104 GAL -7.00 AZL 88.16 HCA 272.14 SMA 189.87 ECC .25103 INC 1.8351 V1 30.128
RP 206.86 LAP -1.83 LOP 326.83 VP 24.169 GAP -13.62 AZP 89.93 TAL 323.96 TAP 236.10 RCA 142.21 APO 237.53 V2 26.474
RC 328.152 GL 12.99 GP -.67 ZAL 141.54 ZAP 29.14 ETS 177.70 ZAE 47.50 ETE 179.18 ZAC 86.18 ETC 256.60 CLP 29.13
PLANETOCENTRIC CONIC
C3 21.912 VHL 4.681 DLA 4.90 RAL 201.68 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 6.128 DPA 2.36 RAP 176.62 ECC 1.3606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 37	2388.59	-23.38	52.81	65.87	106.45	21 4 25	1788.6	-20.90	45.02
90.00	9 39 35	4728.03	16.20	202.33	63.46	66.45	10 58 23	4128.0	12.88	195.23
100.00	21 48 16	2118.79	-24.48	32.60	65.50	107.71	22 23 35	1518.8	-21.83	24.81
100.00	10 58 37	4473.06	17.26	183.09	62.97	65.21	12 13 10	3873.1	13.77	176.03
110.00	23 1 47	1888.67	-27.45	13.96	64.33	111.22	23 33 16	1288.7	-24.32	6.20
110.00	12 1 34	4275.95	20.07	166.65	61.48	61.73	13 12 50	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-2.1995 TRA 9.2464 TC-10.2999 BAU 3.0185
RDE .4885 RRA .0757 RC3 .2944 FAU .07045
FDE-1.3126 FRA 3.4332 FC3-2.7834 BSP 53495
BDE 2.2531 BRA 9.2467 BC310.3041 FSP 1669

MID-COURSE EXECUTION ACCURACY
SGT15141.3 SGR 665.0 SG3 450.3
RRT -.3189 RRF -.3713 RTF .9804
SGB15155.9 R23 .0613 R13 -.9804
SG115142.8 SG2 630.2 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 4352.5 SR 598.7 SS 1083.5
CRT -.5822 CRS .7558 CST -.9722
LSA 4492.7 MSA 539.8 SSA 18.3
EL1 4366.6 EL2 485.2 ALF 175.36

LAUNCH DATE NOV 17 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 910.935 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 33.110 GAL -7.23 AZL 88.17 HCA 273.41 SMA 189.99 ECC .25336 INC 1.8313 V1 30.128
RP 206.81 LAP -1.83 LOP 328.10 VP 24.185 GAP -13.79 AZP 89.89 TAL 322.96 TAP 236.37 RCA 141.85 APO 238.12 V2 26.480
RC 328.970 GL 12.68 GP -.65 ZAL 142.65 ZAP 28.66 ETS 177.68 ZAE 46.71 ETE 179.19 ZAC 86.36 ETC 256.54 CLP 28.65
PLANETOCENTRIC CONIC
C3 22.865 VHL 4.782 DLA 4.21 RAL 202.55 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 6.239 DPA 2.04 RAP 177.34 ECC 1.3763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 16	2377.35	-23.16	52.06	67.24	106.77	21 12 54	1777.4	-20.64	44.30
90.00	9 37 52	4759.90	17.06	204.28	65.11	67.05	10 57 12	4159.9	13.80	197.12
100.00	21 56 35	2108.62	-24.27	31.92	66.86	108.01	22 31 44	1508.6	-21.58	24.15
100.00	10 57 14	4503.87	18.13	184.96	64.63	65.82	12 12 18	3903.9	14.71	177.84
110.00	23 9 22	1880.87	-27.26	13.44	65.67	111.47	23 40 42	1280.9	-24.09	5.70
110.00	12 0 57	4304.39	20.98	168.35	63.15	62.37	13 12 41	3704.4	17.12	161.36

DIFFERENTIAL CORRECTIONS
TDE-2.3459 TRA 9.5902 TC3-9.9958 BAU 3.0568
RDE .5024 RRA .0692 RC3 .2885 FAU .06505
FDE-1.2999 FRA 3.3091 FC3-2.4631 BSP 53757
BDE 2.3991 BRA 9.5905 BC310.0000 FSP 1566

MID-COURSE EXECUTION ACCURACY
SGT15233.2 SGR 667.4 SG3 421.3
RRT -.3317 RRF -.3862 RTF .9787
SGB15247.8 R23 .0647 R13 -.9788
SG115234.8 SG2 629.6 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4464.6 SR 602.6 SS 1058.2
CRT -.5979 CRS .7680 CST -.9723
LSA 4596.7 MSA 534.2 SSA 18.0
EL1 4479.3 EL2 481.4 ALF 175.33

LAUNCH DATE NOV 17 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 915.085 EARTH TO MARS
RL 147.89 LAL .00 LOL 54.68 VL 33.117 GAL -7.48 AZL 88.17 HCA 274.68 SMA 190.11 ECC .25579 INC 1.8274 V1 30.128
RP 206.77 LAP -1.82 LOP 329.37 VP 24.200 GAP -13.96 AZP 89.85 TAL 321.95 TAP 236.63 RCA 141.48 APO 238.74 V2 26.486
RC 329.784 GL 12.37 GP -.64 ZAL 143.75 ZAP 28.19 ETS 177.65 ZAE 45.93 ETE 179.19 ZAC 86.54 ETC 256.48 CLP 28.18
PLANETOCENTRIC CONIC
C3 23.879 VHL 4.887 DLA 3.53 RAL 203.42 RAD 6568.0 VEL 12.052 PTH 2.15 VHP 6.352 DPA 1.72 RAP 178.07 ECC 1.3930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 49	2366.71	-22.95	51.36	68.63	107.06	21 21 16	1766.7	-20.39	43.61
90.00	9 36 12	4791.74	17.89	206.25	66.80	67.68	10 56 4	4191.7	14.71	199.01
100.00	22 4 49	2099.02	-24.07	31.28	68.24	108.29	22 39 48	1499.0	-21.34	23.54
100.00	10 55 54	4534.67	18.98	186.86	66.31	66.46	12 11 29	3934.7	15.63	179.66
110.00	23 16 50	1873.58	-27.08	12.95	67.03	111.71	23 48 4	1273.6	-23.88	5.24
110.00	12 0 22	4332.87	21.87	170.09	64.86	63.05	13 12 34	3732.9	18.08	163.00

DIFFERENTIAL CORRECTIONS
TDE-2.4960 TRA 9.9421 TC3-9.6969 BAU 3.0970
RDE .5167 RRA .0622 RC3 .2825 FAU .05983
FDE-1.2838 FRA 3.1818 FC3-2.1690 BSP 53970
BDE 2.5489 BRA 9.9423 BC3 9.7010 FSP 1465

MID-COURSE EXECUTION ACCURACY
SGT15322.7 SGR 669.8 SG3 393.4
RRT -.3445 RRF -.4014 RTF .9768
SGB15337.3 R23 .0684 R13 -.9769
SG115324.4 SG2 628.7 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 4574.0 SR 606.3 SS 1030.7
CRT -.6125 CRS .7797 CST -.9723
LSA 4698.1 MSA 528.6 SSA 17.7
EL1 4589.2 EL2 477.7 ALF 175.31

LAUNCH DATE NOV 17 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 919.221 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.124 GAL -7.72 AZL 88.18 HCA 275.95 SMA 190.23 ECC .25832 INC 1.8235 V1 30.128
RP 206.73 LAP -1.81 LOP 330.63 VP 24.214 GAP -14.14 AZP 89.81 TAL 320.92 TAP 236.87 RCA 141.09 APO 239.37 V2 26.490
RC 330.595 GL 12.07 GP -.63 ZAL 144.84 ZAP 27.73 ETS 177.63 ZAE 45.17 ETE 179.20 ZAC 86.73 ETC 256.42 CLP 27.73

PLANETOCENTRIC CONIC

C3 24.960 VHL 4.996 DLA 2.86 RAL 204.27 RAD 6568.0 VEL 12.097 PTH 2.17 VHP 6.468 DPA 1.39 RAP 178.81 ECC 1.4108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 15	2356.65	-22.74	50.69	70.04	107.34	21 29 32	1756.6	-20.16	42.97
90.00	9 34 36	4823.54	18.70	208.23	68.51	68.34	10 55 0	4223.5	15.60	200.93
100.00	22 12 56	2089.98	-23.87	30.68	69.64	108.54	22 47 46	1490.0	-21.12	22.96
100.00	10 54 37	4565.44	19.80	188.77	68.03	67.14	12 10 42	3965.4	16.53	181.50
110.00	23 24 14	1866.82	-26.90	12.50	68.40	111.93	23 55 21	1266.8	-23.69	4.81
110.00	11 59 48	4361.37	22.74	171.84	66.59	63.76	13 12 29	3761.4	19.03	164.67

DIFFERENTIAL CORRECTIONS
TDE-2.6488 TRA10.3047 TC3-9.4003 BAU 3.1381
RDE .5314 RRA .0548 RC3 .2763 FAU .05476
FDE-1.2645 FRA 3.0517 FC3-1.8992 BSP 54181
BDE 2.7015 BRA10.3048 BC3 9.4043 FSP 1367

MID-COURSE EXECUTION ACCURACY
SGT15409.7 SGR 672.0 SG3 366.4
RRT -.3573 RRF -.4166 RTF .9747
SGB15424.4 R23 .0726 R13 -.9747
SG115411.6 SG2 627.6 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 4680.6 SR 609.8 SS 1001.4
CRT -.6260 CRS .7910 CST -.9720
LSA 4796.7 MSA 523.3 SSA 17.4
EL1 4696.3 EL2 474.0 ALF 175.29

LAUNCH DATE NOV 17 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 923.339 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.131 GAL -7.98 AZL 88.18 HCA 277.22 SMA 190.36 ECC .26096 INC 1.8196 V1 30.128
RP 206.70 LAP -1.81 LOP 331.90 VP 24.227 GAP -14.32 AZP 89.77 TAL 319.87 TAP 237.09 RCA 140.68 APO 240.03 V2 26.493
RC 331.403 GL 11.76 GP -.62 ZAL 145.91 ZAP 27.29 ETS 177.61 ZAE 44.42 ETE 179.20 ZAC 86.92 ETC 256.37 CLP 27.29

PLANETOCENTRIC CONIC

C3 26.110 VHL 5.110 DLA 2.19 RAL 205.12 RAD 6568.1 VEL 12.144 PTH 2.18 VHP 6.586 DPA 1.05 RAP 179.57 ECC 1.4297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 35	2347.16	-22.55	50.06	71.46	107.60	21 37 42	1747.2	-19.93	42.36
90.00	9 33 3	4855.29	19.49	210.22	70.25	69.04	10 53 58	4255.3	16.47	202.85
100.00	22 20 57	2081.49	-23.69	30.12	71.05	108.79	22 55 38	1481.5	-20.90	22.42
100.00	10 53 22	4596.19	20.60	190.70	69.78	67.85	12 9 59	3996.2	17.42	183.36
110.00	23 31 32	1860.56	-26.74	12.08	69.79	112.13	24 2 32	1260.6	-23.50	4.42
110.00	11 59 17	4389.89	23.59	173.62	68.36	64.51	13 12 26	3789.9	19.96	166.36

DIFFERENTIAL CORRECTIONS
TDE-2.8053 TRA10.6765 TC3-9.1086 BAU 3.1810
RDE .5466 RRA .0469 RC3 .2700 FAU .04982
FDE-1.2425 FRA 2.9183 FC3-1.6519 BSP 54333
BDE 2.8580 BRA10.6766 BC3 9.1126 FSP 1271

MID-COURSE EXECUTION ACCURACY
SGT15494.2 SGR 674.1 SG3 340.3
RRT -.3701 RRF -.4321 RTF .9721
SGB15508.8 R23 .0772 R13 -.9722
SG115496.2 SG2 626.2 THA 179.08

ORBIT DETERMINATION ACCURACY
ST 4784.3 SR 613.1 SS 970.4
CRT -.6386 CRS .8021 CST -.9715
LSA 4892.7 MSA 518.0 SSA 17.1
EL1 4800.4 EL2 470.2 ALF 175.28

LAUNCH DATE NOV 17 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 927.440 EARTH TO MARS

RL 147.89 LAL .00 LOL 54.68 VL 33.138 GAL -8.24 AZL 88.18 HCA 278.48 SMA 190.48 ECC .26371 INC 1.8157 V1 30.128
RP 206.68 LAP -1.80 LOP 333.17 VP 24.239 GAP -14.51 AZP 89.73 TAL 318.81 TAP 237.30 RCA 140.25 APO 240.71 V2 26.495
RC 332.208 GL 11.46 GP -.61 ZAL 146.98 ZAP 26.86 ETS 177.58 ZAE 43.68 ETE 179.21 ZAC 87.11 ETC 256.31 CLP 26.86

PLANETOCENTRIC CONIC

C3 27.336 VHL 5.228 DLA 1.54 RAL 205.97 RAD 6568.1 VEL 12.195 PTH 2.19 VHP 6.707 DPA .71 RAP 180.34 ECC 1.4499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 48	2338.23	-22.36	49.47	72.89	107.84	21 45 46	1738.2	-19.72	41.80
90.00	9 31 33	4886.99	20.25	212.24	72.02	69.77	10 53 0	4287.0	17.31	204.80
100.00	22 28 51	2073.55	-23.51	29.59	72.48	109.01	23 3 25	1473.5	-20.70	21.92
100.00	10 52 11	4626.90	21.38	192.65	71.56	68.59	12 9 17	4026.9	18.28	185.23
110.00	23 38 45	1854.81	-26.60	11.70	71.19	112.31	24 9 39	1254.8	-23.33	4.06
110.00	11 58 47	4418.41	24.41	175.43	70.16	65.29	13 12 25	3818.4	20.87	168.07

DIFFERENTIAL CORRECTIONS
TDE-2.9649 TRA11.0592 TC3-8.8211 BAU 3.2252
RDE .5621 RRA .0385 RC3 .2635 FAU .04502
FDE-1.2171 FRA 2.7820 FC3-1.4257 BSP 54461
BDE 3.0177 BRA11.0593 BC3 8.8250 FSP 1178

MID-COURSE EXECUTION ACCURACY
SGT15576.3 SGR 676.2 SG3 315.1
RRT -.3828 RRF -.4476 RTF .9692
SGB15591.0 R23 .0822 R13 -.9692
SG115578.5 SG2 624.6 THA 179.05

ORBIT DETERMINATION ACCURACY
ST 4884.8 SR 616.2 SS 937.6
CRT -.6504 CRS .8128 CST -.9709
LSA 4985.7 MSA 512.9 SSA 16.8
EL1 4901.4 EL2 466.5 ALF 175.27

LAUNCH DATE NOV 18 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 425.198 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 35.295 GAL -5.50 AZL 88.36 HCA 134.59 SMA 241.54 ECC .39779 INC 1.6350 V1 30.134
RP 244.68 LAP 1.16 LOP 190.30 VP 23.137 GAP 23.43 AZP 91.15 TAL 340.56 TAP 115.15 RCA 145.45 APO 337.62 V2 22.418
RC 128.267 GL 9.76 GP .58 ZAL 120.70 ZAP 173.71 ETS 173.41 ZAE 154.98 ETE 358.81 ZAC 89.14 ETC 256.10 CLP 173.74

PLANETOCENTRIC CONIC

C3 34.991 VHL 5.915 DLA 10.18 RAL 181.08 RAD 6568.4 VEL 12.504 PTH 2.26 VHP 10.556 DPA .13 RAP 184.47 ECC 1.5759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 21	2673.83	-27.43	72.68	56.01	97.33	19 1 54	2073.8	-26.13	64.25
90.00	8 54 35	4675.33	14.74	199.15	49.77	65.55	10 12 30	4075.3	11.32	192.15
100.00	19 43 44	2395.22	-28.79	51.97	55.79	98.42	20 23 39	1795.2	-27.32	43.47
100.00	10 10 53	4429.17	15.99	180.45	49.17	64.40	11 24 42	3829.2	12.41	173.49
110.00	21 3 25	2145.83	-32.43	32.29	55.05	101.45	21 39 11	1545.8	-30.51	23.60
110.00	11 7 40	4251.31	19.27	165.18	47.39	61.21	12 18 32	3651.3	15.28	158.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9162 TRA-2.3091 TC3 .7588 BAU .3560 SGT 2599.4 SGR 496.9 SG3 208.8 ST 1119.4 SR 461.6 SS 540.1
RDE -.4734 RRA -.1810 RC3 -.0591 FAU .06369 RRT -.0502 RRF .0348 RTF -.8592 CRT -.7171 CRS -.5590 CST .9769
FDE -.3975 FRA 1.5120 FC3-1.5759 BSP 8731 SGB 2646.5 R23 .0099 R13 .8592 LSA 1281.7 MSA 337.9 SSA 30.2
BDE 1.0313 BRA 2.3162 BC3 .7611 FSP 570 SG1 2599.6 SG2 496.2 THA 179.43 EL1 1171.1 EL2 307.5 ALF 162.26

LAUNCH DATE NOV 18 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 427.297 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 35.186 GAL -5.31 AZL 88.37 HCA 135.50 SMA 238.19 ECC .38882 INC 1.6285 V1 30.134
RP 244.46 LAP 1.14 LOP 191.20 VP 22.992 GAP 22.83 AZP 91.16 TAL 340.91 TAP 116.41 RCA 145.58 APO 330.81 V2 22.440
RC 130.354 GL 9.94 GP .60 ZAL 120.13 ZAP 173.23 ETS 173.59 ZAE 154.75 ETE 359.03 ZAC 89.26 ETC 256.08 CLP 173.26

PLANETOCENTRIC CONIC

C3 33.273 VHL 5.768 DLA 10.57 RAL 180.64 RAD 6568.3 VEL 12.436 PTH 2.25 VHP 10.317 DPA -.03 RAP 184.86 ECC 1.5476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 25	2673.99	-27.43	72.69	54.78	97.33	18 56 59	2074.0	-26.13	64.26
90.00	8 56 0	4649.77	14.02	197.63	48.49	65.14	10 13 30	4049.8	10.55	190.66
100.00	19 39 1	2394.66	-28.78	51.93	54.57	98.44	20 18 56	1794.7	-27.32	43.44
100.00	10 12 5	4404.32	15.25	178.97	47.89	63.97	11 25 29	3804.3	11.63	172.06
110.00	20 59 12	2143.73	-32.40	32.14	53.83	101.54	21 34 56	1543.7	-30.47	23.45
110.00	11 8 23	4228.02	18.50	163.82	46.10	60.73	12 18 51	3628.0	14.46	157.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8963 TRA-2.2805 TC3 .8253 BAU .3681 SGT 2647.4 SGR 490.0 SG3 219.3 ST 1127.5 SR 455.2 SS 545.9
RDE -.4552 RRA -.1735 RC3 -.0608 FAU .06553 RRT -.0503 RRF .0345 RTF -.8640 CRT -.7135 CRS -.5490 CST .9754
FDE -.3951 FRA 1.5388 FC3-1.7049 BSP 8912 SGB 2692.4 R23 .0106 R13 .8640 LSA 1289.1 MSA 337.4 SSA 30.5
BDE 1.0052 BRA 2.2871 BC3 .8276 FSP 603 SG1 2647.5 SG2 489.4 THA 179.45 EL1 1176.9 EL2 305.5 ALF 162.73

LAUNCH DATE NOV 18 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 429.516 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 35.081 GAL -5.13 AZL 88.38 HCA 136.41 SMA 235.08 ECC .38024 INC 1.6218 V1 30.134
RP 244.23 LAP 1.12 LOP 192.11 VP 22.853 GAP 22.24 AZP 91.17 TAL 341.27 TAP 117.67 RCA 145.70 APO 324.47 V2 22.463
RC 132.477 GL 10.12 GP .63 ZAL 119.55 ZAP 172.74 ETS 173.75 ZAE 154.57 ETE 359.24 ZAC 89.37 ETC 256.06 CLP 172.77

PLANETOCENTRIC CONIC

C3 31.663 VHL 5.627 DLA 10.97 RAL 180.18 RAD 6568.3 VEL 12.371 PTH 2.23 VHP 10.083 DPA -.18 RAP 185.25 ECC 1.5211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 19	2674.65	-27.43	72.74	53.56	97.30	18 51 54	2074.7	-26.14	64.31
90.00	8 57 26	4624.12	13.28	196.11	47.22	64.76	10 14 30	4024.1	9.77	189.19
100.00	19 34 10	2394.59	-28.78	51.93	53.35	98.44	20 14 4	1794.6	-27.31	43.43
100.00	10 13 17	4379.41	14.50	177.50	46.61	63.57	11 26 16	3779.4	10.83	170.63
110.00	20 54 52	2142.07	-32.38	32.01	52.61	101.61	21 30 34	1542.1	-30.44	23.33
110.00	11 9 4	4204.70	17.72	162.46	44.82	60.28	12 19 9	3604.7	13.63	155.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8753 TRA-2.2516 TC3 .8964 BAU .3804 SGT 2695.5 SGR 482.9 SG3 230.3 ST 1134.1 SR 448.5 SS 551.1
RDE -.4375 RRA -.1663 RC3 -.0625 FAU .06746 RRT -.0501 RRF .0337 RTF -.8688 CRT -.7095 CRS -.5376 CST .9737
FDE -.3915 FRA 1.5659 FC3-1.8445 BSP 9089 SGB 2738.5 R23 .0112 R13 .8687 LSA 1294.8 MSA 337.1 SSA 30.8
BDE .9786 BRA 2.2578 BC3 .8986 FSP 638 SG1 2695.7 SG2 482.3 THA 179.47 EL1 1181.2 EL2 303.5 ALF 163.18

LAUNCH DATE NOV 18 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 431.846 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.981 GAL -4.95 AZL 88.39 HCA 137.32 SMA 232.19 ECC .37202 INC 1.6148 V1 30.134
RP 243.99 LAP 1.09 LOP 193.02 VP 22.722 GAP 21.65 AZP 91.19 TAL 341.63 TAP 118.95 RCA 145.81 APO 318.57 V2 22.486
RC 134.631 GL 10.30 GP .65 ZAL 118.94 ZAP 172.24 ETS 173.88 ZAE 154.43 ETE 359.45 ZAC 89.48 ETC 256.04 CLP 172.27

PLANETOCENTRIC CONIC

C3 30.153 VHL 5.491 DLA 11.37 RAL 179.70 RAD 6568.2 VEL 12.310 PTH 2.22 VHP 9.855 DPA -.33 RAP 185.64 ECC 1.4962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 5	2675.82	-27.44	72.82	52.33	97.26	18 46 41	2075.8	-26.15	64.39
90.00	8 58 53	4598.40	12.52	194.59	45.96	64.39	10 15 31	3998.4	8.98	187.71
100.00	19 29 10	2394.99	-28.79	51.96	52.12	98.43	20 9 5	1795.0	-27.32	43.46
100.00	10 14 29	4354.46	13.74	176.04	45.35	63.19	11 27 4	3754.5	10.03	169.21
110.00	20 50 23	2140.83	-32.36	31.92	51.39	101.67	21 26 4	1540.8	-30.42	23.24
110.00	11 9 45	4181.38	16.93	161.12	43.55	59.85	12 19 27	3581.4	12.80	154.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8539 TRA-2.2218 TC3 .9710 BAU .3923 SGT 2742.7 SGR 475.6 SG3 241.8 ST 1139.3 SR 441.6 SS 555.8
RDE -.4204 RRA -.1594 RC3 -.0639 FAU .06947 RRT -.0495 RRF .0326 RTF -.8733 CRT -.7052 CRS -.5253 CST .9718
FDE -.3871 FRA 1.5927 FC3-1.9946 BSP 9275 SGB 2783.6 R23 .0120 R13 .8732 LSA 1299.1 MSA 336.8 SSA 31.1
BDE .9518 BRA 2.2275 BC3 .9731 FSP 676 SG1 2742.8 SG2 475.0 THA 179.49 EL1 1184.2 EL2 301.3 ALF 163.62

LAUNCH DATE NOV 18 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 434.275 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.884 GAL -4.78 AZL 88.39 HCA 138.23 SMA 229.49 ECC .36414 INC 1.6075 V1 30.134
RP 243.75 LAP 1.07 LOP 193.93 VP 22.597 GAP 21.07 AZP 91.20 TAL 342.00 TAP 120.23 RCA 145.92 APO 313.06 V2 22.510
RC 136.814 GL 10.48 GP .68 ZAL 118.32 ZAP 171.74 ETS 173.99 ZAE 154.34 ETE 359.66 ZAC 89.60 ETC 256.02 CLP 171.76

PLANETOCENTRIC CONIC

C3 28.737 VHL 5.361 DLA 11.78 RAL 179.21 RAD 6568.2 VEL 12.252 PTH 2.20 VHP 9.632 DPA -.48 RAP 186.02 ECC 1.4729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 42	2677.50	-27.46	72.94	51.11	97.20	18 41 20	2077.5	-26.18	64.51
90.00	9 0 19	4572.64	11.76	193.08	44.71	64.06	10 16 32	3972.6	8.18	186.24
100.00	19 24 1	2395.87	-28.79	52.02	50.90	98.40	20 3 57	1795.9	-27.33	43.52
100.00	10 15 41	4329.49	12.97	174.59	44.09	62.83	11 27 51	3729.5	9.22	167.80
110.00	20 45 47	2140.02	-32.35	31.86	50.17	101.70	21 21 27	1540.0	-30.40	23.19
110.00	11 10 25	4158.11	16.13	159.79	42.29	59.45	12 19 43	3558.1	11.95	153.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8324 TRA-2.1916 TC3 1.0499 BAU .4041 SGT 2790.0 SGR 468.0 SG3 254.0 ST 1143.6 SR 434.5 SS 560.1
RDE -.4038 RRA -.1528 RC3 -.0652 FAU .07159 RRT -.0487 RRF .0313 RTF -.8776 CRT -.7006 CRS -.5124 CST .9698
FDE -.3821 FRA 1.6196 FC3-2.1569 BSP 9443 SGB 2829.0 R23 .0127 R13 .8776 LSA 1302.4 MSA 336.5 SSA 31.4
BDE .9252 BRA 2.1970 BC3 1.0519 FSP 714 SG1 2790.1 SG2 467.4 THA 179.52 EL1 1186.3 EL2 298.9 ALF 164.06

LAUNCH DATE NOV 18 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 436.797 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.792 GAL -4.61 AZL 88.40 HCA 139.14 SMA 226.97 ECC .35660 INC 1.5999 V1 30.134
RP 243.50 LAP 1.05 LOP 194.85 VP 22.479 GAP 20.49 AZP 91.21 TAL 342.38 TAP 121.52 RCA 146.03 APO 307.90 V2 22.535
RC 139.022 GL 10.66 GP .70 ZAL 117.68 ZAP 171.22 ETS 174.08 ZAE 154.29 ETE 359.87 ZAC 89.71 ETC 256.01 CLP 171.25

PLANETOCENTRIC CONIC

C3 27.407 VHL 5.235 DLA 12.20 RAL 178.70 RAD 6568.1 VEL 12.198 PTH 2.19 VHP 9.415 DPA -.62 RAP 186.39 ECC 1.4511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 9	2679.69	-27.48	73.10	49.89	97.13	18 35 49	2079.7	-26.21	64.66
90.00	9 1 47	4546.82	10.99	191.58	43.46	63.74	10 17 34	3946.8	7.37	184.77
100.00	19 18 44	2397.25	-28.81	52.12	49.68	98.35	19 58 41	1797.2	-27.35	43.62
100.00	10 16 53	4304.50	12.19	173.15	42.85	62.49	11 28 38	3704.5	8.41	166.40
110.00	20 41 3	2139.66	-32.34	31.83	48.96	101.72	21 16 43	1539.7	-30.39	23.16
110.00	11 11 3	4134.85	15.32	158.47	41.04	59.06	12 19 58	3534.9	11.11	151.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8220 TRA-2.1488 TC3 1.1503 BAU .4222 SGT 2837.0 SGR 460.6 SG3 266.5 ST 1154.0 SR 427.5 SS 562.8
RDE -.3880 RRA -.1467 RC3 -.0667 FAU .07368 RRT -.0543 RRF .0282 RTF -.8850 CRT -.7025 CRS -.4938 CST .9638
FDE -.3727 FRA 1.6494 FC3-2.3274 BSP 9337 SGB 2874.2 R23 .0212 R13 .8850 LSA 1310.1 MSA 337.3 SSA 31.0
BDE .9090 BRA 2.1538 BC3 1.1522 FSP 761 SG1 2837.2 SG2 459.9 THA 179.48 EL1 1195.0 EL2 293.8 ALF 164.45

LAUNCH DATE NOV 18 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 439.404 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.704 GAL -4.44 AZL 88.41 HCA 140.06 SMA 224.61 ECC .34938 INC 1.5921 V1 30.134
RP 243.25 LAP 1.02 LOP 195.76 VP 22.367 GAP 19.91 AZP 91.22 TAL 342.76 TAP 122.82 RCA 146.13 APO 303.08 V2 22.560
RC 141.251 GL 10.83 GP .73 ZAL 117.02 ZAP 170.70 ETS 174.16 ZAE 154.29 ETE .08 ZAC 89.83 ETC 255.99 CLP 170.73

PLANETOCENTRIC CONIC

C3 26.163 VHL 5.115 DLA 12.61 RAL 178.17 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 9.203 DPA -.76 RAP 186.77 ECC 1.4306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 29	2682.36	-27.50	73.29	48.67	97.03	18 30 12	2082.4	-26.24	64.85
90.00	9 3 14	4521.08	10.21	190.09	42.23	63.44	10 18 35	3921.1	6.56	183.31
100.00	19 13 20	2399.07	-28.83	52.25	48.47	98.28	19 53 19	1799.1	-27.38	43.75
100.00	10 18 5	4279.61	11.40	171.72	41.61	62.18	11 29 24	3679.6	7.59	165.00
110.00	20 36 13	2139.69	-32.35	31.83	47.75	101.71	21 11 53	1539.7	-30.39	23.16
110.00	11 11 40	4111.75	14.51	157.17	39.80	58.70	12 20 12	3511.7	10.26	150.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7932 TRA-2.1241 TC3 1.2284 BAU .4303 SGT 2883.3 SGR 452.4 SG3 280.0 ST 1151.5 SR 419.9 SS 566.6
RDE -.3723 RRA -.1405 RC3 -.0673 FAU .07610 RRT -.0490 RRF .0267 RTF -.8872 CRT -.6935 CRS -.4809 CST .9632
FDE -.3674 FRA 1.6744 FC3-2.5182 BSP 9662 SGB 2918.5 R23 .0179 R13 .8872 LSA 1307.2 MSA 336.8 SSA 31.6
BDE .8763 BRA 2.1287 BC3 1.2302 FSP 801 SG1 2883.3 SG2 451.9 THA 179.55 EL1 1190.2 EL2 292.7 ALF 164.87

LAUNCH DATE NOV 18 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 442.089 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.619 GAL -4.28 AZL 88.42 HCA 140.97 SMA 222.40 ECC .34246 INC 1.5839 V1 30.134
RP 243.00 LAP 1.00 LOP 196.68 VP 22.262 GAP 19.34 AZP 91.23 TAL 343.15 TAP 124.12 RCA 146.23 APO 298.56 V2 22.585
RC 143.499 GL 11.00 GP .76 ZAL 116.35 ZAP 170.17 ETS 174.22 ZAE 154.33 ETE .29 ZAC 89.94 ETC 255.98 CLP 170.20

PLANETOCENTRIC CONIC

C3 24.995 VHL 5.000 DLA 13.04 RAL 177.62 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 8.995 DPA -.89 RAP 187.13 ECC 1.4114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 41	2685.51	-27.53	73.52	47.46	96.92	18 24 27	2085.5	-26.28	65.07
90.00	9 4 41	4495.37	9.42	188.61	41.01	63.17	10 19 37	3895.4	5.75	181.86
100.00	19 7 48	2401.35	-28.85	52.42	47.26	98.19	19 47 49	1801.3	-27.41	43.91
100.00	10 19 16	4254.80	10.61	170.30	40.39	61.89	11 30 10	3654.8	6.77	163.62
110.00	20 31 17	2140.13	-32.35	31.87	46.54	101.70	21 6 57	1540.1	-30.40	23.19
110.00	11 12 16	4088.75	13.69	155.89	38.57	58.37	12 20 25	3488.8	9.41	149.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7672 TRA-2.0955 TC3 1.3147 BAU .4399 SGT 2928.7 SGR 444.1 SG3 294.0 ST 1149.6 SR 412.1 SS 569.5
RDE -.3572 RRA -.1347 RC3 -.0678 FAU .07858 RRT -.0450 RRF .0242 RTF -.8902 CRT -.6858 CRS -.4654 CST .9612
FDE -.3600 FRA 1.7005 FC3-2.7217 BSP 9907 SGB 2962.2 R23 .0169 R13 .8902 LSA 1304.4 MSA 336.6 SSA 32.1
BDE .8463 BRA 2.0998 BC3 1.3164 FSP 844 SG1 2928.8 SG2 443.7 THA 179.60 EL1 1186.1 EL2 290.7 ALF 165.28

LAUNCH DATE NOV 18 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 444.846 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.538 GAL -4.12 AZL 88.42 HCA 141.89 SMA 220.32 ECC .33584 INC 1.5754 V1 30.134
RP 242.74 LAP .97 LOP 197.60 VP 22.162 GAP 18.77 AZP 91.24 TAL 343.54 TAP 125.43 RCA 146.33 APO 294.32 V2 22.611
RC 145.763 GL 11.17 GP .80 ZAL 115.67 ZAP 169.64 ETS 174.26 ZAE 154.41 ETE .50 ZAC 90.06 ETC 255.97 CLP 169.67

PLANETOCENTRIC CONIC

C3 23.900 VHL 4.889 DLA 13.46 RAL 177.06 RAD 6568.0 VEL 12.053 PTH 2.15 VHP 8.793 DPA -1.02 RAP 187.49 ECC 1.3933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 45	2689.15	-27.56	73.78	46.24	96.79	18 18 34	2089.1	-26.33	65.33
90.00	9 6 8	4469.73	8.63	187.14	39.80	62.93	10 20 38	3869.7	4.93	180.42
100.00	19 2 8	2404.08	-28.87	52.62	46.05	98.09	19 42 13	1804.1	-27.45	44.10
100.00	10 20 26	4230.03	9.81	168.89	39.17	61.62	11 30 56	3630.0	5.94	162.24
110.00	20 26 13	2140.98	-32.36	31.93	45.34	101.66	21 1 54	1541.0	-30.42	23.25
110.00	11 12 50	4065.90	12.87	154.63	37.36	58.06	12 20 36	3465.9	8.56	148.19

DIFFERENTIAL CORRECTIONS
TDE .7429 TRA-2.0645 TC3 1.4076 BAU .4503
RDE -.3426 RRA -.1291 RC3 -.0679 FAU .08115
FDE -.3511 FRA 1.7269 FC3-2.9397 BSP 10109
BDE .8181 BRA 2.0686 BC3 1.4092 FSP 892

MID-COURSE EXECUTION ACCURACY
SGT 2973.6 SGR 435.7 SG3 308.7
RRT -.0416 RRF .0208 RTF -.8935
SGB 3005.3 R23 .0172 R13 .8935
SG1 2973.6 SG2 435.3 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 1147.5 SR 404.2 SS 571.8
CRT -.6787 CRS -.4477 CST .9584
LSA 1301.0 MSA 336.8 SSA 32.4
EL1 1182.0 EL2 288.2 ALF 165.69

LAUNCH DATE NOV 18 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 447.671 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.460 GAL -3.96 AZL 88.43 HCA 142.82 SMA 218.38 ECC .32950 INC 1.5665 V1 30.134
RP 242.47 LAP .95 LOP 198.52 VP 22.067 GAP 18.20 AZP 91.25 TAL 343.93 TAP 126.75 RCA 146.42 APO 290.33 V2 22.638
RC 148.041 GL 11.33 GP .83 ZAL 114.97 ZAP 169.09 ETS 174.30 ZAE 154.53 ETE .72 ZAC 90.17 ETC 255.95 CLP 169.12

PLANETOCENTRIC CONIC

C3 22.873 VHL 4.783 DLA 13.89 RAL 176.48 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 8.595 DPA -1.15 RAP 187.85 ECC 1.3764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 41	2693.24	-27.59	74.07	45.04	96.65	18 12 34	2093.2	-26.38	65.62
90.00	9 7 35	4444.19	7.84	185.69	38.60	62.70	10 21 39	3844.2	4.12	178.98
100.00	18 56 22	2407.24	-28.90	52.85	44.84	97.97	19 36 29	1807.2	-27.50	44.33
100.00	10 21 35	4205.42	9.01	167.51	37.97	61.38	11 31 40	3605.4	5.12	160.88
110.00	20 21 4	2142.21	-32.38	32.02	44.15	101.61	20 56 46	1542.2	-30.44	23.34
110.00	11 13 22	4043.22	12.05	153.38	36.15	57.77	12 20 45	3443.2	7.71	146.98

DIFFERENTIAL CORRECTIONS
TDE .7190 TRA-2.0324 TC3 1.5061 BAU .4610
RDE -.3285 RRA -.1239 RC3 -.0678 FAU .08386
FDE -.3408 FRA 1.7532 FC3-3.1741 BSP 10280
BDE .7905 BRA 2.0362 BC3 1.5076 FSP 941

MID-COURSE EXECUTION ACCURACY
SGT 3018.0 SGR 427.1 SG3 324.0
RRT -.0379 RRF .0166 RTF -.8969
SGB 3048.1 R23 .0181 R13 .8969
SG1 3018.0 SG2 426.8 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 1144.6 SR 396.2 SS 573.4
CRT -.6716 CRS -.4285 CST .9550
LSA 1296.6 MSA 337.1 SSA 32.6
EL1 1177.1 EL2 285.4 ALF 166.08

LAUNCH DATE NOV 18 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 450.557 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.385 GAL -3.81 AZL 88.44 HCA 143.74 SMA 216.55 ECC .32342 INC 1.5573 V1 30.134
RP 242.20 LAP .92 LOP 199.44 VP 21.978 GAP 17.64 AZP 91.26 TAL 344.33 TAP 128.07 RCA 146.51 APO 286.58 V2 22.664
RC 150.330 GL 11.49 GP .87 ZAL 114.25 ZAP 168.53 ETS 174.32 ZAE 154.70 ETE .95 ZAC 90.29 ETC 255.94 CLP 168.56

PLANETOCENTRIC CONIC

C3 21.909 VHL 4.681 DLA 14.32 RAL 175.89 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 8.401 DPA -1.26 RAP 188.20 ECC 1.3606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 30	2697.77	-27.62	74.40	43.83	96.49	18 6 28	2097.8	-26.44	65.93
90.00	9 9 0	4418.79	7.04	184.25	37.41	62.50	10 22 39	3818.8	3.30	177.56
100.00	18 50 29	2410.82	-28.94	53.11	43.64	97.84	19 30 40	1810.8	-27.55	44.58
100.00	10 22 43	4180.97	8.21	166.13	36.78	61.16	11 32 24	3581.0	4.30	159.53
110.00	20 15 49	2143.80	-32.40	32.14	42.96	101.54	20 51 33	1543.8	-30.47	23.46
110.00	11 13 52	4020.75	11.23	152.16	34.96	57.50	12 20 53	3420.7	6.86	145.79

DIFFERENTIAL CORRECTIONS
TDE .6950 TRA-2.0002 TC3 1.6078 BAU .4713
RDE -.3148 RRA -.1189 RC3 -.0671 FAU .08668
FDE -.3291 FRA 1.7802 FC3-3.4252 BSP 10463
BDE .7629 BRA 2.0038 BC3 1.6092 FSP 995

MID-COURSE EXECUTION ACCURACY
SGT 3061.8 SGR 418.4 SG3 340.2
RRT -.0333 RRF .0114 RTF -.9002
SGB 3090.2 R23 .0192 R13 .9002
SG1 3061.8 SG2 418.1 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 1140.3 SR 388.0 SS 574.6
CRT -.6639 CRS -.4070 CST .9510
LSA 1290.7 MSA 337.8 SSA 32.9
EL1 1170.9 EL2 282.6 ALF 166.47

LAUNCH DATE NOV 18 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 453.502 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.314 GAL -3.66 AZL 88.45 HCA 144.66 SMA 214.83 ECC .31761 INC 1.5475 V1 30.134
RP 241.93 LAP .89 LOP 200.37 VP 21.895 GAP 17.09 AZP 91.26 TAL 344.74 TAP 129.40 RCA 146.60 APO 283.06 V2 22.692
RC 152.629 GL 11.64 GP .91 ZAL 113.53 ZAP 167.96 ETS 174.34 ZAE 154.89 ETE 1.18 ZAC 90.41 ETC 255.93 CLP 168.00

PLANETOCENTRIC CONIC

C3 21.006 VHL 4.583 DLA 14.74 RAL 175.27 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 8.212 DPA -1.38 RAP 188.54 ECC 1.3457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 13	2702.71	-27.66	74.76	42.63	96.31	18 0 16	2102.7	-26.50	66.28
90.00	9 10 25	4393.55	6.25	182.82	36.23	62.32	10 23 39	3793.5	2.49	176.15
100.00	18 44 30	2414.78	-28.97	53.40	42.45	97.69	19 24 45	1814.8	-27.61	44.86
100.00	10 23 49	4156.71	7.41	164.77	35.59	60.96	11 33 6	3556.7	3.48	158.19
110.00	20 10 29	2145.74	-32.43	32.29	41.77	101.46	20 46 15	1545.7	-30.51	23.60
110.00	11 14 19	3998.52	10.42	150.95	33.77	57.26	12 20 58	3398.5	6.03	144.61

DIFFERENTIAL CORRECTIONS
TDE .6712 TRA-1.9668 TC3 1.7146 BAU .4819
RDE -.3016 RRA -.1143 RC3 -.0660 FAU .08966
FDE -.3164 FRA 1.8067 FC3-3.6951 BSP 10620
BDE .7358 BRA 1.9702 BC3 1.7159 FSP 1050

MID-COURSE EXECUTION ACCURACY
SGT 3104.6 SGR 409.4 SG3 357.1
RRT -.0282 RRF .0053 RTF -.9035
SGB 3131.5 R23 .0206 R13 .9035
SG1 3104.6 SG2 409.3 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 1134.9 SR 379.6 SS 575.4
CRT -.6560 CRS -.3841 CST .9464
LSA 1283.5 MSA 338.7 SSA 33.0
EL1 1163.6 EL2 279.5 ALF 166.85

LAUNCH DATE NOV 18 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 456.502 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.245 GAL -3.52 AZL 88.46 HCA 145.59 SMA 213.20 ECC .31203 INC 1.5374 V1 30.134
RP 241.65 LAP .87 LOP 201.29 VP 21.816 GAP 16.54 AZP 91.27 TAL 345.14 TAP 130.73 RCA 146.68 APO 279.73 V2 22.720
RC 154.936 GL 11.79 GP .95 ZAL 112.79 ZAP 167.38 ETS 174.34 ZAE 155.13 ETE 1.43 ZAC 90.53 ETC 255.92 CLP 167.42

PLANETOCENTRIC CONIC

C3 20.157 VHL 4.490 DLA 15.17 RAL 174.65 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 8.027 DPA -1.49 RAP 188.88 ECC 1.3317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 49	2708.07	-27.70	75.14	41.44	96.12	17 53 57	2108.1	-26.56	66.66
90.00	9 11 48	4368.46	5.45	181.40	35.06	62.17	10 24 37	3768.5	1.68	174.75
100.00	18 38 24	2419.12	-29.01	53.71	41.26	97.53	19 18 44	1819.1	-27.67	45.17
100.00	10 24 54	4132.64	6.61	163.43	34.42	60.78	11 33 46	3532.6	2.67	156.87
110.00	20 5 3	2148.01	-32.46	32.46	40.59	101.36	20 40 51	1548.0	-30.55	23.76
110.00	11 14 44	3976.51	9.60	149.77	32.60	57.03	12 21 1	3376.5	5.19	143.45

DIFFERENTIAL CORRECTIONS
TDE .6609 TRA-1.9191 TC3 1.8520 BAU .4994
RDE -.2891 RRA -.1101 RC3 -.0648 FAU .09269
FDE -.3009 FRA 1.8344 FC3-3.9809 BSP 10450
BDE .7214 BRA 1.9222 BC3 1.8531 FSP 1112

MID-COURSE EXECUTION ACCURACY
SGT 3148.9 SGR 400.8 SG3 374.7
RRT -.0305 RRF -.0020 RTF -.9097
SGB 3174.3 R23 .0302 R13 .9097
SG1 3148.9 SG2 400.7 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 1137.3 SR 371.5 SS 575.4
CRT -.6580 CRS -.3571 CST .9359
LSA 1282.4 MSA 342.0 SSA 32.3
EL1 1164.8 EL2 273.1 ALF 167.15

LAUNCH DATE NOV 18 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 459.549 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.180 GAL -3.38 AZL 88.47 HCA 146.52 SMA 211.68 ECC .30671 INC 1.5267 V1 30.134
RP 241.36 LAP .84 LOP 202.22 VP 21.743 GAP 15.99 AZP 91.27 TAL 345.55 TAP 132.07 RCA 146.76 APO 276.60 V2 22.748
RC 157.250 GL 11.92 GP 1.00 ZAL 112.05 ZAP 166.79 ETS 174.34 ZAE 155.41 ETE 1.68 ZAC 90.65 ETC 255.91 CLP 166.83

PLANETOCENTRIC CONIC

C3 19.363 VHL 4.400 DLA 15.59 RAL 174.01 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 7.847 DPA -1.59 RAP 189.21 ECC 1.3187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 21	2713.71	-27.74	75.55	40.25	95.92	17 47 35	2113.7	-26.63	67.06
90.00	9 13 10	4343.74	4.66	180.01	33.90	62.04	10 25 33	3743.7	.89	173.37
100.00	18 32 16	2423.73	-29.05	54.05	40.08	97.36	19 12 40	1823.7	-27.73	45.50
100.00	10 25 56	4108.95	5.82	162.12	33.26	60.63	11 34 25	3508.9	1.87	155.56
110.00	19 59 35	2150.53	-32.49	32.65	39.42	101.25	20 35 26	1550.5	-30.60	23.94
110.00	11 15 6	3954.91	8.80	148.61	31.44	56.84	12 21 1	3354.9	4.37	142.32

DIFFERENTIAL CORRECTIONS
TDE .6243 TRA-1.8980 TC3 1.9401 BAU .5025
RDE -.2765 RRA -.1057 RC3 -.0620 FAU .09602
FDE -.2871 FRA 1.8595 FC3-4.2931 BSP 10901
BDE .6828 BRA 1.9009 BC3 1.9411 FSP 1170

MID-COURSE EXECUTION ACCURACY
SGT 3187.3 SGR 391.1 SG3 393.4
RRT -.0153 RRF -.0105 RTF -.9098
SGB 3211.2 R23 .0246 R13 .9098
SG1 3187.3 SG2 391.1 THA 179.89

ORBIT DETERMINATION ACCURACY
ST 1120.7 SR 362.5 SS 575.8
CRT -.6393 CRS -.3327 CST .9353
LSA 1265.4 MSA 341.4 SSA 33.2
EL1 1145.9 EL2 272.6 ALF 167.60

LAUNCH DATE NOV 18 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 462.645 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.117 GAL -3.24 AZL 88.48 HCA 147.45 SMA 210.24 ECC .30160 INC 1.5152 V1 30.134
RP 241.08 LAP .82 LOP 203.15 VP 21.674 GAP 15.45 AZP 91.28 TAL 345.95 TAP 133.41 RCA 146.83 APO 273.65 V2 22.777
RC 159.568 GL 12.05 GP 1.04 ZAL 111.29 ZAP 166.19 ETS 174.33 ZAE 155.72 ETE 1.95 ZAC 90.77 ETC 255.90 CLP 166.23

PLANETOCENTRIC CONIC

C3 18.618 VHL 4.315 DLA 16.01 RAL 173.35 RAD 6567.8 VEL 11.832 PTH 2.10 VHP 7.670 DPA -1.68 RAP 189.53 ECC 1.3064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 48	2719.69	-27.78	75.99	39.07	95.71	17 41 8	2119.7	-26.70	67.49
90.00	9 14 29	4319.26	3.88	178.64	32.76	61.93	10 26 28	3719.3	.09	172.00
100.00	18 26 3	2428.65	-29.10	54.41	38.90	97.17	19 6 32	1828.7	-27.80	45.85
100.00	10 26 55	4085.52	5.04	160.82	32.12	60.50	11 35 0	3485.5	1.07	154.28
110.00	19 54 3	2153.32	-32.53	32.85	38.25	101.14	20 29 56	1553.3	-30.65	24.14
110.00	11 15 24	3933.63	8.01	147.47	30.29	56.66	12 20 58	3333.6	3.56	141.20

DIFFERENTIAL CORRECTIONS
TDE .5991 TRA-1.8649 TC3 2.0542 BAU .5115
RDE -.2645 RRA -.1018 RC3 -.0588 FAU .09948
FDE -.2712 FRA 1.8852 FC3-4.6258 BSP 11080
BDE .6548 BRA 1.8677 BC3 2.0551 FSP 1234

MID-COURSE EXECUTION ACCURACY
SGT 3226.8 SGR 381.7 SG3 413.0
RRT -.0057 RRF -.0204 RTF -.9124
SGB 3249.3 R23 .0256 R13 .9124
SG1 3226.8 SG2 381.7 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 1110.4 SR 353.7 SS 575.6
CRT -.6284 CRS -.3049 CST .9297
LSA 1253.3 MSA 342.7 SSA 33.4
EL1 1133.8 EL2 269.5 ALF 167.99

LAUNCH DATE NOV 18 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 465.785 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 34.057 GAL -3.11 AZL 88.50 HCA 148.39 SMA 208.88 ECC .29672 INC 1.5033 V1 30.134
RP 240.79 LAP .79 LOP 204.09 VP 21.610 GAP 14.92 AZP 91.28 TAL 346.36 TAP 134.75 RCA 146.90 APO 270.86 V2 22.806
RC 161.890 GL 12.17 GP 1.10 ZAL 110.53 ZAP 165.58 ETS 174.31 ZAE 156.06 ETE 2.24 ZAC 90.89 ETC 255.89 CLP 165.62

PLANETOCENTRIC CONIC

C3 17.919 VHL 4.233 DLA 16.42 RAL 172.68 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 7.497 DPA -1.77 RAP 189.84 ECC 1.2949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 11	2725.93	-27.82	76.44	37.89	95.49	17 34 37	2125.9	-26.77	67.93
90.00	9 15 45	4295.11	3.10	177.29	31.62	61.84	10 27 20	3695.1	-.68	170.66
100.00	18 19 46	2433.82	-29.14	54.79	37.72	96.98	19 0 20	1833.8	-27.87	46.21
100.00	10 27 51	4062.45	4.26	159.54	30.98	60.39	11 35 33	3462.5	.29	153.01
110.00	19 48 28	2156.32	-32.57	33.08	37.09	101.01	20 24 24	1556.3	-30.71	24.36
110.00	11 15 39	3912.72	7.22	146.36	29.15	56.50	12 20 51	3312.7	2.77	140.11

DIFFERENTIAL CORRECTIONS
TDE .5750 TRA-1.8300 TC3 2.1752 BAU .5213
RDE -.2529 RRA -.0982 RC3 -.0549 FAU .10309
FDE -.2532 FRA 1.9112 FC3-4.9809 BSP 11224
BDE .6282 BRA 1.8326 BC3 2.1759 FSP 1302

MID-COURSE EXECUTION ACCURACY
SGT 3265.8 SGR 372.2 SG3 433.5
RRT .0047 RRF -.0323 RTF -.9152
SGB 3286.9 R23 -.0279 R13 -.9152
SG1 3265.8 SG2 372.2 THA .03

ORBIT DETERMINATION ACCURACY
ST 1099.5 SR 344.8 SS 575.0
CRT -.6180 CRS -.2740 CST .9226
LSA 1240.4 MSA 344.8 SSA 33.4
EL1 1121.3 EL2 265.9 ALF 168.37

LAUNCH DATE NOV 18 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 468.967 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.999	GAL	-2.98	AZL	88.51	HCA	149.32	SMA	207.59	ECC	.29204
RP	240.49	LAP	.76	LOP	205.02	VP	21.550	GAP	14.39	AZP	91.28	TAL	346.77	TAP	136.09	RCA	146.97
RC	164.213	GL	12.28	GP	1.15	ZAL	109.76	ZAP	164.95	ETS	174.28	ZAE	156.44	ETE	2.54	ZAC	91.01

INC	1.4907	V1	30.134	APO	268.22	V2	22.836	ETC	255.88	CLP	165.00						

PLANETOCENTRIC CONIC

C3	17.263	VHL	4.155	DLA	16.83	RAL	172.00	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	7.329	DPA	-1.85
RAP	190.15	ECC	1.2841														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 31	2732.41	-27.86	76.91	36.71	95.26	17 28 4	2132.4	-26.84	68.39
90.00	9 16 57	4271.32	2.34	175.96	30.50	61.77	10 28 8	3671.3	-1.45	169.33
100.00	18 13 27	2439.19	-29.18	55.18	36.55	96.78	18 54 6	1839.2	-27.94	46.60
100.00	10 28 43	4039.77	3.50	158.29	29.85	60.29	11 36 3	3439.8	-.48	151.77
110.00	19 42 50	2159.49	-32.61	33.32	35.93	100.87	20 18 50	1559.5	-30.77	24.58
110.00	11 15 48	3892.22	6.45	145.28	28.03	56.36	12 20 41	3292.2	1.98	139.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5578	TRA	-1.7877	TC3	2.3126	BAU	.5339	SGT	3304.2	SGR	362.9	SG3	455.0	ST	1091.8	SR	336.0
RDE	-.2418	RRA	-.0950	RC3	-.0503	FAU	.10689	RRT	.0129	RRF	-.0458	RTF	-.9192	CRT	-.6130	CRS	-.2414
FDE	-.2343	FRA	1.9360	FC3	-5.3607	BSP	11183	SGB	3324.1	R23	-.0338	R13	-.9192	LSA	1229.7	MSA	348.5
BDE	.6080	BRA	1.7902	BC3	2.3132	FSP	1372	SG1	3304.3	SG2	362.9	THA	.08	EL1	1112.2	EL2	260.6

SS	574.2	CST	.9118	SSA	32.9
ALF	168.69				

LAUNCH DATE NOV 18 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 472.186 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.944	GAL	-2.85	AZL	88.52	HCA	150.26	SMA	206.38	ECC	.28757
RP	240.19	LAP	.73	LOP	205.96	VP	21.495	GAP	13.86	AZP	91.28	TAL	347.18	TAP	137.44	RCA	147.03
RC	166.536	GL	12.37	GP	1.21	ZAL	108.99	ZAP	164.31	ETS	174.25	ZAE	156.86	ETE	2.87	ZAC	91.13

INC	1.4773	V1	30.134	APO	265.73	V2	22.866	ETC	255.88	CLP	164.36						

PLANETOCENTRIC CONIC

C3	16.648	VHL	4.080	DLA	17.23	RAL	171.30	RAD	6567.7	VEL	11.749	PTH	2.07	VHP	7.164	DPA	-1.92
RAP	190.45	ECC	1.2740														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 51	2738.99	-27.90	77.38	35.54	95.02	17 21 30	2139.0	-26.92	68.86
90.00	9 18 5	4248.03	1.59	174.66	29.38	61.72	10 28 53	3648.0	-2.20	168.03
100.00	18 7 7	2444.66	-29.23	55.58	35.39	96.57	18 47 52	1844.7	-28.01	46.99
100.00	10 29 30	4017.60	2.75	157.07	28.74	60.22	11 36 28	3417.6	-1.23	150.55
110.00	19 37 13	2162.77	-32.65	33.57	34.78	100.73	20 13 15	1562.8	-30.83	24.82
110.00	11 15 54	3872.26	5.70	144.22	26.91	56.24	12 20 26	3272.3	1.22	138.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5263	TRA	-1.7611	TC3	2.4170	BAU	.5380	SGT	3337.7	SGR	353.0	SG3	477.4	ST	1073.8	SR	326.7
RDE	-.2309	RRA	-.0917	RC3	-.0441	FAU	.11081	RRT	.0328	RRF	-.0629	RTF	-.9201	CRT	-.5936	CRS	-.2059
FDE	-.2136	FRA	1.9627	FC3	-5.7625	BSP	11506	SGB	3356.3	R23	-.0324	R13	-.9201	LSA	1210.6	MSA	349.6
BDE	.5747	BRA	1.7635	BC3	2.4174	FSP	1449	SG1	3337.7	SG2	352.8	THA	.20	EL1	1092.2	EL2	258.5

SS	573.7	CST	.9066	SSA	33.4
ALF	169.15				

LAUNCH DATE NOV 18 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 475.443 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.890	GAL	-2.73	AZL	88.54	HCA	151.20	SMA	205.23	ECC	.28330
RP	239.88	LAP	.70	LOP	206.90	VP	21.444	GAP	13.34	AZP	91.28	TAL	347.59	TAP	138.79	RCA	147.09
RC	168.857	GL	12.45	GP	1.28	ZAL	108.21	ZAP	163.86	ETS	174.20	ZAE	157.30	ETE	3.22	ZAC	91.26

INC	1.4632	V1	30.134	APO	263.37	V2	22.897	ETC	255.87	CLP	163.71						

PLANETOCENTRIC CONIC

C3	16.071	VHL	4.009	DLA	17.61	RAL	170.59	RAD	6567.6	VEL	11.724	PTH	2.07	VHP	7.002	DPA	-1.98
RAP	190.74	ECC	1.2645														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 9	2745.67	-27.94	77.87	34.38	94.78	17 14 55	2145.7	-26.99	69.33
90.00	9 19 8	4225.23	.85	173.39	28.28	61.69	10 29 33	3625.2	-2.94	166.76
100.00	18 0 46	2450.21	-29.27	55.99	34.23	96.36	18 41 36	1850.2	-28.08	47.39
100.00	10 30 12	3995.93	2.02	155.88	27.63	60.17	11 36 48	3395.9	-1.97	149.36
110.00	19 31 34	2166.12	-32.69	33.82	33.63	100.59	20 7 40	1566.1	-30.89	25.06
110.00	11 15 53	3852.79	4.96	143.20	25.80	56.14	12 20 6	3252.8	.48	136.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5025	TRA	-1.7260	TC3	2.5428	BAU	.5464	SGT	3372.1	SGR	343.4	SG3	501.0	ST	1059.5	SR	317.6
RDE	-.2204	RRA	-.0889	RC3	-.0370	FAU	.11498	RRT	.0503	RRF	-.0821	RTF	-.9225	CRT	-.5804	CRS	-.1689
FDE	-.1920	FRA	1.9881	FC3	-6.1941	BSP	11628	SGB	3389.5	R23	-.0353	R13	-.9225	LSA	1194.3	MSA	352.6
BDE	.5487	BRA	1.7283	BC3	2.5431	FSP	1527	SG1	3372.1	SG2	343.0	THA	.30	EL1	1076.3	EL2	254.6

SS	573.1	CST	.8974	SSA	33.3
ALF	169.54				

LAUNCH DATE NOV 18 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 478.734 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.840	GAL	-2.61	AZL	88.55	HCA	152.15	SMA	204.15	ECC	.27920
RP	239.58	LAP	.68	LOP	207.85	VP	21.397	GAP	12.83	AZP	91.28	TAL	347.99	TAP	140.14	RCA	147.15
RC	171.174	GL	12.52	GP	1.34	ZAL	107.43	ZAP	162.99	ETS	174.15	ZAE	157.79	ETE	3.61	ZAC	91.39

INC	1.4482	V1	30.134	APO	261.15	V2	22.928	ETC	255.87	CLP	163.04						

PLANETOCENTRIC CONIC

C3	15.529	VHL	3.941	DLA	17.99	RAL	169.87	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	6.844	DPA	-2.03
RAP	191.02	ECC	1.2556														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 28	2752.37	-27.98	78.36	33.21	94.54	17 8 20	2152.4	-27.06	69.81
90.00	9 20 5	4203.01	.14	172.15	27.18	61.68	10 30 8	3603.0	-3.65	165.51
100.00	17 54 26	2455.77	-29.31	56.40	33.07	96.15	18 35 22	1855.8	-28.15	47.78
100.00	10 30 47	3974.84	1.30	154.73	26.53	60.13	11 37 2	3374.8	-2.68	148.20
110.00	19 25 57	2169.48	-32.73	34.07	32.49	100.44	20 2 6	1569.5	-30.95	25.31
110.00	11 15 46	3833.90	4.24	142.21	24.70	56.05	12 19 40	3233.9	-.25	136.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4789	TRA	-1.6902	TC3	2.6702	BAU	.5544	SGT	3404.4	SGR	333.9	SG3	525.8	ST	1043.9	SR	308.4
RDE	-.2103	RRA	-.0864	RC3	-.0287	FAU	.11934	RRT	.0710	RRF	-.1049	RTF	-.9248	CRT	-.5663	CRS	-.1287
FDE	-.1684	FRA	2.0135	FC3	-6.6530	BSP	11740	SGB	3420.7	R23	-.0387	R13	-.9248	LSA	1176.7	MSA	356.2
BDE	.5231	BRA	1.6924	BC3	2.6704	FSP	1611	SG1	3404.5	SG2	333.0	THA	.40	EL1	1059.3	EL2	250.5

SS	572.5	CST	.8867	SSA	33.1
ALF	169.93				

LAUNCH DATE NOV 18 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 482.058 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.791 GAL -2.50 AZL 88.57 HCA 153.09 SMA 203.12 ECC .27529 INC 1.4320 V1 30.134
RP 239.26 LAP .65 LOP 208.79 VP 21.354 GAP 12.32 AZP 91.28 TAL 348.40 TAP 141.49 RCA 147.20 APO 259.04 V2 22.959
RC 173.485 GL 12.57 GP 1.42 ZAL 106.64 ZAP 162.31 ETS 174.09 ZAE 158.30 ETE 4.03 ZAC 91.52 ETC 255.86 CLP 162.36

PLANETOCENTRIC CONIC

C3 15.021 VHL 3.876 DLA 18.35 RAL 169.14 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 6.690 DPA -2.07 RAP 191.29 ECC 1.2472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 49	2758.98	-28.02	78.84	32.06	94.30	17 1 48	2159.0	-27.12	70.28
90.00	9 20 54	4181.43	-.56	170.95	26.09	61.69	10 30 35	3581.4	-4.34	164.31
100.00	17 48 9	2461.25	-29.35	56.80	31.92	95.94	18 29 10	1861.3	-28.22	48.18
100.00	10 31 15	3954.40	.61	153.60	25.44	60.11	11 37 9	3354.4	-3.37	147.08
110.00	19 20 21	2172.78	-32.78	34.32	31.35	100.30	19 56 34	1572.8	-31.01	25.54
110.00	11 15 32	3815.63	3.55	141.25	23.61	55.98	12 19 8	3215.6	-.94	135.04

DIFFERENTIAL CORRECTIONS
TDE .4590 TRA-1.6521 TC3 2.8051 BAU .5633
RDE -.2006 RRA -.0841 RC3 -.0189 FAU .12396
FDE -.1455 FRA 2.0376 FC3-7.1445 BSP 11780
BDE .5009 BRA 1.6543 BC3 2.8051 FSP 1696

MID-COURSE EXECUTION ACCURACY
SGT 3436.5 SGR 324.6 SG3 551.8
RRT .0934 RRF -.1307 RTF -.9274
SGB 3451.8 R23 -.0436 R13 -.9274
SG1 3436.7 SG2 323.1 THA .51

ORBIT DETERMINATION ACCURACY
ST 1029.8 SR 299.2 SS 572.3
CRT -.5547 CRS -.0893 CST .8746
LSA 1160.5 MSA 360.4 SSA 32.8
EL1 1043.9 EL2 245.6 ALF 170.30

LAUNCH DATE NOV 18 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 485.414 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.744 GAL -2.39 AZL 88.59 HCA 154.04 SMA 202.14 ECC .27155 INC 1.4149 V1 30.134
RP 238.95 LAP .62 LOP 209.74 VP 21.314 GAP 11.82 AZP 91.27 TAL 348.80 TAP 142.84 RCA 147.25 APO 257.04 V2 22.991
RC 175.790 GL 12.61 GP 1.50 ZAL 105.86 ZAP 161.61 ETS 174.01 ZAE 158.85 ETE 4.49 ZAC 91.66 ETC 255.85 CLP 161.66

PLANETOCENTRIC CONIC

C3 14.543 VHL 3.814 DLA 18.70 RAL 168.40 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 6.539 DPA -2.10 RAP 191.56 ECC 1.2393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 13	2765.45	-28.05	79.31	30.90	94.07	16 55 19	2165.5	-27.19	70.75
90.00	9 21 34	4160.56	-1.23	169.78	25.01	61.71	10 30 55	3560.6	-5.01	163.13
100.00	17 41 54	2466.59	-29.39	57.19	30.77	95.74	18 23 0	1866.6	-28.28	48.56
100.00	10 31 34	3934.65	-.06	152.52	24.36	60.11	11 37 9	3334.7	-4.04	145.99
110.00	19 14 47	2175.97	-32.81	34.56	30.21	100.16	19 51 3	1576.0	-31.06	25.78
110.00	11 15 10	3798.04	2.88	140.33	22.52	55.92	12 18 28	3198.0	-1.62	134.13

DIFFERENTIAL CORRECTIONS
TDE .4475 TRA-1.6050 TC3 2.9641 BAU .5763
RDE -.1913 RRA -.0823 RC3 -.0078 FAU .12886
FDE -.1222 FRA 2.0597 FC3-7.6707 BSP 11624
BDE .4866 BRA 1.6071 BC3 2.9641 FSP 1784

MID-COURSE EXECUTION ACCURACY
SGT 3470.4 SGR 315.8 SG3 579.2
RRT .1146 RRF -.1601 RTF -.9314
SGB 3484.7 R23 -.0528 R13 -.9314
SG1 3470.6 SG2 313.7 THA .60

ORBIT DETERMINATION ACCURACY
ST 1019.7 SR 290.1 SS 572.0
CRT -.5522 CRS -.0492 CST .8561
LSA 1146.7 MSA 367.6 SSA 31.7
EL1 1032.9 EL2 238.8 ALF 170.56

LAUNCH DATE NOV 18 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 488.796 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.700 GAL -2.28 AZL 88.60 HCA 154.99 SMA 201.22 ECC .26798 INC 1.3963 V1 30.134
RP 238.63 LAP .59 LOP 210.69 VP 21.279 GAP 11.33 AZP 91.27 TAL 349.19 TAP 144.19 RCA 147.30 APO 255.15 V2 23.024
RC 178.086 GL 12.62 GP 1.59 ZAL 105.08 ZAP 160.89 ETS 173.93 ZAE 159.43 ETE 5.01 ZAC 91.80 ETC 255.85 CLP 160.95

PLANETOCENTRIC CONIC

C3 14.096 VHL 3.754 DLA 19.02 RAL 167.65 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 6.392 DPA -2.12 RAP 191.81 ECC 1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 46	2771.54	-28.08	79.75	29.75	93.84	16 48 58	2171.5	-27.25	71.18
90.00	9 22 3	4140.65	-1.88	168.67	23.94	61.74	10 31 4	3540.6	-5.64	162.01
100.00	17 35 47	2471.58	-29.42	57.56	29.63	95.55	18 16 59	1871.6	-28.34	48.92
100.00	10 31 43	3915.84	-.70	151.49	23.28	60.11	11 36 59	3315.8	-4.67	144.95
110.00	19 9 21	2178.88	-32.85	34.78	29.08	100.04	19 45 39	1578.9	-31.12	25.99
110.00	11 14 39	3781.31	2.24	139.46	21.45	55.88	12 17 41	3181.3	-2.26	133.25

DIFFERENTIAL CORRECTIONS
TDE .4112 TRA-1.5838 TC3 3.0518 BAU .5751
RDE -.1820 RRA -.0804 RC3 .0062 FAU .13379
FDE -.0940 FRA 2.0866 FC3-8.2170 BSP 12073
BDE .4497 BRA 1.5858 BC3 3.0518 FSP 1887

MID-COURSE EXECUTION ACCURACY
SGT 3490.1 SGR 306.6 SG3 607.5
RRT .1571 RRF -.1976 RTF -.9308
SGB 3503.6 R23 -.0509 R13 -.9308
SG1 3490.5 SG2 302.7 THA .80

ORBIT DETERMINATION ACCURACY
ST 993.4 SR 280.4 SS 572.8
CRT -.5185 CRS -.0017 CST .8519
LSA 1121.3 MSA 367.6 SSA 32.4
EL1 1004.6 EL2 237.1 ALF 171.18

LAUNCH DATE NOV 18 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 492.207 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.657 GAL -2.17 AZL 88.62 HCA 155.94 SMA 200.35 ECC .26456 INC 1.3765 V1 30.134
RP 238.31 LAP .56 LOP 211.64 VP 21.246 GAP 10.84 AZP 91.26 TAL 349.59 TAP 145.53 RCA 147.34 APO 253.35 V2 23.056
RC 180.373 GL 12.62 GP 1.69 ZAL 104.31 ZAP 160.15 ETS 173.84 ZAE 160.04 ETE 5.59 ZAC 91.94 ETC 255.84 CLP 160.22

PLANETOCENTRIC CONIC

C3 13.675 VHL 3.698 DLA 19.33 RAL 166.89 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 6.248 DPA -2.12 RAP 192.06 ECC 1.2251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 25	2777.27	-28.10	80.17	28.60	93.64	16 42 43	2177.3	-27.30	71.59
90.00	9 22 21	4121.62	-2.49	167.61	22.87	61.78	10 31 2	3521.6	-6.24	160.94
100.00	17 29 47	2476.23	-29.45	57.90	28.48	95.37	18 11 3	1876.2	-28.40	49.26
100.00	10 31 40	3897.90	-1.31	150.51	22.21	60.13	11 36 38	3297.9	-5.27	143.96
110.00	19 3 59	2181.52	-32.88	34.98	27.94	99.92	19 40 20	1581.5	-31.16	26.18
110.00	11 13 58	3765.37	1.63	138.62	20.38	55.85	12 16 43	3165.4	-2.86	132.42

DIFFERENTIAL CORRECTIONS
TDE .3891 TRA-1.5484 TC3 3.1769 BAU .5808
RDE -.1732 RRA -.0789 RC3 .0218 FAU .13905
FDE -.0665 FRA 2.1106 FC3-8.8030 BSP 12167
BDE .4259 BRA 1.5504 BC3 3.1770 FSP 1989

MID-COURSE EXECUTION ACCURACY
SGT 3513.9 SGR 298.4 SG3 637.3
RRT .1961 RRF -.2391 RTF -.9325
SGB 3526.6 R23 -.0561 R13 -.9326
SG1 3514.4 SG2 292.6 THA .96

ORBIT DETERMINATION ACCURACY
ST 974.8 SR 271.1 SS 573.7
CRT -.4997 CRS .0447 CST .8386
LSA 1101.5 MSA 372.0 SSA 32.1
EL1 984.7 EL2 232.5 ALF 171.62

LAUNCH DATE NOV 18 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 495.645 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.616 GAL -2.07 AZL 88.64 HCA 156.90 SMA 199.52 ECC .26130 INC 1.3548 V1 30.134
RP 237.98 LAP .53 LOP 212.60 VP 21.218 GAP 10.36 AZP 91.25 TAL 349.98 TAP 146.88 RCA 147.39 APO 251.66 V2 23.089
RC 182.651 GL 12.59 GP 1.80 ZAL 103.53 ZAP 159.40 ETS 173.74 ZAE 160.67 ETE 6.24 ZAC 92.09 ETC 255.84 CLP 159.48

PLANETOCENTRIC CONIC

C3 13.279 VHL 3.644 DLA 19.61 RAL 166.13 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 6.107 DPA -2.11 RAP 192.29 ECC 1.2185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 15	2782.43	-28.12	80.54	27.45	93.45	16 36 38	2182.4	-27.35	71.96
90.00	9 22 23	4103.68	-3.07	166.61	21.80	61.84	10 30 47	3503.7	-6.81	159.92
100.00	17 23 56	2480.36	-29.48	58.21	27.34	95.21	18 5 16	1880.4	-28.44	49.55
100.00	10 31 24	3880.98	-1.88	149.58	21.15	60.16	11 36 5	3281.0	-5.84	143.03
110.00	18 58 44	2183.75	-32.91	35.15	26.81	99.83	19 35 8	1583.7	-31.20	26.34
110.00	11 13 5	3750.36	1.05	137.84	19.31	55.83	12 15 35	3150.4	-3.44	131.63

DIFFERENTIAL CORRECTIONS

TDE .3687 TRA-1.5116 TC3 3.3057 BAU .5869
RDE -.1646 RRA -.0778 RC3 .0397 FAU .14466
FDE -.0395 FRA 2.1328 FC3-9.4308 BSP 12234
BDE .4038 BRA 1.5136 BC3 3.3059 FSP 2094

MID-COURSE EXECUTION ACCURACY

SGT 3536.4 SGR 291.1 SG3 668.8
RRT .2404 RRF -.2865 RTF -.9343
SGB 3548.4 R23 -.0622 R13 -.9344
SG1 3537.1 SG2 282.5 THA 1.14

ORBIT DETERMINATION ACCURACY

ST 956.2 SR 261.8 SS 574.8
CRT -.4815 CRS .0902 CST .8249
LSA 1081.9 MSA 376.4 SSA 31.6
EL1 965.0 EL2 227.3 ALF 172.05

LAUNCH DATE NOV 18 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 499.109 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.577 GAL -1.97 AZL 88.67 HCA 157.86 SMA 198.74 ECC .25818 INC 1.3315 V1 30.134
RP 237.65 LAP .50 LOP 213.56 VP 21.192 GAP 9.88 AZP 91.23 TAL 350.37 TAP 148.22 RCA 147.43 APO 250.05 V2 23.123
RC 184.919 GL 12.54 GP 1.91 ZAL 102.76 ZAP 158.63 ETS 173.62 ZAE 161.34 ETE 6.97 ZAC 92.25 ETC 255.84 CLP 158.71

PLANETOCENTRIC CONIC

C3 12.907 VHL 3.593 DLA 19.86 RAL 165.35 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 5.969 DPA -2.08 RAP 192.51 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 17	2786.90	-28.14	80.87	26.30	93.29	16 30 44	2186.9	-27.39	72.28
90.00	9 22 9	4086.92	-3.60	165.67	20.74	61.89	10 30 16	3486.9	-7.34	158.98
100.00	17 18 16	2483.86	-29.50	58.46	26.19	95.08	17 59 40	1883.9	-28.48	49.81
100.00	10 30 52	3865.19	-2.41	148.71	20.08	60.20	11 35 17	3265.2	-6.36	142.15
110.00	18 53 38	2185.48	-32.93	35.28	25.67	99.75	19 30 4	1585.5	-31.23	26.47
110.00	11 11 59	3736.34	.52	137.11	18.25	55.82	12 14 15	3136.3	-3.97	130.90

DIFFERENTIAL CORRECTIONS

TDE .3603 TRA-1.4652 TC3 3.4614 BAU .5974
RDE -.1565 RRA -.0771 RC3 .0601 FAU .15062
FDE -.0165 FRA 2.1513 FC-10.1032 BSP 12058
BDE .3928 BRA 1.4673 BC3 3.4619 FSP 2199

MID-COURSE EXECUTION ACCURACY

SGT 3562.2 SGR 285.1 SG3 701.9
RRT .2845 RRF -.3385 RTF -.9376
SGB 3573.5 R23 -.0732 R13 -.9377
SG1 3563.1 SG2 273.2 THA 1.31

ORBIT DETERMINATION ACCURACY

ST 944.1 SR 252.7 SS 575.6
CRT -.4782 CRS .1300 CST .8039
LSA 1066.7 MSA 384.2 SSA 30.4
EL1 952.2 EL2 220.0 ALF 172.29

LAUNCH DATE NOV 18 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 502.594 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.540 GAL -1.88 AZL 88.69 HCA 158.82 SMA 197.99 ECC .25521 INC 1.3060 V1 30.134
RP 237.31 LAP .47 LOP 214.52 VP 21.170 GAP 9.41 AZP 91.22 TAL 350.74 TAP 149.56 RCA 147.46 APO 248.52 V2 23.157
RC 187.176 GL 12.45 GP 2.04 ZAL 102.00 ZAP 157.83 ETS 173.49 ZAE 162.04 ETE 7.81 ZAC 92.41 ETC 255.83 CLP 157.92

PLANETOCENTRIC CONIC

C3 12.557 VHL 3.544 DLA 20.09 RAL 164.57 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 5.834 DPA -2.04 RAP 192.73 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 38	2790.39	-28.15	81.12	25.15	93.16	16 25 8	2190.4	-27.42	72.53
90.00	9 21 34	4071.66	-4.09	164.81	19.67	61.96	10 29 26	3471.7	-7.81	158.11
100.00	17 12 53	2486.48	-29.51	58.66	25.04	94.97	17 54 19	1886.5	-28.51	50.00
100.00	10 30 1	3850.80	-2.90	147.92	19.01	60.24	11 34 12	3250.8	-6.84	141.35
110.00	18 48 46	2186.51	-32.94	35.36	24.53	99.71	19 25 12	1586.5	-31.25	26.54
110.00	11 10 37	3723.53	.03	136.44	17.18	55.82	12 12 41	3123.5	-4.46	130.23

DIFFERENTIAL CORRECTIONS

TDE .3295 TRA-1.4414 TC3 3.5460 BAU .5954
RDE -.1484 RRA -.0766 RC3 .0843 FAU .15655
FDE .0148 FRA 2.1775 FC-10.7936 BSP 12385
BDE .3614 BRA 1.4434 BC3 3.5470 FSP 2322

MID-COURSE EXECUTION ACCURACY

SGT 3571.7 SGR 280.2 SG3 736.0
RRT .3491 RRF -.4009 RTF -.9371
SGB 3582.7 R23 -.0768 R13 -.9373
SG1 3573.0 SG2 262.5 THA 1.58

ORBIT DETERMINATION ACCURACY

ST 918.5 SR 243.2 SS 578.7
CRT -.4399 CRS .1813 CST .7983
LSA 1043.7 MSA 384.2 SSA 30.7
EL1 925.1 EL2 216.8 ALF 172.97

LAUNCH DATE NOV 18 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 506.103 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.504 GAL -1.79 AZL 88.72 HCA 159.78 SMA 197.28 ECC .25237 INC 1.2782 V1 30.134
RP 236.98 LAP .44 LOP 215.48 VP 21.151 GAP 8.95 AZP 91.20 TAL 351.12 TAP 150.90 RCA 147.50 APO 247.07 V2 23.191
RC 189.421 GL 12.34 GP 2.19 ZAL 101.25 ZAP 157.02 ETS 173.35 ZAE 162.76 ETE 8.78 ZAC 92.59 ETC 255.83 CLP 157.12

PLANETOCENTRIC CONIC

C3 12.227 VHL 3.497 DLA 20.28 RAL 163.78 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 5.703 DPA -1.97 RAP 192.93 ECC 1.2012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 17	2792.79	-28.16	81.30	24.00	93.07	16 19 50	2192.8	-27.44	72.71
90.00	9 20 36	4057.92	-4.53	164.04	18.60	62.02	10 28 14	3457.9	-8.24	157.33
100.00	17 7 46	2488.12	-29.52	58.78	23.89	94.91	17 49 15	1888.1	-28.53	50.11
100.00	10 28 48	3837.83	-3.34	147.21	17.94	60.28	11 32 46	3237.8	-7.27	140.62
110.00	18 44 6	2186.77	-32.94	35.38	23.38	99.70	19 20 32	1586.8	-31.25	26.56
110.00	11 8 59	3711.94	-.42	135.84	16.12	55.82	12 10 51	3111.9	-4.90	129.62

DIFFERENTIAL CORRECTIONS

TDE .3111 TRA-1.4058 TC3 3.6656 BAU .5995
RDE -.1407 RRA -.0765 RC3 .1117 FAU .16293
FDE .0431 FRA 2.1993 FC-11.5364 BSP 12439
BDE .3414 BRA 1.4079 BC3 3.6673 FSP 2448

MID-COURSE EXECUTION ACCURACY

SGT 3586.3 SGR 277.7 SG3 772.1
RRT .4125 RRF -.4674 RTF -.9386
SGB 3597.1 R23 -.0859 R13 -.9388
SG1 3588.2 SG2 252.8 THA 1.84

ORBIT DETERMINATION ACCURACY

ST 899.2 SR 234.0 SS 581.3
CRT -.4173 CRS .2284 CST .7840
LSA 1024.4 MSA 388.4 SSA 30.1
EL1 904.7 EL2 211.3 ALF 173.44

LAUNCH DATE NOV 18 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 509.634 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.470 GAL -1.70 AZL 88.75 HCA 160.75 SMA 196.61 ECC .24966 INC 1.2481 V1 30.134
RP 236.64 LAP .41 LOP 216.45 VP 21.135 GAP 8.49 AZP 91.18 TAL 351.48 TAP 152.23 RCA 147.53 APO 245.70 V2 23.226
RC 191.655 GL 12.19 GP 2.35 ZAL 100.51 ZAP 156.18 ETS 173.19 ZAE 163.51 ETE 9.91 ZAC 92.77 ETC 255.83 CLP 156.29

PLANETOCENTRIC CONIC

C3 11.915 VHL 3.452 DLA 20.43 RAL 162.98 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 5.575 DPA -1.88 RAP 193.12 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 20	2793.82	-28.17	81.37	22.84	93.04	16 14 54	2193.8	-27.45	72.78
90.00	9 19 11	4046.00	-4.91	163.37	17.53	62.08	10 26 37	3446.0	-8.61	156.65
100.00	17 3 1	2488.53	-29.53	58.81	22.73	94.90	17 44 30	1888.5	-28.53	50.14
100.00	10 27 11	3826.53	-3.72	146.58	16.87	60.32	11 30 58	3226.5	-7.64	139.99
110.00	18 39 42	2186.06	-32.93	35.32	22.22	99.73	19 16 8	1586.1	-31.24	26.51
110.00	11 7 0	3701.76	-.80	135.31	15.05	55.83	12 8 42	3101.8	-5.28	129.08

DIFFERENTIAL CORRECTIONS
TDE .2942 TRA-1.3704 TC3 3.7723 BAU .6014
RDE -.1332 RRA -.0768 RC3 .1431 FAU .16946
FDE .0701 FRA 2.2204 FC-12.3125 BSP 12514
BDE .3229 BRA 1.3726 BC3 3.7750 FSP 2582

MID-COURSE EXECUTION ACCURACY
SGT 3593.4 SGR 277.8 SG3 809.3
RRT .4804 RRF -.5383 RTF -.9396
SGB 3604.2 R23 -.0967 R13 -.9399
SG1 3595.9 SG2 243.5 THA 2.14

ORBIT DETERMINATION ACCURACY
ST 880.2 SR 224.9 SS 584.1
CRT -.3942 CRS .2736 CST .7703
LSA 1006.0 MSA 392.0 SSA 29.5
EL1 884.9 EL2 205.6 ALF 173.92

LAUNCH DATE NOV 18 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 513.186 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.437 GAL -1.61 AZL 88.79 HCA 161.72 SMA 195.98 ECC .24707 INC 1.2139 V1 30.134
RP 236.29 LAP .38 LOP 217.42 VP 21.122 GAP 8.04 AZP 91.15 TAL 351.84 TAP 153.56 RCA 147.56 APO 244.40 V2 23.261
RC 193.877 GL 11.99 GP 2.52 ZAL 99.78 ZAP 155.32 ETS 173.01 ZAE 164.28 ETE 11.24 ZAC 92.97 ETC 255.82 CLP 155.44

PLANETOCENTRIC CONIC

C3 11.621 VHL 3.409 DLA 20.54 RAL 162.17 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 5.449 DPA -1.77 RAP 193.31 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 51	2793.22	-28.17	81.33	21.67	93.06	16 10 25	2193.2	-27.44	72.74
90.00	9 17 13	4036.14	-5.23	162.82	16.44	62.13	10 24 29	3436.1	-8.92	156.08
100.00	16 58 40	2487.47	-29.52	58.73	21.56	94.94	17 40 8	1887.5	-28.52	50.07
100.00	10 25 5	3817.12	-4.04	146.06	15.78	60.36	11 28 42	3217.1	-7.95	139.47
110.00	18 35 37	2184.20	-32.91	35.18	21.05	99.81	19 12 1	1584.2	-31.21	26.37
110.00	11 4 38	3693.15	-1.13	134.86	13.97	55.83	12 6 12	3093.2	-5.61	128.63

DIFFERENTIAL CORRECTIONS
TDE .2798 TRA-1.3338 TC3 3.8883 BAU .6048
RDE -.1259 RRA -.0775 RC3 .1797 FAU .17662
FDE .0912 FRA 2.2362 FC-13.1574 BSP 12525
BDE .3068 BRA 1.3361 BC3 3.8925 FSP 2713

MID-COURSE EXECUTION ACCURACY
SGT 3602.8 SGR 281.3 SG3 849.2
RRT .5506 RRF -.6110 RTF -.9409
SGB 3613.7 R23 -.1087 R13 -.9412
SG1 3606.1 SG2 234.6 THA 2.47

ORBIT DETERMINATION ACCURACY
ST 862.1 SR 215.7 SS 585.3
CRT -.3725 CRS .3118 CST .75[illegible]5
LSA 988.4 MSA 393.1 SSA 29.0
EL1 866.1 EL2 199.3 ALF 174.38

LAUNCH DATE NOV 18 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 516.758 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.406 GAL -1.53 AZL 88.82 HCA 162.69 SMA 195.37 ECC .24461 INC 1.1768 V1 30.134
RP 235.94 LAP .35 LOP 218.39 VP 21.111 GAP 7.59 AZP 91.12 TAL 352.20 TAP 154.89 RCA 147.58 APO 243.16 V2 23.297
RC 196.086 GL 11.75 GP 2.72 ZAL 99.06 ZAP 154.44 ETS 172.80 ZAE 165.07 ETE 12.81 ZAC 93.19 ETC 255.82 CLP 154.57

PLANETOCENTRIC CONIC

C3 11.343 VHL 3.368 DLA 20.59 RAL 161.35 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 5.327 DPA -1.63 RAP 193.48 ECC 1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 56	2790.64	-28.16	81.14	20.48	93.15	16 6 26	2190.6	-27.42	72.55
90.00	9 14 38	4028.63	-5.47	162.40	15.34	62.17	10 21 47	3428.6	-9.15	155.65
100.00	16 54 49	2484.65	-29.50	58.52	20.37	95.05	17 36 14	1884.6	-28.49	49.86
100.00	10 22 26	3809.86	-4.28	145.66	14.69	60.39	11 25 55	3209.9	-8.19	139.06
110.00	18 31 54	2180.95	-32.87	34.94	19.85	99.95	19 8 15	1580.9	-31.15	26.14
110.00	11 1 51	3686.32	-1.40	134.50	12.89	55.84	12 3 17	3086.3	-5.87	128.27

DIFFERENTIAL CORRECTIONS
TDE .2639 TRA-1.2996 TC3 3.9846 BAU .6052
RDE -.1189 RRA -.0787 RC3 .2215 FAU .18373
FDE .1166 FRA 2.2563 FC-14.0228 BSP 12580
BDE .2894 BRA 1.3019 BC3 3.9908 FSP 2862

MID-COURSE EXECUTION ACCURACY
SGT 3603.2 SGR 289.2 SG3 889.8
RRT .6212 RRF -.6835 RTF -.9417
SGB 3614.8 R23 -.1227 R13 -.9421
SG1 3607.7 SG2 226.3 THA 2.87

ORBIT DETERMINATION ACCURACY
ST 842.6 SR 206.8 SS 588.1
CRT -.3446 CRS .3562 CST .7480
LSA 970.5 MSA 395.1 SSA 28.4
EL1 845.8 EL2 193.4 ALF 174.90

LAUNCH DATE NOV 18 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 520.349 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.376 GAL -1.45 AZL 88.87 HCA 163.67 SMA 194.80 ECC .24226 INC 1.1349 V1 30.134
RP 235.59 LAP .32 LOP 219.36 VP 21.104 GAP 7.16 AZP 91.09 TAL 352.54 TAP 156.21 RCA 147.61 APO 241.99 V2 23.333
RC 198.280 GL 11.45 GP 2.95 ZAL 98.36 ZAP 153.52 ETS 172.57 ZAE 165.88 ETE 14.70 ZAC 93.43 ETC 255.81 CLP 153.68

PLANETOCENTRIC CONIC

C3 11.079 VHL 3.329 DLA 20.59 RAL 160.52 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.208 DPA -1.46 RAP 193.65 ECC 1.1823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 38	2785.73	-28.14	80.78	19.28	93.33	16 3 4	2185.7	-27.38	72.20
90.00	9 11 19	4023.82	-5.62	162.12	14.21	62.20	10 18 23	3423.8	-9.30	155.38
100.00	16 51 32	2479.74	-29.47	58.16	19.17	95.23	17 32 52	1879.7	-28.44	49.51
100.00	10 19 7	3805.04	-4.44	145.40	13.57	60.41	11 22 32	3205.0	-8.35	138.79
110.00	18 28 36	2176.05	-32.81	34.57	18.64	100.16	19 4 52	1576.1	-31.07	25.78
110.00	10 58 32	3681.50	-1.58	134.25	11.79	55.85	11 59 53	3081.5	-6.05	128.02

DIFFERENTIAL CORRECTIONS
TDE .2530 TRA-1.2630 TC3 4.0829 BAU .6061
RDE -.1120 RRA -.0804 RC3 .2701 FAU .19133
FDE .1329 FRA 2.2705 FC-14.9509 BSP 12563
BDE .2766 BRA 1.2655 BC3 4.0919 FSP 3009

MID-COURSE EXECUTION ACCURACY
SGT 3601.5 SGR 302.2 SG3 932.7
RRT .6873 RRF -.7512 RTF -.9426
SGB 3614.2 R23 -.1390 R13 -.9431
SG1 3607.5 SG2 219.2 THA 3.31

ORBIT DETERMINATION ACCURACY
ST 825.6 SR 197.9 SS 588.5
CRT -.3220 CRS .3912 CST .7385
LSA 954.2 MSA 394.8 SSA 27.7
EL1 828.2 EL2 186.7 ALF 175.35

LAUNCH DATE NOV 18 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 523.958 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.347 GAL -1.38 AZL 88.91 HCA 164.65 SMA 194.26 ECC .24002 INC 1.0870 V1 30.134
RP 235.24 LAP .29 LOP 220.34 VP 21.098 GAP 6.72 AZP 91.05 TAL 352.88 TAP 157.53 RCA 147.63 APO 240.88 V2 23.369
RC 200.460 GL 11.09 GP 3.21 ZAL 97.67 ZAP 152.58 ETS 172.30 ZAE 166.69 ETE 16.98 ZAC 93.69 ETC 255.81 CLP 152.76

PLANETOCENTRIC CONIC

C3 10.829 VHL 3.291 DLA 20.52 RAL 159.68 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 5.092 DPA -1.25 RAP 193.81 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 6	2778.04	-28.10	80.22	18.05	93.61	16 0 24	2178.0	-27.31	71.65
90.00	9 7 9	4022.13	-5.67	162.03	13.07	62.21	10 14 11	3422.1	-9.35	155.28
100.00	16 48 54	2472.35	-29.43	57.62	17.93	95.52	17 30 7	1872.4	-28.35	48.98
100.00	10 15 2	3803.06	-4.51	145.29	12.43	60.42	11 18 25	3203.1	-8.42	138.68
110.00	18 25 48	2169.18	-32.73	34.05	17.39	100.46	19 1 58	1569.2	-30.94	25.28
110.00	10 54 37	3678.99	-1.68	134.12	10.66	55.85	11 55 56	3079.0	-6.14	127.88

DIFFERENTIAL CORRECTIONS

TDE .2443 TRA-1.2267 TC3 4.1757 BAU .6064
RDE -.1051 RRA -.0825 RC3 .3271 FAU .19939
FDE .1403 FRA 2.2796 FC-15.9409 BSP 12539
BDE .2660 BRA 1.2295 BC3 4.1885 FSP 3158

MID-COURSE EXECUTION ACCURACY

SGT 3596.6 SGR 321.5 SG3 977.8
RRT .7470 RRF -.8117 RTF -.9432
SGB 3610.9 R23 -.1574 R13 -.9439
SG1 3604.6 SG2 213.2 THA 3.83

ORBIT DETERMINATION ACCURACY

ST 809.9 SR 188.7 SS 586.2
CRT -.2996 CRS .4185 CST .7339
LSA 939.0 MSA 390.7 SSA 27.3
EL1 812.0 EL2 179.6 ALF 175.80

LAUNCH DATE NOV 18 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 527.585 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.320 GAL -1.30 AZL 88.97 HCA 165.63 SMA 193.74 ECC .23789 INC 1.0325 V1 30.134
RP 234.89 LAP .26 LOP 221.32 VP 21.096 GAP 6.30 AZP 91.00 TAL 353.21 TAP 158.83 RCA 147.65 APO 239.83 V2 23.405
RC 202.623 GL 10.64 GP 3.50 ZAL 96.99 ZAP 151.61 ETS 172.00 ZAE 167.51 ETE 19.77 ZAC 93.99 ETC 255.80 CLP 151.81

PLANETOCENTRIC CONIC

C3 10.590 VHL 3.254 DLA 20.37 RAL 158.83 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.979 DPA -.99 RAP 193.96 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 26	2767.07	-28.06	79.42	16.79	94.01	15 58 33	2167.1	-27.20	70.86
90.00	9 1 59	4024.03	-5.61	162.14	11.88	62.20	10 9 3	3424.0	-9.29	155.39
100.00	16 47 2	2462.01	-29.36	56.85	16.66	95.91	17 28 4	1862.0	-28.23	48.23
100.00	10 10 3	3804.33	-4.47	145.36	11.26	60.41	11 13 28	3204.3	-8.37	138.75
110.00	18 23 35	2159.95	-32.62	33.35	16.10	100.85	18 59 35	1560.0	-30.78	24.62
110.00	10 50 0	3679.14	-1.67	134.13	9.51	55.85	11 51 19	3079.1	-6.14	127.89

DIFFERENTIAL CORRECTIONS

TDE .2376 TRA-1.1898 TC3 4.2698 BAU .6071
RDE -.0981 RRA -.0853 RC3 .3939 FAU .20793
FDE .1407 FRA 2.2845 FC-16.9983 BSP 12488
BDE .2570 BRA 1.1929 BC3 4.2879 FSP 3311

MID-COURSE EXECUTION ACCURACY

SGT 3590.4 SGR 348.2 SG3 1025.5
RRT .7984 RRF -.8630 RTF -.9440
SGB 3607.3 R23 -.1772 R13 -.9448
SG1 3601.2 SG2 209.1 THA 4.44

ORBIT DETERMINATION ACCURACY

ST 794.5 SR 179.5 SS 581.6
CRT -.2763 CRS .4417 CST .7325
LSA 924.0 MSA 383.9 SSA 26.9
EL1 796.2 EL2 172.2 ALF 176.25

LAUNCH DATE NOV 18 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 531.229 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.294 GAL -1.23 AZL 89.03 HCA 166.61 SMA 193.25 ECC .23586 INC .9718 V1 30.134
RP 234.53 LAP .22 LOP 222.31 VP 21.096 GAP 5.88 AZP 90.95 TAL 353.53 TAP 160.14 RCA 147.67 APO 238.83 V2 23.442
RC 204.770 GL 10.10 GP 3.84 ZAL 96.33 ZAP 150.61 ETS 171.66 ZAE 168.30 ETE 23.22 ZAC 94.32 ETC 255.80 CLP 150.84

PLANETOCENTRIC CONIC

C3 10.362 VHL 3.219 DLA 20.13 RAL 157.95 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.869 DPA -.69 RAP 194.11 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 47	2752.19	-27.98	78.34	15.48	94.54	15 57 39	2152.2	-27.06	69.80
90.00	8 55 38	4030.10	-5.42	162.48	10.66	62.16	10 2 48	3430.1	-9.10	155.74
100.00	16 46 5	2448.12	-29.25	55.83	15.34	96.44	17 26 53	1848.1	-28.05	47.24
100.00	10 4 1	3809.40	-4.30	145.64	10.04	60.39	11 7 31	3209.4	-8.21	139.03
110.00	18 22 3	2147.87	-32.46	32.45	14.76	101.37	18 57 51	1547.9	-30.55	23.75
110.00	10 44 32	3682.42	-1.54	134.30	8.33	55.85	11 45 55	3082.4	-6.01	128.07

DIFFERENTIAL CORRECTIONS

TDE .2307 TRA-1.1574 TC3 4.3310 BAU .6035
RDE -.0913 RRA -.0891 RC3 .4713 FAU .21611
FDE .1396 FRA 2.2976 FC-18.0555 BSP 12517
BDE .2482 BRA 1.1608 BC3 4.3566 FSP 3496

MID-COURSE EXECUTION ACCURACY

SGT 3571.7 SGR 383.5 SG3 1072.7
RRT .8397 RRF -.9039 RTF -.9441
SGB 3592.2 R23 -.1997 R13 -.9451
SG1 3586.2 SG2 207.4 THA 5.17

ORBIT DETERMINATION ACCURACY

ST 780.3 SR 170.5 SS 578.5
CRT -.2452 CRS .4684 CST .7336
LSA 911.1 MSA 376.5 SSA 26.4
EL1 781.5 EL2 165.1 ALF 176.79

LAUNCH DATE NOV 18 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 534.890 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.269 GAL -1.17 AZL 89.10 HCA 167.60 SMA 192.79 ECC .23392 INC .9010 V1 30.134
RP 234.17 LAP .19 LOP 223.29 VP 21.098 GAP 5.47 AZP 90.88 TAL 353.83 TAP 161.43 RCA 147.69 APO 237.89 V2 23.479
RC 206.900 GL 9.45 GP 4.24 ZAL 95.69 ZAP 149.57 ETS 171.26 ZAE 169.05 ETE 27.51 ZAC 94.70 ETC 255.79 CLP 149.83

PLANETOCENTRIC CONIC

C3 10.144 VHL 3.185 DLA 19.76 RAL 157.04 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.762 DPA -.32 RAP 194.26 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 18	2732.65	-27.87	76.92	14.11	95.25	15 57 51	2132.7	-26.85	68.41
90.00	8 47 54	4041.09	-5.07	163.10	9.39	62.10	9 55 15	3441.1	-8.76	156.36
100.00	16 46 9	2430.00	-29.11	54.51	13.96	97.12	17 26 39	1830.0	-27.82	45.94
100.00	9 56 43	3818.97	-3.98	146.17	8.78	60.35	11 0 22	3219.0	-7.89	139.57
110.00	18 21 18	2132.33	-32.24	31.29	13.34	102.02	18 56 50	1532.3	-30.25	22.64
110.00	10 38 4	3689.41	-1.28	134.66	7.10	55.84	11 39 33	3089.4	-5.75	128.43

DIFFERENTIAL CORRECTIONS

TDE .2270 TRA-1.1227 TC3 4.3962 BAU .6011
RDE -.0843 RRA -.0938 RC3 .5636 FAU .22481
FDE .1259 FRA 2.3026 FC-19.1867 BSP 12486
BDE .2421 BRA 1.1266 BC3 4.4322 FSP 3681

MID-COURSE EXECUTION ACCURACY

SGT 3551.6 SGR 429.0 SG3 1122.5
RRT .8718 RRF -.9350 RTF -.9444
SGB 3577.5 R23 -.2222 R13 -.9458
SG1 3571.3 SG2 209.0 THA 6.03

ORBIT DETERMINATION ACCURACY

ST 767.0 SR 161.2 SS 571.5
CRT -.2132 CRS .4881 CST .7401
LSA 898.5 MSA 364.6 SSA 26.0
EL1 767.8 EL2 157.3 ALF 177.32

LAUNCH DATE NOV 18 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 538.567 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.245 GAL -1.10 AZL 89.18 HCA 168.59 SMA 192.35 ECC .23209 INC .8156 V1 30.134
RP 233.80 LAP .16 LOP 224.28 VP 21.102 GAP 5.06 AZP 90.80 TAL 354.13 TAP 162.72 RCA 147.71 APO 236.99 V2 23.517
RC 209.011 GL 8.65 GP 4.71 ZAL 95.07 ZAP 148.48 ETS 170.78 ZAE 169.73 ETE 32.84 ZAC 95.15 ETC 255.78 CLP 148.80

PLANETOCENTRIC CONIC

C3 9.934 VHL 3.152 DLA 19.25 RAL 156.10 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.659 DPA .12 RAP 194.41 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 12	2707.51	-27.70	75.10	12.66	96.14	15 59 19	2107.5	-26.56	66.62
90.00	8 38 30	4057.91	-4.53	164.04	8.04	62.02	9 46 8	3457.9	-8.24	157.33
100.00	16 47 28	2406.73	-28.90	52.81	12.49	97.99	17 27 35	1806.7	-27.49	44.29
100.00	9 47 54	3833.92	-3.47	146.99	7.46	60.29	10 51 48	3233.9	-7.40	140.41
110.00	18 21 30	2112.52	-31.95	29.81	11.84	102.85	18 56 43	1512.5	-29.85	21.23
110.00	10 30 21	3700.90	-.84	135.26	5.82	55.83	11 32 2	3100.9	-5.32	129.04

DIFFERENTIAL CORRECTIONS
TDE .2317 TRA-1.0846 TC3 4.4613 BAU .5993
RDE -.0761 RRA -.0990 RC3 .6758 FAU .23433
FDE .0766 FRA 2.2871 FC-20.4210 BSP 12364
BDE .2439 BRA 1.0891 BC3 4.5122 FSP 3843

MID-COURSE EXECUTION ACCURACY
SGT 3528.1 SGR 486.8 SG3 1175.6
RRT .8955 RRF -.9577 RTF -.9445
SGB 3561.6 R23 -.2442 R13 -.9464
SG1 3555.1 SG2 215.0 THA 7.07

ORBIT DETERMINATION ACCURACY
ST 759.6 SR 150.2 SS 556.9
CRT -.1869 CRS .4802 CST .7628
LSA 890.4 MSA 340.9 SSA 26.2
EL1 760.2 EL2 147.4 ALF 177.80

LAUNCH DATE NOV 18 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 542.259 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.223 GAL -1.04 AZL 89.28 HCA 169.58 SMA 191.93 ECC .23034 INC .7157 V1 30.134
RP 233.44 LAP .13 LOP 225.28 VP 21.109 GAP 4.66 AZP 90.71 TAL 354.42 TAP 164.00 RCA 147.72 APO 236.14 V2 23.555
RC 211.104 GL 7.66 GP 5.27 ZAL 94.46 ZAP 147.36 ETS 170.22 ZAE 170.27 ETE 39.43 ZAC 95.68 ETC 255.77 CLP 147.74

PLANETOCENTRIC CONIC

C3 9.733 VHL 3.120 DLA 18.55 RAL 155.12 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.560 DPA .66 RAP 194.58 ECC 1.1602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 43	2675.51	-27.44	72.80	11.10	97.27	16 2 18	2075.5	-26.15	64.37
90.00	8 27 5	4081.80	-3.77	165.38	6.62	61.91	9 35 7	3481.8	-7.50	158.68
100.00	16 50 15	2377.11	-28.60	50.66	10.91	99.09	17 29 52	1777.1	-27.05	42.20
100.00	9 37 14	3855.43	-2.74	148.17	6.06	60.22	10 41 29	3255.4	-6.69	141.61
110.00	18 22 51	2087.37	-31.56	27.96	10.22	103.88	18 57 39	1487.4	-29.33	19.46
110.00	10 21 7	3717.93	-.19	136.15	4.46	55.82	11 23 5	3117.9	-4.67	129.93

DIFFERENTIAL CORRECTIONS
TDE .2391 TRA-1.0471 TC3 4.5209 BAU .5977
RDE -.0670 RRA -.1056 RC3 .8115 FAU .24393
FDE .0108 FRA 2.2695 FC-21.6966 BSP 12277
BDE .2483 BRA 1.0524 BC3 4.5932 FSP 4030

MID-COURSE EXECUTION ACCURACY
SGT 3502.1 SGR 559.8 SG3 1229.8
RRT .9127 RRF -.9735 RTF -.9448
SGB 3546.6 R23 -.2631 R13 -.9473
SG1 3539.3 SG2 226.4 THA 8.33

ORBIT DETERMINATION ACCURACY
ST 755.2 SR 138.3 SS 543.8
CRT -.1473 CRS .4692 CST .7946
LSA 887.2 MSA 312.0 SSA 26.7
EL1 755.5 EL2 136.8 ALF 178.40

LAUNCH DATE NOV 18 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 545.966 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.201 GAL -.99 AZL 89.40 HCA 170.58 SMA 191.54 ECC .22868 INC .5937 V1 30.134
RP 233.07 LAP .10 LOP 226.27 VP 21.118 GAP 4.27 AZP 90.59 TAL 354.70 TAP 165.28 RCA 147.74 APO 235.34 V2 23.593
RC 213.179 GL 6.42 GP 5.95 ZAL 93.88 ZAP 146.18 ETS 169.55 ZAE 170.61 ETE 47.38 ZAC 96.33 ETC 255.75 CLP 146.64

PLANETOCENTRIC CONIC

C3 9.541 VHL 3.089 DLA 17.62 RAL 154.06 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 4.465 DPA 1.33 RAP 194.77 ECC 1.1570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 11	2635.00	-27.06	69.89	9.40	98.68	16 7 6	2035.0	-25.58	61.54
90.00	8 13 11	4114.45	-2.72	167.21	5.10	61.80	9 21 46	3514.5	-6.47	160.53
100.00	16 54 48	2339.53	-28.17	47.95	9.19	100.45	17 33 47	1739.5	-26.43	39.58
100.00	9 24 15	3885.15	-1.74	149.81	4.56	60.15	10 29 0	3285.1	-5.70	143.26
110.00	18 25 36	2055.43	-31.01	25.63	8.45	105.16	18 59 52	1455.4	-28.62	17.25
110.00	10 9 56	3742.02	.73	137.41	3.01	55.82	11 12 18	3142.0	-3.75	131.20

DIFFERENTIAL CORRECTIONS
TDE .2513 TRA-1.0102 TC3 4.5569 BAU .5945
RDE -.0558 RRA -.1135 RC3 .9782 FAU .25358
FDE -.0909 FRA 2.2388 FC-23.0101 BSP 12177
BDE .2574 BRA 1.0165 BC3 4.6607 FSP 4215

MID-COURSE EXECUTION ACCURACY
SGT 3465.2 SGR 651.7 SG3 1284.6
RRT .9243 RRF -.9840 RTF -.9445
SGB 3525.9 R23 -.2794 R13 -.9479
SG1 3517.4 SG2 245.0 THA 9.91

ORBIT DETERMINATION ACCURACY
ST 756.5 SR 124.3 SS 534.3
CRT -.0813 CRS .4467 CST .8451
LSA 894.1 MSA 270.1 SSA 28.1
EL1 756.5 EL2 123.9 ALF 179.21

LAUNCH DATE NOV 18 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 549.687 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.181 GAL -.93 AZL 89.55 HCA 171.58 SMA 191.16 ECC .22710 INC .4452 V1 30.134
RP 232.70 LAP .07 LOP 227.27 VP 21.128 GAP 3.88 AZP 90.44 TAL 354.97 TAP 166.54 RCA 147.75 APO 234.57 V2 23.631
RC 215.236 GL 4.84 GP 6.80 ZAL 93.31 ZAP 144.93 ETS 168.72 ZAE 170.64 ETE 56.51 ZAC 97.13 ETC 255.73 CLP 145.51

PLANETOCENTRIC CONIC

C3 9.359 VHL 3.059 DLA 16.35 RAL 152.91 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 4.374 DPA 2.15 RAP 195.00 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 2	2583.62	-26.48	66.25	7.51	100.42	16 14 6	1983.6	-24.77	57.99
90.00	7 56 9	4158.30	-1.31	169.66	3.46	61.71	9 5 27	3558.3	-5.08	163.01
100.00	17 1 33	2291.70	-27.53	44.54	7.27	102.14	17 39 45	1691.7	-25.58	36.28
100.00	9 8 19	3925.45	-.37	152.02	2.94	60.11	10 13 44	3325.5	-4.35	145.48
110.00	18 30 7	2014.59	-30.25	22.69	6.47	106.74	19 3 42	1414.6	-27.66	14.46
110.00	9 56 14	3775.32	2.01	139.14	1.46	55.87	10 59 10	3175.3	-2.48	132.94

DIFFERENTIAL CORRECTIONS
TDE .2676 TRA -.9776 TC3 4.5644 BAU .5900
RDE -.0417 RRA -.1239 RC3 1.1839 FAU .26268
FDE -.2300 FRA 2.2073 FC-24.2991 BSP 12198
BDE .2708 BRA .9854 BC3 4.7154 FSP 4437

MID-COURSE EXECUTION ACCURACY
SGT 3419.2 SGR 767.6 SG3 1337.9
RRT .9316 RRF -.9908 RTF -.9435
SGB 3504.3 R23 -.2920 R13 -.9485
SG1 3493.6 SG2 273.1 THA 11.89

ORBIT DETERMINATION ACCURACY
ST 765.4 SR 108.8 SS 541.8
CRT .0502 CRS .4475 CST .9051
LSA 918.1 MSA 217.7 SSA 30.9
EL1 765.4 EL2 108.7 ALF .42

LAUNCH DATE NOV 18 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 553.423 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.161	GAL	-.88	AZL	89.74	HCA	172.58	SMA	190.81	ECC	.22560	INC	.2480
RP	232.32	LAP	.03	LOP	228.27	VP	21.141	GAP	3.50	AZP	90.25	TAL	355.22	TAP	167.80	RCA	147.76	APO	233.85
RC	217.275	GL	2.79	GP	7.88	ZAL	92.77	ZAP	143.59	ETS	167.68	ZAE	170.24	ETE	66.26	ZAC	98.14	ETC	255.69

V1	30.134	V2	23.670	CLP	144.34														

PLANETOCENTRIC CONIC

C3	9.193	VHL	3.032	DLA	14.63	RAL	151.62	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	4.290	DPA	3.21	RAP	195.29
ECC	1.1513																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 55	2517.90	-25.59	61.64	5.36	102.56	16 23 53	1917.9	-23.60	53.53
90.00	7 34 59	4217.06	.59	172.93	1.68	61.69	8 45 16	3617.1	-3.20	166.30
100.00	17 11 7	2230.24	-26.57	40.22	5.09	104.22	17 48 17	1630.2	-24.36	32.12
100.00	8 48 29	3979.96	1.48	155.01	1.19	60.14	9 54 49	3380.0	-2.51	148.49
110.00	18 36 55	1961.76	-29.15	18.97	4.23	108.70	19 9 37	1361.8	-26.32	10.93
110.00	9 39 10	3821.20	3.76	141.54	359.76	56.00	10 42 51	3221.2	-.73	135.33

DIFFERENTIAL CORRECTIONS

TDE	.2994	TRA	-.9362	TC3	4.5905	BAU	.5918
RDE	-.0201	RRA	-.1347	RC3	1.4529	FAU	.27291
FDE	-.4634	FRA	2.1229	FC-	25.7004	BSP	12061
BDE	.3001	BRA	.9459	BC3	4.8149	FSP	4600

MID-COURSE EXECUTION ACCURACY

SGT	3378.2	SGR	920.2	SG3	1395.4		
RRT	.9367	RRF	-.9950	RTF	-.9432		
SGB	3501.3	R23	-.2967	R13	-.9503		
SG1	3487.4	SG2	312.1	THA	14.43		

ORBIT DETERMINATION ACCURACY

ST	792.4	SR	91.5	SS	589.8
CRT	.3318	CRS	.5312	CST	.9649
LSA	980.6	MSA	145.5	SSA	38.9
EL1	793.0	EL2	86.2	ALF	2.22

LAUNCH DATE NOV 18 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 557.174 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.143	GAL	-.83	AZL	90.00	HCA	173.59	SMA	190.47	ECC	.22418	INC	.0383
RP	231.95	LAP	.00	LOP	229.28	VP	21.156	GAP	3.12	AZP	90.00	TAL	355.47	TAP	169.05	RCA	147.77	APO	233.17
RC	219.295	GL	.05	GP	9.29	ZAL	92.24	ZAP	142.13	ETS	166.35	ZAE	169.28	ETE	75.72	ZAC	99.47	ETC	255.64

V1	30.134	V2	23.709	CLP	143.12		

PLANETOCENTRIC CONIC

C3	9.056	VHL	3.009	DLA	12.24	RAL	150.13	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	4.214	DPA	4.58	RAP	195.69
ECC	1.1490																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 50	2432.43	-24.19	55.77	2.87	105.19	16 37 22	1832.4	-21.87	47.87
90.00	7 8 9	4296.74	3.16	177.38	359.74	61.85	8 19 46	3696.7	-.63	170.75
100.00	17 24 26	2149.90	-25.11	34.70	2.58	106.77	18 0 16	1549.9	-22.57	26.82
100.00	8 23 14	4054.50	4.00	159.11	359.27	60.35	9 30 49	3454.5	.02	152.58
110.00	18 46 49	1892.13	-27.54	14.20	1.65	111.10	19 18 21	1292.1	-24.42	6.42
110.00	9 17 21	3885.03	6.18	144.90	357.92	56.31	10 22 6	3285.0	1.71	138.66

DIFFERENTIAL CORRECTIONS

TDE	.3492	TRA	-.8891	TC3	4.5954	BAU	.5974
RDE	.0127	RRA	-.1481	RC3	1.7972	FAU	.28161
FDE	-.7861	FRA	2.0151	FC-	26.9211	BSP	11892
BDE	.3494	BRA	.9013	BC3	4.9343	FSP	4788

MID-COURSE EXECUTION ACCURACY

SGT	3330.5	SGR	1119.8	SG3	1446.2		
RRT	.9406	RRF	-.9974	RTF	-.9437		
SGB	3513.7	R23	-.2919	R13	-.9539		
SG1	3494.9	SG2	362.4	THA	17.75		

ORBIT DETERMINATION ACCURACY

ST	847.9	SR	95.6	SS	715.6
CRT	.7872	CRS	.8198	CST	.9885
LSA	1109.1	MSA	87.3	SSA	50.0
EL1	851.3	EL2	58.7	ALF	5.09

LAUNCH DATE NOV 18 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 560.936 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.125	GAL	-.78	AZL	90.34	HCA	174.59	SMA	190.15	ECC	.22284	INC	.3372
RP	231.57	LAP	-.03	LOP	230.29	VP	21.172	GAP	2.76	AZP	89.66	TAL	355.70	TAP	170.30	RCA	147.78	APO	232.52
RC	221.297	GL	-3.77	GP	11.22	ZAL	91.73	ZAP	140.48	ETS	164.58	ZAE	167.56	ETE	83.93	ZAC	101.30	ETC	255.56

V1	30.134	V2	23.748	CLP	141.85		

PLANETOCENTRIC CONIC

C3	8.983	VHL	2.997	DLA	8.82	RAL	148.31	RAD	6567.3	VEL	11.418	PTH	1.98	VHP	4.151	DPA	6.44	RAP	196.26
ECC	1.1478																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 30	2318.13	-21.94	48.15	359.95	108.37	16 56 8	1718.1	-19.23	40.53
90.00	6 33 3	4407.90	6.70	183.63	357.65	62.42	7 46 30	3807.9	2.95	176.95
100.00	17 43 8	2041.92	-22.80	27.51	359.63	109.88	18 17 10	1441.9	-19.88	19.93
100.00	7 50 5	4159.34	7.50	164.92	357.21	60.98	8 59 25	3559.3	3.57	158.33
110.00	19 1 10	1797.72	-25.07	7.97	358.63	114.04	19 31 8	1197.7	-21.60	.53
110.00	8 48 33	3976.30	9.59	149.76	355.94	57.03	9 54 49	3376.3	5.19	143.44

DIFFERENTIAL CORRECTIONS

TDE	.4152	TRA	-.8443	TC3	4.5426	BAU	.6094
RDE	.0708	RRA	-.1613	RC3	2.2613	FAU	.29001
FDE	-1.2888	FRA	1.8283	FC-	27.9505	BSP	11981
BDE	.4212	BRA	.8595	BC3	5.0744	FSP	4920

MID-COURSE EXECUTION ACCURACY

SGT	3273.0	SGR	1397.5	SG3	1494.7		
RRT	.9418	RRF	-.9988	RTF	-.9423		
SGB	3558.8	R23	-.2833	R13	-.9578		
SG1	3532.1	SG2	435.2	THA	22.26		

ORBIT DETERMINATION ACCURACY

ST	936.4	SR	169.5	SS	978.9
CRT	.9867	CRS	.9797	CST	.9847
LSA	1359.8	MSA	118.4	SSA	26.1
EL1	951.2	EL2	27.1	ALF	10.14

LAUNCH DATE NOV 18 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 564.710 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.108	GAL	-.74	AZL	90.85	HCA	175.61	SMA	189.85	ECC	.22156	INC	.8294
RP	231.20	LAP	-.06	LOP	231.30	VP	21.190	GAP	2.39	AZP	89.16	TAL	355.92	TAP	171.53	RCA	147.79	APO	231.91
RC	223.281	GL	-9.34	GP	13.99	ZAL	91.24	ZAP	138.49	ETS	162.12	ZAE	164.82	ETE	90.30	ZAC	103.93	ETC	255.41

V1	30.134	V2	23.788	CLP	140.51		

PLANETOCENTRIC CONIC

C3	9.064	VHL	3.011	DLA	3.74	RAL	145.98	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	4.112	DPA	9.10	RAP	197.13
ECC	1.1492																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 12	2158.72	-18.17	37.98	356.55	112.09	17 23 10	1558.7	-15.02	30.72
90.00	5 44 42	4570.76	11.71	192.97	355.55	64.03	7 0 53	3970.8	8.12	186.13
100.00	18 10 17	1890.72	-18.98	17.91	356.20	113.54	18 41 48	1290.7	-15.63	10.71
100.00	7 4 18	4314.01	12.48	173.69	355.15	62.62	8 16 12	3714.0	8.72	166.93
110.00	19 22 32	1664.57	-21.11	359.65	355.11	117.53	19 50 17	1064.6	-17.26	352.65
110.00	8 8 32	4112.91	14.55	157.24	353.96	58.72	9 17 5	3512.9	10.30	150.71

DIFFERENTIAL CORRECTIONS

TDE	.5270	TRA	-.7854	TC3	4.4318	BAU	.6426
RDE	.1896	RRA	-.1637	RC3	2.9127	FAU	.29884
FDE	-2.1288	FRA	1.4597	FC-	28.5442	BSP	11988
BDE	.5600	BRA	.8023	BC3	5.3032	FSP	4820

MID-COURSE EXECUTION ACCURACY

SGT	3220.3	SGR	1817.6	SG3	1544.5		
RRT	.9413	RRF	-.9995	RTF	-.9397		
SGB	3697.8	R23	-.2637	R13	-.9641		
SG1	3658.2	SG2	540.1	THA	28.66		

ORBIT DETERMINATION ACCURACY

ST	1101.9	SR	376.5	SS	1481.2
CRT	.9839	CRS	.9986	CST	.9753
LSA	1873.7	MSA	196.9	SSA	9.9
EL1	1162.7	EL2	63.7	ALF	18.64

LAUNCH DATE NOV 18 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 568.496 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.093 GAL -.70 AZL 91.66 HCA 176.62 SMA 189.56 ECC .22036 INC 1.6521 V1 30.134
RP 230.82 LAP -.10 LOP 232.32 VP 21.210 GAP 2.04 AZP 88.35 TAL 356.13 TAP 172.75 RCA 147.79 APO 231.34 V2 23.827
RC 225.247 GL -17.99 GP 18.28 ZAL 90.76 ZAP 135.81 ETS 158.59 ZAE 160.43 ETE 94.65 ZAC 108.00 ETC 255.11 CLP 139.04

PLANETOCENTRIC CONIC

C3 9.583 VHL 3.096 DLA -4.27 RAL 142.68 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 4.125 DPA 13.17 RAP 198.56 ECC 1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 35	1920.99	-11.53	23.69	352.90	116.04	18 5 36	1321.0	-7.94	16.85
90.00	4 32 1	4830.21	18.87	208.64	354.09	68.49	5 52 32	4230.2	15.78	201.33
100.00	18 52 55	1665.05	-12.33	4.46	352.49	117.45	19 20 40	1065.0	-8.56	357.70
100.00	5 55 22	4561.38	19.69	188.52	353.73	67.05	7 11 23	3961.4	16.42	181.26
110.00	19 56 34	1465.77	-14.44	348.11	351.27	121.33	20 21 0	865.8	-10.19	341.59
110.00	7 8 12	4333.42	21.89	170.12	352.64	63.06	8 20 26	3733.4	18.10	163.04

DIFFERENTIAL CORRECTIONS
TDE .6873 TRA -.7388 TC3 4.0148 BAU .6946
RDE .4220 RRA -.1687 RC3 3.6432 FAU .29274
FDE-3.2238 FRA 1.0851 FC-26.4457 BSP 13105
BDE .8065 BRA .7578 BC3 5.4214 FSP 4930

MID-COURSE EXECUTION ACCURACY
SGT 3110.8 SGR 2407.5 SG3 1515.7
RRT .9387 RRF -.9998 RTF -.9355
SGB 3933.6 R23 -.2284 R13 -.9733
SG1 3876.8 SG2 666.2 THA 37.28

ORBIT DETERMINATION ACCURACY
ST 1339.1 SR 789.5 SS 2144.8
CRT .9811 CRS .9998 CST .9774
LSA 2637.7 MSA 243.1 SSA 4.7
EL1 1548.8 EL2 132.2 ALF 30.29

LAUNCH DATE NOV 18 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 572.294 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.078 GAL -.66 AZL 93.17 HCA 177.64 SMA 189.30 ECC .21921 INC 3.1708 V1 30.134
RP 230.43 LAP -.13 LOP 233.33 VP 21.231 GAP 1.69 AZP 86.84 TAL 356.33 TAP 173.97 RCA 147.80 APO 230.79 V2 23.867
RC 227.193 GL -32.27 GP 25.61 ZAL 90.31 ZAP 131.47 ETS 153.32 ZAE 152.93 ETE 97.17 ZAC 114.96 ETC 254.37 CLP 137.25

PLANETOCENTRIC CONIC

C3 11.702 VHL 3.421 DLA -17.58 RAL 137.38 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 4.286 DPA 20.09 RAP 201.20 ECC 1.1926

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 18	1513.30	1.34	.65	350.90	118.29	19 29 32	913.3	5.11	354.00
90.00	2 19 0	5318.93	27.44	241.71	355.85	82.70	3 47 39	4718.9	26.14	233.28
100.00	20 15 24	1283.89	.29	343.20	350.32	119.89	20 36 48	683.9	4.26	336.67
100.00	3 50 36	5023.58	28.63	219.79	355.65	81.00	5 14 19	4423.6	27.09	211.32
110.00	21 1 10	1140.53	-2.36	330.67	348.66	124.11	21 20 10	540.5	2.13	324.47
110.00	5 21 19	4739.70	31.69	197.52	354.95	76.46	6 40 19	4139.7	29.50	189.00

DIFFERENTIAL CORRECTIONS
TDE .9975 TRA -.6784 TC3 3.0680 BAU .8061
RDE 1.0188 RRA -.1343 RC3 4.1401 FAU .26263
FDE-4.8618 FRA .4793 FC-19.4299 BSP 16200
BDE 1.4258 BRA .6915 BC3 5.1530 FSP 4909

MID-COURSE EXECUTION ACCURACY
SGT 2935.6 SGR 3315.2 SG3 1348.9
RRT .9328 RRF -.9998 RTF -.9276
SGB 4428.1 R23 -.1740 R13 -.9847
SG1 4354.2 SG2 805.8 THA 48.72

ORBIT DETERMINATION ACCURACY
ST 1709.8 SR 1709.9 SS 3020.4
CRT .9856 CRS .9999 CST .9838
LSA 3859.5 MSA 272.0 SSA 2.2
EL1 2409.4 EL2 204.9 ALF 45.00

LAUNCH DATE NOV 18 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 576.098 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.063 GAL -.62 AZL 96.97 HCA 178.65 SMA 189.04 ECC .21813 INC 6.9579 V1 30.134
RP 230.05 LAP -.16 LOP 234.36 VP 21.254 GAP 1.34 AZP 83.04 TAL 356.52 TAP 175.18 RCA 147.81 APO 230.28 V2 23.907
RC 229.120 GL -56.19 GP 39.79 ZAL 89.96 ZAP 122.33 ETS 146.34 ZAE 138.49 ETE 99.16 ZAC 128.19 ETC 251.94 CLP 134.10

PLANETOCENTRIC CONIC

C3 23.293 VHL 4.826 DLA -39.59 RAL 126.58 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 5.084 DPA 33.46 RAP 206.87 ECC 1.3834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.09	18 39 43	1544.81	25.54	17.04	1.26	121.34	19 5 28	944.8	29.49	9.61
118.91	1 17 27	5601.50	25.56	261.38	1.27	121.33	2 50 48	5001.5	29.51	253.95
61.09	18 39 43	1544.81	25.54	17.04	1.26	121.34	19 5 28	944.8	29.49	9.61
118.91	1 17 27	5601.50	25.56	261.38	1.27	121.33	2 50 48	5001.5	29.51	253.95
61.09	18 39 43	1544.81	25.54	17.04	1.26	121.34	19 5 28	944.8	29.49	9.61
118.91	1 17 27	5601.50	25.56	261.38	1.27	121.33	2 50 48	5001.5	29.51	253.95

DIFFERENTIAL CORRECTIONS
TDE 1.9484 TRA -.4018 TC3 1.6197 BAU 1.2649
RDE 3.4829 RRA .5315 RC3 3.7250 FAU .20884
FDE-7.2872 FRA-1.2900 FC3-7.7620 BSP 15506
BDE 3.9909 BRA .6662 BC3 4.0619 FSP 2402

MID-COURSE EXECUTION ACCURACY
SGT 2859.6 SGR 5540.3 SG3 1003.6
RRT .9265 RRF -.9997 RTF -.9180
SGB 6234.8 R23 -.0990 R13 -.9950
SG1 6159.2 SG2 968.0 THA 63.74

ORBIT DETERMINATION ACCURACY
ST 2320.9 SR 4143.5 SS 3810.4
CRT .9903 CRS 1.0000 CST .9889
LSA 6081.0 MSA 309.1 SSA 1.6
EL1 4740.8 EL2 282.1 ALF 60.87

LAUNCH DATE NOV 18 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 587.512 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.025 GAL -.56 AZL 81.48 HCA 181.77 SMA 188.36 ECC .21527 INC 8.5214 V1 30.134
RP 228.89 LAP -.26 LOP 237.44 VP 21.332 GAP .38 AZP 98.52 TAL 356.84 TAP 178.61 RCA 147.81 APO 228.91 V2 24.029
RC 234.778 GL 62.70 GP -34.40 ZAL 89.58 ZAP 122.80 ETS 204.51 ZAE 145.29 ETE 249.14 ZAC 56.11 ETC 253.00 CLP 131.03

PLANETOCENTRIC CONIC

C3 30.350 VHL 5.509 DLA 67.00 RAL 196.48 RAD 6568.2 VEL 12.318 PTH 2.22 VHP 4.398 DPA -33.08 RAP 171.98 ECC 1.4995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.79	11 28 12	4343.56	-45.93	228.03	115.77	29.36	12 40 35	3743.6	-52.73	221.98
22.79	7 18 31	4687.65	-24.72	238.98	65.57	22.05	8 36 39	4087.7	-32.09	235.87
26.35	9 31 12	4505.03	-34.64	230.35	89.44	28.36	10 46 17	3905.0	-41.58	225.70
153.65	19 43 37	2772.46	-34.63	84.05	89.42	28.35	20 29 49	2172.5	-41.57	79.40
26.35	9 31 12	4505.03	-34.64	230.35	89.44	28.36	10 46 17	3905.0	-41.58	225.70
153.65	19 43 37	2772.46	-34.63	84.05	89.42	28.35	20 29 49	2172.5	-41.57	79.40

DIFFERENTIAL CORRECTIONS
TDE -.2439 TRA-1.3706 TC3 -.0278 BAU .7555
RDE 1.7861 RRA 2.0261 RC3-1.8619 FAU .21088
FDE 5.5074 FRA 5.8326 FC3-6.0154 BSP 38183
BDE 1.8027 BRA 2.4462 BC3 1.8621 FSP 7326

MID-COURSE EXECUTION ACCURACY
SGT 3656.5 SGR 6060.9 SG3 1539.9
RRT -.9059 RRF .9992 RTF -.8879
SGB 7078.4 R23 -.1514 R13 .9885
SG1 6948.4 SG2 1350.6 THA 119.90

ORBIT DETERMINATION ACCURACY
ST 1123.3 SR 2464.0 SS 2806.3
CRT -.8098 CRS -.9994 CST .7894
LSA 3843.5 MSA 660.1 SSA 1.4
EL1 2637.0 EL2 615.8 ALF 111.49

LAUNCH DATE NOV 18 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 591.505 EARTH TO MARS
RL 147.85 LAL .00 LOL 55.69 VL 33.014 GAL -.52 AZL 83.95 HCA 182.80 SMA 188.16 ECC .21440 INC 6.0514 V1 30.134
RP 228.51 LAP -.30 LOP 238.48 VP 21.361 GAP .03 AZP 96.05 TAL 357.08 TAP 179.88 RCA 147.82 APO 228.51 V2 24.070
RC 236.623 GL 52.24 GP -24.24 ZAL 89.16 ZAP 126.15 ETS 197.68 ZAE 154.32 ETE 240.66 ZAC 66.01 ETC 254.57 CLP 130.31
PLANETOCENTRIC CONIC
C3 19.396 VHL 4.404 DLA 60.16 RAL 178.48 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 3.829 DPA -24.27 RAP 177.77 ECC 1.3192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.42	8 38 28	4364.10	-38.30	216.29	61.56	39.34	9 51 12	3764.1	-44.28	209.63
145.58	18 12 46	2694.16	-38.29	79.28	61.55	39.34	18 57 40	2094.2	-44.27	72.62
34.42	8 38 28	4364.10	-38.30	216.29	61.56	39.34	9 51 12	3764.1	-44.28	209.63
145.58	18 12 46	2694.16	-38.29	79.28	61.55	39.34	18 57 40	2094.2	-44.27	72.62
34.42	8 38 28	4364.10	-38.30	216.29	61.56	39.34	9 51 12	3764.1	-44.28	209.63
145.58	18 12 46	2694.16	-38.29	79.28	61.55	39.34	18 57 40	2094.2	-44.27	72.62

DIFFERENTIAL CORRECTIONS
TDE .0191 TRA -.6933 TC3 1.4001 BAU .8183
RDE 1.1319 RRA .8600 RC3-2.8281 FAU .35691
FDE 6.4416 FRA 4.6149 FC-15.9304 BSP 13942
BDE 1.1320 BRA 1.1047 BC3 3.1557 FSP 5627

MID-COURSE EXECUTION ACCURACY
SGT 2192.7 SGR 3664.6 SG3 1755.3
RRT -.8850 RRF .9997 RTF -.8748
SGB 4270.5 R23 -.1411 R13 .9899
SG1 4175.5 SG2 895.8 THA 119.39

ORBIT DETERMINATION ACCURACY
ST 545.7 SR 1621.4 SS 3023.1
CRT -.3764 CRS -.9998 CST .3561
LSA 3436.1 MSA 509.0 SSA 1.7
EL1 1635.7 EL2 501.1 ALF 97.97

LAUNCH DATE NOV 18 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 595.372 EARTH TO MARS
RL 147.85 LAL .00 LOL 55.69 VL 33.003 GAL -.49 AZL 85.09 HCA 183.84 SMA 187.97 ECC .21360 INC 4.9115 V1 30.134
RP 228.12 LAP -.33 LOP 239.52 VP 21.390 GAP -.28 AZP 94.90 TAL 357.19 TAP 181.03 RCA 147.82 APO 228.13 V2 24.111
RC 238.446 GL 45.78 GP -18.64 ZAL 88.87 ZAP 126.64 ETS 193.06 ZAE 158.31 ETE 230.68 ZAC 71.40 ETC 255.15 CLP 129.04
PLANETOCENTRIC CONIC
C3 15.542 VHL 3.942 DLA 55.12 RAL 170.91 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.596 DPA -19.16 RAP 180.26 ECC 1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.52	8 24 29	4280.84	-38.31	206.08	47.51	46.79	9 35 50	3680.8	-43.52	198.46
139.48	17 26 22	2674.90	-38.30	76.94	47.49	46.78	18 10 57	2074.9	-43.51	69.32
40.52	8 24 29	4280.84	-38.31	206.08	47.51	46.79	9 35 50	3680.8	-43.52	198.46
139.48	17 26 22	2674.90	-38.30	76.94	47.49	46.78	18 10 57	2074.9	-43.51	69.32
40.52	8 24 29	4280.84	-38.31	206.08	47.51	46.79	9 35 50	3680.8	-43.52	198.46
139.48	17 26 22	2674.90	-38.30	76.94	47.49	46.78	18 10 57	2074.9	-43.51	69.32

DIFFERENTIAL CORRECTIONS
TDE -.0446 TRA -.6736 TC3 1.5936 BAU .6441
RDE .8635 RRA .6287 RC3-2.6589 FAU .38947
FDE 6.9659 FRA 4.8245 FC-21.6948 BSP 12330
BDE .8646 BRA .9214 BC3 3.0999 FSP 6870

MID-COURSE EXECUTION ACCURACY
SGT 2124.3 SGR 2919.3 SG3 2017.8
RRT -.8788 RRF .9996 RTF -.8695
SGB 3610.4 R23 -.1839 R13 .9828
SG1 3510.7 SG2 842.8 THA 124.90

ORBIT DETERMINATION ACCURACY
ST 519.0 SR 1344.8 SS 3350.2
CRT -.4727 CRS -.9999 CST .4583
LSA 3618.0 MSA 460.1 SSA 2.2
EL1 1369.8 EL2 449.0 ALF 101.60

LAUNCH DATE NOV 18 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 599.252 EARTH TO MARS
RL 147.85 LAL .00 LOL 55.69 VL 32.993 GAL -.47 AZL 85.75 HCA 184.88 SMA 187.80 ECC .21285 INC 4.2512 V1 30.134
RP 227.73 LAP -.36 LOP 240.56 VP 21.421 GAP -.59 AZP 94.24 TAL 357.30 TAP 182.18 RCA 147.82 APO 227.77 V2 24.152
RC 240.248 GL 41.45 GP -15.18 ZAL 88.62 ZAP 126.04 ETS 189.95 ZAE 159.79 ETE 221.09 ZAC 74.67 ETC 255.42 CLP 127.56
PLANETOCENTRIC CONIC
C3 13.659 VHL 3.696 DLA 51.56 RAL 166.77 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 3.458 DPA -15.87 RAP 181.45 ECC 1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.93	8 20 57	4223.51	-37.52	198.93	39.23	51.62	9 31 21	3623.5	-42.19	190.88
135.07	16 56 49	2674.87	-37.51	76.07	39.21	51.61	17 41 24	2074.9	-42.18	68.02
44.93	8 20 57	4223.51	-37.52	198.93	39.23	51.62	9 31 21	3623.5	-42.19	190.88
135.07	16 56 49	2674.87	-37.51	76.07	39.21	51.61	17 41 24	2074.9	-42.18	68.02
44.93	8 20 57	4223.51	-37.52	198.93	39.23	51.62	9 31 21	3623.5	-42.19	190.88
135.07	16 56 49	2674.87	-37.51	76.07	39.21	51.61	17 41 24	2074.9	-42.18	68.02

DIFFERENTIAL CORRECTIONS
TDE -.0248 TRA -.6322 TC3 1.6831 BAU .5513
RDE .6605 RRA .4774 RC3-2.5064 FAU .42192
FDE 6.8145 FRA 4.7079 FC-26.7421 BSP 10498
BDE .6610 BRA .7922 BC3 3.0191 FSP 7302

MID-COURSE EXECUTION ACCURACY
SGT 2008.4 SGR 2428.5 SG3 2186.0
RRT -.8653 RRF .9995 RTF -.8561
SGB 3151.4 R23 -.2239 R13 .9742
SG1 3047.6 SG2 802.2 THA 128.77

ORBIT DETERMINATION ACCURACY
ST 475.9 SR 1085.9 SS 3331.9
CRT -.4071 CRS -.9999 CST .3946
LSA 3509.5 MSA 436.6 SSA 3.0
EL1 1106.1 EL2 426.7 ALF 101.91

LAUNCH DATE NOV 18 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 603.144 EARTH TO MARS
RL 147.85 LAL .00 LOL 55.69 VL 32.984 GAL -.46 AZL 86.18 HCA 185.93 SMA 187.63 ECC .21215 INC 3.8233 V1 30.134
RP 227.34 LAP -.39 LOP 241.61 VP 21.453 GAP -.69 AZP 93.80 TAL 357.39 TAP 183.31 RCA 147.83 APO 227.44 V2 24.193
RC 242.030 GL 38.37 GP -12.85 ZAL 88.40 ZAP 124.95 ETS 187.76 ZAE 159.89 ETE 212.85 ZAC 76.82 ETC 255.58 CLP 125.98
PLANETOCENTRIC CONIC
C3 12.559 VHL 3.544 DLA 48.97 RAL 164.14 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 3.359 DPA -13.55 RAP 182.01 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.22	8 21 1	4180.57	-36.63	193.70	33.84	54.89	9 30 42	3580.6	-40.92	185.45
131.78	16 35 49	2681.54	-36.62	75.92	33.83	54.88	17 20 30	2081.5	-40.92	67.67
48.22	8 21 1	4180.57	-36.63	193.70	33.84	54.89	9 30 42	3580.6	-40.92	185.45
131.78	16 35 49	2681.54	-36.62	75.92	33.83	54.88	17 20 30	2081.5	-40.92	67.67
48.22	8 21 1	4180.57	-36.63	193.70	33.84	54.89	9 30 42	3580.6	-40.92	185.45
131.78	16 35 49	2681.54	-36.62	75.92	33.83	54.88	17 20 30	2081.5	-40.92	67.67

DIFFERENTIAL CORRECTIONS
TDE .0091 TRA -.6010 TC3 1.6358 BAU .4759
RDE .5400 RRA .3955 RC3-2.3144 FAU .44306
FDE 6.7136 FRA 4.7359 FC-30.5424 BSP 9372
BDE .5401 BRA .7194 BC3 2.8342 FSP 7863

MID-COURSE EXECUTION ACCURACY
SGT 1880.1 SGR 2098.0 SG3 2322.3
RRT -.8443 RRF .9992 RTF -.8351
SGB 2817.2 R23 -.2609 R13 .9647
SG1 2706.8 SG2 780.9 THA 131.29

ORBIT DETERMINATION ACCURACY
ST 445.6 SR 922.0 SS 3315.1
CRT -.2885 CRS -.9999 CST .2781
LSA 3443.2 MSA 427.7 SSA 3.7
EL1 933.3 EL2 421.5 ALF 100.00

LAUNCH DATE NOV 18 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 607.046 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.975 GAL -.44 AZL 86.48 HCA 186.98 SMA 187.48 ECC .21149 INC 3.5216 V1 30.134
RP 226.95 LAP -.43 LOP 242.66 VP 21.487 GAP -1.19 AZP 93.50 TAL 357.46 TAP 184.44 RCA 147.83 APO 227.13 V2 24.235
RC 243.792 GL 36.07 GP -11.18 ZAL 88.22 ZAP 123.60 ETS 186.16 ZAE 159.21 ETE 206.21 ZAC 78.32 ETC 255.68 CLP 124.34

PLANETOCENTRIC CONIC

C3 11.840 VHL 3.441 DLA 47.01 RAL 162.33 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 3.280 DPA -11.79 RAP 182.20 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.76	8 22 29	4146.66	-35.82	189.72	30.08	57.23	9 31 35	3546.7	-39.84	181.37
129.24	16 19 53	2690.50	-35.81	76.11	30.07	57.21	17 4 43	2090.5	-39.83	67.77
50.76	8 22 29	4146.66	-35.82	189.72	30.08	57.23	9 31 35	3546.7	-39.84	181.37
129.24	16 19 53	2690.50	-35.81	76.11	30.07	57.21	17 4 43	2090.5	-39.83	67.77
50.76	8 22 29	4146.66	-35.82	189.72	30.08	57.23	9 31 35	3546.7	-39.84	181.37
129.24	16 19 53	2690.50	-35.81	76.11	30.07	57.21	17 4 43	2090.5	-39.83	67.77

DIFFERENTIAL CORRECTIONS
TDE .0490 TRA -.5625 TC3 1.5169 BAU .4168
RDE .4570 RRA .3356 RC3-2.1522 FAU .46372
FDE 6.5775 FRA 4.7003 FC-33.9061 BSP 8332
BDE .4590 BRA .6550 BC3 2.6330 FSP 8249

MID-COURSE EXECUTION ACCURACY
SGT 1727.3 SGR 1855.9 SG3 2437.9
RRT -.8142 RRF .9987 RTF -.8050
SGB 2535.3 R23 -.2935 R13 .9547
SG1 2415.4 SG2 770.5 THA 132.48

ORBIT DETERMINATION ACCURACY
ST 421.3 SR 800.9 SS 3259.2
CRT -.1206 CRS-1.0000 CST .1132
LSA 3356.5 MSA 418.5 SSA 4.6
EL1 803.1 EL2 417.0 ALF 94.97

LAUNCH DATE NOV 18 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 610.959 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.966 GAL -.43 AZL 86.70 HCA 188.03 SMA 187.34 ECC .21088 INC 3.2993 V1 30.134
RP 226.56 LAP -.46 LOP 243.71 VP 21.521 GAP -1.48 AZP 93.27 TAL 357.52 TAP 185.55 RCA 147.83 APO 226.84 V2 24.277
RC 245.534 GL 34.30 GP -9.93 ZAL 88.07 ZAP 122.09 ETS 184.93 ZAE 158.06 ETE 201.00 ZAC 79.40 ETC 255.76 CLP 122.64

PLANETOCENTRIC CONIC

C3 11.333 VHL 3.366 DLA 45.50 RAL 161.00 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 3.212 DPA -10.39 RAP 182.16 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.77	8 24 29	4118.95	-35.11	186.56	27.31	58.97	9 33 8	3518.9	-38.92	178.16
127.23	16 7 18	2699.96	-35.10	76.47	27.30	58.95	16 52 18	2100.0	-38.91	68.07
52.77	8 24 29	4118.95	-35.11	186.56	27.31	58.97	9 33 8	3518.9	-38.92	178.16
127.23	16 7 18	2699.96	-35.10	76.47	27.30	58.95	16 52 18	2100.0	-38.91	68.07
52.77	8 24 29	4118.95	-35.11	186.56	27.31	58.97	9 33 8	3518.9	-38.92	178.16
127.23	16 7 18	2699.96	-35.10	76.47	27.30	58.95	16 52 18	2100.0	-38.91	68.07

DIFFERENTIAL CORRECTIONS
TDE .0863 TRA -.5284 TC3 1.3274 BAU .3628
RDE .4046 RRA .2982 RC3-1.9932 FAU .47913
FDE 6.5598 FRA 4.7678 FC-36.6009 BSP 7484
BDE .4137 BRA .6067 BC3 2.3948 FSP 8744

MID-COURSE EXECUTION ACCURACY
SGT 1570.4 SGR 1673.2 SG3 2542.5
RRT -.7716 RRF .9981 RTF -.7625
SGB 2294.7 R23 -.3240 R13 .9441
SG1 2160.3 SG2 773.7 THA 132.65

ORBIT DETERMINATION ACCURACY
ST 412.8 SR 723.1 SS 3251.3
CRT .0550 CRS-1.0000 CST -.0585
LSA 3330.8 MSA 412.1 SSA 5.5
EL1 723.7 EL2 411.9 ALF 87.34

LAUNCH DATE NOV 18 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 614.882 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.959 GAL -.42 AZL 86.87 HCA 189.09 SMA 187.20 ECC .21031 INC 3.1264 V1 30.134
RP 226.17 LAP -.49 LOP 244.77 VP 21.556 GAP -1.76 AZP 93.09 TAL 357.56 TAP 186.66 RCA 147.83 APO 226.57 V2 24.318
RC 247.256 GL 32.90 GP -8.95 ZAL 87.94 ZAP 120.48 ETS 183.97 ZAE 156.61 ETE 196.95 ZAC 80.20 ETC 255.82 CLP 120.89

PLANETOCENTRIC CONIC

C3 10.955 VHL 3.310 DLA 44.28 RAL 160.00 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.153 DPA -9.22 RAP 181.95 ECC 1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.41	8 26 42	4095.71	-34.50	184.00	25.20	60.31	9 34 58	3495.7	-38.15	175.57
125.59	15 57 3	2709.23	-34.49	76.88	25.19	60.30	16 42 13	2109.2	-38.14	68.46
54.41	8 26 42	4095.71	-34.50	184.00	25.20	60.31	9 34 58	3495.7	-38.15	175.57
125.59	15 57 3	2709.23	-34.49	76.88	25.19	60.30	16 42 13	2109.2	-38.14	68.46
54.41	8 26 42	4095.71	-34.50	184.00	25.20	60.31	9 34 58	3495.7	-38.15	175.57
125.59	15 57 3	2709.23	-34.49	76.88	25.19	60.30	16 42 13	2109.2	-38.14	68.46

DIFFERENTIAL CORRECTIONS
TDE .1308 TRA -.4947 TC3 1.1055 BAU .3180
RDE .3620 RRA .2677 RC3-1.8685 FAU .49703
FDE 6.4684 FRA 4.7868 FC-39.2774 BSP 6581
BDE .3849 BRA .5625 BC3 2.1710 FSP 9048

MID-COURSE EXECUTION ACCURACY
SGT 1420.5 SGR 1530.3 SG3 2642.5
RRT -.7074 RRF .9972 RTF -.6983
SGB 2087.9 R23 -.3564 R13 .9314
SG1 1930.2 SG2 796.0 THA 131.99

ORBIT DETERMINATION ACCURACY
ST 424.9 SR 657.1 SS 3200.3
CRT .2558 CRS-1.0000 CST -.2549
LSA 3268.8 MSA 410.6 SSA 6.4
EL1 671.3 EL2 402.1 ALF 75.19

LAUNCH DATE NOV 18 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 618.816 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.952 GAL -.42 AZL 87.01 HCA 190.15 SMA 187.08 ECC .20978 INC 2.9897 V1 30.134
RP 225.78 LAP -.53 LOP 245.83 VP 21.592 GAP -2.04 AZP 92.94 TAL 357.59 TAP 187.75 RCA 147.83 APO 226.32 V2 24.360
RC 248.959 GL 31.76 GP -8.17 ZAL 87.85 ZAP 118.78 ETS 183.19 ZAE 154.96 ETE 193.78 ZAC 80.81 ETC 255.88 CLP 119.11

PLANETOCENTRIC CONIC

C3 10.662 VHL 3.265 DLA 43.29 RAL 159.22 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 3.099 DPA -8.20 RAP 181.63 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.78	8 29 0	4075.77	-33.98	181.85	23.55	61.38	9 36 56	3475.8	-37.50	173.41
124.22	15 48 32	2718.06	-33.97	77.33	23.54	61.37	16 33 51	2118.1	-37.49	68.89
55.78	8 29 0	4075.77	-33.98	181.85	23.55	61.38	9 36 56	3475.8	-37.50	173.41
124.22	15 48 32	2718.06	-33.97	77.33	23.54	61.37	16 33 51	2118.1	-37.49	68.89
55.78	8 29 0	4075.77	-33.98	181.85	23.55	61.38	9 36 56	3475.8	-37.50	173.41
124.22	15 48 32	2718.06	-33.97	77.33	23.54	61.37	16 33 51	2118.1	-37.49	68.89

DIFFERENTIAL CORRECTIONS
TDE .1730 TRA -.4589 TC3 .8378 BAU .2766
RDE .3329 RRA .2456 RC3-1.7506 FAU .51201
FDE 6.4519 FRA 4.8444 FC-41.5756 BSP 5879
BDE .3751 BRA .5205 BC3 1.9408 FSP 9473

MID-COURSE EXECUTION ACCURACY
SGT 1270.8 SGR 1413.8 SG3 2734.5
RRT -.6140 RRF .9960 RTF -.6051
SGB 1901.0 R23 -.3835 R13 .9192
SG1 1710.7 SG2 829.0 THA 130.07

ORBIT DETERMINATION ACCURACY
ST 450.0 SR 611.5 SS 3181.2
CRT .4280 CRS -.9999 CST -.4228
LSA 3245.1 MSA 407.1 SSA 7.3
EL1 658.7 EL2 377.6 ALF 63.02

LAUNCH DATE NOV 18 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 622.759 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.945 GAL -.41 AZL 87.12 HCA 191.22 SMA 186.96 ECC .20929 INC 2.8772 V1 30.134
RP 225.38 LAP -.56 LOP 246.90 VP 21.629 GAP -2.32 AZP 92.82 TAL 357.61 TAP 188.83 RCA 147.83 APO 226.09 V2 24.402
RC 250.643 GL 30.81 GP -7.53 ZAL 87.79 ZAP 117.03 ETS 182.55 ZAE 153.17 ETE 191.28 ZAC 81.27 ETC 255.93 CLP 117.28

PLANETOCENTRIC CONIC

C3 10.426 VHL 3.229 DLA 42.46 RAL 158.61 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.052 DPA -7.30 RAP 181.22 ECC 1.1716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.94	8 31 18	4058.47	-33.53	180.02	22.22	62.26	9 38 57	3458.5	-36.94	171.57
123.06	15 41 23	2726.31	-33.52	77.77	22.22	62.24	16 26 49	2126.3	-36.93	69.32
56.94	8 31 18	4058.47	-33.53	180.02	22.22	62.26	9 38 57	3458.5	-36.94	171.57
123.06	15 41 23	2726.31	-33.52	77.77	22.22	62.24	16 26 49	2126.3	-36.93	69.32
56.94	8 31 18	4058.47	-33.53	180.02	22.22	62.26	9 38 57	3458.5	-36.94	171.57
123.06	15 41 23	2726.31	-33.52	77.77	22.22	62.24	16 26 49	2126.3	-36.93	69.32

DIFFERENTIAL CORRECTIONS
TDE .2178 TRA -.4238 TC3 .5457 BAU .2428
RDE .3083 RRA .2269 RC3-1.6542 FAU .52874
FDE 6.3878 FRA 4.8742 FC-43.9044 BSP 5110
BDE .3775 BRA .4807 BC3 1.7419 FSP 9726

MID-COURSE EXECUTION ACCURACY
SGT 1145.6 SGR 1318.4 SG3 2825.9
RRT -.4775 RRF .9945 RTF -.4686
SGB 1746.7 R23 -.4037 R13 .9089
SG1 1509.1 SG2 879.4 THA 126.78

ORBIT DETERMINATION ACCURACY
ST 493.0 SR 572.0 SS 3137.1
CRT .5712 CRS -.9998 CST -.5621
LSA 3201.0 MSA 406.1 SSA 8.3
EL1 672.0 EL2 344.4 ALF 52.32

LAUNCH DATE NOV 18 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 626.712 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.939 GAL -.41 AZL 87.22 HCA 192.29 SMA 186.85 ECC .20884 INC 2.7846 V1 30.134
RP 224.99 LAP -.59 LOP 247.97 VP 21.667 GAP -2.59 AZP 92.72 TAL 357.61 TAP 189.90 RCA 147.83 APO 225.88 V2 24.444
RC 252.307 GL 30.02 GP -6.99 ZAL 87.76 ZAP 115.22 ETS 182.02 ZAE 151.27 ETE 189.29 ZAC 81.62 ETC 255.99 CLP 115.43

PLANETOCENTRIC CONIC

C3 10.232 VHL 3.199 DLA 41.75 RAL 158.13 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.008 DPA -6.49 RAP 180.73 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.94	8 33 38	4043.12	-33.13	178.43	21.15	62.99	9 41 1	3443.1	-36.45	169.98
122.06	15 35 14	2734.10	-33.12	78.20	21.15	62.98	16 20 48	2134.1	-36.44	69.75
57.94	8 33 38	4043.12	-33.13	178.43	21.15	62.99	9 41 1	3443.1	-36.45	169.98
122.06	15 35 14	2734.10	-33.12	78.20	21.15	62.98	16 20 48	2134.1	-36.44	69.75
57.94	8 33 38	4043.12	-33.13	178.43	21.15	62.99	9 41 1	3443.1	-36.45	169.98
122.06	15 35 14	2734.10	-33.12	78.20	21.15	62.98	16 20 48	2134.1	-36.44	69.75

DIFFERENTIAL CORRECTIONS
TDE .2621 TRA -.3865 TC3 .2158 BAU .2154
RDE .2909 RRA .2129 RC3-1.5600 FAU .54253
FDE 6.3787 FRA 4.9400 FC-45.9021 BSP 4475
BDE .3916 BRA .4413 BC3 1.5749 FSP 10039

MID-COURSE EXECUTION ACCURACY
SGT 1049.0 SGR 1236.5 SG3 2909.0
RRT -.2833 RRF .9926 RTF -.2745
SGB 1621.5 R23 -.3836 R13 .9156
SG1 1319.1 SG2 943.0 THA 119.88

ORBIT DETERMINATION ACCURACY
ST 545.8 SR 544.0 SS 3118.8
CRT .6797 CRS -.9997 CST -.6672
LSA 3187.1 MSA 403.7 SSA 9.2
EL1 706.2 EL2 308.4 ALF 44.87

LAUNCH DATE NOV 18 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 630.675 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.933 GAL -.41 AZL 87.29 HCA 193.36 SMA 186.76 ECC .20843 INC 2.7062 V1 30.134
RP 224.60 LAP -.63 LOP 249.04 VP 21.706 GAP -2.85 AZP 92.63 TAL 357.60 TAP 190.96 RCA 147.83 APO 225.68 V2 24.486
RC 253.951 GL 29.34 GP -6.53 ZAL 87.75 ZAP 113.37 ETS 181.56 ZAE 149.30 ETE 187.68 ZAC 81.89 ETC 256.04 CLP 113.54

PLANETOCENTRIC CONIC

C3 10.070 VHL 3.173 DLA 41.13 RAL 157.76 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 2.969 DPA -5.73 RAP 180.19 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.83	8 35 59	4029.35	-32.77	177.02	20.28	63.62	9 43 9	3429.3	-36.02	168.57
121.17	15 29 56	2741.46	-32.76	78.63	20.27	63.60	16 15 38	2141.5	-36.01	70.18
58.83	8 35 59	4029.35	-32.77	177.02	20.28	63.62	9 43 9	3429.3	-36.02	168.57
121.17	15 29 56	2741.46	-32.76	78.63	20.27	63.60	16 15 38	2141.5	-36.01	70.18
58.83	8 35 59	4029.35	-32.77	177.02	20.28	63.62	9 43 9	3429.3	-36.02	168.57
121.17	15 29 56	2741.46	-32.76	78.63	20.27	63.60	16 15 38	2141.5	-36.01	70.18

DIFFERENTIAL CORRECTIONS
TDE .3060 TRA -.3485 TC3 -.1403 BAU .1995
RDE .2772 RRA .2013 RC3-1.4751 FAU .55587
FDE 6.3725 FRA 5.0043 FC-47.7908 BSP 4016
BDE .4129 BRA .4025 BC3 1.4818 FSP 10340

MID-COURSE EXECUTION ACCURACY
SGT 1005.6 SGR 1166.2 SG3 2988.3
RRT -.0369 RRF .9903 RTF -.0277
SGB 1539.9 R23 -.1120 R13 .9840
SG1 1168.4 SG2 1002.9 THA 96.96

ORBIT DETERMINATION ACCURACY
ST 606.8 SR 521.8 SS 3101.8
CRT .7592 CRS -.9995 CST -.7441
LSA 3178.2 MSA 401.1 SSA 10.2
EL1 751.9 EL2 274.1 ALF 39.36

LAUNCH DATE NOV 18 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 634.648 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.928 GAL -.42 AZL 87.36 HCA 194.44 SMA 186.67 ECC .20805 INC 2.6392 V1 30.134
RP 224.21 LAP -.66 LOP 250.12 VP 21.745 GAP -3.11 AZP 92.56 TAL 357.57 TAP 192.01 RCA 147.83 APO 225.50 V2 24.527
RC 255.576 GL 28.76 GP -6.13 ZAL 87.78 ZAP 111.49 ETS 181.17 ZAE 147.26 ETE 186.37 ZAC 82.10 ETC 256.10 CLP 111.62

PLANETOCENTRIC CONIC

C3 9.931 VHL 3.151 DLA 40.58 RAL 157.48 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 2.935 DPA -5.02 RAP 179.59 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.62	8 38 23	4016.81	-32.45	175.76	19.56	64.16	9 45 20	3416.8	-35.63	167.31
120.38	15 25 19	2748.47	-32.44	79.04	19.56	64.15	16 11 7	2148.5	-35.62	70.60
59.62	8 38 23	4016.81	-32.45	175.76	19.56	64.16	9 45 20	3416.8	-35.63	167.31
120.38	15 25 19	2748.47	-32.44	79.04	19.56	64.15	16 11 7	2148.5	-35.62	70.60
59.62	8 38 23	4016.81	-32.45	175.76	19.56	64.16	9 45 20	3416.8	-35.63	167.31
120.38	15 25 19	2748.47	-32.44	79.04	19.56	64.15	16 11 7	2148.5	-35.62	70.60

DIFFERENTIAL CORRECTIONS
TDE .3516 TRA -.3105 TC3 -.5198 BAU .1977
RDE .2665 RRA .1925 RC3-1.3954 FAU .56782
FDE 6.3735 FRA 5.0955 FC-49.5005 BSP 3795
BDE .4412 BRA .3653 BC3 1.4891 FSP 10652

MID-COURSE EXECUTION ACCURACY
SGT 1033.7 SGR 1104.8 SG3 3062.6
RRT .2236 RRF .9876 RTF .2337
SGB 1513.0 R23 .4892 R13 .8580
SG1 1187.9 SG2 937.1 THA 53.30

ORBIT DETERMINATION ACCURACY
ST 677.2 SR 504.5 SS 3090.3
CRT .8172 CRS -.9993 CST -.7999
LSA 3178.5 MSA 400.2 SSA 11.1
EL1 808.6 EL2 243.6 ALF 34.96

LAUNCH DATE NOV 18 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 638.630 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.923 GAL -.42 AZL 87.42 HCA 195.52 SMA 186.59 ECC .20771 INC 2.5805 V1 30.134
RP 223.82 LAP -.69 LOP 251.20 VP 21.785 GAP -3.37 AZP 92.49 TAL 357.53 TAP 193.05 RCA 147.83 APO 225.34 V2 24.569
RC 257.180 GL 28.25 GP -5.78 ZAL 87.83 ZAP 109.57 ETS 180.83 ZAE 145.18 ETE 185.29 ZAC 82.25 ETC 256.15 CLP 109.67

PLANETOCENTRIC CONIC

C3 9.811 VHL 3.132 DLA 40.09 RAL 157.28 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 2.904 DPA -4.34 RAP 178.95 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.34	8 40 50	4005.23	-32.16	174.61	18.98	64.64	9 47 36	3405.2	-35.28	166.16
119.66	15 21 14	2755.24	-32.15	79.45	18.97	64.63	16 7 9	2155.2	-35.27	71.01
60.34	8 40 50	4005.23	-32.16	174.61	18.98	64.64	9 47 36	3405.2	-35.28	166.16
119.66	15 21 14	2755.24	-32.15	79.45	18.97	64.63	16 7 9	2155.2	-35.27	71.01
60.34	8 40 50	4005.23	-32.16	174.61	18.98	64.64	9 47 36	3405.2	-35.28	166.16
119.66	15 21 14	2755.24	-32.15	79.45	18.97	64.63	16 7 9	2155.2	-35.27	71.01

DIFFERENTIAL CORRECTIONS
TDE .3967 TRA -.2703 TC3 -.9226 BAU .2118
RDE .2568 RRA .1837 RC3-1.3254 FAU .58052
FDE 6.3378 FRA 5.1377 FC-51.2242 BSP 3840
BDE .4726 BRA .3268 BC3 1.6149 FSP 10851

MID-COURSE EXECUTION ACCURACY
SGT 1130.7 SGR 1050.2 SG3 3133.2
RRT .4521 RRF .9843 RTF .4638
SGB 1543.2 R23 .5572 R13 .8117
SG1 1317.1 SG2 804.2 THA 40.36

ORBIT DETERMINATION ACCURACY
ST 751.3 SR 488.6 SS 3061.3
CRT .8603 CRS -.9990 CST -.8414
LSA 3164.9 MSA 397.5 SSA 12.1
EL1 870.0 EL2 215.1 ALF 31.36

LAUNCH DATE NOV 18 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 642.622 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.919 GAL -.43 AZL 87.47 HCA 196.60 SMA 186.51 ECC .20740 INC 2.5298 V1 30.134
RP 223.44 LAP -.72 LOP 252.28 VP 21.826 GAP -3.61 AZP 92.42 TAL 357.48 TAP 194.08 RCA 147.83 APO 225.19 V2 24.611
RC 258.763 GL 27.80 GP -5.47 ZAL 87.91 ZAP 107.63 ETS 180.53 ZAE 143.05 ETE 184.38 ZAC 82.36 ETC 256.21 CLP 107.71

PLANETOCENTRIC CONIC

C3 9.707 VHL 3.116 DLA 39.65 RAL 157.15 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 2.876 DPA -3.69 RAP 178.29 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.01	8 43 22	3994.46	-31.89	173.55	18.50	65.07	9 49 56	3394.5	-34.95	165.11
118.99	15 17 38	2761.77	-31.87	79.85	18.50	65.06	16 3 40	2161.8	-34.94	71.41
61.01	8 43 22	3994.46	-31.89	173.55	18.50	65.07	9 49 56	3394.5	-34.95	165.11
118.99	15 17 38	2761.77	-31.87	79.85	18.50	65.06	16 3 40	2161.8	-34.94	71.41
61.01	8 43 22	3994.46	-31.89	173.55	18.50	65.07	9 49 56	3394.5	-34.95	165.11
118.99	15 17 38	2761.77	-31.87	79.85	18.50	65.06	16 3 40	2161.8	-34.94	71.41

DIFFERENTIAL CORRECTIONS
TDE .4446 TRA -.2294 TC3-1.3556 BAU .2396
RDE .2491 RRA .1773 RC3-1.2534 FAU .58983
FDE 6.3080 FRA 5.2239 FC-52.6065 BSP 4221
BDE .5097 BRA .2900 BC3 1.8462 FSP 11094

MID-COURSE EXECUTION ACCURACY
SGT 1297.0 SGR 999.6 SG3 3191.8
RRT .6188 RRF .9803 RTF .6332
SGB 1637.5 R23 .5323 R13 .8238
SG1 1487.5 SG2 684.7 THA 33.47

ORBIT DETERMINATION ACCURACY
ST 834.4 SR 476.1 SS 3039.0
CRT .8921 CRS -.9986 CST -.8717
LSA 3162.4 MSA 397.5 SSA 13.0
EL1 941.6 EL2 190.6 ALF 28.23

LAUNCH DATE NOV 18 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 646.622 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.915 GAL -.44 AZL 87.52 HCA 197.69 SMA 186.44 ECC .20712 INC 2.4848 V1 30.134
RP 223.05 LAP -.75 LOP 253.37 VP 21.868 GAP -3.86 AZP 92.37 TAL 357.41 TAP 195.10 RCA 147.83 APO 225.06 V2 24.653
RC 260.326 GL 27.40 GP -5.20 ZAL 88.03 ZAP 105.66 ETS 180.27 ZAE 140.89 ETE 183.62 ZAC 82.43 ETC 256.28 CLP 105.73

PLANETOCENTRIC CONIC

C3 9.615 VHL 3.101 DLA 39.23 RAL 157.07 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 2.853 DPA -3.07 RAP 177.59 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.63	8 45 59	3984.30	-31.63	172.55	18.13	65.47	9 52 23	3384.3	-34.65	164.12
118.37	15 14 26	2768.18	-31.62	80.25	18.12	65.45	16 0 34	2168.2	-34.64	71.82
61.63	8 45 59	3984.30	-31.63	172.55	18.13	65.47	9 52 23	3384.3	-34.65	164.12
118.37	15 14 26	2768.18	-31.62	80.25	18.12	65.45	16 0 34	2168.2	-34.64	71.82
61.63	8 45 59	3984.30	-31.63	172.55	18.13	65.47	9 52 23	3384.3	-34.65	164.12
118.37	15 14 26	2768.18	-31.62	80.25	18.12	65.45	16 0 34	2168.2	-34.64	71.82

DIFFERENTIAL CORRECTIONS
TDE .4915 TRA -.1881 TC3-1.7987 BAU .2771
RDE .2429 RRA .1719 RC3-1.1881 FAU .59922
FDE 6.2743 FRA 5.3097 FC-53.9553 BSP 4858
BDE .5483 BRA .2549 BC3 2.1557 FSP 11292

MID-COURSE EXECUTION ACCURACY
SGT 1506.9 SGR 955.3 SG3 3249.4
RRT .7263 RRF .9756 RTF .7441
SGB 1784.2 R23 .4837 R13 .8489
SG1 1684.7 SG2 587.3 THA 28.50

ORBIT DETERMINATION ACCURACY
ST 918.8 SR 465.9 SS 3017.2
CRT .9153 CRS -.9982 CST -.8937
LSA 3163.3 MSA 397.6 SSA 14.0
EL1 1016.1 EL2 169.7 ALF 25.67

LAUNCH DATE NOV 18 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 650.632 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.912 GAL -.46 AZL 87.56 HCA 198.78 SMA 186.38 ECC .20687 INC 2.4447 V1 30.134
RP 222.66 LAP -.79 LOP 254.46 VP 21.909 GAP -4.10 AZP 92.31 TAL 357.32 TAP 196.10 RCA 147.83 APO 224.94 V2 24.695
RC 261.869 GL 27.04 GP -4.95 ZAL 88.17 ZAP 103.67 ETS 180.04 ZAE 138.70 ETE 182.98 ZAC 82.48 ETC 256.34 CLP 103.73

PLANETOCENTRIC CONIC

C3 9.533 VHL 3.088 DLA 38.85 RAL 157.06 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.833 DPA -2.46 RAP 176.87 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.22	8 48 43	3974.62	-31.38	171.61	17.83	65.83	9 54 58	3374.6	-34.36	163.18
117.78	15 11 34	2774.53	-31.37	80.65	17.83	65.81	15 57 48	2174.5	-34.35	72.22
62.22	8 48 43	3974.62	-31.38	171.61	17.83	65.83	9 54 58	3374.6	-34.36	163.18
117.78	15 11 34	2774.53	-31.37	80.65	17.83	65.81	15 57 48	2174.5	-34.35	72.22
62.22	8 48 43	3974.62	-31.38	171.61	17.83	65.83	9 54 58	3374.6	-34.36	163.18
117.78	15 11 34	2774.53	-31.37	80.65	17.83	65.81	15 57 48	2174.5	-34.35	72.22

DIFFERENTIAL CORRECTIONS
TDE .5380 TRA -.1442 TC3-2.2584 BAU .3216
RDE .2377 RRA .1670 RC3-1.1258 FAU .60748
FDE 6.2314 FRA 5.3812 FC-55.1658 BSP 5683
BDE .5882 BRA .2206 BC3 2.5235 FSP 11452

MID-COURSE EXECUTION ACCURACY
SGT 1749.2 SGR 914.4 SG3 3299.8
RRT .7961 RRF .9703 RTF .8181
SGB 1973.8 R23 .4251 R13 .8754
SG1 1907.4 SG2 507.5 THA 24.44

ORBIT DETERMINATION ACCURACY
ST 1004.5 SR 457.5 SS 2993.0
CRT .9335 CRS -.9977 CST -.9110
LSA 3165.4 MSA 396.0 SSA 14.9
EL1 1093.4 EL2 150.7 ALF 23.51

LAUNCH DATE NOV 18 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 654.651 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.908	GAL	-.48	AZL	87.59	HCA	199.88	SMA	186.33	ECC	.20665	INC	2.4085
RP	222.28	LAP	-.82	LOP	255.55	VP	21.952	GAP	-4.33	AZP	92.27	TAL	357.22	TAP	197.10	RCA	147.82	APO	224.84
RC	263.392	GL	26.72	GP	-4.72	ZAL	88.34	ZAP	101.68	ETS	179.84	ZAE	136.50	ETE	182.45	ZAC	82.51	ETC	256.41

V1 30.134 V2 24.737 CLP 101.72

PLANETOCENTRIC CONIC

C3	9.461	VHL	3.076	DLA	38.48	RAL	157.09	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	2.816	DPA	-1.88	RAP	176.14

ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.78	8 51 35	3965.28	-31.15	170.72	17.61	66.16	9 57 40	3365.3	-34.08	162.29
117.22	15 8 58	2780.88	-31.14	81.05	17.61	66.15	15 55 19	2180.9	-34.07	72.63
62.78	8 51 35	3965.28	-31.15	170.72	17.61	66.16	9 57 40	3365.3	-34.08	162.29
117.22	15 8 58	2780.88	-31.14	81.05	17.61	66.15	15 55 19	2180.9	-34.07	72.63
62.78	8 51 35	3965.28	-31.15	170.72	17.61	66.16	9 57 40	3365.3	-34.08	162.29
117.22	15 8 58	2780.88	-31.14	81.05	17.61	66.15	15 55 19	2180.9	-34.07	72.63

DIFFERENTIAL CORRECTIONS

TDE	.5846	TRA	-.0996	TC3	-2.7478	BAU	.3727
RDE	.2328	RRA	.1626	RC3	-1.0641	FAU	.61380
FDE	6.1541	FRA	5.4478	FC	-56.1661	BSP	6605
BDE	.6292	BRA	.1907	BC3	2.9466	FSP	11584

MID-COURSE EXECUTION ACCURACY

SGT	2024.7	SGR	875.4	SG3	3338.8		
RRT	.8390	RRF	.9639	RTF	.8668		
SGB	2205.8	R23	.3654	R13	.8982		
SG1	2160.1	SG2	446.4	THA	20.87		

ORBIT DETERMINATION ACCURACY

ST	1092.4	SR	449.4	SS	2956.3		
CRT	.9472	CRS	-.9970	CST	-.9236		
LSA	3158.8	MSA	396.0	SSA	15.9		
EL1	1173.6	EL2	134.1	ALF	21.59		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 658.680 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.906	GAL	-.49	AZL	87.62	HCA	200.98	SMA	186.28	ECC	.20647	INC	2.3760
RP	221.89	LAP	-.85	LOP	256.65	VP	21.995	GAP	-4.56	AZP	92.22	TAL	357.11	TAP	198.09	RCA	147.82	APO	224.75
RC	264.895	GL	26.43	GP	-4.51	ZAL	88.53	ZAP	99.67	ETS	179.65	ZAE	134.27	ETE	181.96	ZAC	82.52	ETC	256.49

V1 30.134 V2 24.779 CLP 99.70

PLANETOCENTRIC CONIC

C3	9.397	VHL	3.065	DLA	38.13	RAL	157.17	RAD	6567.3	VEL	11.436	PTH	1.98	VHP	2.803	DPA	-1.31	RAP	175.39

ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.32	8 54 35	3956.19	-30.92	169.85	17.46	66.48	10 0 31	3356.2	-33.81	161.43
116.68	15 6 37	2787.30	-30.91	81.47	17.45	66.46	15 53 4	2187.3	-33.80	73.05
63.32	8 54 35	3956.19	-30.92	169.85	17.46	66.48	10 0 31	3356.2	-33.81	161.43
116.68	15 6 37	2787.30	-30.91	81.47	17.45	66.46	15 53 4	2187.3	-33.80	73.05
63.32	8 54 35	3956.19	-30.92	169.85	17.46	66.48	10 0 31	3356.2	-33.81	161.43
116.68	15 6 37	2787.30	-30.91	81.47	17.45	66.46	15 53 4	2187.3	-33.80	73.05

DIFFERENTIAL CORRECTIONS

TDE	.6311	TRA	-.0542	TC3	-3.2333	BAU	.4255
RDE	.2285	RRA	.1590	RC3	-1.0086	FAU	.62069
FDE	6.0582	FRA	5.5190	FC	-57.1860	BSP	7612
BDE	.6712	BRA	.1680	BC3	3.3870	FSP	11699

MID-COURSE EXECUTION ACCURACY

SGT	2310.3	SGR	841.1	SG3	3378.8		
RRT	.8650	RRF	.9567	RTF	.8984		
SGB	2458.7	R23	.3091	R13	.9163		
SG1	2425.6	SG2	402.0	THA	17.99		

ORBIT DETERMINATION ACCURACY

ST	1181.8	SR	442.3	SS	2914.7		
CRT	.9577	CRS	-.9962	CST	-.9330		
LSA	3151.1	MSA	397.5	SSA	16.9		
EL1	1256.2	EL2	119.7	ALF	19.91		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 662.716 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.903	GAL	-.52	AZL	87.65	HCA	202.08	SMA	186.24	ECC	.20631	INC	2.3465
RP	221.51	LAP	-.88	LOP	257.75	VP	22.038	GAP	-4.78	AZP	92.17	TAL	356.98	TAP	199.06	RCA	147.82	APO	224.67
RC	266.379	GL	26.16	GP	-4.31	ZAL	88.78	ZAP	97.66	ETS	179.49	ZAE	132.04	ETE	181.56	ZAC	82.51	ETC	256.56

V1 30.134 V2 24.820 CLP 97.68

PLANETOCENTRIC CONIC

C3	9.339	VHL	3.056	DLA	37.79	RAL	157.30	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	2.794	DPA	-.75	RAP	174.64

ECC 1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.86	8 57 45	3947.28	-30.69	169.00	17.37	66.78	10 3 32	3347.3	-33.55	160.59
116.14	15 4 28	2793.80	-30.68	81.89	17.37	66.76	15 51 2	2193.8	-33.54	73.48
63.86	8 57 45	3947.28	-30.69	169.00	17.37	66.78	10 3 32	3347.3	-33.55	160.59
116.14	15 4 28	2793.80	-30.68	81.89	17.37	66.76	15 51 2	2193.8	-33.54	73.48
63.86	8 57 45	3947.28	-30.69	169.00	17.37	66.78	10 3 32	3347.3	-33.55	160.59
116.14	15 4 28	2793.80	-30.68	81.89	17.37	66.76	15 51 2	2193.8	-33.54	73.48

DIFFERENTIAL CORRECTIONS

TDE	.6757	TRA	-.0060	TC3	-3.7439	BAU	.4822
RDE	.2257	RRA	.1560	RC3	-.9495	FAU	.62364
FDE	5.9875	FRA	5.5958	FC	-57.8130	BSP	8701
BDE	.7124	BRA	.1561	BC3	3.8624	FSP	11805

MID-COURSE EXECUTION ACCURACY

SGT	2615.5	SGR	807.9	SG3	3402.5		
RRT	.8796	RRF	.9482	RTF	.9212		
SGB	2737.5	R23	.2548	R13	.9315		
SG1	2712.3	SG2	370.6	THA	15.50		

ORBIT DETERMINATION ACCURACY

ST	1268.7	SR	437.8	SS	2886.8		
CRT	.9664	CRS	-.9953	CST	-.9410		
LSA	3158.7	MSA	396.4	SSA	17.8		
EL1	1337.9	EL2	106.7	ALF	18.56		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 666.762 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.901	GAL	-.54	AZL	87.68	HCA	203.19	SMA	186.21	ECC	.20618	INC	2.3196
RP	221.13	LAP	-.91	LOP	258.86	VP	22.082	GAP	-5.00	AZP	92.13	TAL	356.84	TAP	200.03	RCA	147.82	APO	224.60
RC	267.844	GL	25.91	GP	-4.13	ZAL	89.02	ZAP	95.65	ETS	179.34	ZAE	129.81	ETE	181.21	ZAC	82.49	ETC	256.64

V1 30.134 V2 24.862 CLP 95.66

PLANETOCENTRIC CONIC

C3	9.287	VHL	3.048	DLA	37.46	RAL	157.47	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	2.788	DPA	-.21	RAP	173.89

ECC 1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.38	9 1 7	3938.38	-30.46	168.16	17.34	67.06	10 6 45	3338.4	-33.29	159.76
115.62	15 2 28	2800.56	-30.45	82.33	17.33	67.05	15 49 8	2200.6	-33.28	73.93
64.38	9 1 7	3938.38	-30.46	168.16	17.34	67.06	10 6 45	3338.4	-33.29	159.76
115.62	15 2 28	2800.56	-30.45	82.33	17.33	67.05	15 49 8	2200.6	-33.28	73.93
64.38	9 1 7	3938.38	-30.46	168.16	17.34	67.06	10 6 45	3338.4	-33.29	159.76
115.62	15 2 28	2800.56	-30.45	82.33	17.33	67.05	15 49 8	2200.6	-33.28	73.93

DIFFERENTIAL CORRECTIONS

TDE	.7205	TRA	.0435	TC3	-4.2591	BAU	.5404
RDE	.2223	RRA	.1531	RC3	-.8950	FAU	.62675
FDE	5.8579	FRA	5.6568	FC	-58.4222	BSP	9846
BDE	.7540	BRA	.1592	BC3	4.3521	FSP	11801

MID-COURSE EXECUTION ACCURACY

SGT	2929.9	SGR	777.0	SG3	3422.1		
RRT	.8871	RRF	.9386	RTF	.9370		
SGB	3031.2	R23	.2066	R13	.9431		
SG1	3011.0	SG2	348.9	THA	13.42		

ORBIT DETERMINATION ACCURACY

ST	1357.2	SR	432.2	SS	2835.8		
CRT	.9731	CRS	-.9941	CST	-.9467		
LSA	3148.3	MSA	397.8	SSA	18.8		
EL1	1421.1	EL2	95.0	ALF	17.30		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 670.816 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.900	GAL	-.57	AZL	87.70	HCA	204.30	SMA	186.18	ECC	.20608	INC	2.2950
RP	220.75	LAP	-.94	LOP	259.97	VP	22.126	GAP	-5.22	AZP	92.09	TAL	356.68	TAP	200.98	RCA	147.81	APO	224.55
RC	269.292	GL	25.68	GP	-3.97	ZAL	89.30	ZAP	93.64	ETS	179.21	ZAE	127.57	ETE	180.90	ZAC	82.47	ETC	256.72

V1	30.134	V2	24.903	CLP	93.65														

PLANETOCENTRIC CONIC

C3	9.242	VHL	3.040	DLA	37.13	RAL	157.68	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	2.785	DPA	.31	RAP	173.14
ECC	1.1521																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.91	9 4 39	3929.54	-30.24	167.33	17.36	67.34	10 10 8	3329.5	-33.03	158.94
115.09	15 0 37	2807.47	-30.23	82.78	17.35	67.33	15 47 24	2207.5	-33.02	74.39
64.91	9 4 39	3929.54	-30.24	167.33	17.36	67.34	10 10 8	3329.5	-33.03	158.94
115.09	15 0 37	2807.47	-30.23	82.78	17.35	67.33	15 47 24	2207.5	-33.02	74.39
64.91	9 4 39	3929.54	-30.24	167.33	17.36	67.34	10 10 8	3329.5	-33.03	158.94
115.09	15 0 37	2807.47	-30.23	82.78	17.35	67.33	15 47 24	2207.5	-33.02	74.39

DIFFERENTIAL CORRECTIONS

TDE	.7635	TRA	.0950	TC3	-4.7833	BAU	.6001
RDE	.2198	RRA	.1506	RC3	-.8412	FAU	.62808
FDE	5.7329	FRA	5.7147	FC	-58.8369	BSP	11002
BDE	.7945	BRA	.1781	BC3	4.8567	FSP	11826

MID-COURSE EXECUTION ACCURACY

SGT	3252.6	SGR	748.3	SG3	3433.2		
RRT	.8889	RRF	.9276	RTF	.9487		
SGB	3337.5	R23	.1641	R13	.9524		
SG1	3320.6	SG2	335.7	THA	11.68		

ORBIT DETERMINATION ACCURACY

ST	1443.2	SR	428.1	SS	2789.1		
CRT	.9787	CRS	-.9927	CST	-.9515		
LSA	3144.3	MSA	398.2	SSA	19.7		
EL1	1503.0	EL2	84.4	ALF	16.24		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 674.879 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.898	GAL	-.60	AZL	87.73	HCA	205.41	SMA	186.16	ECC	.20601	INC	2.2723
RP	220.37	LAP	-.97	LOP	261.09	VP	22.171	GAP	-5.43	AZP	92.05	TAL	356.51	TAP	201.92	RCA	147.81	APO	224.51
RC	270.721	GL	25.47	GP	-3.81	ZAL	89.62	ZAP	91.65	ETS	179.09	ZAE	125.34	ETE	180.63	ZAC	82.43	ETC	256.81

V1	30.134	V2	24.945	CLP	91.65		

PLANETOCENTRIC CONIC

C3	9.201	VHL	3.033	DLA	36.81	RAL	157.93	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	2.786	DPA	.82	RAP	172.40
ECC	1.1514																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.43	9 8 24	3920.59	-30.01	166.50	17.42	67.61	10 13 44	3320.6	-32.77	158.11
114.57	14 58 52	2814.71	-30.00	83.26	17.42	67.60	15 45 46	2214.7	-32.76	74.87
65.43	9 8 24	3920.59	-30.01	166.50	17.42	67.61	10 13 44	3320.6	-32.77	158.11
114.57	14 58 52	2814.71	-30.00	83.26	17.42	67.60	15 45 46	2214.7	-32.76	74.87
65.43	9 8 24	3920.59	-30.01	166.50	17.42	67.61	10 13 44	3320.6	-32.77	158.11
114.57	14 58 52	2814.71	-30.00	83.26	17.42	67.60	15 45 46	2214.7	-32.76	74.87

DIFFERENTIAL CORRECTIONS

TDE	.8055	TRA	.1480	TC3	-5.3150	BAU	.6609
RDE	.2176	RRA	.1488	RC3	-.7873	FAU	.62727
FDE	5.5911	FRA	5.7908	FC	-59.0203	BSP	12181
BDE	.8344	BRA	.2099	BC3	5.3730	FSP	11835

MID-COURSE EXECUTION ACCURACY

SGT	3582.5	SGR	721.3	SG3	3434.6		
RRT	.8854	RRF	.9151	RTF	.9570		
SGB	3654.4	R23	.1300	R13	.9593		
SG1	3639.4	SG2	330.0	THA	10.19		

ORBIT DETERMINATION ACCURACY

ST	1528.2	SR	424.5	SS	2739.1		
CRT	.9831	CRS	-.9911	CST	-.9547		
LSA	3139.6	MSA	401.0	SSA	20.6		
EL1	1584.3	EL2	75.0	ALF	15.31		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 678.950 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.897	GAL	-.63	AZL	87.75	HCA	206.53	SMA	186.14	ECC	.20596	INC	2.2514
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.216	GAP	-5.64	AZP	92.01	TAL	356.33	TAP	202.86	RCA	147.80	APO	224.48
RC	272.134	GL	25.27	GP	-3.66	ZAL	89.96	ZAP	89.66	ETS	178.98	ZAE	123.12	ETE	180.40	ZAC	82.40	ETC	256.89

V1	30.134	V2	24.986	CLP	89.66		

PLANETOCENTRIC CONIC

C3	9.165	VHL	3.027	DLA	36.49	RAL	158.22	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	2.790	DPA	1.31	RAP	171.67
ECC	1.1508																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.96	9 12 23	3911.45	-29.78	165.65	17.54	67.87	10 17 35	3311.4	-32.50	157.28
114.04	14 57 11	2822.34	-29.77	83.76	17.54	67.86	15 44 13	2222.3	-32.50	75.39
65.96	9 12 23	3911.45	-29.78	165.65	17.54	67.87	10 17 35	3311.4	-32.50	157.28
114.04	14 57 11	2822.34	-29.77	83.76	17.54	67.86	15 44 13	2222.3	-32.50	75.39
65.96	9 12 23	3911.45	-29.78	165.65	17.54	67.87	10 17 35	3311.4	-32.50	157.28
114.04	14 57 11	2822.34	-29.77	83.76	17.54	67.86	15 44 13	2222.3	-32.50	75.39

DIFFERENTIAL CORRECTIONS

TDE	.8456	TRA	.2038	TC3	-5.8506	BAU	.7225
RDE	.2157	RRA	.1470	RC3	-.7343	FAU	.62478
FDE	5.4356	FRA	5.8459	FC	-59.0156	BSP	13383
BDE	.8727	BRA	.2513	BC3	5.8965	FSP	11795

MID-COURSE EXECUTION ACCURACY

SGT	3916.7	SGR	695.7	SG3	3425.7		
RRT	.8787	RRF	.9008	RTF	.9637		
SGB	3978.0	R23	.1006	R13	.9650		
SG1	3964.4	SG2	328.2	THA	8.93		

ORBIT DETERMINATION ACCURACY

ST	1610.4	SR	421.5	SS	2684.4		
CRT	.9868	CRS	-.9892	CST	-.9575		
LSA	3132.8	MSA	402.4	SSA	21.5		
EL1	1663.3	EL2	66.1	ALF	14.50		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 683.026 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.897	GAL	-.66	AZL	87.77	HCA	207.65	SMA	186.13	ECC	.20594	INC	2.2318
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.261	GAP	-5.84	AZP	91.98	TAL	356.12	TAP	203.78	RCA	147.80	APO	224.46
RC	273.529	GL	25.08	GP	-3.52	ZAL	90.33	ZAP	87.70	ETS	178.88	ZAE	120.92	ETE	180.20	ZAC	82.36	ETC	256.97

V1	30.134	V2	25.027	CLP	87.69		

PLANETOCENTRIC CONIC

C3	9.134	VHL	3.022	DLA	36.16	RAL	158.55	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	2.797	DPA	1.78	RAP	170.95
ECC	1.1503																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.51	9 16 37	3902.10	-29.55	164.79	17.70	68.13	10 21 39	3302.1	-32.24	156.43
113.49	14 55 33	2830.36	-29.54	84.30	17.70	68.12	15 42 44	2230.4	-32.23	75.94
66.51	9 16 37	3902.10	-29.55	164.79	17.70	68.13	10 21 39	3302.1	-32.24	156.43
113.49	14 55 33	2830.36	-29.54	84.30	17.70	68.12	15 42 44	2230.4	-32.23	75.94
66.51	9 16 37	3902.10	-29.55	164.79	17.70	68.13	10 21 39	3302.1	-32.24	156.43
113.49	14 55 33	2830.36	-29.54	84.30	17.70	68.12	15 42 44	2230.4	-32.23	75.94

DIFFERENTIAL CORRECTIONS

TDE	.8869	TRA	.2656	TC3	-6.3757	BAU	.7829
RDE	.2161	RRA	.1470	RC3	-.6760	FAU	.61667
FDE	5.3817	FRA	5.9975	FC	-58.4498	BSP	14686
BDE	.9129	BRA	.3036	BC3	6.4114	FSP	11933

MID-COURSE EXECUTION ACCURACY

SGT	4250.6	SGR	673.7	SG3	3402.3		
RRT	.8655	RRF	.8849	RTF	.9684		
SGB	4303.7	R23	.0828	R13	.9694		
SG1	4290.7	SG2	334.3	THA	7.86		

ORBIT DETERMINATION ACCURACY

ST	1695.8	SR	422.7	SS	2681.0		
CRT	.9899	CRS	-.9873	CST	-.9605		
LSA	3174.7	MSA	403.4	SSA	22.2		
EL1	1746.7	EL2	58.1	ALF	13.88		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 687.115 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.896 GAL -.70 AZL 87.79 HCA 208.78 SMA 186.12 ECC .20595 INC 2.2137 V1 30.134
RP 219.25 LAP -1.07 LOP 264.45 VP 22.306 GAP -6.04 AZP 91.94 TAL 355.91 TAP 204.69 RCA 147.79 APO 224.45 V2 25.067
RC 274.906 GL 24.90 GP -3.39 ZAL 90.73 ZAP 85.75 ETS 178.80 ZAE 118.73 ETE 180.02 ZAC 82.32 ETC 257.06 CLP 85.74

PLANETOCENTRIC CONIC

C3 9.107 VHL 3.018 DLA 35.83 RAL 158.91 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.807 DPA 2.24 RAP 170.26 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.06	9 21 5	3892.48	-29.31	163.91	17.90	68.39	10 25 58	3292.5	-31.97	155.56
112.94	14 53 57	2838.85	-29.30	84.87	17.90	68.37	15 41 16	2238.8	-31.96	76.51
67.06	9 21 5	3892.48	-29.31	163.91	17.90	68.39	10 25 58	3292.5	-31.97	155.56
112.94	14 53 57	2838.85	-29.30	84.87	17.90	68.37	15 41 16	2238.8	-31.96	76.51
67.06	9 21 5	3892.48	-29.31	163.91	17.90	68.39	10 25 58	3292.5	-31.97	155.56
112.94	14 53 57	2838.85	-29.30	84.87	17.90	68.37	15 41 16	2238.8	-31.96	76.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9207 TRA .3233 TC3-6.9143 BAU .8453 SGT 4587.4 SGR 651.3 SG3 3385.4 ST 1767.2 SR 418.4 SS 2588.5
RDE .2137 RRA .1448 RC3 -.6304 FAU .61455 RRT .8546 RRF .8670 RTF .9726 CRT .9923 CRS -.9844 CST -.9614
FDE 5.1349 FRA 5.9931 FC-58.4199 BSP 15837 SGB 4633.5 R23 .0605 R13 .9731 LSA 3135.7 MSA 406.6 SSA 23.1
BDE .9452 BRA .3543 BC3 6.9430 FSP 11716 SG1 4621.3 SG2 335.8 THA 6.96 EL1 1815.4 EL2 50.5 ALF 13.23

LAUNCH DATE NOV 18 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 691.212 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.896 GAL -.74 AZL 87.80 HCA 209.91 SMA 186.12 ECC .20598 INC 2.1968 V1 30.134
RP 218.89 LAP -1.10 LOP 265.58 VP 22.351 GAP -6.24 AZP 91.90 TAL 355.68 TAP 205.59 RCA 147.78 APO 224.45 V2 25.108
RC 276.266 GL 24.73 GP -3.26 ZAL 91.16 ZAP 83.82 ETS 178.72 ZAE 116.56 ETE 179.86 ZAC 82.28 ETC 257.15 CLP 83.81

PLANETOCENTRIC CONIC

C3 9.085 VHL 3.014 DLA 35.50 RAL 159.30 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.821 DPA 2.68 RAP 169.58 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.63	9 25 48	3882.60	-29.06	163.02	18.15	68.64	10 30 31	3282.6	-31.69	154.67
112.37	14 52 23	2847.77	-29.05	85.47	18.14	68.63	15 39 50	2247.8	-31.68	77.13
67.63	9 25 48	3882.60	-29.06	163.02	18.15	68.64	10 30 31	3282.6	-31.69	154.67
112.37	14 52 23	2847.77	-29.05	85.47	18.14	68.63	15 39 50	2247.8	-31.68	77.13
67.63	9 25 48	3882.60	-29.06	163.02	18.15	68.64	10 30 31	3282.6	-31.69	154.67
112.37	14 52 23	2847.77	-29.05	85.47	18.14	68.63	15 39 50	2247.8	-31.68	77.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9528 TRA .3846 TC3-7.4489 BAU .9075 SGT 4924.4 SGR 631.4 SG3 3359.4 ST 1836.1 SR 416.1 SS 2515.6
RDE .2123 RRA .1433 RC3 -.5834 FAU .60965 RRT .8597 RRF .8473 RTF .9758 CRT .9942 CRS -.9811 CST -.9622
FDE 4.9258 FRA 6.0186 FC-58.0984 BSP 17014 SGB 4964.7 R23 .0441 R13 .9762 LSA 3115.2 MSA 409.1 SSA 24.0
BDE .9761 BRA .4104 BC3 7.4717 FSP 11552 SG1 4953.0 SG2 340.9 THA 6.17 EL1 1882.1 EL2 43.5 ALF 12.70

LAUNCH DATE NOV 18 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 695.316 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.896 GAL -.78 AZL 87.82 HCA 211.04 SMA 186.12 ECC .20603 INC 2.1809 V1 30.134
RP 218.52 LAP -1.12 LOP 266.71 VP 22.397 GAP -6.43 AZP 91.87 TAL 355.44 TAP 206.48 RCA 147.77 APO 224.47 V2 25.148
RC 277.609 GL 24.57 GP -3.14 ZAL 91.62 ZAP 81.93 ETS 178.65 ZAE 114.41 ETE 179.72 ZAC 82.24 ETC 257.23 CLP 81.91

PLANETOCENTRIC CONIC

C3 9.066 VHL 3.011 DLA 35.17 RAL 159.73 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.837 DPA 3.10 RAP 168.93 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.22	9 30 51	3872.18	-28.81	162.08	18.43	68.90	10 35 23	3272.2	-31.41	153.75
111.78	14 50 44	2857.41	-28.80	86.12	18.42	68.88	15 38 22	2257.4	-31.40	77.79
68.22	9 30 51	3872.18	-28.81	162.08	18.43	68.90	10 35 23	3272.2	-31.41	153.75
111.78	14 50 44	2857.41	-28.80	86.12	18.42	68.88	15 38 22	2257.4	-31.40	77.79
68.22	9 30 51	3872.18	-28.81	162.08	18.43	68.90	10 35 23	3272.2	-31.41	153.75
111.78	14 50 44	2857.41	-28.80	86.12	18.42	68.88	15 38 22	2257.4	-31.40	77.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9823 TRA .4484 TC3-7.9789 BAU .9693 SGT 5260.3 SGR 612.9 SG3 3323.9 ST 1900.7 SR 414.5 SS 2443.6
RDE .2114 RRA .1420 RC3 -.5367 FAU .60291 RRT .8220 RRF .8254 RTF .9786 CRT .9958 CRS -.9774 CST -.9628
FDE 4.7167 FRA 6.0366 FC-57.5723 BSP 18184 SGB 5295.9 R23 .0308 R13 .9788 LSA 3096.2 MSA 411.0 SSA 24.8
BDE 1.0048 BRA .4703 BC3 7.9969 FSP 11381 SG1 5284.5 SG2 347.4 THA 5.49 EL1 1945.0 EL2 37.2 ALF 12.25

LAUNCH DATE NOV 18 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 699.428 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.897 GAL -.82 AZL 87.83 HCA 212.18 SMA 186.13 ECC .20611 INC 2.1659 V1 30.134
RP 218.16 LAP -1.15 LOP 267.85 VP 22.442 GAP -6.61 AZP 91.83 TAL 355.18 TAP 207.36 RCA 147.76 APO 224.49 V2 25.188
RC 278.933 GL 24.41 GP -3.02 ZAL 92.11 ZAP 80.06 ETS 178.58 ZAE 112.29 ETE 179.60 ZAC 82.20 ETC 257.31 CLP 80.05

PLANETOCENTRIC CONIC

C3 9.052 VHL 3.009 DLA 34.82 RAL 160.19 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.856 DPA 3.51 RAP 168.31 ECC 1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.83	9 36 12	3861.24	-28.55	161.10	18.75	69.16	10 40 33	3261.2	-31.12	152.78
111.17	14 49 3	2867.75	-28.54	86.82	18.74	69.14	15 36 51	2267.7	-31.11	78.50
68.83	9 36 12	3861.24	-28.55	161.10	18.75	69.16	10 40 33	3261.2	-31.12	152.78
111.17	14 49 3	2867.75	-28.54	86.82	18.74	69.14	15 36 51	2267.7	-31.11	78.50
68.83	9 36 12	3861.24	-28.55	161.10	18.75	69.16	10 40 33	3261.2	-31.12	152.78
111.17	14 49 3	2867.75	-28.54	86.82	18.74	69.14	15 36 51	2267.7	-31.11	78.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0082 TRA .5142 TC3-8.5048 BAU 1.0309 SGT 5594.6 SGR 596.1 SG3 3281.4 ST 1959.2 SR 413.4 SS 2370.5
RDE .2108 RRA .1410 RC3 -.4907 FAU .59480 RRT .8012 RRF .8014 RTF .9807 CRT .9968 CRS -.9730 CST -.9630
FDE 4.5017 FRA 6.0539 FC-56.8867 BSP 19338 SGB 5626.2 R23 .0207 R13 .9809 LSA 3075.2 MSA 413.3 SSA 25.6
BDE 1.0300 BRA .5331 BC3 8.5190 FSP 11198 SG1 5615.0 SG2 355.4 THA 4.90 EL1 2002.0 EL2 32.1 ALF 11.88

LAUNCH DATE NOV 18 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 703.548 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.897	GAL	-.87	AZL	87.85	HCA	213.32	SMA	186.14	ECC	.20622	INC	2.1519
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.488	GAP	-6.80	AZP	91.80	TAL	354.91	TAP	208.22	RCA	147.75	APO	224.53
RC	280.240	GL	24.25	GP	-2.91	ZAL	92.62	ZAP	78.22	ETS	178.53	ZAE	110.20	ETE	179.49	ZAC	82.16	ETC	257.39

V1 30.134 V2 25.228 CLP 78.21

PLANETOCENTRIC CONIC

C3	9.042	VHL	3.007	DLA	34.47	RAL	160.68	RAD	6567.3	VEL	11.421	PTH	1.98	VHP	2.878	DPA	3.89	RAP	167.71

ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.46	9 41 52	3849.81	-28.28	160.09	19.11	69.41	10 46 2	3249.8	-30.81	151.78
110.54	14 47 18	2878.75	-28.27	87.57	19.10	69.40	15 35 17	2278.7	-30.81	79.26
69.46	9 41 52	3849.81	-28.28	160.09	19.11	69.41	10 46 2	3249.8	-30.81	151.78
110.54	14 47 18	2878.75	-28.27	87.57	19.10	69.40	15 35 17	2278.7	-30.81	79.26
69.46	9 41 52	3849.81	-28.28	160.09	19.11	69.41	10 46 2	3249.8	-30.81	151.78
110.54	14 47 18	2878.75	-28.27	87.57	19.10	69.40	15 35 17	2278.7	-30.81	79.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0327	TRA	.5836	TC3	-9.0168	BAU	1.0913	SGT	5924.3	SGR	581.2	SG3	3233.2	ST	2015.4	SR	412.8	SS	2299.7
RDE	.2105	RRA	.1403	RC3	-.4457	FAU	.58538	RRT	.7783	RRF	.7755	RTF	.9825	CRT	.9975	CRS	-.9678	CST	-.9628
FDE	4.2882	FRA	6.0792	FC	-56.0485	BSP	20502	SGB	5952.7	R23	.0126	R13	.9826	LSA	3057.2	MSA	416.8	SSA	26.4
BDE	1.0539	BRA	.6002	BC3	9.0279	FSP	10997	SG1	5941.6	SG2	363.9	THA	4.38	EL1	2057.1	EL2	28.5	ALF	11.55

LAUNCH DATE NOV 18 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 707.675 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.898	GAL	-.92	AZL	87.86	HCA	214.46	SMA	186.16	ECC	.20635	INC	2.1387
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.534	GAP	-6.98	AZP	91.76	TAL	354.62	TAP	209.08	RCA	147.74	APO	224.57
RC	281.529	GL	24.10	GP	-2.81	ZAL	93.16	ZAP	76.42	ETS	178.47	ZAE	108.15	ETE	179.40	ZAC	82.13	ETC	257.47

V1 30.134 V2 25.268 CLP 76.40

PLANETOCENTRIC CONIC

C3	9.036	VHL	3.006	DLA	34.11	RAL	161.20	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.902	DPA	4.25	RAP	167.15

ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.13	9 47 57	3837.52	-28.00	159.01	19.50	69.67	10 51 54	3237.5	-30.51	150.71
109.87	14 45 23	2890.79	-27.99	88.39	19.50	69.65	15 33 34	2290.8	-30.50	80.10
70.13	9 47 57	3837.52	-28.00	159.01	19.50	69.67	10 51 54	3237.5	-30.51	150.71
109.87	14 45 23	2890.79	-27.99	88.39	19.50	69.65	15 33 34	2290.8	-30.50	80.10
110.00	15 2 46	2837.83	-29.19	84.74	19.98	71.37	15 50 4	2237.8	-31.46	76.27
110.00	14 29 45	2938.47	-28.81	91.60	18.98	67.95	15 18 43	2338.5	-29.56	83.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0532	TRA	.6559	TC3	-9.5194	BAU	1.1510	SGT	6250.1	SGR	568.0	SG3	3178.8	ST	2065.1	SR	412.5	SS	2225.4
RDE	.2104	RRA	.1398	RC3	-.4014	FAU	.57470	RRT	.7527	RRF	.7475	RTF	.9838	CRT	.9977	CRS	-.9615	CST	-.9619
FDE	4.0631	FRA	6.1091	FC	-55.0613	BSP	21647	SGB	6275.8	R23	.0066	R13	.9839	LSA	3034.6	MSA	422.1	SSA	27.1
BDE	1.0740	BRA	.6706	BC3	9.5278	FSP	10805	SG1	6264.7	SG2	373.1	THA	3.93	EL1	2105.7	EL2	27.2	ALF	11.27

LAUNCH DATE NOV 18 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 711.809 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.899	GAL	-.97	AZL	87.87	HCA	215.61	SMA	186.18	ECC	.20651	INC	2.1261
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.579	GAP	-7.15	AZP	91.73	TAL	354.32	TAP	209.93	RCA	147.73	APO	224.62
RC	282.801	GL	23.96	GP	-2.71	ZAL	93.74	ZAP	74.65	ETS	178.43	ZAE	106.12	ETE	179.32	ZAC	82.11	ETC	257.54

V1 30.134 V2 25.307 CLP 74.64

PLANETOCENTRIC CONIC

C3	9.035	VHL	3.006	DLA	33.74	RAL	161.75	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.929	DPA	4.59	RAP	166.62

ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.83	9 54 22	3824.56	-27.71	157.88	19.93	69.93	10 58 7	3224.6	-30.18	149.60
109.17	14 43 21	2903.68	-27.70	89.28	19.92	69.91	15 31 45	2303.7	-30.18	81.00
70.83	9 54 22	3824.56	-27.71	157.88	19.93	69.93	10 58 7	3224.6	-30.18	149.60
109.17	14 43 21	2903.68	-27.70	89.28	19.92	69.91	15 31 45	2303.7	-30.18	81.00
110.00	15 29 53	2761.47	-30.73	79.33	21.05	74.24	16 15 54	2161.5	-32.59	70.60
110.00	14 7 1	3014.77	-24.76	96.58	18.58	65.65	14 57 16	2414.8	-27.83	88.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0707	TRA	.7307	TC	-10.0115	BAU	1.2100	SGT	6572.1	SGR	556.5	SG3	3120.5	ST	2109.6	SR	412.7	SS	2152.8
RDE	.2106	RRA	.1394	RC3	-.3589	FAU	.56347	RRT	.7253	RRF	.7179	RTF	.9851	CRT	.9975	CRS	-.9543	CST	-.9609
FDE	3.8426	FRA	6.1254	FC	-53.9943	BSP	22776	SGB	6595.6	R23	.0014	R13	.9851	LSA	3012.2	MSA	426.3	SSA	27.8
BDE	1.0912	BRA	.7438	BC3	10.0179	FSP	10584	SG1	6584.5	SG2	382.4	THA	3.53	EL1	2149.4	EL2	28.5	ALF	11.04

LAUNCH DATE NOV 18 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 715.951 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.901	GAL	-1.03	AZL	87.89	HCA	216.76	SMA	186.20	ECC	.20669	INC	2.1143
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.625	GAP	-7.33	AZP	91.69	TAL	354.00	TAP	210.76	RCA	147.72	APO	224.68
RC	284.057	GL	23.81	GP	-2.61	ZAL	94.34	ZAP	72.93	ETS	178.38	ZAE	104.13	ETE	179.24	ZAC	82.08	ETC	257.62

V1 30.134 V2 25.346 CLP 72.91

PLANETOCENTRIC CONIC

C3	9.037	VHL	3.006	DLA	33.37	RAL	162.33	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	2.959	DPA	4.90	RAP	166.13

ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.57	10 1 16	3810.52	-27.41	156.67	20.39	70.19	11 4 47	3210.5	-29.85	148.40
108.43	14 41 4	2917.84	-27.40	90.25	20.38	70.17	15 29 42	2317.8	-29.84	81.99
71.57	10 1 16	3810.52	-27.41	156.67	20.39	70.19	11 4 47	3210.5	-29.85	148.40
108.43	14 41 4	2917.84	-27.40	90.25	20.38	70.17	15 29 42	2317.8	-29.84	81.99
110.00	15 47 17	2714.88	-31.54	75.94	21.83	76.09	16 32 32	2114.9	-33.13	67.08
110.00	13 54 14	3061.48	-23.42	99.55	18.54	64.36	14 45 15	2461.5	-26.67	91.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0846	TRA	.8084	TC	-10.4886	BAU	1.2678	SGT	6888.0	SGR	546.5	SG3	3056.8	ST	2148.2	SR	413.2	SS	2078.1
RDE	.2110	RRA	.1389	RC3	-.3175	FAU	.55136	RRT	.6960	RRF	.6864	RTF	.9862	CRT	.9968	CRS	-.9459	CST	-.9596
FDE	3.6176	FRA	6.1308	FC	-52.8171	BSP	23879	SGB	6909.7	R23	-.0031	R13	.9862	LSA	2986.3	MSA	430.5	SSA	28.4
BDE	1.1049	BRA	.8203	BC3	10.4935	FSP	10344	SG1	6898.5	SG2	391.8	THA	3.17	EL1	2187.4	EL2	32.4	ALF	10.86

LAUNCH DATE NOV 18 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 720.101 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.902 GAL -1.08 AZL 87.90 HCA 217.92 SMA 186.23 ECC .20689 INC 2.1030 V1 30.134
RP 216.39 LAP -1.29 LOP 273.59 VP 22.671 GAP -7.49 AZP 91.66 TAL 353.67 TAP 211.59 RCA 147.70 APO 224.76 V2 25.385
RC 285.296 GL 23.67 GP -2.52 ZAL 94.97 ZAP 71.23 ETS 178.35 ZAE 102.18 ETE 179.18 ZAC 82.07 ETC 257.68 CLP 71.22

PLANETOCENTRIC CONIC

C3 9.045 VHL 3.007 DLA 32.97 RAL 162.94 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.991 DPA 5.20 RAP 165.68 ECC 1.1489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.35	10 8 39	3795.41	-27.10	155.38	20.88	70.45	11 11 54	3195.4	-29.51	147.13
107.65	14 38 32	2933.27	-27.09	91.32	20.88	70.44	15 27 26	2333.3	-29.50	83.07
72.35	10 8 39	3795.41	-27.10	155.38	20.88	70.45	11 11 54	3195.4	-29.51	147.13
107.65	14 38 32	2933.27	-27.09	91.32	20.88	70.44	15 27 26	2333.3	-29.50	83.07
110.00	16 1 49	2677.29	-32.13	73.17	22.54	77.64	16 46 26	2077.3	-33.49	64.20
110.00	13 44 33	3099.39	-22.28	101.90	18.62	63.38	14 36 12	2499.4	-25.67	94.39

DIFFERENTIAL CORRECTIONS
TDE 1.0958 TRA .8902 TC-10.9483 BAU 1.3243
RDE .2116 RRA .1388 RC3 -.2773 FAU .53847
FDE 3.3987 FRA 6.1457 FC-51.5403 BSP 24989
BDE 1.1161 BRA .9009 BC310.9518 FSP 10124

MID-COURSE EXECUTION ACCURACY
SGT 7198.0 SGR 538.3 SG3 2990.2
RRT .6652 RRF .6539 RTF .9870
SGB 7218.1 R23 -.0064 R13 .9870
SG1 7206.9 SG2 401.4 THA 2.86

ORBIT DETERMINATION ACCURACY
ST 2183.0 SR 414.2 SS 2007.4
CRT .9956 CRS -.9361 CST -.9579
LSA 2962.4 MSA 435.9 SSA 29.0
EL1 2221.6 EL2 38.3 ALF 10.70

LAUNCH DATE NOV 18 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 724.257 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.904 GAL -1.14 AZL 87.91 HCA 219.08 SMA 186.26 ECC .20712 INC 2.0922 V1 30.134
RP 216.05 LAP -1.32 LOP 274.75 VP 22.716 GAP -7.66 AZP 91.62 TAL 353.32 TAP 212.40 RCA 147.68 APO 224.84 V2 25.423
RC 286.520 GL 23.52 GP -2.43 ZAL 95.62 ZAP 69.58 ETS 178.31 ZAE 100.27 ETE 179.13 ZAC 82.06 ETC 257.75 CLP 69.56

PLANETOCENTRIC CONIC

C3 9.057 VHL 3.009 DLA 32.57 RAL 163.57 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 3.026 DPA 5.48 RAP 165.26 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.19	10 16 34	3778.97	-26.78	153.99	21.41	70.72	11 19 33	3179.0	-29.15	145.75
106.81	14 35 40	2950.22	-26.77	92.49	21.41	70.71	15 24 51	2350.2	-29.15	84.26
73.19	10 16 34	3778.97	-26.78	153.99	21.41	70.72	11 19 33	3179.0	-29.15	145.75
106.81	14 35 40	2950.22	-26.77	92.49	21.41	70.71	15 24 51	2350.2	-29.15	84.26
110.00	16 14 52	2644.45	-32.58	70.71	23.21	79.03	16 58 56	2044.5	-33.75	61.67
110.00	13 36 33	3132.74	-21.25	103.94	18.80	62.57	14 28 46	2532.7	-24.75	96.54

DIFFERENTIAL CORRECTIONS
TDE 1.1015 TRA .9731 TC-11.3974 BAU 1.3803
RDE .2123 RRA .1385 RC3 -.2387 FAU .52522
FDE 3.1641 FRA 6.1372 FC-50.2051 BSP 26026
BDE 1.1218 BRA .9829 BC311.3999 FSP 9856

MID-COURSE EXECUTION ACCURACY
SGT 7502.7 SGR 531.1 SG3 2919.3
RRT .6328 RRF .6195 RTF .9878
SGB 7521.5 R23 -.0096 R13 .9878
SG1 7510.2 SG2 410.8 THA 2.57

ORBIT DETERMINATION ACCURACY
ST 2207.9 SR 415.0 SS 1928.6
CRT .9937 CRS -.9243 CST -.9555
LSA 2927.6 MSA 441.8 SSA 29.5
EL1 2246.1 EL2 45.9 ALF 10.58

LAUNCH DATE NOV 18 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 728.421 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.906 GAL -1.21 AZL 87.92 HCA 220.24 SMA 186.29 ECC .20737 INC 2.0819 V1 30.134
RP 215.71 LAP -1.34 LOP 275.92 VP 22.762 GAP -7.82 AZP 91.59 TAL 352.96 TAP 213.21 RCA 147.66 APO 224.93 V2 25.461
RC 287.729 GL 23.38 GP -2.35 ZAL 96.31 ZAP 67.97 ETS 178.28 ZAE 98.39 ETE 179.08 ZAC 82.05 ETC 257.80 CLP 67.95

PLANETOCENTRIC CONIC

C3 9.074 VHL 3.012 DLA 32.16 RAL 164.23 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 3.063 DPA 5.73 RAP 164.88 ECC 1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.08	10 25 6	3761.00	-26.44	152.48	21.97	70.99	11 27 47	3161.0	-28.78	144.26
105.92	14 32 25	2968.91	-26.43	93.79	21.96	70.98	15 21 54	2368.9	-28.78	85.57
74.08	10 25 6	3761.00	-26.44	152.48	21.97	70.99	11 27 47	3161.0	-28.78	144.26
105.92	14 32 25	2968.91	-26.43	93.79	21.96	70.98	15 21 54	2368.9	-28.78	85.57
110.00	16 27 0	2614.62	-32.94	68.46	23.88	80.31	17 10 34	2014.6	-33.93	59.36
110.00	13 29 41	3163.29	-20.28	105.78	19.04	61.87	14 22 24	2563.3	-23.88	98.48

DIFFERENTIAL CORRECTIONS
TDE 1.1045 TRA 1.0599 TC-11.8285 BAU 1.4351
RDE .2134 RRA .1385 RC3 -.2012 FAU .51137
FDE 2.9431 FRA 6.1350 FC-48.7903 BSP 27056
BDE 1.1249 BRA 1.0689 BC311.8302 FSP 9595

MID-COURSE EXECUTION ACCURACY
SGT 7801.7 SGR 525.6 SG3 2846.4
RRT .5993 RRF .5847 RTF .9884
SGB 7819.4 R23 -.0118 R13 .9884
SG1 7808.1 SG2 420.4 THA 2.32

ORBIT DETERMINATION ACCURACY
ST 2229.3 SR 416.5 SS 1856.5
CRT .9910 CRS -.9108 CST -.9530
LSA 2896.3 MSA 448.0 SSA 30.0
EL1 2267.2 EL2 54.7 ALF 10.50

LAUNCH DATE NOV 18 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 732.591 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.909 GAL -1.27 AZL 87.93 HCA 221.41 SMA 186.33 ECC .20765 INC 2.0720 V1 30.134
RP 215.38 LAP -1.37 LOP 277.08 VP 22.807 GAP -7.98 AZP 91.55 TAL 352.59 TAP 214.00 RCA 147.64 APO 225.03 V2 25.498
RC 288.924 GL 23.23 GP -2.27 ZAL 97.02 ZAP 66.40 ETS 178.25 ZAE 96.56 ETE 179.04 ZAC 82.05 ETC 257.86 CLP 66.38

PLANETOCENTRIC CONIC

C3 9.096 VHL 3.016 DLA 31.73 RAL 164.91 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 3.102 DPA 5.97 RAP 164.54 ECC 1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.05	10 34 22	3741.04	-26.09	150.83	22.56	71.27	11 36 43	3141.0	-28.40	142.63
104.95	14 28 36	2989.81	-26.08	95.25	22.55	71.26	15 18 26	2389.8	-28.40	87.05
75.05	10 34 22	3741.04	-26.09	150.83	22.56	71.27	11 36 43	3141.0	-28.40	142.63
104.95	14 28 36	2989.81	-26.08	95.25	22.55	71.26	15 18 26	2389.8	-28.40	87.05
110.00	16 38 32	2586.89	-33.24	66.35	24.55	81.53	17 21 39	1986.9	-34.05	57.21
110.00	13 23 37	3191.96	-19.35	107.49	19.35	61.26	14 16 49	2592.0	-23.03	100.28

DIFFERENTIAL CORRECTIONS
TDE 1.1032 TRA 1.1502 TC-12.2402 BAU 1.4886
RDE .2146 RRA .1385 RC3 -.1656 FAU .49752
FDE 2.7209 FRA 6.1300 FC-47.3531 BSP 28071
BDE 1.1239 BRA 1.1586 BC312.2413 FSP 9537

MID-COURSE EXECUTION ACCURACY
SGT 8093.5 SGR 521.5 SG3 2772.9
RRT .5655 RRF .5485 RTF .9890
SGB 8110.2 R23 -.0138 R13 .9890
SG1 8098.8 SG2 429.8 THA 2.09

ORBIT DETERMINATION ACCURACY
ST 2244.1 SR 418.1 SS 1784.4
CRT .9876 CRS -.8949 CST -.9497
LSA 2861.3 MSA 455.2 SSA 30.5
EL1 2281.8 EL2 64.6 ALF 10.44

LAUNCH DATE NOV 18 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 736.769 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.911	GAL	-1.34	AZL	87.94	HCA	222.58	SMA	186.38	ECC	.20796	INC	2.0627
RP	215.05	LAP	-1.40	LOP	278.26	VP	22.852	GAP	-8.14	AZP	91.52	TAL	352.20	TAP	214.78	RCA	147.62	APO	225.13
RC	290.105	GL	23.08	GP	-2.19	ZAL	97.76	ZAP	64.87	ETS	178.22	ZAE	94.76	ETE	179.00	ZAC	82.05	ETC	257.90

V1	30.134	V2	25.535	CLP	64.85														

PLANETOCENTRIC CONIC

C3	9.123	VHL	3.020	DLA	31.29	RAL	165.62	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.143	DPA	6.18	RAP	164.23
ECC	1.1501																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.10	10 44 28	3718.79	-25.73	149.01	23.18	71.55	11 46 26	3118.8	-28.01	140.83
103.90	14 24 10	3013.22	-25.72	96.88	23.17	71.54	15 14 23	2413.2	-28.00	88.70
76.10	10 44 28	3718.79	-25.73	149.01	23.18	71.55	11 46 26	3118.8	-28.01	140.83
103.90	14 24 10	3013.22	-25.72	96.88	23.17	71.54	15 14 23	2413.2	-28.00	88.70
110.00	16 49 38	2560.69	-33.49	64.35	25.21	82.69	17 32 19	1960.7	-34.13	55.16
110.00	13 18 10	3219.32	-18.45	109.09	19.70	60.70	14 11 49	2619.3	-22.21	101.98

DIFFERENTIAL CORRECTIONS

TDE	1.0985	TRA	1.2436	TC-12.6309	BAU	1.5407	
RDE	.2160	RRA	.1386	RC3 -.1309	FAU	.48307	
FDE	2.5034	FRA	6.1135	FC-45.8397	BSP	29062	
BDE	1.1195	BRA	1.2513	BC312.6315	FSP	9067	

MID-COURSE EXECUTION ACCURACY

SGT	8377.5	SGR	518.5	SG3	2695.8		
RRT	.5310	RRF	.5137	RTF	.9895		
SGB	8383.5	R23	-.0155	R13	.9895		
SG1	8382.0	SG2	439.1	THA	1.89		

ORBIT DETERMINATION ACCURACY

ST	2253.9	SR	420.1	SS	1713.7		
CRT	.9832	CRS	-.8767	CST	-.9462		
LSA	2824.6	MSA	462.2	SSA	30.9		
EL1	2291.4	EL2	75.5	ALF	10.40		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 740.948 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.914	GAL	-1.41	AZL	87.95	HCA	223.75	SMA	186.42	ECC	.20828	INC	2.0537
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.897	GAP	-8.30	AZP	91.48	TAL	351.79	TAP	215.55	RCA	147.59	APO	225.25
RC	291.272	GL	22.93	GP	-2.12	ZAL	98.53	ZAP	63.38	ETS	178.20	ZAE	93.00	ETE	178.97	ZAC	82.06	ETC	257.95

V1	30.134	V2	25.572	CLP	63.36														

PLANETOCENTRIC CONIC

C3	9.156	VHL	3.026	DLA	30.84	RAL	166.36	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	3.187	DPA	6.37	RAP	163.97
ECC	1.1507																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.25	10 55 37	3693.53	-25.36	146.97	23.83	71.84	11 57 11	3093.5	-27.60	138.81
102.75	14 18 52	3030.88	-25.35	98.75	23.83	71.82	15 9 31	2439.9	-27.59	90.59
77.25	10 55 37	3693.53	-25.36	146.97	23.83	71.84	11 57 11	3093.5	-27.60	138.81
102.75	14 18 52	3030.88	-25.35	98.75	23.83	71.82	15 9 31	2439.9	-27.59	90.59
110.00	17 0 27	2535.61	-33.69	62.42	25.89	83.82	17 42 43	1935.6	-34.17	53.21
110.00	13 13 12	3245.79	-17.56	110.63	20.11	60.19	14 7 18	2645.8	-21.39	103.60

DIFFERENTIAL CORRECTIONS

TDE	1.1070	TRA	1.3588	TC-12.9318	BAU	1.5830	
RDE	.2185	RRA	.1396	RC3 -.0939	FAU	.46425	
FDE	2.3740	FRA	6.1857	FC-43.8956	BSP	30461	
BDE	1.1283	BRA	1.3660	BC312.9321	FSP	8988	

MID-COURSE EXECUTION ACCURACY

SGT	8638.3	SGR	518.8	SG3	2609.2		
RRT	.4986	RRF	.4831	RTF	.9898		
SGB	8653.9	R23	-.0135	R13	.9897		
SG1	8642.2	SG2	449.5	THA	1.72		

ORBIT DETERMINATION ACCURACY

ST	2292.7	SR	423.9	SS	1688.0		
CRT	.9781	CRS	-.8615	CST	-.9453		
LSA	2840.2	MSA	466.8	SSA	31.2		
EL1	2330.0	EL2	86.9	ALF	10.26		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 745.140 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.917	GAL	-1.49	AZL	87.95	HCA	224.93	SMA	186.47	ECC	.20864	INC	2.0450
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.941	GAP	-8.45	AZP	91.45	TAL	351.38	TAP	216.31	RCA	147.57	APO	225.37
RC	292.426	GL	22.78	GP	-2.05	ZAL	99.32	ZAP	61.93	ETS	178.18	ZAE	91.28	ETE	178.95	ZAC	82.08	ETC	257.98

V1	30.134	V2	25.608	CLP	61.91														

PLANETOCENTRIC CONIC

C3	9.195	VHL	3.032	DLA	30.37	RAL	167.11	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	3.232	DPA	6.54	RAP	163.75
ECC	1.1513																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.54	11 8 3	3664.48	-24.97	144.66	24.51	72.13	12 9 7	3064.5	-27.17	136.51
101.46	14 12 26	3070.57	-24.96	100.91	24.50	72.11	15 3 37	2470.6	-27.17	92.77
78.54	11 8 3	3664.48	-24.97	144.66	24.51	72.13	12 9 7	3064.5	-27.17	136.51
101.46	14 12 26	3070.57	-24.96	100.91	24.50	72.11	15 3 37	2470.6	-27.17	92.77
110.00	17 11 0	2511.55	-33.85	60.56	26.58	84.91	17 52 52	1911.6	-34.18	51.33
110.00	13 8 39	3271.50	-16.68	112.11	20.55	59.72	14 3 11	2671.5	-20.58	105.15

DIFFERENTIAL CORRECTIONS

TDE	1.0866	TRA	1.4521	TC-13.3100	BAU	1.6362	
RDE	.2199	RRA	.1394	RC3 -.0658	FAU	.45146	
FDE	2.1220	FRA	6.1262	FC-42.5053	BSP	31219	
BDE	1.1086	BRA	1.4588	BC313.3102	FSP	8638	

MID-COURSE EXECUTION ACCURACY

SGT	8915.6	SGR	517.0	SG3	2534.6		
RRT	.4634	RRF	.4457	RTF	.9902		
SGB	8930.5	R23	-.0163	R13	.9902		
SG1	8918.8	SG2	457.9	THA	1.54		

ORBIT DETERMINATION ACCURACY

ST	2276.8	SR	425.4	SS	1601.0		
CRT	.9711	CRS	-.8344	CST	-.9391		
LSA	2774.7	MSA	477.6	SSA	31.6		
EL1	2314.0	EL2	99.9	ALF	10.30		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 749.337 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.920	GAL	-1.56	AZL	87.96	HCA	226.11	SMA	186.52	ECC	.20902	INC	2.0366
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.885	GAP	-8.60	AZP	91.41	TAL	350.94	TAP	217.06	RCA	147.54	APO	225.51
RC	293.566	GL	22.63	GP	-1.98	ZAL	100.14	ZAP	60.52	ETS	178.16	ZAE	89.59	ETE	178.93	ZAC	82.10	ETC	258.02

V1	30.134	V2	25.644	CLP	60.50														

PLANETOCENTRIC CONIC

C3	9.240	VHL	3.040	DLA	29.89	RAL	167.88	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	3.279	DPA	6.69	RAP	163.56
ECC	1.1521																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.02	11 22 14	3630.05	-24.56	141.05	25.21	72.42	12 22 44	3030.0	-26.74	133.82
99.98	14 4 25	3106.91	-24.55	103.48	25.21	72.41	14 56 12	2506.9	-26.73	95.35
100.00	14 10 8	3088.66	-24.92	102.24	25.34	72.93	15 1 37	2488.7	-27.02	94.07
100.00	13 59 12	3123.54	-24.20	104.59	25.09	71.90	14 51 16	2523.5	-26.45	96.51
110.00	17 21 23	2488.23	-33.97	58.75	27.27	85.97	18 2 51	1888.2	-34.16	49.51
110.00	13 4 27	3296.72	-15.81	113.54	21.04	59.29	13 59 24	2696.7	-19.77	106.66

DIFFERENTIAL CORRECTIONS

TDE	1.0648	TRA	1.5512	TC-13.6501	BAU	1.6873	
RDE	.2216	RRA	.1394	RC3 -.0346	FAU	.43814	
FDE	1.8892	FRA	6.0770	FC-41.0489	BSP	32012	
BDE	1.0876	BRA	1.5575	BC313.6581	FSP	8314	

MID-COURSE EXECUTION ACCURACY

SGT	9184.2	SGR	516.4	SG3	2459.0		
RRT	.4290	RRF	.4093	RTF	.9906		
SGB	9198.7	R23	-.0186	R13	.9905		
SG1	9186.9	SG2	466.3	THA	1.39		

ORBIT DETERMINATION ACCURACY

ST	2261.3	SR	427.4	SS	1524.4		
CRT	.9825	CRS	-.8036	CST	-.9323		
LSA	2716.5	MSA	489.2	SSA	31.8		
EL1	2298.5	EL2	114.0	ALF	10.34		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 753.540 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.923	GAL	-1.64	AZL	87.97	HCA	227.30	SMA	186.58	ECC	.20943	INC	2.0286	V1	30.134
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.029	GAP	-8.74	AZP	91.38	TAL	350.50	TAP	217.79	RCA	147.50	APO	225.65	V2	25.679
RC	294.693	GL	22.47	GP	-1.92	ZAL	100.99	ZAP	59.15	ETS	178.14	ZAE	87.95	ETE	178.91	ZAC	82.12	ETC	258.04	CLP	59.13

PLANETOCENTRIC CONIC

C3	9.292	VHL	3.048	DLA	29.39	RAL	168.68	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.328	DPA	6.83	RAP	163.42	ECC	1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.79	11 39 5	3587.37	-24.15	138.64	25.95	72.72	12 38 52	2987.4	-26.28	130.54
98.21	13 53 55	3151.76	-24.14	106.66	25.95	72.70	14 46 27	2551.8	-26.28	98.55
100.00	14 53 55	2959.59	-27.20	93.33	26.86	77.09	15 43 15	2359.6	-28.70	84.86
100.00	13 21 46	3254.78	-21.16	113.15	24.81	68.38	14 16 0	2654.8	-23.91	105.43
110.00	17 31 37	2465.53	-34.07	56.98	27.98	87.01	18 12 43	1865.5	-34.11	47.73
110.00	15 0 33	3321.60	-14.94	114.95	21.57	58.89	13 55 54	2721.6	-18.95	108.13

DIFFERENTIAL CORRECTIONS

TDE	1.0406	TRA	1.6562	TC-13.9756	BAU	1.7362	
RDE	.2236	RRA	.1395	RC3 -.0062	FAU	.42429	
FDE	1.6743	FRA	6.0338	FC-39.5303	BSP	32826	
BDE	1.0643	BRA	1.6621	BC313.9756	FSP	8015	

MID-COURSE EXECUTION ACCURACY

SGT	9443.9	SGR	517.0	SG3	2382.1		
RRT	.3952	RRF	.3740	RTF	.9909		
SGB	9458.0	R23	-.0202	R13	.9909		
SG1	9446.1	SG2	474.8	THA	1.24		

ORBIT DETERMINATION ACCURACY

ST	2244.9	SR	429.9	SS	1457.1		
CRT	.9521	CRS	-.7691	CST	-.9253		
LSA	2663.8	MSA	500.6	SSA	32.0		
EL1	2282.0	EL2	129.3	ALF	10.37		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 757.749 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.926	GAL	-1.72	AZL	87.98	HCA	228.49	SMA	186.63	ECC	.20986	INC	2.0208	V1	30.134
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.073	GAP	-8.89	AZP	91.34	TAL	350.03	TAP	218.52	RCA	147.47	APO	225.80	V2	25.714
RC	295.805	GL	22.30	GP	-1.86	ZAL	101.86	ZAP	57.82	ETS	178.12	ZAE	86.34	ETE	178.90	ZAC	82.16	ETC	258.06	CLP	57.80

PLANETOCENTRIC CONIC

C3	9.351	VHL	3.058	DLA	28.88	RAL	169.49	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	3.379	DPA	6.94	RAP	163.31	ECC	1.1539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.09	12 0 43	3529.46	-23.71	134.22	26.71	73.02	12 59 32	2929.5	-25.81	126.14
95.91	13 38 46	3212.13	-23.71	110.96	26.71	73.01	14 32 19	2612.1	-25.81	102.88
100.00	15 16 27	2890.33	-28.05	88.98	27.90	79.23	16 4 45	2298.3	-29.25	80.39
100.00	13 5 43	3318.48	-19.51	117.16	25.06	66.89	14 1 2	2718.5	-22.47	109.61
110.00	17 41 46	2443.34	-34.13	55.25	28.70	88.03	18 22 29	1843.3	-34.03	46.01
110.00	12 56 54	3346.24	-14.07	116.32	22.13	58.52	13 52 40	2746.2	-18.13	109.57

DIFFERENTIAL CORRECTIONS

TDE	1.0137	TRA	1.7662	TC-14.2641	BAU	1.7832	
RDE	.2260	RRA	.1397	RC3 .0212	FAU	.41006	
FDE	1.4714	FRA	5.9936	FC-37.9644	BSP	33652	
BDE	1.0386	BRA	1.7717	BC314.2641	FSP	7737	

MID-COURSE EXECUTION ACCURACY

SGT	9695.0	SGR	518.4	SG3	2304.1		
RRT	.3622	RRF	.3399	RTF	.9911		
SGB	9708.9	R23	-.0214	R13	.9911		
SG1	9696.8	SG2	483.1	THA	1.11		

ORBIT DETERMINATION ACCURACY

ST	2227.4	SR	432.8	SS	1396.8		
CRT	.9396	CRS	-.7303	CST	-.9178		
LSA	2614.5	MSA	512.8	SSA	32.1		
EL1	2264.4	EL2	145.7	ALF	10.39		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 761.963 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.930	GAL	-1.81	AZL	87.99	HCA	229.68	SMA	186.70	ECC	.21033	INC	2.0133	V1	30.134
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.116	GAP	-9.03	AZP	91.30	TAL	349.56	TAP	219.23	RCA	147.43	APO	225.96	V2	25.748
RC	296.904	GL	22.14	GP	-1.80	ZAL	102.76	ZAP	56.53	ETS	178.10	ZAE	84.77	ETE	178.89	ZAC	82.19	ETC	258.08	CLP	56.51

PLANETOCENTRIC CONIC

C3	9.417	VHL	3.069	DLA	28.35	RAL	170.32	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.432	DPA	7.03	RAP	163.24	ECC	1.1550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.57	12 41 6	3410.96	-23.27	125.39	27.50	73.33	13 37 57	2811.0	-25.33	117.32
91.43	13 5 2	3333.38	-23.26	119.71	27.50	73.32	14 0 35	2733.4	-25.32	111.64
100.00	15 34 53	2850.23	-28.62	85.52	28.86	80.97	16 22 23	2250.2	-29.57	76.84
100.00	12 53 55	3369.34	-18.12	120.30	25.45	65.81	13 50 5	2769.3	-21.23	112.89
110.00	17 51 49	2421.60	-34.17	53.55	29.43	89.04	18 32 11	1821.6	-33.93	44.32
110.00	12 53 29	3370.74	-13.19	117.68	22.74	58.18	13 49 39	2770.7	-17.31	110.99

DIFFERENTIAL CORRECTIONS

TDE	.9833	TRA	1.8807	TC-14.5267	BAU	1.8289	
RDE	.2285	RRA	.1400	RC3 .0475	FAU	.39581	
FDE	1.2773	FRA	5.9560	FC-36.3877	BSP	34461	
BDE	1.0095	BRA	1.8859	BC314.5267	FSP	7463	

MID-COURSE EXECUTION ACCURACY

SGT	9938.8	SGR	520.6	SG3	2226.5		
RRT	.3302	RRF	.3071	RTF	.9913		
SGB	9952.4	R23	-.0223	R13	.9913		
SG1	9940.3	SG2	491.4	THA	.99		

ORBIT DETERMINATION ACCURACY

ST	2207.9	SR	435.8	SS	1342.8		
CRT	.9246	CRS	-.6864	CST	-.9097		
LSA	2567.1	MSA	526.2	SSA	32.2		
EL1	2244.6	EL2	163.4	ALF	10.40		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 766.182 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.933	GAL	-1.90	AZL	87.99	HCA	230.87	SMA	186.76	ECC	.21082	INC	2.0060	V1	30.134
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.158	GAP	-9.17	AZP	91.27	TAL	349.07	TAP	219.94	RCA	147.39	APO	226.13	V2	25.782
RC	297.989	GL	21.96	GP	-1.74	ZAL	103.68	ZAP	55.27	ETS	178.08	ZAE	83.23	ETE	178.88	ZAC	82.24	ETC	258.09	CLP	55.25

PLANETOCENTRIC CONIC

C3	9.491	VHL	3.081	DLA	27.81	RAL	171.17	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	3.486	DPA	7.11	RAP	163.20	ECC	1.1562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 32	3220.60	-25.81	112.18	29.16	77.92	14 37 12	2620.6	-27.21	103.80
90.00	12 9 22	3526.80	-19.86	132.62	27.27	69.39	13 8 9	2926.8	-22.49	124.93
100.00	15 51 16	2808.79	-29.02	82.51	29.78	82.50	16 38 5	2208.8	-29.76	73.78
100.00	12 44 19	3413.83	-16.86	123.00	25.93	64.94	13 41 12	2813.8	-20.09	115.70
110.00	18 1 49	2400.24	-34.18	51.88	30.18	90.03	18 41 49	1800.2	-33.80	42.66
110.00	12 50 16	3395.15	-12.31	119.03	23.37	57.86	13 46 51	2795.1	-16.47	112.39

DIFFERENTIAL CORRECTIONS

TDE	.9491	TRA	1.9997	TC-14.7653	BAU	1.8735	
RDE	.2312	RRA	.1403	RC3 .0724	FAU	.38182	
FDE	1.0928	FRA	5.9128	FC-34.8283	BSP	35259	
BDE	.9768	BRA	2.0047	BC314.7655	FSP	7200	

MID-COURSE EXECUTION ACCURACY

SGT	10176.5	SGR	523.4	SG3	2150.0		
RRT	.2992	RRF	.2752	RTF	.9916		
SGB	10190.0	R23	-.0233	R13	.9915		
SG1	10177.7	SG2	499.4	THA	.88		

ORBIT DETERMINATION ACCURACY

ST	2186.6	SR	439.1	SS	1294.1		
CRT	.9065	CRS	-.6379	CST	-.9014		
LSA	2521.2	MSA	539.4	SSA	32.2		
EL1	2222.8	EL2	182.3	ALF	10.39		

LAUNCH DATE NOV 18 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 770.407 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.937	GAL	-1.99	AZL	88.00	HCA	232.07	SMA	186.82	ECC	.21134	INC	1.9990
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.201	GAP	-9.31	AZP	91.23	TAL	348.56	TAP	220.63	RCA	147.34	APO	226.31
RC	299.061	GL	21.78	GP	-1.69	ZAL	104.62	ZAP	54.05	ETS	178.07	ZAE	81.73	ETE	178.87	ZAC	82.29	ETC	258.09

V1	30.134	V2	25.815	CLP	54.03														

PLANETOCENTRIC CONIC

C3	9.573	VHL	3.094	DLA	27.25	RAL	172.04	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.542	DPA	7.16	RAP	163.20
ECC	1.1575																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 0	3153.18	-26.68	107.44	30.27	80.14	15 0 33	2553.2	-27.77	98.94
90.00	11 51 48	3597.60	-18.10	137.07	27.61	67.85	12 51 46	2997.6	-20.95	129.55
100.00	16 6 23	2771.53	-29.32	79.78	30.69	83.91	16 52 35	2171.5	-29.86	71.01
100.00	12 36 6	3454.48	-15.67	125.43	26.48	64.21	13 33 40	2854.5	-19.01	118.23
110.00	18 11 45	2379.24	-34.17	50.24	30.94	91.00	18 51 24	1779.2	-33.65	41.04
110.00	12 47 14	3419.53	-11.43	120.36	24.05	57.56	13 44 13	2819.5	-15.63	113.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9115	TRA	2.1237	TC-14.9759	BAU	1.9167	SGT10406.7	SGR	526.8	SG3	2074.3	ST	2165.0	SR	442.6	SS	1252.1
RDE	.2342	RRA	.1406	RC3 .0960	FAU	.36790	RRT	.2694	RRF	.2448	RTF	.9917	CRT	.8852	CRS	-.5847	CST	-.8931
FDE	.9178	FRA	5.8719	FC-33.2705	BSP	36050	SGB10420.0	R23	-.0239	R13	.9917	LSA	2478.7	MSA	553.3	SSA	32.2
BDE	.9411	BRA	2.1283	BC314.9762	FSP	6947	SG110407.7	SG2	507.2	THA	.78	EL1	2200.5	EL2	202.5	ALF	10.35

LAUNCH DATE NOV 18 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 774.636 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.941	GAL	-2.08	AZL	88.01	HCA	233.27	SMA	186.89	ECC	.21189	INC	1.9921
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.242	GAP	-9.44	AZP	91.19	TAL	348.04	TAP	221.31	RCA	147.29	APO	226.49
RC	300.120	GL	21.60	GP	-1.64	ZAL	105.59	ZAP	52.86	ETS	178.05	ZAE	80.26	ETE	178.87	ZAC	82.34	ETC	258.09

V1	30.134	V2	25.847	CLP	52.85														

PLANETOCENTRIC CONIC

C3	9.664	VHL	3.109	DLA	26.68	RAL	172.92	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.600	DPA	7.21	RAP	163.24
ECC	1.1590																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 46	3101.01	-27.23	103.72	31.29	81.93	15 19 27	2501.0	-28.07	95.16
90.00	11 39 3	3653.49	-16.64	140.51	28.09	66.75	12 39 56	3053.5	-19.64	133.13
100.00	16 20 38	2737.18	-29.54	77.25	31.58	85.22	17 6 15	2137.2	-29.89	68.46
100.00	12 28 52	3492.55	-14.53	127.68	27.08	63.58	13 27 5	2892.5	-17.96	120.57
110.00	18 21 38	2358.55	-34.13	48.63	31.72	91.95	19 0 56	1758.6	-33.49	39.45
110.00	12 44 21	3443.94	-10.53	121.68	24.76	57.29	13 41 45	2843.9	-14.77	115.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8698	TRA	2.2517	TC-15.1604	BAU	1.9588	SGT10629.6	SGR	530.5	SG3	1998.8	ST	2142.7	SR	446.2	SS	1214.9
RDE	.2374	RRA	.1409	RC3 .1186	FAU	.35402	RRT	.2406	RRF	.2154	RTF	.9918	CRT	.8601	CRS	-.5259	CST	-.8845
FDE	.7481	FRA	5.8278	FC-31.7143	BSP	36825	SGB10642.8	R23	-.0245	R13	.9918	LSA	2437.7	MSA	568.3	SSA	32.1
BDE	.9016	BRA	2.2561	BC315.1609	FSP	6696	SG110630.4	SG2	514.9	THA	.69	EL1	2177.2	EL2	224.0	ALF	10.26

LAUNCH DATE NOV 18 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 778.866 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.945	GAL	-2.18	AZL	88.01	HCA	234.48	SMA	186.96	ECC	.21246	INC	1.9855
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.284	GAP	-9.58	AZP	91.15	TAL	347.50	TAP	221.98	RCA	147.24	APO	226.69
RC	301.167	GL	21.41	GP	-1.59	ZAL	106.58	ZAP	51.72	ETS	178.04	ZAE	78.83	ETE	178.86	ZAC	82.40	ETC	258.08

V1	30.134	V2	25.879	CLP	51.70														

PLANETOCENTRIC CONIC

C3	9.764	VHL	3.125	DLA	26.09	RAL	173.81	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.659	DPA	7.23	RAP	163.31
ECC	1.1607																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 16	3056.32	-27.62	100.51	32.27	83.49	15 36 12	2456.3	-28.23	91.90
90.00	11 28 42	3702.24	-15.30	143.47	28.66	65.88	12 30 24	3102.2	-18.43	136.19
100.00	16 34 16	2704.93	-29.70	74.86	32.48	86.47	17 19 20	2104.9	-29.88	66.06
100.00	12 22 23	3528.86	-13.42	129.81	27.73	63.04	13 21 12	2928.9	-16.93	122.77
110.00	18 31 30	2338.12	-34.08	47.04	32.51	92.89	19 10 28	1738.1	-33.30	37.88
110.00	12 41 38	3468.45	-9.63	123.00	25.50	57.04	13 39 27	2868.4	-13.90	116.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8492	TRA	2.4110	TC-15.2207	BAU	1.9869	SGT10823.1	SGR	536.0	SG3	1918.1	ST	2164.9	SR	450.9	SS	1208.5
RDE	.2413	RRA	.1417	RC3 .1418	FAU	.33698	RRT	.2189	RRF	.1962	RTF	.9918	CRT	.8363	CRS	-.4890	CST	-.8857
FDE	.6572	FRA	5.8509	FC-29.8785	BSP	38183	SGB10836.4	R23	-.0220	R13	.9918	LSA	2453.7	MSA	573.7	SSA	32.0
BDE	.8828	BRA	2.4152	BC315.2214	FSP	6594	SG110823.7	SG2	523.0	THA	.62	EL1	2197.9	EL2	243.5	ALF	10.01

LAUNCH DATE NOV 18 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 783.106 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.949	GAL	-2.28	AZL	88.02	HCA	235.68	SMA	187.04	ECC	.21308	INC	1.9790
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.324	GAP	-9.71	AZP	91.12	TAL	346.95	TAP	222.64	RCA	147.18	APO	226.89
RC	302.203	GL	21.21	GP	-1.54	ZAL	107.59	ZAP	50.60	ETS	178.02	ZAE	77.43	ETE	178.86	ZAC	82.46	ETC	258.07

V1	30.134	V2	25.911	CLP	50.58														

PLANETOCENTRIC CONIC

C3	9.874	VHL	3.142	DLA	25.49	RAL	174.72	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	3.720	DPA	7.23	RAP	163.42
ECC	1.1625																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 17	3016.45	-27.89	97.63	33.24	84.91	15 51 34	2416.4	-28.31	88.98
90.00	11 19 54	3746.55	-14.05	146.12	29.29	65.16	12 22 20	3146.6	-17.29	138.94
100.00	16 47 22	2674.47	-29.81	72.61	33.38	87.65	17 31 56	2074.5	-29.82	63.80
100.00	12 16 30	3563.76	-12.33	131.83	28.42	62.55	13 15 54	2963.8	-15.91	124.87
110.00	18 41 18	2318.00	-34.00	45.47	33.32	93.82	19 19 56	1718.0	-33.09	36.35
110.00	12 39 4	3492.99	-8.71	124.32	26.27	56.82	13 37 17	2893.0	-13.02	117.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7948	TRA	2.5432	TC-15.3745	BAU	2.0296	SGT11038.7	SGR	540.0	SG3	1847.4	ST	2135.4	SR	454.6	SS	1175.1
RDE	.2448	RRA	.1418	RC3 .1611	FAU	.32457	RRT	.1913	RRF	.1674	RTF	.9919	CRT	.8020	CRS	-.4188	CST	-.8769
FDE	.4871	FRA	5.7849	FC-28.4572	BSP	38802	SGB11051.9	R23	-.0232	R13	.9919	LSA	2407.9	MSA	590.3	SSA	31.8
BDE	.8317	BRA	2.5472	BC315.3753	FSP	6324	SG111039.2	SG2	530.0	THA	.54	EL1	2166.8	EL2	267.7	ALF	9.84

LAUNCH DATE NOV 18 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 787.352 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.954 GAL -2.38 AZL 88.03 HCA 236.90 SMA 187.11 ECC .21372 INC 1.9727 V1 30.134
RP 211.47 LAP -1.65 LOP 292.57 VP 23.365 GAP -9.84 AZP 91.08 TAL 346.39 TAP 223.28 RCA 147.12 APO 227.10 V2 25.941
RC 303.228 GL 21.01 GP -1.50 ZAL 108.62 ZAP 49.51 ETS 178.01 ZAE 76.06 ETE 178.86 ZAC 82.53 ETC 258.06 CLP 49.50

PLANETOCENTRIC CONIC

C3 9.994 VHL 3.161 DLA 24.88 RAL 175.63 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.783 DPA 7.23 RAP 163.55 ECC 1.1645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 19	2979.89	-28.09	94.97	34.20	86.23	16 5 59	2379.9	-28.31	86.31
90.00	11 12 10	3787.93	-12.86	148.57	29.97	64.55	12 15 18	3187.9	-16.18	141.47
100.00	17 0 4	2645.42	-29.87	70.45	34.29	88.79	17 44 9	2045.4	-29.72	61.65
100.00	12 11 7	3597.63	-11.26	133.77	29.15	62.13	13 11 5	2997.6	-14.90	126.88
110.00	18 51 3	2298.18	-33.89	43.93	34.14	94.72	19 29 21	1698.2	-32.87	34.84
110.00	12 36 37	3517.64	-7.79	125.63	27.07	56.61	13 35 15	2917.6	-12.13	119.23

DIFFERENTIAL CORRECTIONS
TDE .7209 TRA 2.6638 TC-15.5637 BAU 2.0797
RDE .2484 RRA .1417 RC3 .1783 FAU .31448
FDE .2857 FRA 5.6779 FC-27.2410 BSP 39006
BDE .7625 BRA 2.6676 BC315.5648 FSP 5979

MID-COURSE EXECUTION ACCURACY
SGT11263.5 SGR 543.5 SG3 1782.4
RRT .1609 RRF .1339 RTF .9921
SGB11276.6 R23 -.0264 R13 .9921
SG111263.8 SG2 536.4 THA .45

ORBIT DETERMINATION ACCURACY
ST 2084.0 SR 458.1 SS 1137.5
CRT .7570 CRS -.3263 CST -.8633
LSA 2338.7 MSA 613.4 SSA 31.3
EL1 2113.2 EL2 295.2 ALF 9.64

LAUNCH DATE NOV 18 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 791.599 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.958 GAL -2.49 AZL 88.03 HCA 238.11 SMA 187.19 ECC .21440 INC 1.9666 V1 30.134
RP 211.20 LAP -1.67 LOP 293.79 VP 23.404 GAP -9.97 AZP 91.04 TAL 345.81 TAP 223.92 RCA 147.06 APO 227.32 V2 25.971
RC 304.242 GL 20.80 GP -1.45 ZAL 109.66 ZAP 48.46 ETS 177.99 ZAE 74.72 ETE 178.87 ZAC 82.60 ETC 258.04 CLP 48.45

PLANETOCENTRIC CONIC

C3 10.126 VHL 3.182 DLA 24.25 RAL 176.56 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 3.846 DPA 7.20 RAP 163.72 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 39	2945.73	-28.21	92.48	35.16	87.48	16 19 45	2345.7	-28.27	83.81
90.00	11 5 15	3827.31	-11.69	150.88	30.71	64.03	12 9 2	3227.3	-15.09	143.85
100.00	17 12 27	2617.49	-29.89	68.37	35.20	89.88	17 56 5	2017.5	-29.59	59.58
100.00	12 6 7	3630.78	-10.20	135.66	29.93	61.75	13 6 38	3030.8	-13.90	128.82
110.00	19 0 47	2278.58	-33.77	42.41	34.98	95.61	19 38 46	1678.6	-32.63	33.36
110.00	12 34 17	3542.45	-6.86	126.95	27.91	56.43	13 33 20	2942.4	-11.23	120.58

DIFFERENTIAL CORRECTIONS
TDE .6634 TRA 2.8107 TC-15.6461 BAU 2.1182
RDE .2525 RRA .1418 RC3 .1958 FAU .30176
FDE .1461 FRA 5.6252 FC-25.7994 BSP 39694
BDE .7098 BRA 2.8143 BC315.6473 FSP 5751

MID-COURSE EXECUTION ACCURACY
SGT11462.6 SGR 548.3 SG3 1713.0
RRT .1363 RRF .1090 RTF .9922
SGB11475.7 R23 -.0268 R13 .9921
SG111462.8 SG2 543.2 THA .37

ORBIT DETERMINATION ACCURACY
ST 2071.0 SR 462.3 SS 1123.0
CRT .7121 CRS -.2546 CST -.8589
LSA 2317.0 MSA 627.9 SSA 31.0
EL1 2097.7 EL2 320.4 ALF 9.25

LAUNCH DATE NOV 18 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 795.850 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.963 GAL -2.60 AZL 88.04 HCA 239.33 SMA 187.27 ECC .21511 INC 1.9606 V1 30.134
RP 210.95 LAP -1.69 LOP 295.00 VP 23.443 GAP -10.10 AZP 91.00 TAL 345.21 TAP 224.54 RCA 146.99 APO 227.55 V2 26.001
RC 305.247 GL 20.58 GP -1.41 ZAL 110.73 ZAP 47.44 ETS 177.97 ZAE 73.42 ETE 178.87 ZAC 82.68 ETC 258.01 CLP 47.43

PLANETOCENTRIC CONIC

C3 10.269 VHL 3.205 DLA 23.61 RAL 177.50 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.912 DPA 7.16 RAP 163.92 ECC 1.1690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 25	2913.49	-28.29	90.12	36.12	88.65	16 32 59	2313.5	-28.17	81.46
90.00	10 58 57	3865.17	-10.55	153.08	31.49	63.57	12 3 22	3265.2	-14.02	146.12
100.00	17 24 35	2590.55	-29.88	66.37	36.12	90.93	18 7 46	1990.5	-29.43	57.59
100.00	12 1 29	3663.35	-9.14	137.50	30.74	61.42	13 2 32	3063.3	-12.89	130.72
110.00	19 10 29	2259.24	-33.64	40.92	35.84	96.49	19 48 8	1659.2	-32.37	31.91
110.00	12 32 4	3567.42	-5.92	128.27	28.78	56.27	13 31 32	2967.4	-10.31	121.93

DIFFERENTIAL CORRECTIONS
TDE .6022 TRA 2.9625 TC-15.7025 BAU 2.1559
RDE .2568 RRA .1419 RC3 .2121 FAU .28946
FDE .0138 FRA 5.5686 FC-24.4032 BSP 40377
BDE .6546 BRA 2.9659 BC315.7039 FSP 5534

MID-COURSE EXECUTION ACCURACY
SGT11655.8 SGR 553.2 SG3 1645.4
RRT .1128 RRF .0850 RTF .9922
SGB11668.9 R23 -.0274 R13 .9922
SG111656.0 SG2 549.7 THA .31

ORBIT DETERMINATION ACCURACY
ST 2063.5 SR 466.6 SS 1113.1
CRT .6618 CRS -.1824 CST -.8566
LSA 2302.7 MSA 641.3 SSA 30.6
EL1 2087.1 EL2 345.9 ALF 8.75

LAUNCH DATE NOV 18 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 800.104 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.967 GAL -2.72 AZL 88.05 HCA 240.55 SMA 187.35 ECC .21585 INC 1.9547 V1 30.134
RP 210.70 LAP -1.70 LOP 296.23 VP 23.482 GAP -10.23 AZP 90.96 TAL 344.60 TAP 225.15 RCA 146.91 APO 227.79 V2 26.029
RC 306.243 GL 20.36 GP -1.37 ZAL 111.82 ZAP 46.45 ETS 177.96 ZAE 72.14 ETE 178.87 ZAC 82.77 ETC 257.98 CLP 46.43

PLANETOCENTRIC CONIC

C3 10.424 VHL 3.229 DLA 22.96 RAL 178.44 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.979 DPA 7.11 RAP 164.14 ECC 1.1716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 44	2882.84	-28.32	87.88	37.09	89.78	16 45 47	2282.8	-28.05	79.22
90.00	10 53 11	3901.88	-9.43	155.19	32.31	63.18	11 58 13	3301.9	-12.96	148.29
100.00	17 36 28	2564.49	-29.83	64.43	37.06	91.95	18 19 13	1964.5	-29.24	55.68
100.00	11 57 8	3695.47	-8.09	139.31	31.59	61.13	12 58 43	3095.5	-11.88	132.57
110.00	19 20 8	2240.16	-33.48	39.45	36.71	97.34	19 57 29	1640.2	-32.10	30.49
110.00	12 29 57	3592.56	-4.97	129.59	29.68	56.14	13 29 50	2992.6	-9.38	123.29

DIFFERENTIAL CORRECTIONS
TDE .5371 TRA 3.1196 TC-15.7360 BAU 2.1933
RDE .2614 RRA .1420 RC3 .2272 FAU .27749
FDE -.1108 FRA 5.5101 FC-23.0450 BSP 41027
BDE .5973 BRA 3.1229 BC315.7376 FSP 5317

MID-COURSE EXECUTION ACCURACY
SGT11845.2 SGR 558.2 SG3 1579.6
RRT .0902 RRF .0619 RTF .9922
SGB11858.3 R23 -.0280 R13 .9922
SG111845.3 SG2 555.9 THA .24

ORBIT DETERMINATION ACCURACY
ST 2062.7 SR 471.1 SS 1107.9
CRT .6060 CRS -.1109 CST -.8567
LSA 2297.0 MSA 653.2 SSA 30.2
EL1 2083.0 EL2 371.1 ALF 8.14

LAUNCH DATE NOV 18 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 804.361 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.972 GAL -2.83 AZL 88.05 HCA 241.77 SMA 187.44 ECC .21664 INC 1.9490 V1 30.134
RP 210.46 LAP -1.72 LOP 297.45 VP 23.520 GAP -10.36 AZP 90.92 TAL 343.98 TAP 225.75 RCA 146.83 APO 228.04 V2 26.057
RC 307.229 GL 20.13 GP -1.34 ZAL 112.92 ZAP 45.49 ETS 177.94 ZAE 70.88 ETE 178.88 ZAC 82.85 ETC 257.95 CLP 45.47

PLANETOCENTRIC CONIC

C3 10.593 VHL 3.255 DLA 22.29 RAL 179.40 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.047 DPA 7.04 RAP 164.40 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 41	2853.52	-28.31	85.74	38.06	90.85	16 58 14	2253.5	-27.89	77.09
90.00	10 47 51	3937.70	-8.33	157.24	33.17	62.84	11 53 28	3337.7	-11.90	150.39
100.00	17 48 9	2539.21	-29.76	62.56	38.01	92.94	18 30 29	1939.2	-29.04	53.83
100.00	11 53 3	3727.24	-7.04	141.08	32.48	60.87	12 55 10	3127.2	-10.87	134.39
110.00	19 29 46	2221.34	-33.31	38.01	37.60	98.18	20 6 47	1621.3	-31.82	29.10
110.00	12 27 56	3617.87	-4.01	130.92	30.61	56.02	13 28 14	3017.9	-8.44	124.64

DIFFERENTIAL CORRECTIONS
TDE .4683 TRA 3.2824 TC-15.7403 BAU 2.2294
RDE .2663 RRA .1419 RC3 .2411 FAU .26576
FDE -.2289 FRA 5.4498 FC-21.7198 BSP 41673
BDE .5387 BRA 3.2855 BC315.7422 FSP 5108

MID-COURSE EXECUTION ACCURACY
SGT12027.5 SGR 563.3 SG3 1515.2
RRT .0886 RRF .0397 RTF .9922
SGB12040.7 RZ3 -.0286 R13 .9922
SG112027.6 SG2 561.9 THA .18

ORBIT DETERMINATION ACCURACY
ST 2069.9 SR 475.7 SS 1106.7
CRT .5451 CRS -.0406 CST -.8587
LSA 2300.9 MSA 663.5 SSA 29.7
EL1 2086.7 EL2 395.6 ALF 7.41

LAUNCH DATE NOV 18 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 808.621 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.977 GAL -2.95 AZL 88.06 HCA 242.99 SMA 187.52 ECC .21745 INC 1.9434 V1 30.134
RP 210.22 LAP -1.73 LOP 298.67 VP 23.557 GAP -10.49 AZP 90.88 TAL 343.34 TAP 226.33 RCA 146.75 APO 228.30 V2 26.085
RC 308.206 GL 19.89 GP -1.30 ZAL 114.04 ZAP 44.55 ETS 177.93 ZAE 69.66 ETE 178.89 ZAC 82.95 ETC 257.91 CLP 44.54

PLANETOCENTRIC CONIC

C3 10.776 VHL 3.283 DLA 21.61 RAL 180.36 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 4.116 DPA 6.96 RAP 164.68 ECC 1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 18	2825.35	-28.26	83.68	39.05	91.89	17 10 23	2225.4	-27.70	75.05
90.00	10 42 53	3972.82	-7.23	159.24	34.07	62.55	11 49 5	3372.8	-10.85	152.44
100.00	17 59 30	2514.65	-29.66	60.74	38.97	93.89	18 41 34	1914.7	-28.81	52.04
100.00	11 49 12	3758.75	-5.99	142.84	33.40	60.66	12 51 51	3158.8	-9.86	136.18
110.00	19 39 20	2202.79	-33.12	36.59	38.51	99.00	20 16 3	1602.8	-31.52	27.73
110.00	12 26 1	3643.38	-3.03	132.26	31.57	55.94	13 26 44	3043.4	-7.49	126.00

DIFFERENTIAL CORRECTIONS
TDE .3954 TRA 3.4496 TC-15.7222 BAU 2.2653
RDE .2714 RRA .1418 RC3 .2539 FAU .25437
FDE -.3405 FRA 5.3876 FC-20.4364 BSP 42297
BDE .4796 BRA 3.4525 BC315.7242 FSP 4908

MID-COURSE EXECUTION ACCURACY
SGT12205.1 SGR 568.3 SG3 1452.6
RRT .0476 RRF .0182 RTF .9921
SGB12218.3 RZ3 -.0291 R13 .9921
SG112205.1 SG2 567.7 THA .13

ORBIT DETERMINATION ACCURACY
ST 2084.9 SR 480.4 SS 1109.0
CRT .4797 CRS .0275 CST -.8629
LSA 2314.2 MSA 671.7 SSA 29.2
EL1 2098.2 EL2 418.9 ALF 6.57

LAUNCH DATE NOV 18 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 812.884 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.982 GAL -3.08 AZL 88.06 HCA 244.22 SMA 187.61 ECC .21831 INC 1.9379 V1 30.134
RP 209.99 LAP -1.75 LOP 299.90 VP 23.593 GAP -10.61 AZP 90.84 TAL 342.68 TAP 226.91 RCA 146.65 APO 228.57 V2 26.111
RC 309.174 GL 19.65 GP -1.27 ZAL 115.17 ZAP 43.64 ETS 177.91 ZAE 68.46 ETE 178.89 ZAC 83.04 ETC 257.87 CLP 43.63

PLANETOCENTRIC CONIC

C3 10.973 VHL 3.313 DLA 20.92 RAL 181.32 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.188 DPA 6.86 RAP 164.99 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 39	2798.20	-28.18	81.69	40.05	92.88	17 22 17	2198.2	-27.49	73.10
90.00	10 38 14	4007.40	-6.14	161.20	35.01	62.30	11 45 1	3407.4	-9.80	154.43
100.00	18 10 59	2490.77	-29.54	58.97	39.94	94.81	18 52 30	1890.8	-28.56	50.31
100.00	11 45 34	3790.07	-4.95	144.57	34.35	60.48	12 48 44	3190.1	-8.84	137.95
110.00	19 48 52	2184.52	-32.91	35.21	39.44	99.79	20 25 17	1584.5	-31.21	26.40
110.00	12 24 10	3669.08	-2.05	133.60	32.55	55.87	13 25 19	3069.1	-6.52	127.36

DIFFERENTIAL CORRECTIONS
TDE .3194 TRA 3.6231 TC-15.6780 BAU 2.3003
RDE .2768 RRA .1415 RC3 .2655 FAU .24329
FDE -.4437 FRA 5.3229 FC-19.1945 BSP 42913
BDE .4226 BRA 3.6258 BC315.6803 FSP 4712

MID-COURSE EXECUTION ACCURACY
SGT12377.6 SGR 573.5 SG3 1391.7
RRT .0275 RRF -.0023 RTF .9921
SGB12390.9 RZ3 -.0297 R13 .9921
SG112377.6 SG2 573.2 THA .07

ORBIT DETERMINATION ACCURACY
ST 2110.3 SR 485.2 SS 1113.9
CRT .4112 CRS .0917 CST -.8691
LSA 2338.8 MSA 677.1 SSA 28.7
EL1 2120.1 EL2 440.2 ALF 5.65

LAUNCH DATE NOV 18 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 817.148 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 32.987 GAL -3.21 AZL 88.07 HCA 245.45 SMA 187.70 ECC .21921 INC 1.9325 V1 30.134
RP 209.77 LAP -1.76 LOP 301.13 VP 23.629 GAP -10.74 AZP 90.80 TAL 342.01 TAP 227.47 RCA 146.55 APO 228.85 V2 26.137
RC 310.132 GL 19.39 GP -1.23 ZAL 116.31 ZAP 42.76 ETS 177.90 ZAE 67.29 ETE 178.90 ZAC 83.14 ETC 257.83 CLP 42.75

PLANETOCENTRIC CONIC

C3 11.186 VHL 3.345 DLA 20.22 RAL 182.29 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 4.260 DPA 6.75 RAP 165.33 ECC 1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 44	2771.97	-28.08	79.78	41.06	93.83	17 33 56	2172.0	-27.25	71.21
90.00	10 33 51	4041.54	-5.06	163.12	35.98	62.10	11 41 13	3441.5	-8.75	156.39
100.00	18 22 10	2467.51	-29.39	57.26	40.93	95.70	19 3 17	1867.5	-28.29	48.63
100.00	11 42 7	3821.24	-3.90	146.29	35.34	60.34	12 45 48	3221.2	-7.82	139.70
110.00	19 58 21	2166.55	-32.70	33.85	40.38	100.57	20 34 28	1566.5	-30.90	25.09
110.00	12 22 25	3694.97	-1.06	134.95	33.57	55.83	13 24 0	3095.0	-5.54	128.73

DIFFERENTIAL CORRECTIONS
TDE .2397 TRA 3.8023 TC-15.6092 BAU 2.3347
RDE .2825 RRA .1411 RC3 .2761 FAU .23253
FDE -.5405 FRA 5.2567 FC-17.9963 BSP 43521
BDE .3705 BRA 3.8049 BC315.6116 FSP 4522

MID-COURSE EXECUTION ACCURACY
SGT12544.9 SGR 578.5 SG3 1332.6
RRT .0082 RRF -.0222 RTF .9920
SGB12558.3 RZ3 -.0303 R13 .9920
SG112544.9 SG2 578.5 THA .02

ORBIT DETERMINATION ACCURACY
ST 2145.6 SR 490.1 SS 1121.1
CRT .3404 CRS .1524 CST -.8766
LSA 2374.3 MSA 680.1 SSA 28.2
EL1 2152.4 EL2 459.4 ALF 4.66

LAUNCH DATE NOV 18 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 821.414 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.993	GAL	-3.34	AZL	88.07	HCA	246.69	SMA	187.79	ECC	.22015	INC	1.9271	V1	30.134
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.664	GAP	-10.86	AZP	90.76	TAL	341.33	TAP	228.02	RCA	146.45	APO	229.14	V2	26.162
RC	311.080	GL	19.14	GP	-1.20	ZAL	117.47	ZAP	41.91	ETS	177.88	ZAE	66.13	ETE	178.91	ZAC	83.25	ETC	257.78	CLP	41.89

PLANETOCENTRIC CONIC

C3	11.416	VHL	3.379	DLA	19.52	RAL	183.26	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	4.334	DPA	6.63	RAP	165.69	ECC	1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 37	2746.59	-27.95	77.94	42.08	94.75	17 45 23	2146.6	-27.00	69.40
90.00	10 29 44	4075.34	-3.98	165.02	36.98	61.94	11 37 39	3475.3	-7.70	158.32
100.00	18 33 11	2444.86	-29.23	55.60	41.94	96.56	19 13 56	1844.9	-28.01	47.00
100.00	11 38 51	3852.31	-2.85	148.00	36.36	60.23	12 43 3	3252.3	-6.79	141.43
110.00	20 7 48	2148.87	-32.47	32.52	41.35	101.33	20 43 36	1548.9	-30.57	23.82
110.00	12 20 44	3721.06	-.07	136.31	34.62	55.82	13 22 45	3121.1	-4.55	130.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1581	TRA	3.9882	TC-15.5158	BAU 2.3684	SGT12707.8	SGR	583.6	SG3	1275.1		ST	2191.9	SR	495.1	SS	1129.5
RDE	.2885	RRA	.1406	RC3 .2855	FAU .22206	RRT -.0102	RRF	-.0412	RTF	.9919		CRT	.2698	CRS	.2082	CST	-.8849
FDE	-.6287	FRA	5.1894	FC-16.8400	BSP 44128	SGB12721.2	R23	.0310	R13	-.9919		LSA	2421.0	MSA	680.7	SSA	27.6
BDE	.3290	BRA	3.9907	BC315.5184	FSP 4338	SG112707.8	SG2	583.6	THA	179.97		EL1	2196.2	EL2	475.8	ALF	3.66

LAUNCH DATE NOV 18 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 825.681 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	32.998	GAL	-3.47	AZL	88.08	HCA	247.92	SMA	187.89	ECC	.22113	INC	1.9219	V1	30.134
RP	209.34	LAP	-1.78	LOP	303.60	VP	23.698	GAP	-10.99	AZP	90.72	TAL	340.63	TAP	228.55	RCA	146.34	APO	229.43	V2	26.186
RC	312.019	GL	18.87	GP	-1.17	ZAL	118.63	ZAP	41.07	ETS	177.86	ZAE	65.01	ETE	178.91	ZAC	83.36	ETC	257.74	CLP	41.06

PLANETOCENTRIC CONIC

C3	11.663	VHL	3.415	DLA	18.80	RAL	184.23	RAD	6567.4	VEL	11.535	PTH	2.01	VHP	4.409	DPA	6.50	RAP	166.07	ECC	1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 17	2722.00	-27.80	76.15	43.12	95.63	17 56 39	2122.0	-26.73	67.65
90.00	10 25 50	4108.86	-2.90	166.00	38.02	61.82	11 34 19	3508.9	-6.65	160.22
100.00	18 44 4	2422.79	-29.05	53.98	42.96	97.39	19 24 27	1822.8	-27.72	45.43
100.00	11 35 44	3883.30	-1.80	149.70	37.41	60.16	12 40 27	3283.3	-5.76	143.15
110.00	20 17 10	2131.51	-32.23	31.22	42.33	102.06	20 52 42	1531.5	-30.23	22.58
110.00	12 19 7	3747.34	.94	137.68	35.70	55.83	13 21 35	3147.3	-3.55	131.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0715	TRA	4.1796	TC-15.4003	BAU 2.4018	SGT12865.8	SGR	588.6	SG3	1219.2		ST	2247.6	SR	500.2	SS	1139.1
RDE	.2948	RRA	.1400	RC3 .2939	FAU .21187	RRT -.0288	RRF	-.0598	RTF	.9917		CRT	.1982	CRS	.2612	CST	-.8937
FDE	-.7126	FRA	5.1191	FC-15.7267	BSP 44721	SGB12879.2	R23	.0317	R13	-.9917		LSA	2477.4	MSA	679.2	SSA	27.1
BDE	.3033	BRA	4.1819	BC315.4031	FSP 4163	SG112865.8	SG2	588.3	THA	179.93		EL1	2249.9	EL2	489.8	ALF	2.65

LAUNCH DATE NOV 18 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 829.949 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.003	GAL	-3.61	AZL	88.08	HCA	249.16	SMA	187.98	ECC	.22216	INC	1.9168	V1	30.134
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.731	GAP	-11.11	AZP	90.68	TAL	339.92	TAP	229.08	RCA	146.22	APO	229.74	V2	26.209
RC	312.050	GL	18.60	GP	-1.14	ZAL	119.81	ZAP	40.26	ETS	177.84	ZAE	63.90	ETE	178.92	ZAC	83.47	ETC	257.68	CLP	40.25

PLANETOCENTRIC CONIC

C3	11.929	VHL	3.454	DLA	18.07	RAL	185.21	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	4.486	DPA	6.35	RAP	166.48	ECC	1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 46	2698.16	-27.63	74.43	44.18	96.48	18 7 44	2098.2	-26.44	65.96
90.00	10 22 8	4142.16	-1.83	168.75	39.09	61.74	11 31 10	3542.2	-5.59	162.10
100.00	18 54 49	2401.29	-28.85	52.41	44.00	98.20	19 34 51	1801.3	-27.41	43.90
100.00	11 32 45	3914.26	-.75	151.40	38.49	60.12	12 38 0	3314.3	-4.72	144.87
110.00	20 26 29	2114.49	-31.98	29.96	43.33	102.77	21 1 44	1514.5	-29.89	21.37
110.00	12 17 35	3773.82	1.95	139.06	36.80	55.87	13 20 29	3173.8	-2.54	132.86

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0171	TRA	4.3778	TC-15.2615	BAU 2.4345	SGT13019.1	SGR	593.5	SG3	1165.1		ST	2313.6	SR	505.3	SS	1148.9
RDE	.3014	RRA	.1392	RC3 .3011	FAU .20200	RRT -.0456	RRF	-.0775	RTF	.9916		CRT	.1290	CRS	.3090	CST	-.9026
FDE	-.7879	FRA	5.0485	FC-14.6593	BSP 45303	SGB13032.8	R23	.0323	R13	-.9916		LSA	2543.8	MSA	675.5	SSA	26.5
BDE	.3019	BRA	4.3800	BC315.2645	FSP 3993	SG113019.1	SG2	592.9	THA	179.88		EL1	2314.6	EL2	500.9	ALF	1.69

LAUNCH DATE NOV 18 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 834.217 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.008	GAL	-3.75	AZL	88.09	HCA	250.40	SMA	188.08	ECC	.22324	INC	1.9117	V1	30.134
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.764	GAP	-11.24	AZP	90.64	TAL	339.19	TAP	229.59	RCA	146.09	APO	230.06	V2	26.232
RC	313.871	GL	18.32	GP	-1.12	ZAL	120.99	ZAP	39.48	ETS	177.83	ZAE	62.82	ETE	178.93	ZAC	83.59	ETC	257.63	CLP	39.47

PLANETOCENTRIC CONIC

C3	12.215	VHL	3.495	DLA	17.34	RAL	186.18	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	4.565	DPA	6.20	RAP	166.91	ECC	1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 4	2675.02	-27.44	72.76	45.25	97.29	18 18 39	2075.0	-26.14	64.33
90.00	10 18 37	4175.29	-.76	170.60	40.19	61.69	11 28 12	3575.3	-4.54	163.96
100.00	19 5 26	2380.36	-28.63	50.89	45.05	98.97	19 45 7	1780.4	-27.10	42.43
100.00	11 29 55	3945.19	.30	153.10	39.61	60.11	12 35 40	3345.2	-3.68	146.57
110.00	20 35 45	2097.82	-31.72	28.73	44.35	103.46	21 10 43	1497.8	-29.55	20.19
110.00	12 16 6	3800.50	2.97	140.46	37.94	55.93	13 19 27	3200.5	-1.52	134.25

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1094	TRA	4.5819	TC-15.1027	BAU 2.4669	SGT13168.2	SGR	590.3	SG3	1112.6		ST	2388.6	SR	510.5	SS	1158.4
RDE	.3083	RRA	.1382	RC3 .3074	FAU .19241	RRT -.0624	RRF	-.0949	RTF	.9914		CRT	.0618	CRS	.3535	CST	-.9112
FDE	-.8577	FRA	4.9746	FC-13.6367	BSP 45882	SGB13181.8	R23	.0330	R13	-.9914		LSA	2618.8	MSA	670.3	SSA	26.0
BDE	.3272	BRA	4.5840	BC315.1058	FSP 3828	SG113168.2	SG2	597.2	THA	179.84		EL1	2388.8	EL2	509.5	ALF	.79

LAUNCH DATE NOV 18 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 838.486 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.015 GAL -3.90 AZL 88.09 HCA 251.65 SMA 188.18 ECC .22436 INC 1.9067 V1 30.134
RP 208.76 LAP -1.81 LOP 307.33 VP 23.795 GAP -11.37 AZP 90.60 TAL 338.44 TAP 230.09 RCA 145.96 APO 230.40 V2 26.254
RC 314.784 GL 18.04 GP -1.09 ZAL 122.18 ZAP 38.71 ETS 177.81 ZAE 61.76 ETE 178.94 ZAC 83.71 ETC 257.57 CLP 38.70

PLANETOCENTRIC CONIC

C3 12.522 VHL 3.539 DLA 16.61 RAL 187.16 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 4.644 DPA 6.03 RAP 167.36 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 12	2652.58	-27.23	71.15	46.33	98.07	18 29 24	2052.6	-25.84	62.76
90.00	10 15 15	4208.28	.31	172.44	41.33	61.68	11 25 24	3608.3	-3.48	165.81
100.00	19 15 56	2359.98	-28.41	49.42	46.13	99.71	19 55 16	1760.0	-26.78	41.00
100.00	11 27 12	3976.11	1.35	154.80	40.75	60.14	12 33 29	3376.1	-2.64	148.27
110.00	20 44 56	2081.51	-31.46	27.53	45.38	104.12	21 19 38	1481.5	-29.20	19.05
110.00	12 14 42	3827.35	3.99	141.86	39.10	56.02	13 18 29	3227.4	-.50	135.65

DIFFERENTIAL CORRECTIONS
TDE -.2052 TRA 4.7928 TC-14.9231 BAU 2.4988
RDE .3156 RRA .1370 RC3 .3127 FAU .18313
FDE -.9224 FRA 4.8984 FC-12.6609 BSP 46438
BDE .3765 BRA 4.7948 BC314.9264 FSP 3667

MID-COURSE EXECUTION ACCURACY
SGT13312.9 SGR 603.0 SG3 1061.8
RRT -.0788 RRF -.1120 RTF .9912
SGB13326.5 R23 .0339 R13 -.9912
SG113313.0 SG2 601.2 THA 179.80

ORBIT DETERMINATION ACCURACY
ST 2472.4 SR 515.7 SS 1167.7
CRT -.0025 CRS .3948 CST -.9192
LSA 2702.0 MSA 664.0 SSA 25.2
EL1 2472.4 EL2 515.7 ALF 179.97

LAUNCH DATE NOV 18 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 842.753 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.020 GAL -4.05 AZL 88.10 HCA 252.89 SMA 188.28 ECC .22553 INC 1.9018 V1 30.134
RP 208.58 LAP -1.82 LOP 308.57 VP 23.826 GAP -11.49 AZP 90.56 TAL 337.68 TAP 230.57 RCA 145.82 APO 230.74 V2 26.274
RC 315.690 GL 17.75 GP -1.06 ZAL 123.37 ZAP 37.97 ETS 177.79 ZAE 60.72 ETE 178.95 ZAC 83.84 ETC 257.52 CLP 37.96

PLANETOCENTRIC CONIC

C3 12.851 VHL 3.585 DLA 15.86 RAL 188.13 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 4.726 DPA 5.85 RAP 167.84 ECC 1.2115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 10	2630.81	-27.02	69.60	47.44	98.82	18 40 1	2030.8	-25.52	61.25
90.00	10 12 3	4241.15	1.37	174.28	42.50	61.71	11 22 44	3641.2	-2.42	167.65
100.00	19 26 18	2340.16	-28.17	47.99	47.22	100.43	20 5 18	1740.2	-26.45	39.62
100.00	11 24 37	4007.04	2.39	156.49	41.93	60.19	12 31 24	3407.0	-1.59	149.97
110.00	20 54 3	2065.58	-31.19	26.37	46.44	104.76	21 28 29	1465.6	-28.85	17.95
110.00	12 13 21	3854.39	5.02	143.28	40.30	56.14	13 17 35	3254.4	.54	137.06

DIFFERENTIAL CORRECTIONS
TDE -.3033 TRA 5.0108 TC-14.7238 BAU 2.5303
RDE .3232 RRA .1356 RC3 .3170 FAU .17410
FDE -.9798 FRA 4.8213 FC-11.7285 BSP 47012
BDE .4432 BRA 5.0126 BC314.7272 FSP 3513

MID-COURSE EXECUTION ACCURACY
SGT13453.3 SGR 607.7 SG3 1012.5
RRT -.0946 RRF -.1284 RTF .9909
SGB13467.0 R23 .0347 R13 -.9909
SG113453.4 SG2 604.9 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 2563.9 SR 521.0 SS 1175.7
CRT -.0626 CRS .4320 CST -.9267
LSA 2792.0 MSA 656.6 SSA 24.9
EL1 2564.1 EL2 519.9 ALF 179.24

LAUNCH DATE NOV 18 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 847.020 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.026 GAL -4.21 AZL 88.10 HCA 254.14 SMA 188.38 ECC .22675 INC 1.8969 V1 30.134
RP 208.40 LAP -1.82 LOP 309.82 VP 23.856 GAP -11.62 AZP 90.52 TAL 336.91 TAP 231.04 RCA 145.66 APO 231.10 V2 26.294
RC 316.588 GL 17.46 GP -1.04 ZAL 124.57 ZAP 37.25 ETS 177.77 ZAE 59.70 ETE 178.96 ZAC 83.97 ETC 257.46 CLP 37.24

PLANETOCENTRIC CONIC

C3 13.204 VHL 3.634 DLA 15.12 RAL 189.11 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 4.808 DPA 5.66 RAP 168.33 ECC 1.2173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 59	2609.71	-26.79	68.09	48.56	99.54	18 50 29	2009.7	-25.19	59.79
90.00	10 9 0	4273.94	2.42	176.11	43.70	61.78	11 20 14	3673.9	-1.37	169.48
100.00	19 36 32	2320.89	-27.93	46.61	48.32	101.11	20 15 13	1720.9	-26.11	38.28
100.00	11 22 7	4037.99	3.44	158.20	43.14	60.29	12 29 25	3438.0	-.54	151.67
110.00	21 3 6	2050.04	-30.91	25.24	47.52	105.37	21 37 16	1450.0	-28.50	16.87
110.00	12 12 3	3881.60	6.05	144.72	41.52	56.29	13 16 45	3281.6	1.58	138.48

DIFFERENTIAL CORRECTIONS
TDE -.4047 TRA 5.2346 TC-14.5097 BAU 2.5620
RDE .3311 RRA .1340 RC3 .3203 FAU .16542
FDE-1.0323 FRA 4.7409 FC-10.8458 BSP 47552
BDE .5229 BRA 5.2364 BC314.5133 FSP 3362

MID-COURSE EXECUTION ACCURACY
SGT13590.4 SGR 612.2 SG3 965.0
RRT -.1101 RRF -.1447 RTF .9906
SGB13604.2 R23 .0356 R13 -.9906
SG113590.6 SG2 608.4 THA 179.72

ORBIT DETERMINATION ACCURACY
ST 2662.0 SR 526.3 SS 1182.5
CRT -.1192 CRS .4666 CST -.9333
LSA 2887.9 MSA 648.7 SSA 24.3
EL1 2662.7 EL2 522.4 ALF 178.60

LAUNCH DATE NOV 18 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 851.285 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.032 GAL -4.37 AZL 88.11 HCA 255.39 SMA 188.48 ECC .22803 INC 1.8921 V1 30.134
RP 208.24 LAP -1.83 LOP 311.07 VP 23.885 GAP -11.75 AZP 90.48 TAL 336.12 TAP 231.50 RCA 145.50 APO 231.46 V2 26.314
RC 317.480 GL 17.16 GP -1.02 ZAL 125.76 ZAP 36.55 ETS 177.75 ZAE 58.70 ETE 178.97 ZAC 84.10 ETC 257.39 CLP 36.53

PLANETOCENTRIC CONIC

C3 13.582 VHL 3.685 DLA 14.37 RAL 190.07 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 4.893 DPA 5.46 RAP 168.84 ECC 1.2235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 39	2589.25	-26.55	66.64	49.69	100.23	19 0 48	1989.2	-24.86	58.38
90.00	10 6 4	4306.66	3.48	177.94	44.93	61.88	11 17 50	3706.7	-.31	171.30
100.00	19 46 40	2302.18	-27.68	45.28	49.45	101.77	20 25 2	1702.2	-25.77	37.00
100.00	11 19 44	4068.95	4.48	159.90	44.37	60.41	12 27 33	3469.0	.51	153.37
110.00	21 12 4	2034.93	-30.64	24.15	48.61	105.96	21 45 59	1434.9	-28.14	15.84
110.00	12 10 49	3908.97	7.08	146.16	42.77	56.47	13 15 58	3309.0	2.62	139.91

DIFFERENTIAL CORRECTIONS
TDE -.5087 TRA 5.4668 TC-14.2776 BAU 2.5931
RDE .3394 RRA .1322 RC3 .3228 FAU .15696
FDE-1.0777 FRA 4.6588 FC-10.0049 BSP 48105
BDE .6115 BRA 5.4684 BC314.2813 FSP 3217

MID-COURSE EXECUTION ACCURACY
SGT13723.9 SGR 616.5 SG3 918.8
RRT -.1252 RRF -.1605 RTF .9903
SGB13737.8 R23 .0365 R13 -.9903
SG113724.2 SG2 611.7 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 2766.4 SR 531.6 SS 1187.2
CRT -.1714 CRS .4977 CST -.9394
LSA 2989.1 MSA 640.1 SSA 23.8
EL1 2767.9 EL2 523.4 ALF 178.04

LAUNCH DATE NOV 18 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 855.548 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.038 GAL -4.53 AZL 88.11 HCA 256.64 SMA 188.59 ECC .22937 INC 1.8873 V1 30.134
RP 208.08 LAP -1.84 LOP 312.32 VP 23.914 GAP -11.88 AZP 90.44 TAL 335.31 TAP 231.95 RCA 145.33 APO 231.84 V2 26.332
RC 318.367 GL 16.86 GP -.99 ZAL 126.96 ZAP 35.86 ETS 177.73 ZAE 57.71 ETE 178.98 ZAC 84.24 ETC 257.33 CLP 35.85

PLANETOCENTRIC CONIC

C3 13.986 VHL 3.740 DLA 13.62 RAL 191.04 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 4.979 DPA 5.25 RAP 169.37 ECC 1.2302

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 10	2569.43	-26.30	65.24	50.85	100.89	19 10 59	1969.4	-24.53	57.02
90.00	10 3 15	4339.32	4.52	179.77	46.19	62.02	11 15 35	3739.3	.74	173.12
100.00	19 56 39	2284.03	-27.42	43.99	50.59	102.40	20 34 43	1684.0	-25.43	35.76
100.00	11 17 27	4099.95	5.52	161.62	45.64	60.58	12 25 47	3499.9	1.56	155.07
110.00	21 20 58	2020.24	-30.36	23.10	49.75	106.53	21 54 38	1420.2	-27.79	14.84
110.00	12 9 38	3936.51	8.11	147.63	44.05	56.68	13 15 14	3336.5	3.67	141.35

DIFFERENTIAL CORRECTIONS
TDE -.6162 TRA 5.7051 TC-14.0307 BAU 2.6242
RDE .3481 RRA .1302 RC3 .3244 FAU .14876
FDE-1.1196 FRA 4.5745 FC3-9.2082 BSP 48617
BDE .7077 BRA 5.7066 BC314.0345 FSP 3075

MID-COURSE EXECUTION ACCURACY
SGT13852.9 SGR 620.8 SG3 874.2
RRT -.1400 RRF -.1761 RTF .9899
SGB13866.8 R23 .0376 R13 -.9899
SG113853.2 SG2 614.6 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 2875.6 SR 536.9 SS 1190.9
CRT -.2200 CRS .5268 CST -.9447
LSA 3094.6 MSA 631.6 SSA 23.3
EL1 2878.2 EL2 523.3 ALF 177.57

LAUNCH DATE NOV 18 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 859.809 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.044 GAL -4.70 AZL 88.12 HCA 257.89 SMA 188.69 ECC .23076 INC 1.8825 V1 30.134
RP 207.93 LAP -1.84 LOP 313.58 VP 23.941 GAP -12.01 AZP 90.39 TAL 334.49 TAP 232.38 RCA 145.15 APO 232.24 V2 26.349
RC 319.247 GL 16.55 GP -.97 ZAL 128.17 ZAP 35.20 ETS 177.71 ZAE 56.75 ETE 178.98 ZAC 84.38 ETC 257.27 CLP 35.19

PLANETOCENTRIC CONIC

C3 14.419 VHL 3.797 DLA 12.86 RAL 192.00 RAD 6567.6 VEL 11.653 PTH 2.05 VHP 5.066 DPA 5.03 RAP 169.92 ECC 1.2373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 32	2550.26	-26.05	63.90	52.02	101.52	19 21 2	1950.3	-24.19	55.72
90.00	10 0 33	4371.93	5.56	181.60	47.49	62.19	11 13 25	3771.9	1.79	174.94
100.00	20 6 32	2266.45	-27.15	42.75	51.75	103.00	20 44 18	1666.5	-25.09	34.56
100.00	11 15 14	4130.87	6.56	163.34	46.94	60.77	12 24 5	3531.0	2.61	156.77
110.00	21 29 46	2005.99	-30.08	22.08	50.86	107.07	22 3 12	1406.0	-27.45	13.88
110.00	12 8 29	3964.19	9.15	149.11	45.36	56.92	13 14 34	3364.2	4.73	142.81

DIFFERENTIAL CORRECTIONS
TDE -.7261 TRA 5.9508 TC-13.7717 BAU 2.6554
RDE .3571 RRA .1278 RC3 .3251 FAU .14087
FDE-1.1557 FRA 4.4876 FC3-8.4585 BSP 49140
BDE .8092 BRA 5.9521 BC313.7755 FSP 2930

MID-COURSE EXECUTION ACCURACY
SGT13979.1 SGR 624.9 SG3 831.2
RRT -.1546 RRF -.1916 RTF .9895
SGB13993.0 R23 .0387 R13 -.9895
SG113979.4 SG2 617.3 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 2988.9 SR 542.1 SS 1192.3
CRT -.2645 CRS .5535 CST -.9493
LSA 3203.2 MSA 623.0 SSA 22.8
EL1 2992.4 EL2 522.2 ALF 177.17

LAUNCH DATE NOV 18 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 864.066 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.050 GAL -4.88 AZL 88.12 HCA 259.15 SMA 188.80 ECC .23221 INC 1.8778 V1 30.134
RP 207.79 LAP -1.84 LOP 314.83 VP 23.968 GAP -12.14 AZP 90.35 TAL 333.66 TAP 232.80 RCA 144.96 APO 232.64 V2 26.366
RC 320.122 GL 16.24 GP -.95 ZAL 129.36 ZAP 34.55 ETS 177.69 ZAE 55.80 ETE 178.99 ZAC 84.52 ETC 257.20 CLP 34.54

PLANETOCENTRIC CONIC

C3 14.881 VHL 3.858 DLA 12.11 RAL 192.96 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 5.155 DPA 4.80 RAP 170.49 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 45	2531.72	-25.79	62.60	53.21	102.12	19 30 57	1931.7	-23.86	54.46
90.00	9 57 58	4404.50	6.59	183.44	48.81	62.40	11 11 22	3804.5	2.84	176.76
100.00	20 16 17	2249.44	-26.89	41.56	52.93	103.58	20 53 46	1649.4	-24.75	33.41
100.00	11 13 7	4162.01	7.58	165.07	48.27	61.00	12 22 30	3562.0	3.66	158.48
110.00	21 38 29	1992.21	-29.80	21.11	52.01	107.58	22 11 42	1392.2	-27.10	12.95
110.00	12 7 24	3992.02	10.18	150.60	46.70	57.19	13 13 56	3392.0	5.78	144.27

DIFFERENTIAL CORRECTIONS
TDE -.8394 TRA 6.2043 TC-13.5007 BAU 2.6866
RDE .3665 RRA .1252 RC3 .3251 FAU .13321
FDE-1.1869 FRA 4.3987 FC3-7.7499 BSP 49648
BDE .9159 BRA 6.2056 BC313.5046 FSP 2805

MID-COURSE EXECUTION ACCURACY
SGT14102.4 SGR 628.8 SG3 789.5
RRT -.1689 RRF -.2068 RTF .9890
SGB14116.4 R23 .0399 R13 -.9890
SG114102.8 SG2 619.8 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3105.9 SR 547.4 SS 1191.7
CRT -.3056 CRS .5780 CST -.9533
LSA 3314.9 MSA 614.4 SSA 22.4
EL1 3110.5 EL2 520.4 ALF 176.83

LAUNCH DATE NOV 18 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 868.319 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.056 GAL -5.05 AZL 88.13 HCA 260.40 SMA 188.91 ECC .23373 INC 1.8731 V1 30.134
RP 207.66 LAP -1.85 LOP 316.09 VP 23.993 GAP -12.28 AZP 90.31 TAL 332.80 TAP 233.21 RCA 144.76 APO 233.07 V2 26.381
RC 320.992 GL 15.93 GP -.93 ZAL 130.56 ZAP 33.92 ETS 177.67 ZAE 54.87 ETE 179.00 ZAC 84.67 ETC 257.14 CLP 33.91

PLANETOCENTRIC CONIC

C3 15.375 VHL 3.921 DLA 11.36 RAL 193.91 RAD 6567.6 VEL 11.694 PTH 2.06 VHP 5.246 DPA 4.57 RAP 171.07 ECC 1.2530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 51	2513.83	-25.53	61.36	54.42	102.69	19 40 44	1913.8	-23.52	53.26
90.00	9 55 28	4437.04	7.61	185.28	50.17	62.64	11 9 25	3837.0	3.89	178.58
100.00	20 25 55	2233.01	-26.62	40.41	54.13	104.13	21 3 8	1633.0	-24.41	32.31
100.00	11 11 5	4193.09	8.61	166.81	49.63	61.26	12 20 58	3593.1	4.71	160.20
110.00	21 47 7	1978.89	-29.52	20.17	53.18	108.08	22 20 6	1378.9	-26.77	12.06
110.00	12 6 22	4019.97	11.20	152.12	48.07	57.49	13 13 22	3420.0	6.84	145.75

DIFFERENTIAL CORRECTIONS
TDE -.9556 TRA 6.4647 TC-13.2202 BAU 2.7182
RDE .3763 RRA .1224 RC3 .3244 FAU .12579
FDE-1.2140 FRA 4.3067 FC3-7.0830 BSP 50143
BDE 1.0270 BRA 6.4659 BC313.2242 FSP 2676

MID-COURSE EXECUTION ACCURACY
SGT14222.2 SGR 632.7 SG3 749.3
RRT -.1831 RRF -.2219 RTF .9885
SGB14236.3 R23 .0413 R13 -.9885
SG114222.7 SG2 622.0 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 3225.2 SR 552.6 SS 1189.0
CRT -.3434 CRS .6010 CST -.9567
LSA 3428.3 MSA 606.1 SSA 21.9
EL1 3230.9 EL2 518.1 ALF 176.54

LAUNCH DATE NOV 18 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 872.567 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.062 GAL -5.24 AZL 88.13 HCA 261.66 SMA 189.02 ECC .23531 INC 1.8685 V1 30.134
RP 207.54 LAP -1.85 LOP 317.35 VP 24.018 GAP -12.41 AZP 90.27 TAL 331.94 TAP 233.60 RCA 144.54 APO 233.50 V2 26.396
RC 321.856 GL 15.62 GP -.91 ZAL 131.76 ZAP 33.31 ETS 177.65 ZAE 53.96 ETE 179.01 ZAC 84.83 ETC 257.07 CLP 33.30

PLANETOCENTRIC CONIC

C3 15.902 VHL 3.988 DLA 10.61 RAL 194.86 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 5.338 DPA 4.32 RAP 171.67 ECC 1.2617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 48	2496.56	-25.26	60.16	55.65	103.24	19 50 24	1896.6	-23.19	52.10
90.00	9 53 5	4469.56	8.63	187.13	51.55	62.92	11 7 34	3869.6	4.93	180.41
100.00	20 35 26	2217.16	-26.35	39.31	55.35	104.65	21 12 23	1617.2	-24.08	31.25
100.00	11 9 8	4224.19	9.62	168.56	51.02	61.56	12 19 32	3624.2	5.75	161.92
110.00	21 55 40	1966.07	-29.24	19.27	54.37	108.54	22 28 26	1366.1	-26.43	11.21
110.00	12 5 23	4048.05	12.23	153.65	49.47	57.83	13 12 51	3448.1	7.89	147.24

DIFFERENTIAL CORRECTIONS
TDE-1.0748 TRA 6.7326 TC-12.9291 BAU 2.7496
RDE .3864 RRA .1192 RC3 .3229 FAU .11862
FDE-1.2364 FRA 4.2122 FC3-6.4578 BSP 50611
BDE 1.1422 BRA 6.7337 BC312.9331 FSP 2548

MID-COURSE EXECUTION ACCURACY
SGT14337.8 SGR 636.4 SG3 710.4
RRT -.1971 RRF -.2370 RTF .9879
SGB14351.9 R23 .0427 R13 -.9879
SG114338.4 SG2 623.9 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 3346.3 SR 557.7 SS 1184.2
CRT -.3780 CRS .6222 CST -.9597
LSA 3543.0 MSA 597.9 SSA 21.5
EL1 3353.1 EL2 515.3 ALF 176.31

LAUNCH DATE NOV 18 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 876.810 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.068 GAL -5.43 AZL 88.14 HCA 262.92 SMA 189.13 ECC .23696 INC 1.8639 V1 30.134
RP 207.42 LAP -1.85 LOP 318.61 VP 24.041 GAP -12.55 AZP 90.23 TAL 331.06 TAP 233.98 RCA 144.32 APO 233.95 V2 26.409
RC 322.714 GL 15.30 GP -.90 ZAL 132.95 ZAP 32.72 ETS 177.62 ZAE 53.06 ETE 179.02 ZAC 84.98 ETC 257.01 CLP 32.70

PLANETOCENTRIC CONIC

C3 16.466 VHL 4.058 DLA 9.86 RAL 195.80 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 5.432 DPA 4.06 RAP 172.29 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 37	2479.94	-25.00	59.02	56.89	103.75	19 59 56	1879.9	-22.86	51.00
90.00	9 50 46	4502.04	9.63	189.00	52.97	63.24	11 5 48	3902.0	5.96	182.24
100.00	20 44 49	2201.90	-26.08	38.26	56.58	105.14	21 21 31	1601.9	-23.75	30.23
100.00	11 7 15	4255.33	10.62	170.33	52.45	61.89	12 18 10	3655.3	6.78	163.65
110.00	22 4 7	1953.73	-28.97	18.41	55.58	108.99	22 36 41	1353.7	-26.11	10.40
110.00	12 4 26	4076.24	13.24	155.20	50.90	58.19	13 12 22	3476.2	8.94	148.74

DIFFERENTIAL CORRECTIONS
TDE-1.1974 TRA 7.0084 TC-12.6329 BAU 2.7818
RDE .3970 RRA .1157 RC3 .3209 FAU .11171
FDE-1.2545 FRA 4.1148 FC3-5.8737 BSP 51054
BDE 1.2615 BRA 7.0093 BC312.6370 FSP 2424

MID-COURSE EXECUTION ACCURACY
SGT14451.9 SGR 640.0 SG3 672.8
RRT -.2111 RRF -.2521 RTF .9872
SGB14466.0 R23 .0444 R13 -.9872
SG114452.5 SG2 625.5 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 3468.9 SR 562.8 SS 1177.0
CRT -.4099 CRS .6420 CST -.9622
LSA 3658.8 MSA 589.9 SSA 21.1
EL1 3476.7 EL2 512.2 ALF 176.11

LAUNCH DATE NOV 18 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 881.047 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.075 GAL -5.62 AZL 88.14 HCA 264.18 SMA 189.25 ECC .23868 INC 1.8593 V1 30.134
RP 207.31 LAP -1.85 LOP 319.87 VP 24.064 GAP -12.70 AZP 90.19 TAL 330.16 TAP 234.34 RCA 144.08 APO 234.42 V2 26.422
RC 323.568 GL 14.98 GP -.88 ZAL 134.13 ZAP 32.14 ETS 177.60 ZAE 52.17 ETE 179.03 ZAC 85.14 ETC 256.94 CLP 32.13

PLANETOCENTRIC CONIC

C3 17.067 VHL 4.131 DLA 9.12 RAL 196.73 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 5.528 DPA 3.80 RAP 172.92 ECC 1.2809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 17	2463.95	-24.73	57.92	58.16	104.24	20 9 21	1864.0	-22.53	49.94
90.00	9 48 32	4534.50	10.62	190.87	54.42	63.59	11 4 7	3934.5	6.98	184.07
100.00	20 54 5	2187.23	-25.82	37.25	57.84	105.61	21 30 33	1587.2	-23.43	29.26
100.00	11 5 26	4286.46	11.62	172.11	53.90	62.26	12 16 52	3686.5	7.81	165.38
110.00	22 12 29	1941.91	-28.71	17.59	56.81	109.40	22 44 51	1341.9	-25.79	9.63
110.00	12 3 31	4104.54	14.25	156.77	52.37	58.60	13 11 56	3504.5	9.99	150.26

DIFFERENTIAL CORRECTIONS
TDE-1.3222 TRA 7.2916 TC-12.3305 BAU 2.8144
RDE .4079 RRA .1119 RC3 .3182 FAU .10502
FDE-1.2687 FRA 4.0147 FC3-5.3272 BSP 51490
BDE 1.3837 BRA 7.2925 BC312.3346 FSP 2304

MID-COURSE EXECUTION ACCURACY
SGT14562.3 SGR 643.4 SG3 636.5
RRT -.2248 RRF -.2672 RTF .9865
SGB14576.5 R23 .0462 R13 -.9865
SG114563.0 SG2 626.9 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 3591.3 SR 567.8 SS 1167.6
CRT -.4389 CRS .6605 CST -.9643
LSA 3774.0 MSA 582.5 SSA 20.7
EL1 3600.1 EL2 508.9 ALF 175.95

LAUNCH DATE NOV 18 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 885.277 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.081 GAL -5.82 AZL 88.15 HCA 265.44 SMA 189.36 ECC .24048 INC 1.8547 V1 30.134
RP 207.21 LAP -1.85 LOP 321.13 VP 24.085 GAP -12.84 AZP 90.15 TAL 329.25 TAP 234.69 RCA 143.82 APO 234.90 V2 26.434
RC 324.413 GL 14.66 GP -.86 ZAL 135.31 ZAP 31.57 ETS 177.58 ZAE 51.31 ETE 179.03 ZAC 85.30 ETC 256.88 CLP 31.56

PLANETOCENTRIC CONIC

C3 17.708 VHL 4.208 DLA 8.38 RAL 197.66 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 5.626 DPA 3.53 RAP 173.56 ECC 1.2914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 50	2448.60	-24.47	56.87	59.44	104.71	20 18 39	1848.6	-22.21	48.93
90.00	9 46 24	4566.93	11.59	192.75	55.90	63.98	11 2 31	3966.9	8.00	185.91
100.00	21 3 14	2173.15	-25.56	36.28	59.11	106.05	21 39 28	1573.1	-23.11	28.34
100.00	11 3 41	4317.62	12.60	173.90	55.39	62.67	12 15 38	3717.6	8.84	167.13
110.00	22 20 45	1930.60	-28.45	16.82	58.06	109.80	22 52 55	1330.6	-25.49	8.89
110.00	12 2 40	4132.92	15.25	158.36	53.86	59.03	13 11 32	3532.9	11.04	151.80

DIFFERENTIAL CORRECTIONS
TDE-1.4506 TRA 7.5831 TC-12.0243 BAU 2.8476
RDE .4193 RRA .1077 RC3 .3150 FAU .09855
FDE-1.2785 FRA 3.9121 FC3-4.8182 BSP 51892
BDE 1.5100 BRA 7.5839 BC312.0284 FSP 2186

MID-COURSE EXECUTION ACCURACY
SGT14670.7 SGR 646.7 SG3 601.5
RRT -.2386 RRF -.2823 RTF .9857
SGB14685.0 R23 .0481 R13 -.9857
SG114671.5 SG2 628.0 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 3714.2 SR 572.7 SS 1155.8
CRT -.4658 CRS .6778 CST -.9661
LSA 3889.5 MSA 575.1 SSA 20.3
EL1 3724.0 EL2 505.5 ALF 175.81

LAUNCH DATE NOV 18 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 889.500 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.088 GAL -6.02 AZL 88.15 HCA 266.71 SMA 189.48 ECC .24235 INC 1.8501 V1 30.134
RP 207.12 LAP -1.85 LOP 322.40 VP 24.106 GAP -12.99 AZP 90.11 TAL 328.32 TAP 235.03 RCA 143.56 APO 235.40 V2 26.444
RC 325.253 GL 14.34 GP -.85 ZAL 136.48 ZAP 31.02 ETS 177.56 ZAE 50.45 ETE 179.04 ZAC 85.47 ETC 256.81 CLP 31.01

PLANETOCENTRIC CONIC

C3 18.392 VHL 4.289 DLA 7.65 RAL 198.58 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 5.726 DPA 3.25 RAP 174.22 ECC 1.3027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 15	2433.88	-24.22	55.87	60.73	105.14	20 27 49	1833.9	-21.90	47.96
90.00	9 44 19	4599.34	12.55	194.65	57.41	64.41	11 0 59	3999.3	9.01	187.76
100.00	21 12 16	2159.66	-25.30	35.36	60.40	106.47	21 48 16	1559.7	-22.80	27.46
100.00	11 1 59	4348.78	13.56	175.71	56.90	63.11	12 14 28	3748.8	9.85	168.89
110.00	22 28 55	1919.82	-28.20	16.08	59.32	110.17	23 0 55	1319.8	-25.19	8.19
110.00	12 1 50	4161.39	16.24	159.97	55.38	59.50	13 11 12	3561.4	12.07	153.35

DIFFERENTIAL CORRECTIONS
TDE-1.5809 TRA 7.8828 TC-11.7134 BAU 2.8812
RDE .4311 RRA .1032 RC3 .3113 FAU .09228
FDE-1.2839 FRA 3.8068 FC3-4.3437 BSP 52292
BDE 1.6386 BRA 7.8835 BC311.7175 FSP 2073

MID-COURSE EXECUTION ACCURACY
SGT14775.3 SGR 649.8 SG3 567.6
RRT -.2521 RRF -.2972 RTF .9847
SGB14789.6 R23 .0501 R13 -.9848
SG114776.2 SG2 628.8 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 3835.9 SR 577.5 SS 1141.6
CRT -.4902 CRS .6938 CST -.9675
LSA 4003.4 MSA 568.0 SSA 19.9
EL1 3846.5 EL2 502.0 ALF 175.71

LAUNCH DATE NOV 18 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 893.714 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.094 GAL -6.23 AZL 88.15 HCA 267.97 SMA 189.59 ECC .24431 INC 1.8456 V1 30.134
RP 207.04 LAP -1.84 LOP 323.66 VP 24.126 GAP -13.14 AZP 90.07 TAL 327.38 TAP 235.35 RCA 143.27 APO 235.91 V2 26.454
RC 326.088 GL 14.02 GP -.83 ZAL 137.64 ZAP 30.49 ETS 177.53 ZAE 49.61 ETE 179.05 ZAC 85.64 ETC 256.75 CLP 30.48

PLANETOCENTRIC CONIC

C3 19.121 VHL 4.373 DLA 6.92 RAL 199.50 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 5.828 DPA 2.96 RAP 174.89 ECC 1.3147

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 33	2419.79	-23.96	54.91	62.05	105.56	20 36 52	1819.8	-21.60	47.04
90.00	9 42 19	4631.71	13.50	196.56	58.96	64.87	10 59 31	4031.7	10.00	189.62
100.00	21 21 11	2146.78	-25.05	34.49	61.70	106.87	21 56 58	1546.8	-22.50	26.62
100.00	11 0 22	4379.96	14.52	177.54	58.45	63.58	12 13 22	3780.0	10.85	170.66
110.00	22 36 59	1909.56	-27.96	15.58	60.60	110.52	23 8 49	1309.6	-24.91	7.53
110.00	12 1 3	4180.94	17.22	161.61	56.94	60.01	13 10 53	3589.9	13.11	154.92

DIFFERENTIAL CORRECTIONS
TDE-1.7148 TRA 8.1913 TC-11.3998 BAU 2.9152
RDE .4432 RRA .0983 RC3 .3071 FAU .08621
FDE-1.2865 FRA 3.6984 FC3-3.9030 BSP 52666
BDE 1.7711 BRA 8.1919 BC311.4039 FSP 1961

MID-COURSE EXECUTION ACCURACY
SGT14877.4 SGR 652.9 SG3 534.9
RRT -.2858 RRF -.3124 RTF .9837
SGB14891.7 R23 .0525 R13 -.9837
SG114878.4 SG2 629.4 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 3957.0 SR 582.1 SS 1125.5
CRT -.5127 CRS .7092 CST -.9687
LSA 4116.8 MSA 561.4 SSA 19.5
EL1 3968.4 EL2 498.3 ALF 175.62

LAUNCH DATE NOV 18 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 897.918 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.101 GAL -6.45 AZL 88.16 HCA 269.24 SMA 189.71 ECC .24634 INC 1.8410 V1 30.134
RP 206.96 LAP -1.84 LOP 324.93 VP 24.144 GAP -13.29 AZP 90.02 TAL 326.42 TAP 235.66 RCA 142.98 APO 236.45 V2 26.463
RC 326.917 GL 13.70 GP -.82 ZAL 138.80 ZAP 29.97 ETS 177.51 ZAE 48.79 ETE 179.05 ZAC 85.81 ETC 256.69 CLP 29.96

PLANETOCENTRIC CONIC

C3 19.899 VHL 4.461 DLA 6.20 RAL 200.40 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 5.931 DPA 2.66 RAP 175.58 ECC 1.3275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 42	2406.34	-23.71	54.01	63.38	105.95	20 45 49	1806.3	-21.30	46.17
90.00	9 40 24	4664.05	14.42	198.48	60.53	65.37	10 58 8	4064.0	10.98	191.49
100.00	21 29 59	2134.49	-24.80	33.66	63.03	107.24	22 5 34	1534.5	-22.21	25.82
100.00	10 58 48	4411.13	15.45	179.38	60.03	64.09	12 12 19	3811.1	11.84	172.45
110.00	22 44 58	1899.84	-27.72	14.72	61.90	110.85	23 16 38	1299.8	-24.64	6.91
110.00	12 0 18	4218.54	18.19	163.26	58.53	60.55	13 10 37	3618.5	14.13	156.50

DIFFERENTIAL CORRECTIONS
TDE-1.8519 TRA 8.5080 TC-11.0866 BAU 2.9505
RDE .4558 RRA .0930 RC3 .3025 FAU .08035
FDE-1.2852 FRA 3.5870 FC3-3.4956 BSP 53014
BDE 1.9072 BRA 8.5085 BC311.0907 FSP 1852

MID-COURSE EXECUTION ACCURACY
SGT14977.2 SGR 655.8 SG3 503.3
RRT -.2791 RRF -.3276 RTF .9825
SGB14991.6 R23 .0551 R13 -.9826
SG114978.3 SG2 629.7 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 4076.8 SR 586.6 SS 1107.0
CRT -.5336 CRS .7237 CST -.9696
LSA 4228.7 MSA 554.9 SSA 19.2
EL1 4089.0 EL2 494.7 ALF 175.54

LAUNCH DATE NOV 18 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 902.111 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.107 GAL -6.67 AZL 88.16 HCA 270.50 SMA 189.83 ECC .24847 INC 1.8365 V1 30.134
RP 206.89 LAP -1.84 LOP 326.20 VP 24.162 GAP -13.45 AZP 89.98 TAL 325.45 TAP 235.95 RCA 142.66 APO 237.00 V2 26.471
RC 327.742 GL 13.38 GP -.80 ZAL 139.94 ZAP 29.47 ETS 177.48 ZAE 47.98 ETE 179.06 ZAC 85.99 ETC 256.62 CLP 29.46

PLANETOCENTRIC CONIC

C3 20.727 VHL 4.553 DLA 5.48 RAL 201.30 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 6.037 DPA 2.36 RAP 176.28 ECC 1.3411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 45	2393.51	-23.47	53.14	64.73	106.31	20 54 38	1793.5	-21.01	45.34
90.00	9 38 32	4696.35	15.33	200.42	62.14	65.90	10 56 48	4096.3	11.95	193.37
100.00	21 38 40	2122.80	-24.57	32.87	64.37	107.59	22 14 3	1522.8	-21.93	25.07
100.00	10 57 17	4442.29	16.37	181.24	61.64	64.63	12 11 19	3842.3	12.82	174.24
110.00	22 52 51	1890.66	-27.50	14.10	63.22	111.15	23 24 22	1290.7	-24.38	6.32
110.00	11 59 36	4247.19	19.14	164.94	60.15	61.12	13 10 23	3647.2	15.14	158.11

DIFFERENTIAL CORRECTIONS
TDE-1.9916 TRA 8.8327 TC-10.7732 BAU 2.9864
RDE .4688 RRA .0873 RC3 .2975 FAU .07466
FDE-1.2802 FRA 3.4725 FC3-3.1185 BSP 53325
BDE 2.0460 BRA 8.8332 BC310.7773 FSP 1745

MID-COURSE EXECUTION ACCURACY
SGT15073.5 SGR 658.6 SG3 472.7
RRT -.2925 RRF -.3428 RTF .9812
SGB15087.8 R23 .0578 R13 -.9812
SG115074.7 SG2 629.7 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4194.3 SR 591.0 SS 1086.4
CRT -.5528 CRS .7374 CST -.9703
LSA 4338.2 MSA 548.6 SSA 18.8
EL1 4207.1 EL2 491.0 ALF 175.48

LAUNCH DATE NOV 18 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 906.293 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.114 GAL -6.90 AZL 88.17 HCA 271.77 SMA 189.95 ECC .25069 INC 1.8319 V1 30.134
RP 206.84 LAP -1.83 LOP 327.46 VP 24.179 GAP -13.61 AZP 89.94 TAL 324.46 TAP 236.23 RCA 142.33 APO 237.57 V2 26.477
RC 328.562 GL 13.07 GP -.79 ZAL 141.08 ZAP 28.98 ETS 177.46 ZAE 47.18 ETE 179.07 ZAC 86.16 ETC 256.56 CLP 28.97

PLANETOCENTRIC CONIC

C3 21.610 VHL 4.649 DLA 4.77 RAL 202.19 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 6.145 DPA 2.05 RAP 176.99 ECC 1.3557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 39	2381.31	-23.23	52.33	66.10	106.66	21 3 21	1781.3	-20.73	44.55
90.00	9 36 43	4728.61	16.22	202.37	63.77	66.46	10 55 32	4128.6	12.90	195.26
100.00	21 47 15	2111.70	-24.34	32.13	65.73	107.92	22 22 26	1511.7	-21.66	24.35
100.00	10 55 49	4473.45	17.27	183.11	63.28	65.22	12 10 23	3873.4	13.78	176.06
110.00	23 0 38	1882.01	-27.29	13.52	64.55	111.44	23 32 0	1282.0	-24.13	5.77
110.00	11 58 55	4275.90	20.07	166.64	61.80	61.73	13 10 11	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-2.1349 TRA 9.1669 TC-10.4626 BAU 3.0239
RDE .4823 RRA .0812 RC3 .2923 FAU .06916
FDE-1.2721 FRA 3.3553 FC3-2.7708 BSP 53608
BDE 2.1887 BRA 9.1672 BC310.4667 FSP 1641

MID-COURSE EXECUTION ACCURACY
SGT15168.7 SGR 661.2 SG3 443.2
RRT -.3060 RRF -.3582 RTF .9797
SGB15183.1 R23 .0609 R13 -.9797
SG115170.0 SG2 629.5 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 4310.2 SR 595.2 SS 1063.8
CRT -.5706 CRS .7505 CST -.9707
LSA 4446.2 MSA 542.6 SSA 18.5
EL1 4323.7 EL2 487.3 ALF 175.44

LAUNCH DATE NOV 18 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 910.463 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.121 GAL -7.14 AZL 88.17 HCA 273.04 SMA 190.07 ECC .25300 INC 1.8273 V1 30.134
RP 206.79 LAP -1.82 LOP 328.73 VP 24.194 GAP -13.78 AZP 89.90 TAL 323.46 TAP 236.49 RCA 141.98 APO 238.16 V2 26.483
RC 329.378 GL 12.75 GP -.77 ZAL 142.20 ZAP 28.50 ETS 177.44 ZAE 46.40 ETE 179.07 ZAC 86.35 ETC 256.50 CLP 28.49

PLANETOCENTRIC CONIC

C3 22.551 VHL 4.749 DLA 4.07 RAL 203.08 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 6.256 DPA 1.73 RAP 177.72 ECC 1.3711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 27	2369.72	-23.01	51.56	67.48	106.98	21 11 57	1769.7	-20.46	43.81
90.00	9 34 59	4760.83	17.08	204.34	65.44	67.07	10 54 20	4160.8	13.83	197.17
100.00	21 55 42	2101.19	-24.11	31.42	67.10	108.22	22 30 43	1501.2	-21.40	23.68
100.00	10 54 25	4504.58	18.15	185.01	64.95	65.83	12 9 30	3904.6	14.73	177.88
110.00	23 8 19	1873.91	-27.08	12.97	65.90	111.70	23 39 33	1273.9	-23.89	5.26
110.00	11 58 17	4304.63	20.99	168.37	63.49	62.38	13 10 2	3704.6	17.13	161.37

DIFFERENTIAL CORRECTIONS
TDE-2.2806 TRA 9.5104 TC-10.1525 BAU 3.0621
RDE .4961 RRA .0747 RC3 .2868 FAU .06382
FDE-1.2603 FRA 3.2349 FC3-2.4502 BSP 53883
BDE 2.3340 BRA 9.5107 BC310.1566 FSP 1540

MID-COURSE EXECUTION ACCURACY
SGT15260.5 SGR 663.8 SG3 414.7
RRT -.3193 RRF -.3737 RTF .9780
SGB15274.9 R23 .0643 R13 -.9780
SG115261.9 SG2 629.0 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 4423.3 SR 599.2 SS 1038.9
CRT -.5870 CRS .7630 CST -.9709
LSA 4551.4 MSA 536.8 SSA 18.2
EL1 4437.4 EL2 483.6 ALF 175.40

LAUNCH DATE NOV 18 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 914.618 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.128 GAL -7.38 AZL 88.18 HCA 274.30 SMA 190.20 ECC .25541 INC 1.8228 V1 30.134
RP 206.75 LAP -1.82 LOP 330.00 VP 24.209 GAP -13.95 AZP 89.86 TAL 322.44 TAP 236.74 RCA 141.62 APO 238.77 V2 26.488
RC 330.190 GL 12.43 GP -.76 ZAL 143.32 ZAP 28.04 ETS 177.41 ZAE 45.63 ETE 179.07 ZAC 86.53 ETC 256.44 CLP 28.03

PLANETOCENTRIC CONIC

C3 23.553 VHL 4.853 DLA 3.38 RAL 203.95 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 6.368 DPA 1.41 RAP 178.46 ECC 1.3876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 7	2358.74	-22.79	50.83	68.88	107.28	21 20 26	1758.7	-20.21	43.10
90.00	9 33 18	4792.99	17.92	206.32	67.14	67.71	10 53 11	4193.0	14.75	199.09
100.00	22 4 3	2091.27	-23.90	30.76	68.49	108.51	22 38 54	1491.3	-21.15	23.05
100.00	10 53 4	4535.69	19.00	186.92	66.65	66.48	12 8 39	3935.7	15.66	179.72
110.00	23 15 55	1866.34	-26.89	12.47	67.27	111.94	23 47 1	1266.3	-23.67	4.78
110.00	11 57 41	4333.39	21.89	170.12	65.21	63.06	13 9 54	3733.4	18.10	163.03

DIFFERENTIAL CORRECTIONS
TDE-2.4305 TRA 9.8622 TC3-9.8463 BAU 3.1017
RDE .5104 RRA .0677 RC3 .2810 FAU .05866
FDE-1.2459 FRA 3.1113 FC3-2.1560 BSP 54089
BDE 2.4835 BRA 9.8625 BC3 9.8503 FSP 1440

MID-COURSE EXECUTION ACCURACY
SGT15349.6 SGR 666.2 SG3 387.2
RRT -.3327 RRF -.3894 RTF .9760
SGB15364.1 R23 .0680 R13 -.9761
SG115351.2 SG2 628.2 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4534.2 SR 603.1 SS 1012.4
CRT -.6024 CRS .7752 CST -.9710
LSA 4654.6 MSA 531.1 SSA 17.9
EL1 4548.9 EL2 479.8 ALF 175.37

LAUNCH DATE NOV 18 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 918.758 EARTH TO MARS

RL 147.85 LAL .00 LOL 55.69 VL 33.134 GAL -7.63 AZL 88.18 HCA 275.57 SMA 190.32 ECC .25792 INC 1.8181 V1 30.134
RP 206.71 LAP -1.81 LOP 331.27 VP 24.222 GAP -14.12 AZP 89.82 TAL 321.40 TAP 236.98 RCA 141.23 APO 239.41 V2 26.492
RC 331.000 GL 12.12 GP -.75 ZAL 144.42 ZAP 27.59 ETS 177.39 ZAE 44.87 ETE 179.08 ZAC 86.72 ETC 256.39 CLP 27.58

PLANETOCENTRIC CONIC

C3 24.621 VHL 4.962 DLA 2.70 RAL 204.82 RAD 6568.0 VEL 12.083 PTH 2.16 VHP 6.483 DPA 1.08 RAP 179.21 ECC 1.4052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 41	2348.36	-22.57	50.14	70.30	107.56	21 28 49	1748.4	-19.96	42.44
90.00	9 31 40	4825.11	18.74	208.32	68.86	68.38	10 52 5	4225.1	15.64	201.02
100.00	22 12 17	2081.93	-23.70	30.14	69.90	108.77	22 46 59	1481.9	-20.92	22.45
100.00	10 51 45	4566.77	19.84	188.85	68.39	67.17	12 7 52	3966.8	16.57	181.58
110.00	23 23 25	1859.30	-26.71	12.00	68.65	112.17	23 54 24	1259.3	-23.47	4.34
110.00	11 57 7	4362.16	22.76	171.89	66.96	63.78	13 9 49	3762.2	19.05	164.72

DIFFERENTIAL CORRECTIONS
TDE-2.5825 TRA10.2243 TC3-9.5440 BAU 3.1428
RDE .5251 RRA .0602 RC3 .2750 FAU .05364
FDE-1.2278 FRA 2.9844 FC3-1.8860 BSP 54292
BDE 2.6353 BRA10.2245 BC3 9.5480 FSP 1344

MID-COURSE EXECUTION ACCURACY
SGT15436.7 SGR 668.6 SG3 360.6
RRT -.3459 RRF -.4051 RTF .9738
SGB15451.1 R23 .0721 R13 -.9738
SG115438.4 SG2 627.2 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 4641.7 SR 606.7 SS 983.8
CRT -.6165 CRS .7869 CST -.9707
LSA 4754.4 MSA 525.7 SSA 17.6
EL1 4656.9 EL2 476.1 ALF 175.34

LAUNCH DATE NOV 18 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 922.882 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.141	GAL	-7.88	AZL	88.19	HCA	276.84	SMA	190.44	ECC	.26054	INC	1.8135	V1	30.134
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.295	GAP	-14.30	AZP	89.78	TAL	320.35	TAP	237.20	RCA	140.82	APO	240.06	V2	26.494
RC	331.806	GL	11.81	GP	-.74	ZAL	145.51	ZAP	27.15	ETS	177.36	ZAE	44.12	ETE	179.08	ZAC	86.91	ETC	256.33	CLP	27.14

PLANETOCENTRIC CONIC

C3	25.758	VHL	5.075	DLA	2.02	RAL	205.68	RAD	6568.0	VEL	12.130	PTH	2.17	VHP	6.601	DPA	.75	RAP	179.97	ECC	1.4239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 7	2338.57	-22.37	49.49	71.73	107.83	21 37 6	1738.6	-19.73	41.82
90.00	9 30 5	4857.16	19.53	210.34	70.62	69.08	10 51 3	4257.2	16.52	202.97
100.00	22 20 24	2073.16	-23.50	29.56	71.32	109.02	22 54 58	1473.2	-20.69	21.90
100.00	10 50 30	4597.80	20.64	190.81	70.15	67.89	12 7 7	3997.8	17.46	183.45
110.00	23 30 49	1852.79	-26.54	11.57	70.05	112.37	24 1 42	1252.8	-23.28	3.93
110.00	11 56 34	4390.94	23.62	173.69	68.74	64.54	13 9 45	3790.9	19.99	166.42

DIFFERENTIAL CORRECTIONS

TDE	-2.7376	TRA	10.5964	TC3	-9.2445	BAU	3.1848														
RDE	.5402	RRA	.0523	RC3	.2689	FAU	.04874														
FDE	-1.2070	FRA	2.8546	FC3	-1.6382	BSP	54469														
BDE	2.7904	BRA	10.5965	BC3	9.2484	FSP	1250														

MID-COURSE EXECUTION ACCURACY

SGT	15520.4	SGR	670.7	SG3	334.8																
RRT	-.3591	RRF	-.4210	RTF	.9711																
SGB	15534.9	R23	.0768	R13	-.9712																
SG1	15522.3	SG2	625.9	THA	179.11																

ORBIT DETERMINATION ACCURACY

ST	4746.1	SR	610.2	SS	953.5																
CRT	-.6297	CRS	.7982	CST	-.9703																
LSA	4851.4	HSA	520.5	SSA	17.3																
EL1	4761.8	EL2	472.5	ALF	175.33																

LAUNCH DATE NOV 18 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 926.988 EARTH TO MARS

RL	147.85	LAL	.00	LOL	55.69	VL	33.148	GAL	-8.15	AZL	88.19	HCA	278.11	SMA	190.57	ECC	.26328	INC	1.8089	V1	30.134
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.246	GAP	-14.49	AZP	89.74	TAL	319.29	TAP	237.40	RCA	140.40	APO	240.74	V2	26.496
RC	332.609	GL	11.50	GP	-.73	ZAL	146.59	ZAP	26.73	ETS	177.34	ZAE	43.39	ETE	179.08	ZAC	87.10	ETC	256.28	CLP	26.72

PLANETOCENTRIC CONIC

C3	26.970	VHL	5.193	DLA	1.36	RAL	206.53	RAD	6568.1	VEL	12.180	PTH	2.19	VHP	6.721	DPA	.40	RAP	180.74	ECC	1.4439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 27	2329.37	-22.18	48.89	73.17	108.07	21 45 17	1729.4	-19.50	41.24
90.00	9 28 34	4889.14	20.30	212.38	72.41	69.82	10 50 3	4289.1	17.37	204.93
100.00	22 28 26	2064.95	-23.32	29.02	72.75	109.25	23 2 51	1465.0	-20.48	21.38
100.00	10 49 17	4628.79	21.43	192.78	71.95	68.64	12 6 25	4028.8	18.33	185.35
110.00	23 38 8	1846.80	-26.39	11.17	71.46	112.56	24 8 54	1246.8	-23.10	3.56
110.00	11 56 4	4419.71	24.45	175.51	70.56	65.33	13 9 44	3819.7	20.91	168.15

DIFFERENTIAL CORRECTIONS

TDE	-2.8960	TRA	10.9778	TC3	-8.9506	BAU	3.2286														
RDE	.5558	RRA	.0439	RC3	.2626	FAU	.04399														
FDE	-1.1831	FRA	2.7211	FC3	-1.4121	BSP	54584														
BDE	2.9489	BRA	10.9779	BC3	8.9545	FSP	1159														

MID-COURSE EXECUTION ACCURACY

SGT	15601.5	SGR	672.8	SG3	310.0																
RRT	-.3723	RRF	-.4370	RTF	.9680																
SGB	15616.0	R23	.0819	R13	-.9681																
SG1	15603.5	SG2	624.4	THA	179.08																

ORBIT DETERMINATION ACCURACY

ST	4847.3	SR	613.4	SS	921.3																
CRT	-.6419	CRS	.8093	CST	-.9696																
LSA	4945.2	HSA	515.3	SSA	17.0																
EL1	4863.4	EL2	468.8	ALF	175.31																

LAUNCH DATE NOV 19 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 423.672 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 35.268 GAL -5.22 AZL 88.40 HCA 134.04 SMA 240.51 ECC .39444 INC 1.6037 V1 30.141
RP 244.57 LAP 1.15 LOP 190.75 VP 23.097 GAP 23.21 AZP 91.12 TAL 341.43 TAP 115.47 RCA 145.65 APO 335.38 V2 22.429
RC 129.306 GL 9.73 GP .67 ZAL 119.41 ZAP 173.59 ETS 172.70 ZAE 154.73 ETE 359.08 ZAC 89.30 ETC 256.08 CLP 173.62

PLANETOCENTRIC CONIC

C3 33.806 VHL 5.814 DLA 10.28 RAL 180.78 RAD 6568.3 VEL 12.457 PTH 2.25 VHP 10.477 DPA .07 RAP 184.81 ECC 1.5564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 24	2668.50	-27.38	72.29	55.10	97.52	18 55 53	2068.5	-26.06	63.88
90.00	8 50 18	4663.28	14.40	198.43	48.91	65.35	10 8 1	4063.3	10.96	191.45
100.00	19 37 51	2389.70	-28.73	51.57	54.88	98.62	20 17 40	1789.7	-27.24	43.09
100.00	10 6 32	4417.30	15.64	179.74	48.31	64.19	11 20 10	3817.3	12.04	172.80
110.00	20 57 40	2139.91	-32.35	31.85	54.13	101.70	21 33 20	1539.9	-30.40	23.18
110.00	11 3 12	4239.86	18.90	164.51	46.54	60.97	12 13 52	3639.9	14.88	157.69

DIFFERENTIAL CORRECTIONS
TDE .8827 TRA-2.2456 TC3 .8003 BAU .3627
RDE -.4685 RRA -.1832 RC3 -.0579 FAU .06414
FDE -.3790 FRA 1.4754 FC3-1.6425 BSP 8676
BDE .9993 BRA 2.2531 BC3 .8024 FSP 577

MID-COURSE EXECUTION ACCURACY
SGT 2584.7 SGR 501.3 SG3 211.1
RRT -.0397 RRF .0243 RTF -.8590
SGB 2632.9 R23 .0111 R13 .8590
SG1 2584.8 SG2 500.9 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 1101.1 SR 464.9 SS 527.3
CRT -.7119 CRS -.5470 CST .9753
LSA 1260.4 MSA 342.4 SSA 30.6
EL1 1153.9 EL2 311.6 ALF 161.91

LAUNCH DATE NOV 19 1964 FLIGHT TIME 162.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 425.813 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 35.159 GAL -5.04 AZL 88.40 HCA 134.94 SMA 237.23 ECC .38557 INC 1.5963 V1 30.141
RP 244.34 LAP 1.13 LOP 191.66 VP 22.954 GAP 22.62 AZP 91.13 TAL 341.79 TAP 116.73 RCA 145.76 APO 328.70 V2 22.451
RC 131.411 GL 9.91 GP .70 ZAL 118.82 ZAP 173.10 ETS 172.91 ZAE 154.53 ETE 359.30 ZAC 89.42 ETC 256.06 CLP 173.14

PLANETOCENTRIC CONIC

C3 32.148 VHL 5.670 DLA 10.68 RAL 180.31 RAD 6568.3 VEL 12.390 PTH 2.24 VHP 10.239 DPA -.08 RAP 185.21 ECC 1.5291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 19	2668.85	-27.38	72.32	53.85	97.51	18 50 48	2068.8	-26.06	63.90
90.00	8 51 39	4637.57	13.66	196.90	47.61	64.96	10 8 57	4037.6	10.18	189.96
100.00	19 32 59	2389.33	-28.73	51.54	53.63	98.64	20 12 48	1789.3	-27.24	43.06
100.00	10 7 40	4392.32	14.89	178.26	47.01	63.78	11 20 52	3792.3	11.25	171.37
110.00	20 53 18	2137.97	-32.32	31.71	52.88	101.79	21 28 56	1538.0	-30.36	23.04
110.00	11 3 50	4216.44	18.12	163.14	45.23	60.51	12 14 6	3616.4	14.05	156.39

DIFFERENTIAL CORRECTIONS
TDE .8621 TRA-2.2166 TC3 .8701 BAU .3748
RDE -.4505 RRA -.1759 RC3 -.0594 FAU .06601
FDE -.3754 FRA 1.5006 FC3-1.7775 BSP 8861
BDE .9727 BRA 2.2236 BC3 .8721 FSP 612

MID-COURSE EXECUTION ACCURACY
SGT 2632.2 SGR 494.5 SG3 221.8
RRT -.0389 RRF .0230 RTF -.8639
SGB 2678.2 R23 .0118 R13 .8639
SG1 2632.2 SG2 494.1 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 1107.9 SR 458.5 SS 532.2
CRT -.7079 CRS -.5356 CST .9736
LSA 1266.0 MSA 342.2 SSA 30.9
EL1 1158.3 EL2 309.8 ALF 162.37

LAUNCH DATE NOV 19 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 428.070 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 35.055 GAL -4.86 AZL 88.41 HCA 135.85 SMA 234.18 ECC .37708 INC 1.5887 V1 30.141
RP 244.11 LAP 1.11 LOP 192.57 VP 22.817 GAP 22.03 AZP 91.14 TAL 342.16 TAP 118.01 RCA 145.88 APO 322.48 V2 22.475
RC 133.550 GL 10.08 GP .72 ZAL 118.20 ZAP 172.61 ETS 173.08 ZAE 154.37 ETE 359.52 ZAC 89.54 ETC 256.05 CLP 172.64

PLANETOCENTRIC CONIC

C3 30.593 VHL 5.531 DLA 11.08 RAL 179.83 RAD 6568.2 VEL 12.327 PTH 2.22 VHP 10.006 DPA -.23 RAP 185.59 ECC 1.5035

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 4	2669.71	-27.39	72.38	52.60	97.48	18 45 34	2069.7	-26.07	63.96
90.00	8 53 1	4611.79	12.92	195.38	46.32	64.58	10 9 52	4011.8	9.39	188.48
100.00	19 27 58	2389.43	-28.73	51.55	52.38	98.63	20 7 48	1789.4	-27.24	43.07
100.00	10 8 48	4367.29	14.13	176.79	45.71	63.38	11 21 35	3767.3	10.45	169.94
110.00	20 48 49	2136.46	-32.30	31.59	51.63	101.85	21 24 25	1536.5	-30.33	22.93
110.00	11 4 27	4193.03	17.33	161.79	43.93	60.06	12 14 20	3593.0	13.22	155.09

DIFFERENTIAL CORRECTIONS
TDE .8413 TRA-2.1873 TC3 .9442 BAU .3870
RDE -.4332 RRA -.1689 RC3 -.0607 FAU .06798
FDE -.3711 FRA 1.5255 FC3-1.9237 BSP 9036
BDE .9462 BRA 2.1938 BC3 .9461 FSP 647

MID-COURSE EXECUTION ACCURACY
SGT 2679.7 SGR 487.4 SG3 232.9
RRT -.0379 RRF .0215 RTF -.8686
SGB 2723.6 R23 .0126 R13 .8686
SG1 2679.7 SG2 487.1 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 1113.6 SR 451.9 SS 536.6
CRT -.7036 CRS -.5234 CST .9717
LSA 1270.6 MSA 342.0 SSA 31.2
EL1 1161.7 EL2 307.8 ALF 162.82

LAUNCH DATE NOV 19 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 430.434 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 34.956 GAL -4.68 AZL 88.42 HCA 136.76 SMA 231.34 ECC .36895 INC 1.5807 V1 30.141
RP 243.87 LAP 1.08 LOP 193.48 VP 22.687 GAP 21.44 AZP 91.15 TAL 342.53 TAP 119.29 RCA 145.98 APO 316.69 V2 22.498
RC 135.719 GL 10.26 GP .75 ZAL 117.57 ZAP 172.10 ETS 173.23 ZAE 154.25 ETE 359.73 ZAC 89.65 ETC 256.03 CLP 172.14

PLANETOCENTRIC CONIC

C3 29.136 VHL 5.398 DLA 11.48 RAL 179.32 RAD 6568.2 VEL 12.268 PTH 2.21 VHP 9.779 DPA -.37 RAP 185.98 ECC 1.4795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 41	2671.07	-27.40	72.48	51.35	97.43	18 40 12	2071.1	-26.09	64.06
90.00	8 54 22	4585.97	12.16	193.86	45.04	64.23	10 10 48	3986.0	8.59	187.00
100.00	19 22 49	2390.02	-28.74	51.59	51.14	98.61	20 2 39	1790.0	-27.25	43.11
100.00	10 9 55	4342.25	13.36	175.33	44.43	63.01	11 22 17	3742.3	9.64	168.52
110.00	20 44 12	2135.39	-32.29	31.51	50.39	101.90	21 19 47	1535.4	-30.31	22.85
110.00	11 5 2	4169.65	16.53	160.44	42.64	59.64	12 14 32	3569.6	12.37	153.80

DIFFERENTIAL CORRECTIONS
TDE .8198 TRA-2.1570 TC3 1.0222 BAU .3989
RDE -.4163 RRA -.1621 RC3 -.0618 FAU .07004
FDE -.3660 FRA 1.5506 FC3-2.0810 BSP 9211
BDE .9195 BRA 2.1631 BC3 1.0241 FSP 684

MID-COURSE EXECUTION ACCURACY
SGT 2726.5 SGR 480.2 SG3 244.7
RRT -.0365 RRF .0195 RTF -.8731
SGB 2768.4 R23 .0134 R13 .8731
SG1 2726.5 SG2 479.8 THA 179.62

ORBIT DETERMINATION ACCURACY
ST 1117.9 SR 445.0 SS 540.6
CRT -.6989 CRS -.5101 CST .9696
LSA 1273.6 MSA 341.9 SSA 31.5
EL1 1163.7 EL2 305.8 ALF 163.26

LAUNCH DATE NOV 19 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 432.897 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.861	GAL	-4.51	AZL	88.43	HCA	137.68	SMA	228.68	ECC	.36117	INC	1.5725	V1	30.141
RP	243.63	LAP	1.06	LOP	194.39	VP	22.565	GAP	20.85	AZP	91.16	TAL	342.91	TAP	120.59	RCA	146.09	APO	311.28	V2	22.522
RC	137.915	GL	10.43	GP	.78	ZAL	116.92	ZAP	171.59	ETS	173.36	ZAE	154.19	ETE	359.94	ZAC	89.77	ETC	256.01	CLP	171.63

PLANETOCENTRIC CONIC

C3	27.771	VHL	5.270	DLA	11.90	RAL	178.80	RAD	6568.1	VEL	12.213	PTH	2.19	VHP	9.558	DPA	-.52	RAP	186.35	ECC	1.4570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 8	2672.93	-27.42	72.61	50.10	97.36	18 34 41	2072.9	-26.12	64.19
90.00	8 55 44	4560.14	11.39	192.36	43.77	63.90	10 11 44	3960.1	7.79	185.53
100.00	19 17 32	2391.08	-28.75	51.67	49.89	98.57	19 57 23	1791.1	-27.26	43.18
100.00	10 11 2	4317.23	12.58	173.88	43.15	62.66	11 22 59	3717.2	8.82	167.11
110.00	20 39 27	2134.74	-32.28	31.46	49.15	101.92	21 15 2	1534.7	-30.30	22.81
110.00	11 5 36	4146.33	15.72	159.12	41.35	59.25	12 14 42	3546.3	11.53	152.53

DIFFERENTIAL CORRECTIONS

TDE	.7984	TRA	-2.1261	TC3	1.1053	BAU	.4110	SGT	2773.3	SGR	472.7
RDE	-.4000	RRA	-.1557	RC3	-.0627	FAU	.07221	RRT	-.0350	RRF	.0171
FDE	-.3598	FRA	1.5753	FC3	-2.2511	BSP	9383	SGB	2813.3	R23	.0145
BDE	.8930	BRA	2.1318	BC3	1.1070	FSP	724	SG1	2773.3	SG2	472.4

MID-COURSE EXECUTION ACCURACY

SG3	257.0	ST	1121.1	SR	438.0
RTF	-.8775	CRT	-.6940	CRS	-.4957
R13	.8775	LSA	1275.5	MSA	341.8
THA	179.65	EL1	1164.8	EL2	303.5

ORBIT DETERMINATION ACCURACY

SS	543.9		
CST	.9671		
SSA	31.8		
ALF	163.69		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 435.449 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.769	GAL	-4.34	AZL	88.44	HCA	138.59	SMA	226.20	ECC	.35372	INC	1.5639	V1	30.141
RP	243.38	LAP	1.03	LOP	195.30	VP	22.448	GAP	20.27	AZP	91.17	TAL	343.30	TAP	121.89	RCA	146.19	APO	306.22	V2	22.547
RC	140.134	GL	10.59	GP	.81	ZAL	116.25	ZAP	171.07	ETS	173.46	ZAE	154.17	ETE	.16	ZAC	89.89	ETC	256.00	CLP	171.11

PLANETOCENTRIC CONIC

C3	26.490	VHL	5.147	DLA	12.32	RAL	178.25	RAD	6568.1	VEL	12.160	PTH	2.18	VHP	9.341	DPA	-.65	RAP	186.73	ECC	1.4360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 26	2675.31	-27.44	72.78	48.86	97.28	18 29 2	2075.3	-26.15	64.35
90.00	8 57 6	4534.29	10.61	190.86	42.50	63.59	10 12 40	3934.3	6.98	184.06
100.00	19 12 5	2392.63	-28.76	51.78	48.65	98.52	19 51 58	1792.6	-27.29	43.29
100.00	10 12 8	4292.21	11.80	172.44	41.88	62.33	11 23 40	3692.2	8.00	165.71
110.00	20 34 34	2134.52	-32.27	31.45	47.91	101.93	21 10 9	1534.5	-30.29	22.79
110.00	11 6 8	4123.08	14.91	157.81	40.08	58.88	12 14 51	3523.1	10.67	151.26

DIFFERENTIAL CORRECTIONS

TDE	.7864	TRA	-2.0849	TC3	1.2065	BAU	.4279	SGT	2820.0	SGR	465.3
RDE	-.3844	RRA	-.1497	RC3	-.0636	FAU	.07435	RRT	-.0386	RRF	.0131
FDE	-.3501	FRA	1.6026	FC3	-2.4298	BSP	9304	SGB	2858.2	R23	.0220
BDE	.8754	BRA	2.0903	BC3	1.2082	FSP	771	SG1	2820.1	SG2	465.0

MID-COURSE EXECUTION ACCURACY

SG3	269.7	ST	1129.5	SR	431.0
RTF	-.8845	CRT	-.6948	CRS	-.4764
R13	.8845	LSA	1281.1	MSA	342.5
THA	179.62	EL1	1171.4	EL2	298.9

ORBIT DETERMINATION ACCURACY

SS	546.0		
CST	.9612		
SSA	31.6		
ALF	164.09		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 438.084 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.682	GAL	-4.18	AZL	88.44	HCA	139.51	SMA	223.89	ECC	.34659	INC	1.5550	V1	30.141
RP	243.12	LAP	1.01	LOP	196.22	VP	22.338	GAP	19.69	AZP	91.18	TAL	343.69	TAP	123.19	RCA	146.29	APO	301.48	V2	22.572
RC	142.373	GL	10.76	GP	.85	ZAL	115.57	ZAP	170.55	ETS	173.55	ZAE	154.19	ETE	.37	ZAC	90.01	ETC	255.98	CLP	170.58

PLANETOCENTRIC CONIC

C3	25.292	VHL	5.029	DLA	12.74	RAL	177.70	RAD	6568.0	VEL	12.111	PTH	2.17	VHP	9.130	DPA	-.79	RAP	187.10	ECC	1.4162

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 37	2678.15	-27.46	72.99	47.61	97.18	18 23 16	2078.2	-26.19	64.55
90.00	8 58 27	4508.55	9.83	189.37	41.25	63.31	10 13 36	3908.5	6.17	182.60
100.00	19 6 32	2394.61	-28.78	51.93	47.41	98.44	19 46 27	1794.6	-27.31	43.43
100.00	10 13 13	4267.32	11.01	171.01	40.63	62.03	11 24 21	3667.3	7.18	164.32
110.00	20 29 36	2134.70	-32.28	31.46	46.68	101.92	21 5 11	1534.7	-30.30	22.81
110.00	11 6 39	4099.99	14.09	156.52	38.82	58.53	12 14 59	3500.0	9.82	150.02

DIFFERENTIAL CORRECTIONS

TDE	.7580	TRA	-2.0592	TC3	1.2886	BAU	.4362	SGT	2865.4	SGR	457.2
RDE	-.3690	RRA	-.1437	RC3	-.0638	FAU	.07681	RRT	-.0324	RRF	.0102
FDE	-.3434	FRA	1.6257	FC3	-2.6291	BSP	9622	SGB	2901.7	R23	.0193
BDE	.8431	BRA	2.0642	BC3	1.2902	FSP	812	SG1	2865.4	SG2	457.0

MID-COURSE EXECUTION ACCURACY

SG3	283.3	ST	1126.1	SR	423.5
RTF	-.8868	CRT	-.6854	CRS	-.4615
R13	.8868	LSA	1276.8	MSA	342.4
THA	179.70	EL1	1165.6	EL2	297.9

ORBIT DETERMINATION ACCURACY

SS	548.7		
CST	.9601		
SSA	32.2		
ALF	164.51		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 440.795 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.598	GAL	-4.02	AZL	88.45	HCA	140.43	SMA	221.71	ECC	.33976	INC	1.5458	V1	30.141
RP	242.87	LAP	.98	LOP	197.14	VP	22.233	GAP	19.12	AZP	91.19	TAL	344.08	TAP	124.51	RCA	146.39	APO	297.04	V2	22.598
RC	144.629	GL	10.92	GP	.88	ZAL	114.88	ZAP	170.01	ETS	173.62	ZAE	154.25	ETE	.59	ZAC	90.12	ETC	255.97	CLP	170.05

PLANETOCENTRIC CONIC

C3	24.168	VHL	4.916	DLA	13.16	RAL	177.12	RAD	6568.0	VEL	12.064	PTH	2.16	VHP	8.924	DPA	-.91	RAP	187.46	ECC	1.3977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 40	2681.47	-27.49	73.23	46.37	97.06	18 17 22	2081.5	-26.23	64.79
90.00	8 59 48	4482.87	9.04	187.90	40.00	63.05	10 14 31	3882.9	5.35	181.16
100.00	19 0 52	2397.05	-28.81	52.10	46.17	98.35	19 40 49	1797.0	-27.35	43.60
100.00	10 14 18	4242.52	10.21	169.60	39.38	61.75	11 25 0	3642.5	6.36	162.94
110.00	20 24 31	2135.29	-32.28	31.51	45.45	101.90	21 0 6	1535.3	-30.31	22.85
110.00	11 7 8	4077.05	13.27	155.24	37.57	58.21	12 15 5	3477.1	8.97	148.78

DIFFERENTIAL CORRECTIONS

TDE	.7324	TRA	-2.0301	TC3	1.3793	BAU	.4461	SGT	2910.6	SGR	449.0
RDE	-.3542	RRA	-.1381	RC3	-.0637	FAU	.07934	RRT	-.0273	RRF	.0063
FDE	-.3348	FRA	1.6496	FC3	-2.8420	BSP	9856	SGB	2945.1	R23	.0186
BDE	.8135	BRA	2.0347	BC3	1.3808	FSP	856	SG1	2910.7	SG2	448.9

MID-COURSE EXECUTION ACCURACY

SG3	297.5	ST	1123.2	SR	415.8
RTF	-.8900	CRT	-.6773	CRS	-.4441
R13	.8899	LSA	1272.5	MSA	342.6
THA	179.75	EL1	1160.5	EL2	296.1

ORBIT DETERMINATION ACCURACY

SS	550.7		
CST	.9576		
SSA	32.6		
ALF	164.92		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 443.577 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 34.518 GAL -3.86 AZL 88.46 HCA 141.35 SMA 219.68 ECC .33322 INC 1.5362 V1 30.141
RP 242.60 LAP .96 LOP 198.06 VP 22.135 GAP 18.55 AZP 91.20 TAL 344.48 TAP 125.83 RCA 146.48 APO 292.88 V2 22.624
RC 146.900 GL 11.07 GP .92 ZAL 114.16 ZAP 169.47 ETS 173.67 ZAE 154.35 ETE .82 ZAC 90.24 ETC 255.96 CLP 169.51

PLANETOCENTRIC CONIC

C3 23.114 VHL 4.808 DLA 13.58 RAL 176.52 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 8.722 DPA -1.04 RAP 187.82 ECC 1.3804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 35	2685.25	-27.52	73.50	45.14	96.93	18 11 21	2085.3	-26.28	65.05
90.00	9 1 8	4457.30	8.25	186.43	38.77	62.81	10 15 26	3857.3	4.54	179.72
100.00	18 55 4	2399.92	-28.83	52.31	44.94	98.25	19 35 4	1799.9	-27.39	43.81
100.00	10 15 21	4217.86	9.41	168.21	38.14	61.50	11 25 39	3617.9	5.54	161.57
110.00	20 19 20	2136.26	-32.30	31.58	44.23	101.86	20 54 56	1536.3	-30.33	22.92
110.00	11 7 35	4054.28	12.45	153.99	36.34	57.91	12 15 9	3454.3	8.12	147.57

DIFFERENTIAL CORRECTIONS
TDE .7084 TRA-1.9982 TC3 1.4766 BAU .4567
RDE -.3399 RRA -.1327 RC3 -.0632 FAU .08197
FDE -.3248 FRA 1.6735 FC3-3.0699 BSP 10043
BDE .7857 BRA 2.0026 BC3 1.4779 FSP 904

MID-COURSE EXECUTION ACCURACY
SGT 2954.7 SGR 440.7 SG3 312.4
RRT -.0227 RRF .0015 RTF -.8934
SGB 2987.4 R23 .0193 R13 .8934
SG1 2954.7 SG2 440.6 THA 179.80

ORBIT DETERMINATION ACCURACY
ST 1120.2 SR 408.0 SS 552.0
CRT -.6699 CRS -.4246 CST .9542
LSA 1267.8 MSA 342.9 SSA 33.0
EL1 1155.4 EL2 293.6 ALF 165.32

LAUNCH DATE NOV 19 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 446.424 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 34.441 GAL -3.71 AZL 88.47 HCA 142.27 SMA 217.76 ECC .32696 INC 1.5261 V1 30.141
RP 242.34 LAP .93 LOP 198.98 VP 22.042 GAP 17.99 AZP 91.21 TAL 344.89 TAP 127.15 RCA 146.56 APO 288.96 V2 22.651
RC 149.184 GL 11.22 GP .96 ZAL 113.44 ZAP 168.91 ETS 173.71 ZAE 154.49 ETE 1.05 ZAC 90.36 ETC 255.94 CLP 168.95

PLANETOCENTRIC CONIC

C3 22.127 VHL 4.704 DLA 14.01 RAL 175.91 RAD 6567.9 VEL 11.979 PTH 2.14 VHP 8.526 DPA -1.15 RAP 188.17 ECC 1.3642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 24	2689.47	-27.56	73.80	43.91	96.78	18 5 13	2089.5	-26.33	65.35
90.00	9 2 27	4431.87	7.45	184.99	37.55	62.60	10 16 19	3831.9	3.72	178.29
100.00	18 49 9	2403.20	-28.87	52.55	43.71	98.12	19 29 13	1803.2	-27.44	44.04
100.00	10 16 22	4193.37	8.62	166.83	36.92	61.27	11 26 16	3593.4	4.71	160.21
110.00	20 14 2	2137.61	-32.32	31.68	43.01	101.80	20 49 40	1537.6	-30.35	23.01
110.00	11 7 59	4031.73	11.63	152.76	35.11	57.63	12 15 11	3431.7	7.28	146.37

DIFFERENTIAL CORRECTIONS
TDE .6844 TRA-1.9659 TC3 1.5779 BAU .4671
RDE -.3260 RRA -.1277 RC3 -.0623 FAU .08472
FDE -.3134 FRA 1.6973 FC3-3.3147 BSP 10223
BDE .7581 BRA 1.9700 BC3 1.5791 FSP 955

MID-COURSE EXECUTION ACCURACY
SGT 2998.2 SGR 432.2 SG3 328.0
RRT -.0174 RRF -.0044 RTF -.8967
SGB 3029.2 R23 .0203 R13 .8967
SG1 2998.2 SG2 432.1 THA 179.85

ORBIT DETERMINATION ACCURACY
ST 1115.8 SR 400.0 SS 552.7
CRT -.6621 CRS -.4031 CST .9503
LSA 1261.5 MSA 343.6 SSA 33.3
EL1 1149.0 EL2 291.1 ALF 165.71

LAUNCH DATE NOV 19 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 449.333 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 34.367 GAL -3.56 AZL 88.48 HCA 143.19 SMA 215.96 ECC .32097 INC 1.5157 V1 30.141
RP 242.06 LAP .91 LOP 199.90 VP 21.955 GAP 17.43 AZP 91.21 TAL 345.29 TAP 128.49 RCA 146.65 APO 285.28 V2 22.678
RC 151.478 GL 11.36 GP 1.00 ZAL 112.70 ZAP 168.35 ETS 173.74 ZAE 154.68 ETE 1.29 ZAC 90.48 ETC 255.93 CLP 168.39

PLANETOCENTRIC CONIC

C3 21.202 VHL 4.605 DLA 14.44 RAL 175.28 RAD 6567.9 VEL 11.941 PTH 2.12 VHP 8.333 DPA -1.27 RAP 188.52 ECC 1.3489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 5	2694.10	-27.59	74.14	42.68	96.62	17 58 59	2094.1	-26.39	65.68
90.00	9 3 45	4406.62	6.66	183.56	36.33	62.41	10 17 11	3806.6	2.91	176.88
100.00	18 43 9	2406.87	-28.90	52.82	42.49	97.99	19 23 16	1806.9	-27.49	44.30
100.00	10 17 22	4169.08	7.82	165.47	35.71	61.06	11 26 51	3569.1	3.90	158.87
110.00	20 8 40	2139.29	-32.34	31.80	41.79	101.73	20 44 19	1539.3	-30.39	23.13
110.00	11 8 20	4009.42	10.82	151.54	33.90	57.37	12 15 10	3409.4	6.44	145.19

DIFFERENTIAL CORRECTIONS
TDE .6607 TRA-1.9334 TC3 1.6835 BAU .4775
RDE -.3126 RRA -.1229 RC3 -.0609 FAU .08760
FDE -.3008 FRA 1.7216 FC3-3.5770 BSP 10381
BDE .7309 BRA 1.9373 BC3 1.6846 FSP 1008

MID-COURSE EXECUTION ACCURACY
SGT 3041.5 SGR 423.5 SG3 344.4
RRT -.0113 RRF -.0113 RTF -.9000
SGB 3070.9 R23 .0216 R13 .9000
SG1 3041.5 SG2 423.5 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 1110.6 SR 391.9 SS 553.1
CRT -.6539 CRS -.3797 CST .9456
LSA 1254.3 MSA 344.5 SSA 33.5
EL1 1141.9 EL2 288.4 ALF 166.10

LAUNCH DATE NOV 19 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 452.298 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 34.296 GAL -3.41 AZL 88.50 HCA 144.12 SMA 214.27 ECC .31523 INC 1.5047 V1 30.141
RP 241.79 LAP .88 LOP 200.83 VP 21.872 GAP 16.88 AZP 91.22 TAL 345.70 TAP 129.82 RCA 146.73 APO 281.81 V2 22.706
RC 153.781 GL 11.50 GP 1.05 ZAL 111.95 ZAP 167.77 ETS 173.76 ZAE 154.89 ETE 1.54 ZAC 90.60 ETC 255.92 CLP 167.82

PLANETOCENTRIC CONIC

C3 20.334 VHL 4.509 DLA 14.86 RAL 174.64 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 8.145 DPA -1.37 RAP 188.86 ECC 1.3347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 40	2699.11	-27.63	74.50	41.45	96.44	17 52 40	2099.1	-26.45	66.03
90.00	9 5 1	4381.59	5.87	182.14	35.13	62.25	10 18 2	3781.6	2.11	175.48
100.00	18 37 3	2410.90	-28.94	53.11	41.27	97.84	19 17 13	1810.9	-27.55	44.58
100.00	10 18 20	4145.03	7.02	164.12	34.50	60.87	11 27 25	3545.0	3.09	157.55
110.00	20 3 12	2141.30	-32.37	31.95	40.58	101.65	20 38 54	1541.3	-30.42	23.28
110.00	11 8 39	3987.40	10.01	150.35	32.69	57.14	12 15 6	3387.4	5.61	144.03

DIFFERENTIAL CORRECTIONS
TDE .6368 TRA-1.8995 TC3 1.7935 BAU .4878
RDE -.2997 RRA -.1183 RC3 -.0588 FAU .09062
FDE -.2869 FRA 1.7452 FC3-3.8583 BSP 10545
BDE .7038 BRA 1.9032 BC3 1.7944 FSP 1065

MID-COURSE EXECUTION ACCURACY
SGT 3083.2 SGR 414.7 SG3 361.5
RRT -.0043 RRF -.0193 RTF -.9033
SGB 3111.0 R23 .0232 R13 .9033
SG1 3083.2 SG2 414.7 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 1103.7 SR 383.6 SS 553.0
CRT -.6453 CRS -.3544 CST .9404
LSA 1245.3 MSA 345.6 SSA 33.7
EL1 1133.1 EL2 285.5 ALF 166.48

LAUNCH DATE NOV 19 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 455.316 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.228	GAL	-3.27	AZL	88.51	HCA	145.05	SMA	212.67	ECC	.30974	INC	1.4932
RP	241.51	LAP	.86	LOP	201.76	VP	21.795	GAP	16.32	AZP	91.22	TAL	346.12	TAP	131.16	RCA	146.80	APO	278.55
RC	156.092	GL	11.63	GP	1.09	ZAL	111.18	ZAP	167.19	ETS	173.77	ZAE	155.15	ETE	1.80	ZAC	90.73	ETC	255.91

V1	30.141	V2	22.734	CLP	167.23														

PLANETOCENTRIC CONIC

C3	19.521	VHL	4.418	DLA	15.28	RAL	173.98	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	7.961	DPA	-1.47	RAP	189.19
ECC	1.3213																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 10	2704.49	-27.67	74.89	40.23	96.25	17 46 14	2104.5	-26.52	66.41
90.00	9 6 14	4356.78	5.08	180.75	33.94	62.10	10 18 51	3756.8	1.31	174.10
100.00	18 30 51	2415.28	-28.98	53.43	40.05	97.67	19 11 6	1815.3	-27.61	44.89
100.00	10 19 15	4121.23	6.23	162.80	33.31	60.71	11 27 56	3521.2	2.28	156.24
110.00	19 57 40	2143.61	-32.40	32.13	39.38	101.55	20 33 24	1543.6	-30.47	23.44
110.00	11 8 54	3965.66	9.20	149.19	31.50	56.93	12 15 0	3365.7	4.78	142.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6230	TRA	-1.8554	TC3	1.9282	BAU	.5034	SGT	3126.8	SGR	406.2	SG3	379.4	ST	1102.3	SR	375.5	SS	552.3
RDE	-.2874	RRA	-.1143	RC3	-.0565	FAU	.09377	RRT	-.0024	RRF	-.0286	RTF	-.9087	CRT	-.6442	CRS	-.3256	CST	.9302
FDE	-.2708	FRA	1.7692	FC3	-4.1588	BSP	10456	SGB	3153.1	R23	.0308	R13	.9087	LSA	1240.4	MSA	348.4	SSA	33.3
BDE	.6860	BRA	1.8589	BC3	1.9290	FSP	1126	SG1	3126.8	SG2	406.2	THA	179.98	EL1	1130.4	EL2	280.1	ALF	166.80

LAUNCH DATE NOV 19 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 458.382 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.163	GAL	-3.13	AZL	88.52	HCA	145.98	SMA	211.17	ECC	.30449	INC	1.4811
RP	241.22	LAP	.83	LOP	202.69	VP	21.723	GAP	15.78	AZP	91.23	TAL	346.53	TAP	132.51	RCA	146.87	APO	275.47
RC	158.408	GL	11.75	GP	1.15	ZAL	110.41	ZAP	166.59	ETS	173.77	ZAE	155.44	ETE	2.07	ZAC	90.85	ETC	255.90

V1	30.141	V2	22.762	CLP	166.64														

PLANETOCENTRIC CONIC

C3	18.760	VHL	4.331	DLA	15.70	RAL	173.30	RAD	6567.8	VEL	11.838	PTH	2.10	VHP	7.782	DPA	-1.56	RAP	189.52
ECC	1.3087																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 36	2710.14	-27.72	75.29	39.02	96.05	17 39 46	2110.1	-26.59	66.81
90.00	9 7 25	4332.36	4.30	179.38	32.76	61.98	10 19 38	3732.4	.52	172.74
100.00	18 24 36	2419.89	-29.02	53.77	38.84	97.50	19 4 56	1819.9	-27.68	45.22
100.00	10 20 6	4097.84	5.45	161.50	32.13	60.56	11 28 24	3497.8	1.49	154.95
110.00	19 52 6	2146.15	-32.43	32.32	38.18	101.44	20 27 52	1546.1	-30.52	23.62
110.00	11 9 6	3944.35	8.41	148.05	30.32	56.74	12 14 50	3344.4	3.97	141.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5902	TRA	-1.8308	TC3	2.0268	BAU	.5085	SGT	3165.6	SGR	396.7	SG3	398.4	ST	1087.2	SR	366.7	SS	551.9
RDE	-.2751	RRA	-.1101	RC3	-.0527	FAU	.09717	RRT	.0130	RRF	-.0393	RTF	-.9096	CRT	-.6269	CRS	-.2985	CST	.9278
FDE	-.2560	FRA	1.7917	FC3	-4.4842	BSP	10833	SGB	3190.4	R23	-.0273	R13	-.9096	LSA	1224.1	MSA	348.6	SSA	34.1
BDE	.6512	BRA	1.8342	BC3	2.0275	FSP	1187	SG1	3165.6	SG2	396.7	THA	.09	EL1	1112.9	EL2	279.1	ALF	167.24

LAUNCH DATE NOV 19 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 461.495 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.101	GAL	-3.00	AZL	88.53	HCA	146.91	SMA	209.75	ECC	.29946	INC	1.4683
RP	240.93	LAP	.80	LOP	203.62	VP	21.656	GAP	15.24	AZP	91.23	TAL	346.94	TAP	133.85	RCA	146.94	APO	272.57
RC	160.729	GL	11.85	GP	1.20	ZAL	109.63	ZAP	165.98	ETS	173.76	ZAE	155.77	ETE	2.36	ZAC	90.98	ETC	255.89

V1	30.141	V2	22.791	CLP	166.03														

PLANETOCENTRIC CONIC

C3	18.045	VHL	4.248	DLA	16.11	RAL	172.61	RAD	6567.7	VEL	11.808	PTH	2.09	VHP	7.606	DPA	-1.65	RAP	189.84
ECC	1.2970																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 58	2716.07	-27.76	75.72	37.81	95.84	17 33 14	2116.1	-26.66	67.23
90.00	9 8 33	4308.24	3.53	178.02	31.59	61.89	10 20 21	3708.2	-.26	171.39
100.00	18 18 17	2424.78	-29.06	54.13	37.64	97.32	18 58 42	1824.8	-27.75	45.57
100.00	10 20 54	4074.77	4.68	160.22	30.96	60.44	11 28 49	3474.8	.71	153.69
110.00	19 46 27	2148.91	-32.47	32.52	36.99	101.32	20 22 16	1548.9	-30.57	23.82
110.00	11 9 14	3923.40	7.62	146.93	29.14	56.58	12 14 37	3323.4	3.17	140.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5686	TRA	-1.7937	TC3	2.1521	BAU	.5193	SGT	3205.1	SGR	387.7	SG3	418.2	ST	1077.9	SR	358.2	SS	550.7
RDE	-.2635	RRA	-.1064	RC3	-.0484	FAU	.10068	RRT	.0228	RRF	-.0519	RTF	-.9129	CRT	-.6184	CRS	-.2668	CST	.9193
FDE	-.2382	FRA	1.8143	FC3	-4.8302	BSP	10914	SGB	3228.5	R23	-.0308	R13	-.9129	LSA	1212.1	MSA	350.9	SSA	34.0
BDE	.6267	BRA	1.7969	BC3	2.1526	FSP	1252	SG1	3205.1	SG2	387.5	THA	.16	EL1	1102.0	EL2	275.3	ALF	167.60

LAUNCH DATE NOV 19 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 464.651 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	34.042	GAL	-2.87	AZL	88.54	HCA	147.85	SMA	208.42	ECC	.29465	INC	1.4549
RP	240.64	LAP	.77	LOP	204.56	VP	21.593	GAP	14.71	AZP	91.23	TAL	347.36	TAP	135.20	RCA	147.01	APO	269.83
RC	163.052	GL	11.95	GP	1.26	ZAL	108.85	ZAP	165.36	ETS	173.74	ZAE	156.13	ETE	2.67	ZAC	91.10	ETC	255.89

V1	30.141	V2	22.821	CLP	165.41														

PLANETOCENTRIC CONIC

C3	17.376	VHL	4.168	DLA	16.52	RAL	171.91	RAD	6567.7	VEL	11.780	PTH	2.08	VHP	7.435	DPA	-1.73	RAP	190.15
ECC	1.2860																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 17	2722.20	-27.80	76.17	36.60	95.62	17 26 39	2122.2	-26.73	67.66
90.00	9 9 37	4284.55	2.77	176.70	30.43	61.81	10 21 1	3684.5	-1.03	170.07
100.00	18 11 57	2429.84	-29.11	54.50	36.44	97.13	18 52 26	1829.8	-27.81	45.93
100.00	10 21 38	4052.14	3.92	158.98	29.80	60.34	11 29 10	3452.1	-.06	152.45
110.00	19 40 48	2151.84	-32.51	32.74	35.80	101.20	20 16 39	1551.8	-30.62	24.03
110.00	11 9 17	3902.90	6.85	145.84	27.98	56.43	12 14 19	3302.9	2.39	139.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5413	TRA	-1.7621	TC3	2.2671	BAU	.5267	SGT	3241.6	SGR	378.3	SG3	439.0	ST	1063.6	SR	349.3	SS	549.5
RDE	-.2521	RRA	-.1029	RC3	-.0430	FAU	.10435	RRT	.0383	RRF	-.0668	RTF	-.9150	CRT	-.6039	CRS	-.2329	CST	.9126
FDE	-.2192	FRA	1.8369	FC3	-5.1992	BSP	11125	SGB	3263.5	R23	-.0314	R13	-.9150	LSA	1195.7	MSA	352.7	SSA	34.3
BDE	.5971	BRA	1.7651	BC3	2.2675	FSP	1321	SG1	3241.6	SG2	378.0	THA	.26	EL1	1085.7	EL2	272.8	ALF	168.01

LAUNCH DATE NOV 19 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 467.848 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.984 GAL -2.74 AZL 88.56 HCA 148.78 SMA 207.15 ECC .29004 INC 1.4407 V1 30.141
RP 240.34 LAP .75 LOP 205.49 VP 21.534 GAP 14.18 AZP 91.23 TAL 347.78 TAP 136.56 RCA 147.07 APO 267.24 V2 22.851
RC 165.375 GL 12.04 GP 1.32 ZAL 108.05 ZAP 164.72 ETS 173.71 ZAE 156.53 ETE 3.01 ZAC 91.23 ETC 255.88 CLP 164.78

PLANETOCENTRIC CONIC

C3 16.748 VHL 4.092 DLA 16.91 RAL 171.19 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 7.267 DPA -1.80 RAP 190.45 ECC 1.2756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 33	2728.51	-27.84	76.62	35.40	95.40	17 20 2	2128.5	-26.80	68.11
90.00	9 10 36	4261.26	2.02	175.40	29.28	61.75	10 21 37	3661.3	-1.78	168.77
100.00	18 5 33	2435.07	-29.15	54.88	35.24	96.93	18 46 8	1835.1	-27.88	46.30
100.00	10 22 17	4029.94	3.17	157.75	28.64	60.26	11 29 27	3429.9	-.81	151.23
110.00	19 35 5	2154.92	-32.55	32.98	34.61	101.07	20 11 0	1554.9	-30.68	24.26
110.00	11 9 14	3882.85	6.10	144.78	26.83	56.30	12 13 57	3282.8	1.63	138.55

DIFFERENTIAL CORRECTIONS
TDE .5281 TRA-1.7169 TC3 2.4159 BAU .5410
RDE -.2414 RRA -.0998 RC3 -.0371 FAU .10823
FDE -.1997 FRA 1.8583 FC3-5.5944 BSP 11010
BDE .5807 BRA 1.7198 BC3 2.4162 FSP 1392

MID-COURSE EXECUTION ACCURACY
SGT 3281.6 SGR 369.4 SG3 460.8
RRT .0471 RRF -.0831 RTF -.9196
SGB 3302.3 R23 -.0393 R13 -.9196
SG1 3281.6 SG2 369.0 THA .31

ORBIT DETERMINATION ACCURACY
ST 1057.5 SR 340.8 SS 548.3
CRT -.6019 CRS -.1978 CST .8985
LSA 1185.9 MSA 357.1 SSA 33.7
EL1 1078.5 EL2 266.8 ALF 168.30

LAUNCH DATE NOV 19 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 471.082 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.930 GAL -2.62 AZL 88.57 HCA 149.72 SMA 205.96 ECC .28565 INC 1.4258 V1 30.141
RP 240.04 LAP .72 LOP 206.43 VP 21.480 GAP 13.66 AZP 91.23 TAL 348.19 TAP 137.91 RCA 147.13 APO 264.79 V2 22.881
RC 167.697 GL 12.11 GP 1.39 ZAL 107.26 ZAP 164.08 ETS 173.68 ZAE 156.96 ETE 3.36 ZAC 91.36 ETC 255.87 CLP 164.13

PLANETOCENTRIC CONIC

C3 16.161 VHL 4.020 DLA 17.30 RAL 170.46 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 7.103 DPA -1.86 RAP 190.75 ECC 1.2660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 51	2734.85	-27.88	77.08	34.21	95.17	17 13 26	2134.8	-26.87	68.56
90.00	9 11 29	4238.59	1.28	174.13	28.15	61.71	10 22 8	3638.6	-2.51	167.50
100.00	17 59 11	2440.32	-29.19	55.26	34.05	96.73	18 39 52	1840.3	-27.95	46.68
100.00	10 22 50	4008.36	2.44	156.57	27.51	60.20	11 29 39	3408.4	-1.55	150.05
110.00	19 29 25	2158.03	-32.59	33.21	33.44	100.93	20 5 23	1558.0	-30.74	24.48
110.00	11 9 6	3863.41	5.36	143.76	25.69	56.19	12 13 30	3263.4	.88	137.53

DIFFERENTIAL CORRECTIONS
TDE .4937 TRA-1.6929 TC3 2.5161 BAU .5437
RDE -.2307 RRA -.0967 RC3 -.0290 FAU .11227
FDE -.1781 FRA 1.8809 FC3-6.0144 BSP 11415
BDE .5449 BRA 1.6957 BC3 2.5163 FSP 1471

MID-COURSE EXECUTION ACCURACY
SGT 3312.7 SGR 359.8 SG3 483.6
RRT .0723 RRF -.1037 RTF -.9199
SGB 3332.2 R23 -.0366 R13 -.9199
SG1 3312.8 SG2 358.8 THA .46

ORBIT DETERMINATION ACCURACY
ST 1036.1 SR 331.6 SS 547.2
CRT -.5779 CRS -.1593 CST .8941
LSA 1163.4 MSA 357.9 SSA 34.5
EL1 1054.9 EL2 265.8 ALF 168.80

LAUNCH DATE NOV 19 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 474.352 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.877 GAL -2.50 AZL 88.59 HCA 150.67 SMA 204.83 ECC .28144 INC 1.4099 V1 30.141
RP 239.73 LAP .69 LOP 207.37 VP 21.431 GAP 13.14 AZP 91.23 TAL 348.60 TAP 139.27 RCA 147.18 APO 262.48 V2 22.912
RC 170.016 GL 12.17 GP 1.46 ZAL 106.46 ZAP 163.41 ETS 173.63 ZAE 157.43 ETE 3.75 ZAC 91.50 ETC 255.86 CLP 163.48

PLANETOCENTRIC CONIC

C3 15.609 VHL 3.951 DLA 17.67 RAL 169.72 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 6.942 DPA -1.91 RAP 191.03 ECC 1.2569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 9	2741.22	-27.92	77.55	33.01	94.94	17 6 50	2141.2	-26.94	69.02
90.00	9 12 16	4216.47	.57	172.90	27.02	61.69	10 22 33	3616.5	-3.22	166.27
100.00	17 52 49	2445.59	-29.23	55.65	32.86	96.53	18 33 35	1845.6	-28.02	47.06
100.00	10 23 17	3987.33	1.73	155.41	26.37	60.15	11 29 44	3387.3	-2.26	148.89
110.00	19 23 44	2161.17	-32.63	33.45	32.26	100.80	19 59 45	1561.2	-30.80	24.71
110.00	11 8 52	3844.52	4.64	142.76	24.56	56.10	12 12 56	3244.5	.16	136.55

DIFFERENTIAL CORRECTIONS
TDE .4707 TRA-1.6576 TC3 2.6441 BAU .5518
RDE -.2205 RRA -.0940 RC3 -.0201 FAU .11652
FDE -.1558 FRA 1.9020 FC3-6.4624 BSP 11530
BDE .5197 BRA 1.6603 BC3 2.6442 FSP 1550

MID-COURSE EXECUTION ACCURACY
SGT 3346.1 SGR 350.6 SG3 507.5
RRT .0932 RRF -.1266 RTF -.9222
SGB 3364.4 R23 -.0398 R13 -.9222
SG1 3346.2 SG2 349.1 THA .57

ORBIT DETERMINATION ACCURACY
ST 1021.1 SR 322.6 SS 546.1
CRT -.5640 CRS -.1194 CST .8834
LSA 1146.1 MSA 361.0 SSA 34.4
EL1 1038.3 EL2 262.0 ALF 169.20

LAUNCH DATE NOV 19 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 477.656 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.827 GAL -2.38 AZL 88.61 HCA 151.61 SMA 203.76 ECC .27742 INC 1.3930 V1 30.141
RP 239.42 LAP .66 LOP 208.32 VP 21.385 GAP 12.63 AZP 91.23 TAL 349.01 TAP 140.62 RCA 147.23 APO 260.29 V2 22.943
RC 172.331 GL 12.21 GP 1.54 ZAL 105.66 ZAP 162.73 ETS 173.57 ZAE 157.93 ETE 4.18 ZAC 91.63 ETC 255.86 CLP 162.80

PLANETOCENTRIC CONIC

C3 15.092 VHL 3.885 DLA 18.03 RAL 168.96 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 6.785 DPA -1.95 RAP 191.31 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 29	2747.51	-27.95	78.00	31.83	94.71	17 0 16	2147.5	-27.01	69.46
90.00	9 12 55	4195.02	-.12	171.70	25.90	61.68	10 22 50	3595.0	-3.91	165.07
100.00	17 46 30	2450.79	-29.27	56.03	31.68	96.34	18 27 20	1850.8	-28.09	47.43
100.00	10 23 36	3966.97	1.04	154.29	25.25	60.12	11 29 43	3367.0	-2.95	147.77
110.00	19 18 5	2164.26	-32.67	33.68	31.09	100.67	19 54 9	1564.3	-30.85	24.93
110.00	11 8 30	3826.27	3.95	141.81	23.43	56.02	12 12 16	3226.3	-.54	135.60

DIFFERENTIAL CORRECTIONS
TDE .4483 TRA-1.6213 TC3 2.7749 BAU .5599
RDE -.2106 RRA -.0915 RC3 -.0097 FAU .12101
FDE -.1324 FRA 1.9227 FC3-6.9414 BSP 11634
BDE .4953 BRA 1.6239 BC3 2.7749 FSP 1634

MID-COURSE EXECUTION ACCURACY
SGT 3377.8 SGR 341.7 SG3 532.7
RRT .1174 RRF -.1530 RTF -.9246
SGB 3395.0 R23 -.0436 R13 -.9246
SG1 3378.0 SG2 339.3 THA .69

ORBIT DETERMINATION ACCURACY
ST 1005.2 SR 313.6 SS 545.2
CRT -.5497 CRS -.0775 CST .8714
LSA 1127.8 MSA 364.5 SSA 34.3
EL1 1020.9 EL2 257.9 ALF 169.60

LAUNCH DATE NOV 19 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 480.992 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.779	GAL	-2.27	AZL	88.62	HCA	152.56	SMA	202.75	ECC	.27357	INC	1.3750
RP	239.11	LAP	.63	LOP	209.27	VP	21.343	GAP	12.12	AZP	91.22	TAL	349.42	TAP	141.98	RCA	147.28	APO	258.22
RC	174.639	GL	12.24	GP	1.63	ZAL	104.85	ZAP	162.04	ETS	173.51	ZAE	158.46	ETE	4.65	ZAC	91.77	ETC	255.85

PLANETOCENTRIC CONIC

C3	14.607	VHL	3.822	DLA	18.37	RAL	168.20	RAD	6567.6	VEL	11.662	PTH	2.05	VHP	6.632	DPA	-1.97	RAP	191.58

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 52	2753.64	-27.99	78.45	30.64	94.49	16 53 46	2153.6	-27.07	69.90
90.00	9 13 25	4174.31	-.79	170.55	24.78	61.69	10 23 0	3574.3	-4.57	163.91
100.00	17 40 13	2455.83	-29.31	56.40	30.50	96.15	18 21 9	1855.8	-28.15	47.79
100.00	10 23 46	3947.34	.37	153.22	24.13	60.11	11 29 33	3347.3	-3.61	146.69
110.00	19 12 28	2167.22	-32.71	33.90	29.92	100.54	19 48 35	1567.2	-30.91	25.14
110.00	11 8 0	3808.72	3.28	140.89	22.32	55.96	12 11 29	3208.7	-1.21	134.68

DIFFERENTIAL CORRECTIONS

TDE	.4287	TRA	-1.5831	TC3	2.9142	BAU	.5691	SGT	3410.1	SGR	333.0	SG3	559.2	ST	990.1	SR	304.6	SS	544.5
RDE	-.2012	RRA	-.0894	RC3	.0024	FAU	.12574	RRT	.1439	RRF	-.1831	RTF	-.9273	CRT	-.5374	CRS	-.0347	CST	.8572
FDE	-.1085	FRA	1.9424	FC3	-7.4527	BSP	11680	SGB	3426.3	R23	-.0489	R13	-.9274	LSA	1110.1	MSA	368.8	SSA	34.0
BDE	.4736	BRA	1.5856	BC3	2.9142	FSP	1722	SG1	3410.4	SG2	329.5	THA	.81	EL1	1004.5	EL2	253.2	ALF	169.97

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 19 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 484.360 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.733	GAL	-2.16	AZL	88.64	HCA	153.51	SMA	201.79	ECC	.26989	INC	1.3359
RP	238.79	LAP	.60	LOP	210.21	VP	21.305	GAP	11.62	AZP	91.21	TAL	349.83	TAP	143.34	RCA	147.33	APO	256.25
RC	176.939	GL	12.24	GP	1.72	ZAL	104.05	ZAP	161.33	ETS	173.43	ZAE	159.02	ETE	5.17	ZAC	91.92	ETC	255.85

PLANETOCENTRIC CONIC

C3	14.151	VHL	3.762	DLA	18.70	RAL	167.42	RAD	6567.6	VEL	11.642	PTH	2.04	VHP	6.482	DPA	-1.99	RAP	191.84

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 21	2759.52	-28.02	78.88	29.46	94.28	16 47 20	2159.5	-27.13	70.32
90.00	9 13 45	4154.40	-1.43	169.44	23.67	61.72	10 23 0	3554.4	-5.20	162.79
100.00	17 34 2	2460.65	-29.35	56.75	29.32	95.96	18 15 2	1860.6	-28.21	48.13
100.00	10 23 45	3928.50	-.27	152.18	23.02	60.11	11 29 14	3328.5	-4.24	145.65
110.00	19 6 55	2170.01	-32.74	34.11	28.75	100.42	19 43 5	1570.0	-30.96	25.34
110.00	11 7 21	3791.91	2.64	140.01	21.20	55.91	12 10 33	3191.9	-1.85	133.81

DIFFERENTIAL CORRECTIONS

TDE	.4207	TRA	-1.5335	TC3	3.0812	BAU	.5829	SGT	3444.6	SGR	325.1	SG3	587.0	ST	981.2	SR	295.8	SS	543.8
RDE	-.1922	RRA	-.0877	RC3	.0159	FAU	.13075	RRT	.1677	RRF	-.2164	RTF	-.9316	CRT	-.5385	CRS	.0068	CST	.8346
FDE	-.0854	FRA	1.9591	FC3	-7.9990	BSP	11422	SGB	3459.9	R23	-.0597	R13	-.9317	LSA	1096.8	MSA	376.6	SSA	32.8
BDE	.4626	BRA	1.5360	BC3	3.0813	FSP	1808	SG1	3445.0	SG2	320.5	THA	.91	EL1	994.9	EL2	245.8	ALF	170.17

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 19 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 487.753 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.689	GAL	-2.05	AZL	88.66	HCA	154.46	SMA	200.88	ECC	.26639	INC	1.3352
RP	238.47	LAP	.58	LOP	211.17	VP	21.270	GAP	11.13	AZP	91.20	TAL	350.23	TAP	144.69	RCA	147.37	APO	254.40
RC	179.231	GL	12.23	GP	1.82	ZAL	103.25	ZAP	160.60	ETS	173.35	ZAE	159.61	ETE	5.74	ZAC	92.07	ETC	255.84

PLANETOCENTRIC CONIC

C3	13.725	VHL	3.705	DLA	19.00	RAL	166.64	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	6.336	DPA	-1.99	RAP	192.10

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 0	2764.89	-28.04	79.27	28.28	94.09	16 41 5	2164.9	-27.18	70.71
90.00	9 13 52	4135.59	-2.04	168.39	22.57	61.75	10 22 48	3535.6	-5.80	161.73
100.00	17 28 0	2465.00	-29.38	57.07	28.15	95.80	18 9 5	1865.0	-28.26	48.45
100.00	10 23 33	3910.72	-.87	151.21	21.92	60.12	11 28 44	3310.7	-4.84	144.67
110.00	19 1 31	2172.42	-32.77	34.29	27.59	100.32	19 37 44	1572.4	-31.00	25.52
110.00	11 6 32	3776.05	2.04	139.18	20.10	55.87	12 9 28	3176.1	-2.46	132.98

DIFFERENTIAL CORRECTIONS

TDE	.3819	TRA	-1.5159	TC3	3.1588	BAU	.5796	SGT	3460.5	SGR	317.0	SG3	615.7	ST	952.4	SR	286.3	SS	544.6
RDE	-.1831	RRA	-.0858	RC3	.0328	FAU	.13576	RRT	.2167	RRF	-.2588	RTF	-.9303	CRT	-.4983	CRS	.0576	CST	.8320
FDE	-.0564	FRA	1.9821	FC3	-8.5633	BSP	11976	SGB	3475.0	R23	-.0569	R13	-.9304	LSA	1069.2	MSA	375.8	SSA	33.9
BDE	.4235	BRA	1.5183	BC3	3.1590	FSP	1916	SG1	3461.2	SG2	309.4	THA	1.15	EL1	963.8	EL2	245.3	ALF	170.89

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 19 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 491.175 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.647	GAL	-1.95	AZL	88.69	HCA	155.41	SMA	200.03	ECC	.26303	INC	1.3130
RP	238.14	LAP	.55	LOP	212.12	VP	21.239	GAP	10.64	AZP	91.19	TAL	350.63	TAP	146.04	RCA	147.41	APO	252.64
RC	181.513	GL	12.19	GP	1.93	ZAL	102.46	ZAP	159.85	ETS	173.25	ZAE	160.23	ETE	6.39	ZAC	92.22	ETC	255.84

PLANETOCENTRIC CONIC

C3	13.324	VHL	3.650	DLA	19.28	RAL	165.85	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	6.193	DPA	-1.98	RAP	192.34

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 48	2769.78	-28.07	79.62	27.10	93.91	16 34 58	2169.8	-27.23	71.06
90.00	9 13 45	4117.78	-2.61	167.39	21.47	61.79	10 22 23	3517.8	-6.37	160.72
100.00	17 22 7	2468.90	-29.40	57.36	26.97	95.65	18 3 16	1868.9	-28.31	48.73
100.00	10 23 8	3893.89	-1.44	150.29	20.82	60.14	11 28 2	3293.9	-5.41	143.74
110.00	18 56 13	2174.49	-32.80	34.45	26.42	100.23	19 32 27	1574.5	-31.04	25.67
110.00	11 5 31	3761.07	1.46	138.40	19.00	55.84	12 8 12	3161.1	-3.03	132.19

DIFFERENTIAL CORRECTIONS

TDE	.3612	TRA	-1.4811	TC3	3.2846	BAU	.5851	SGT	3483.9	SGR	310.2	SG3	646.0	ST	934.1	SR	277.2	SS	545.4
RDE	-.1745	RRA	-.0845	RC3	.0514	FAU	.14114	RRT	.2597	RRF	-.3044	RTF	-.9320	CRT	-.4793	CRS	.1042	CST	.8177
FDE	-.0299	FRA	2.0009	FC3	-9.1708	BSP	12054	SGB	3497.7	R23	-.0627	R13	-.9321	LSA	1049.5	MSA	379.7	SSA	33.6
BDE	.4012	BRA	1.4835	BC3	3.2850	FSP	2017	SG1	3484.8	SG2	299.4	THA	1.33	EL1	944.2	EL2	240.7	ALF	171.34

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 19 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 494.623 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.606 GAL -1.85 AZL 88.71 HCA 156.37 SMA 199.21 ECC .25983 INC 1.2892 V1 30.141
RP 237.81 LAP .52 LOP 213.08 VP 21.211 GAP 10.16 AZP 91.18 TAL 351.02 TAP 147.39 RCA 147.45 APO 250.97 V2 23.106
RC 183.786 GL 12.12 GP 2.05 ZAL 101.67 ZAP 159.09 ETS 173.14 ZAE 160.89 ETE 7.12 ZAC 92.38 ETC 255.84 CLP 159.19

PLANETOCENTRIC CONIC

C3 12.947 VHL 3.598 DLA 19.53 RAL 165.05 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 6.053 DPA -1.95 RAP 192.57 ECC 1.2131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 49	2773.99	-28.09	79.93	25.92	93.76	16 29 3	2174.0	-27.27	71.36
90.00	9 13 21	4101.18	-3.15	166.47	20.37	61.84	10 21 42	3501.2	-6.89	159.78
100.00	17 16 25	2472.18	-29.42	57.60	25.80	95.52	17 57 37	1872.2	-28.35	48.96
100.00	10 22 27	3878.21	-1.97	149.43	19.72	60.17	11 27 5	3278.2	-5.93	142.87
110.00	18 51 3	2176.07	-32.82	34.57	25.26	100.16	19 27 20	1576.1	-31.07	25.78
110.00	11 4 17	3747.10	.93	137.67	17.91	55.83	12 6 44	3147.1	-3.56	131.46

DIFFERENTIAL CORRECTIONS
TDE .3424 TRA-1.4439 TC3 3.4105 BAU .5905
RDE -.1663 RRA -.0835 RC3 .0726 FAU .14675
FDE -.0024 FRA 2.0182 FC3-9.8130 BSP 12131
BDE .3807 BRA 1.4464 BC3 3.4112 FSP 2128

MID-COURSE EXECUTION ACCURACY
SGT 3503.3 SGR 304.5 SG3 677.6
RRT .3074 RRF -.3555 RTF -.9338
SGB 3516.5 R23 -.0699 R13 -.9339
SG1 3504.5 SG2 289.7 THA 1.54

ORBIT DETERMINATION ACCURACY
ST 915.7 SR 268.2 SS 546.3
CRT -.4615 CRS .1521 CST .8012
LSA 1029.5 MSA 384.5 SSA 33.2
EL1 924.6 EL2 235.6 ALF 171.76

LAUNCH DATE NOV 19 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 498.098 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.568 GAL -1.75 AZL 88.74 HCA 157.33 SMA 198.44 ECC .25677 INC 1.2633 V1 30.141
RP 237.48 LAP .49 LOP 214.04 VP 21.187 GAP 9.69 AZP 91.17 TAL 351.41 TAP 148.74 RCA 147.48 APO 249.39 V2 23.140
RC 186.049 GL 12.03 GP 2.19 ZAL 100.88 ZAP 158.30 ETS 173.01 ZAE 161.57 ETE 7.95 ZAC 92.55 ETC 255.83 CLP 158.41

PLANETOCENTRIC CONIC

C3 12.593 VHL 3.549 DLA 19.76 RAL 164.24 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 5.916 DPA -1.91 RAP 192.79 ECC 1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 4	2777.38	-28.10	80.18	24.74	93.63	16 23 21	2177.4	-27.30	71.60
90.00	9 12 38	4085.88	-3.64	165.61	19.27	61.90	10 20 44	3485.9	-7.37	158.92
100.00	17 10 55	2474.73	-29.44	57.79	24.62	95.43	17 52 10	1874.7	-28.38	49.15
100.00	10 21 28	3863.76	-2.46	148.63	18.62	60.20	11 25 52	3263.8	-6.41	142.07
110.00	18 46 4	2177.06	-32.83	34.64	24.08	100.12	19 22 21	1577.1	-31.08	25.86
110.00	11 2 49	3734.19	.44	137.00	16.81	55.82	12 5 3	3134.2	-4.05	130.79

DIFFERENTIAL CORRECTIONS
TDE .3392 TRA-1.3909 TC3 3.5880 BAU .6043
RDE -.1584 RRA -.0828 RC3 .0967 FAU .15303
FDE .0186 FRA 2.0266 FC-10.5208 BSP 11784
BDE .3744 BRA 1.3934 BC3 3.5893 FSP 2225

MID-COURSE EXECUTION ACCURACY
SGT 3532.5 SGR 300.6 SG3 711.6
RRT .3520 RRF -.4097 RTF -.9381
SGB 3545.3 R23 -.0826 R13 -.9383
SG1 3534.1 SG2 281.2 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 904.6 SR 259.3 SS 545.5
CRT -.4664 CRS .1901 CST .7741
LSA 1013.7 MSA 393.0 SSA 31.7
EL1 913.2 EL2 227.2 ALF 171.88

LAUNCH DATE NOV 19 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 501.592 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.531 GAL -1.66 AZL 88.76 HCA 158.29 SMA 197.71 ECC .25386 INC 1.2350 V1 30.141
RP 237.15 LAP .46 LOP 215.00 VP 21.166 GAP 9.22 AZP 91.15 TAL 351.79 TAP 150.09 RCA 147.52 APO 247.89 V2 23.174
RC 188.300 GL 11.91 GP 2.33 ZAL 100.11 ZAP 157.50 ETS 172.88 ZAE 162.27 ETE 8.90 ZAC 92.73 ETC 255.83 CLP 157.61

PLANETOCENTRIC CONIC

C3 12.260 VHL 3.501 DLA 19.95 RAL 163.42 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 5.783 DPA -1.85 RAP 193.00 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 41	2779.60	-28.11	80.34	23.57	93.55	16 18 1	2179.6	-27.32	71.76
90.00	9 11 32	4072.26	-4.07	164.85	18.18	61.95	10 19 25	3472.3	-7.80	158.14
100.00	17 5 46	2476.22	-29.45	57.90	23.45	95.37	17 47 2	1876.2	-28.40	49.26
100.00	10 20 9	3850.87	-2.90	147.92	17.53	60.24	11 24 19	3250.9	-6.84	141.35
110.00	18 41 20	2177.22	-32.83	34.66	22.91	100.11	19 17 37	1577.2	-31.09	25.87
110.00	11 1 4	3722.64	-.01	136.39	15.72	55.82	12 3 6	3122.6	-4.49	130.18

DIFFERENTIAL CORRECTIONS
TDE .3041 TRA-1.3738 TC3 3.6507 BAU .5987
RDE -.1505 RRA -.0823 RC3 .1251 FAU .15894
FDE .0509 FRA 2.0499 FC-11.2235 BSP 12286
BDE .3394 BRA 1.3763 BC3 3.6529 FSP 2360

MID-COURSE EXECUTION ACCURACY
SGT 3536.0 SGR 298.1 SG3 745.8
RRT .4211 RRF -.4741 RTF -.9365
SGB 3548.5 R23 -.0854 R13 -.9368
SG1 3538.2 SG2 270.2 THA 2.05

ORBIT DETERMINATION ACCURACY
ST 876.5 SR 250.1 SS 549.3
CRT -.4177 CRS .2442 CST .7728
LSA 989.3 MSA 390.9 SSA 32.6
EL1 883.2 EL2 225.5 ALF 172.73

LAUNCH DATE NOV 19 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 505.110 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.496 GAL -1.57 AZL 88.80 HCA 159.26 SMA 197.01 ECC .25107 INC 1.2044 V1 30.141
RP 236.81 LAP .43 LOP 215.96 VP 21.148 GAP 8.76 AZP 91.13 TAL 352.17 TAP 151.43 RCA 147.55 APO 246.47 V2 23.209
RC 190.540 GL 11.75 GP 2.49 ZAL 99.34 ZAP 156.67 ETS 172.72 ZAE 163.00 ETE 10.00 ZAC 92.92 ETC 255.82 CLP 156.79

PLANETOCENTRIC CONIC

C3 11.946 VHL 3.456 DLA 20.11 RAL 162.60 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 5.652 DPA -1.76 RAP 193.20 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 39	2780.61	-28.12	80.41	22.38	93.52	16 12 59	2180.6	-27.33	71.83
90.00	9 10 1	4060.30	-4.46	164.18	17.08	62.01	10 17 41	3460.3	-8.17	157.46
100.00	17 0 55	2476.63	-29.45	57.93	22.26	95.35	17 42 12	1876.6	-28.40	49.28
100.00	10 18 26	3839.52	-3.28	147.30	16.43	60.27	11 22 25	3239.5	-7.22	140.72
110.00	18 36 50	2176.52	-32.82	34.60	21.73	100.14	19 13 7	1576.5	-31.07	25.82
110.00	10 59 0	3712.38	-.40	135.86	14.63	55.82	12 0 52	3112.4	-4.88	129.64

DIFFERENTIAL CORRECTIONS
TDE .2884 TRA-1.3378 TC3 3.7695 BAU .6025
RDE -.1431 RRA -.0822 RC3 .1571 FAU .16547
FDE .0761 FRA 2.0639 FC-11.9917 BSP 12304
BDE .3219 BRA 1.3403 BC3 3.7728 FSP 2484

MID-COURSE EXECUTION ACCURACY
SGT 3549.0 SGR 298.5 SG3 782.4
RRT .4836 RRF -.5396 RTF -.9379
SGB 3561.5 R23 -.0955 R13 -.9382
SG1 3551.9 SG2 261.1 THA 2.34

ORBIT DETERMINATION ACCURACY
ST 858.3 SR 241.1 SS 550.9
CRT -.3976 CRS .2879 CST .7577
LSA 970.5 MSA 394.2 SSA 32.1
EL1 864.0 EL2 219.8 ALF 173.18

LAUNCH DATE NOV 19 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 508.650 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.462 GAL -1.48 AZL 88.83 HCA 160.23 SMA 196.35 ECC .24842 INC 1.1710 V1 30.141
RP 236.46 LAP .40 LOP 216.93 VP 21.133 GAP 8.30 AZP 91.10 TAL 352.54 TAP 152.77 RCA 147.57 APO 245.13 V2 23.244
RC 192.768 GL 11.55 GP 2.67 ZAL 98.59 ZAP 155.82 ETS 172.55 ZAE 163.76 ETE 11.28 ZAC 93.12 ETC 255.82 CLP 155.96

PLANETOCENTRIC CONIC

C3 11.650 VHL 3.413 DLA 20.22 RAL 161.77 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.525 DPA -1.65 RAP 193.39 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 3	2780.09	-28.11	80.37	21.19	93.53	16 8 23	2180.1	-27.33	71.80
90.00	9 7 59	4050.30	-4.78	163.61	15.97	62.06	10 15 30	3450.3	-8.48	156.89
100.00	16 56 28	2475.66	-29.45	57.86	21.07	95.39	17 37 43	1875.7	-28.39	49.22
100.00	10 16 16	3829.97	-3.60	146.77	15.32	60.31	11 20 6	3230.0	-7.53	140.19
110.00	18 32 38	2174.75	-32.80	34.47	20.53	100.22	19 8 53	1574.7	-31.04	25.69
110.00	10 56 34	3703.64	-.73	135.40	13.53	55.82	11 58 18	3103.6	-5.21	129.18

DIFFERENTIAL CORRECTIONS
TDE .2721 TRA-1.3024 TC3 3.8767 BAU .6046
RDE -.1358 RRA -.0825 RC3 .1936 FAU .17217
FDE .1016 FRA 2.0774 FC-12.7940 BSP 12359
BDE .3041 BRA 1.3050 BC3 3.8815 FSP 2618

MID-COURSE EXECUTION ACCURACY
SGT 3555.3 SGR 302.0 SG3 820.2
RRT .5489 RRF -.6073 RTF -.9390
SGB 3568.1 R23 -.1068 R13 -.9394
SG1 3559.1 SG2 252.2 THA 2.68

ORBIT DETERMINATION ACCURACY
ST 838.7 SR 232.3 SS 552.7
CRT -.3741 CRS .3320 CST .7436
LSA 951.1 MSA 396.7 SSA 31.6
EL1 843.5 EL2 214.2 ALF 173.68

LAUNCH DATE NOV 19 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 512.211 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.430 GAL -1.40 AZL 88.87 HCA 161.20 SMA 195.73 ECC .24589 INC 1.1336 V1 30.141
RP 236.12 LAP .37 LOP 217.90 VP 21.120 GAP 7.85 AZP 91.07 TAL 352.90 TAP 154.10 RCA 147.60 APO 243.85 V2 23.279
RC 194.983 GL 11.31 GP 2.87 ZAL 97.84 ZAP 154.94 ETS 172.35 ZAE 164.54 ETE 12.79 ZAC 93.34 ETC 255.81 CLP 155.09

PLANETOCENTRIC CONIC

C3 11.371 VHL 3.372 DLA 20.28 RAL 160.93 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 5.401 DPA -1.51 RAP 193.57 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 58	2777.78	-28.10	80.20	19.99	93.62	16 4 16	2177.8	-27.31	71.63
90.00	9 5 23	4042.52	-5.02	163.18	14.84	62.10	10 12 46	3442.5	-8.72	156.45
100.00	16 52 27	2473.09	-29.43	57.67	19.87	95.49	17 33 40	1873.1	-28.36	49.03
100.00	10 13 35	3822.44	-3.86	146.36	14.20	60.33	11 17 18	3222.4	-7.78	139.76
110.00	18 28 47	2171.70	-32.76	34.24	19.32	100.35	19 4 59	1571.7	-30.99	25.47
110.00	10 53 45	3696.59	-1.00	135.04	12.42	55.83	11 55 21	3096.6	-5.48	128.81

DIFFERENTIAL CORRECTIONS
TDE .2590 TRA-1.2668 TC3 3.9861 BAU .6070
RDE -.1287 RRA -.0832 RC3 .2357 FAU .17937
FDE .1214 FRA 2.0871 FC-13.6561 BSP 12386
BDE .2893 BRA 1.2695 BC3 3.9931 FSP 2754

MID-COURSE EXECUTION ACCURACY
SGT 3561.8 SGR 309.5 SG3 860.4
RRT .6138 RRF -.6744 RTF -.9401
SGB 3575.2 R23 -.1198 R13 -.9406
SG1 3566.9 SG2 244.0 THA 3.07

ORBIT DETERMINATION ACCURACY
ST 821.0 SR 223.4 SS 553.1
CRT -.3531 CRS .3689 CST .7318
LSA 933.4 MSA 397.2 SSA 31.2
EL1 825.1 EL2 208.0 ALF 174.14

LAUNCH DATE NOV 19 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 515.791 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.399 GAL -1.32 AZL 88.91 HCA 162.17 SMA 195.13 ECC .24348 INC 1.0926 V1 30.141
RP 235.77 LAP .33 LOP 218.88 VP 21.111 GAP 7.41 AZP 91.04 TAL 353.26 TAP 155.43 RCA 147.62 APO 242.64 V2 23.315
RC 197.185 GL 11.02 GP 3.09 ZAL 97.11 ZAP 154.04 ETS 172.14 ZAE 165.33 ETE 14.57 ZAC 93.58 ETC 255.81 CLP 154.21

PLANETOCENTRIC CONIC

C3 11.107 VHL 3.333 DLA 20.29 RAL 160.09 RAD 6567.4 VEL 11.511 PTH 2.00 VHP 5.280 DPA -1.35 RAP 193.75 ECC 1.1828

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 28	2773.34	-28.08	79.88	18.77	93.78	16 0 42	2173.3	-27.26	71.31
90.00	9 2 8	4037.24	-5.19	162.88	13.71	62.12	10 9 25	3437.2	-8.88	156.14
100.00	16 48 59	2468.61	-29.40	57.34	18.65	95.66	17 30 7	1868.6	-28.31	48.71
100.00	10 10 19	3817.21	-4.03	146.07	13.07	60.36	11 13 56	3217.2	-7.95	139.47
110.00	18 25 20	2167.16	-32.71	33.90	18.10	100.54	19 1 27	1567.2	-30.91	25.14
110.00	10 50 27	3691.43	-1.20	134.77	11.30	55.84	11 51 58	3091.4	-5.67	128.54

DIFFERENTIAL CORRECTIONS
TDE .2473 TRA-1.2327 TC3 4.0838 BAU .6079
RDE -.1218 RRA -.0843 RC3 .2839 FAU .18675
FDE .1384 FRA 2.0974 FC-14.5562 BSP 12412
BDE .2757 BRA 1.2356 BC3 4.0936 FSP 2900

MID-COURSE EXECUTION ACCURACY
SGT 3563.0 SGR 321.7 SG3 901.9
RRT .6761 RRF -.7383 RTF -.9409
SGB 3577.5 R23 -.1348 R13 -.9414
SG1 3569.7 SG2 236.6 THA 3.51

ORBIT DETERMINATION ACCURACY
ST 804.3 SR 214.5 SS 553.3
CRT -.3312 CRS .4032 CST .7220
LSA 917.0 MSA 396.5 SSA 30.8
EL1 807.6 EL2 201.6 ALF 174.61

LAUNCH DATE NOV 19 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 519.390 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.369 GAL -1.24 AZL 88.95 HCA 163.15 SMA 194.57 ECC .24118 INC 1.0462 V1 30.141
RP 235.42 LAP .30 LOP 219.85 VP 21.104 GAP 6.97 AZP 91.00 TAL 353.60 TAP 156.75 RCA 147.64 APO 241.50 V2 23.351
RC 199.372 GL 10.66 GP 3.34 ZAL 96.40 ZAP 153.11 ETS 171.89 ZAE 166.13 ETE 16.72 ZAC 93.83 ETC 255.81 CLP 153.30

PLANETOCENTRIC CONIC

C3 10.857 VHL 3.295 DLA 20.24 RAL 159.23 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 5.162 DPA -1.15 RAP 193.91 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 40	2766.42	-28.05	79.38	17.53	94.03	15 57 46	2166.4	-27.20	70.82
90.00	8 58 6	4034.82	-5.27	162.74	12.55	62.14	10 5 21	3434.8	-8.96	156.01
100.00	16 46 6	2461.91	-29.35	56.85	17.40	95.91	17 27 8	1861.9	-28.23	48.23
100.00	10 6 21	3814.57	-4.12	145.92	11.92	60.37	11 9 55	3214.6	-8.04	139.32
110.00	18 22 20	2160.84	-32.63	33.42	16.84	100.81	18 58 21	1560.8	-30.79	24.68
110.00	10 46 36	3688.40	-1.32	134.61	10.17	55.84	11 48 5	3088.4	-5.79	128.38

DIFFERENTIAL CORRECTIONS
TDE .2373 TRA-1.1970 TC3 4.1838 BAU .6093
RDE -.1149 RRA -.0858 RC3 .3400 FAU .19468
FDE .1491 FRA 2.1013 FC-15.5240 BSP 12408
BDE .2637 BRA 1.2000 BC3 4.1976 FSP 3045

MID-COURSE EXECUTION ACCURACY
SGT 3562.7 SGR 339.7 SG3 946.0
RRT .7336 RRF -.7965 RTF -.9418
SGB 3578.9 R23 -.1512 R13 -.9425
SG1 3571.5 SG2 230.3 THA 4.02

ORBIT DETERMINATION ACCURACY
ST 787.4 SR 205.6 SS 551.0
CRT -.3100 CRS .4315 CST .7153
LSA 900.3 MSA 392.9 SSA 30.5
EL1 790.1 EL2 194.8 ALF 175.07

LAUNCH DATE NOV 19 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 523.007 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.341	GAL	-1.17	AZL	89.00	HCA	164.13	SMA	194.04	ECC	.23899	INC	.9954
RP	235.06	LAP	.27	LOP	220.83	VP	21.100	GAP	6.54	AZP	90.96	TAL	353.94	TAP	158.07	RCA	147.66	APO	240.41
RC	201.544	GL	10.24	GP	3.62	ZAL	95.70	ZAP	152.15	ETS	171.61	ZAE	166.93	ETE	19.31	ZAC	94.12	ETC	255.80

V1 30.141 V2 23.387 CLP 152.37

PLANETOCENTRIC CONIC

C3 10.620 VHL 3.259 DLA 20.11 RAL 158.36 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.047 DPA -.91 RAP 194.07 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 38	2756.60	-28.00	78.66	16.27	94.39	15 55 35	2156.6	-27.10	70.11
90.00	8 53 11	4035.63	-5.24	162.79	11.37	62.13	10 0 27	3435.6	-8.93	156.05
100.00	16 43 55	2452.59	-29.29	56.16	16.13	96.27	17 24 48	1852.6	-28.11	47.56
100.00	10 1 36	3814.88	-4.11	145.94	10.75	60.37	11 5 11	3214.9	-8.03	139.34
110.00	18 19 52	2152.43	-32.52	32.79	15.56	101.17	18 55 44	1552.4	-30.64	24.08
110.00	10 42 9	3687.80	-1.34	134.58	9.02	55.84	11 43 36	3087.8	-5.81	128.35

DIFFERENTIAL CORRECTIONS

TDE	.2281	TRA	-1.1625	TC3	4.2657	BAU	.6083
RDE	-.1082	RRA	-.0879	RC3	.4041	FAU	.20257
FDE	.1593	FRA	2.1078	FC	-16.5138	BSP	12412
BDE	.2525	BRA	1.1658	BC3	4.2848	FSP	3210

MID-COURSE EXECUTION ACCURACY

SGT	3553.5	SGR	364.3	SG3	990.8		
RRT	.7835	RRF	-.8469	RTF	.9424		
SGB	3572.2	R23	-.1699	R13	-.9432		
SG1	3565.0	SG2	225.6	THA	4.61		

ORBIT DETERMINATION ACCURACY

ST	770.8	SR	196.8	SS	548.9
CRT	-.2862	CRS	.4616	CST	.7087
LSA	884.1	MSA	389.5	SSA	30.0
EL1	773.0	EL2	188.0	ALF	175.56

LAUNCH DATE NOV 19 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 526.641 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.314	GAL	-1.10	AZL	89.06	HCA	165.11	SMA	193.53	ECC	.23690	INC	.9368
RP	234.71	LAP	.24	LOP	221.81	VP	21.098	GAP	6.12	AZP	90.91	TAL	354.27	TAP	159.38	RCA	147.68	APO	239.38
RC	203.699	GL	9.73	GP	3.95	ZAL	95.02	ZAP	151.16	ETS	171.30	ZAE	167.72	ETE	22.47	ZAC	94.44	ETC	255.79

V1 30.141 V2 23.424 CLP 151.40

PLANETOCENTRIC CONIC

C3 10.394 VHL 3.224 DLA 19.90 RAL 157.48 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.935 DPA -.62 RAP 194.22 ECC 1.1711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 31	2743.38	-27.93	77.70	14.97	94.86	15 54 14	2143.4	-26.96	69.17
90.00	8 47 15	4040.15	-5.10	163.04	10.16	62.11	9 54 36	3440.2	-8.79	156.31
100.00	16 42 32	2440.20	-29.19	55.25	14.83	96.74	17 23 12	1840.2	-27.95	46.67
100.00	9 55 55	3818.57	-3.99	146.14	9.54	60.35	10 59 34	3218.6	-7.91	139.55
110.00	18 18 0	2141.54	-32.37	31.97	14.23	101.64	18 53 41	1541.5	-30.43	23.29
110.00	10 36 57	3689.99	-1.25	134.69	7.84	55.84	11 38 27	3090.0	-5.73	128.46

DIFFERENTIAL CORRECTIONS

TDE	.2228	TRA	-1.1273	TC3	4.3445	BAU	.6074
RDE	-.1013	RRA	-.0905	RC3	.4793	FAU	.21101
FDE	.1551	FRA	2.1059	FC	-17.5753	BSP	12367
BDE	.2447	BRA	1.1309	BC3	4.3709	FSP	3369

MID-COURSE EXECUTION ACCURACY

SGT	3541.7	SGR	396.5	SG3	1038.0		
RRT	.8253	RRF	-.8886	RTF	-.9428		
SGB	3563.8	R23	-.1902	R13	-.9439		
SG1	3556.9	SG2	223.0	THA	5.30		

ORBIT DETERMINATION ACCURACY

ST	756.6	SR	187.5	SS	542.2
CRT	-.2660	CRS	.4784	CST	.7095
LSA	869.4	MSA	380.5	SSA	29.8
EL1	758.3	EL2	180.3	ALF	176.00

LAUNCH DATE NOV 19 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 530.293 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.289	GAL	-1.03	AZL	89.13	HCA	166.10	SMA	193.05	ECC	.23492	INC	.8705
RP	234.35	LAP	.21	LOP	222.80	VP	21.099	GAP	5.70	AZP	90.85	TAL	354.58	TAP	160.68	RCA	147.70	APO	238.40
RC	205.837	GL	9.12	GP	4.32	ZAL	94.35	ZAP	150.13	ETS	170.94	ZAE	168.48	ETE	26.35	ZAC	94.81	ETC	255.79

V1 30.141 V2 23.461 CLP 150.41

PLANETOCENTRIC CONIC

C3 10.179 VHL 3.190 DLA 19.59 RAL 156.57 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.826 DPA -.28 RAP 194.37 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 25	2726.18	-27.83	76.46	13.63	95.48	15 53 51	2126.2	-26.77	67.95
90.00	8 40 8	4048.95	-4.82	163.54	8.90	62.06	9 47 37	3448.9	-8.52	156.81
100.00	16 42 4	2424.18	-29.06	54.08	13.47	97.34	17 22 28	1824.2	-27.74	45.53
100.00	9 49 10	3826.18	-3.73	146.56	8.30	60.32	10 52 56	3226.2	-7.66	139.97
110.00	18 16 50	2127.70	-32.18	30.94	12.84	102.22	18 52 17	1527.7	-30.16	22.31
110.00	10 30 54	3695.43	-1.05	134.98	6.63	55.83	11 32 29	3095.4	-5.52	128.75

DIFFERENTIAL CORRECTIONS

TDE	.2206	TRA	-1.0922	TC3	4.4142	BAU	.6056
RDE	-.0943	RRA	-.0938	RC3	.5671	FAU	.21965
FDE	.1410	FRA	2.1019	FC	-18.6812	BSP	12330
BDE	.2399	BRA	1.0962	BC3	4.4505	FSP	3542

MID-COURSE EXECUTION ACCURACY

SGT	3524.9	SGR	437.7	SG3	1086.8		
RRT	.8585	RRF	-.9214	RTF	-.9432		
SGB	3552.0	R23	-.2116	R13	-.9446		
SG1	3545.0	SG2	223.2	THA	6.11		

ORBIT DETERMINATION ACCURACY

ST	744.4	SR	177.9	SS	533.5
CRT	-.2464	CRS	.4887	CST	.7147
LSA	856.5	MSA	368.7	SSA	29.7
EL1	745.8	EL2	172.1	ALF	176.44

LAUNCH DATE NOV 19 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 533.961 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.264	GAL	-.96	AZL	89.21	HCA	167.08	SMA	192.59	ECC	.23304	INC	.7935
RP	233.98	LAP	.18	LOP	223.79	VP	21.102	GAP	5.29	AZP	90.77	TAL	354.89	TAP	161.98	RCA	147.71	APO	237.47
RC	207.958	GL	8.39	GP	4.75	ZAL	93.70	ZAP	149.06	ETS	170.52	ZAE	169.18	ETE	31.13	ZAC	95.22	ETC	255.78

V1 30.141 V2 23.498 CLP 149.40

PLANETOCENTRIC CONIC

C3 9.974 VHL 3.158 DLA 19.15 RAL 155.64 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.721 DPA .13 RAP 194.52 ECC 1.1641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 29	2704.28	-27.67	74.87	12.22	96.26	15 54 33	2104.3	-26.52	66.39
90.00	8 31 38	4062.71	-4.38	164.31	7.60	62.00	9 39 21	3462.7	-8.09	157.60
100.00	16 42 39	2403.86	-28.87	52.60	12.05	98.10	17 22 43	1803.9	-27.45	44.09
100.00	9 41 9	3838.37	-3.32	147.24	7.01	60.28	10 45 8	3238.4	-7.25	140.66
110.00	18 16 29	2110.30	-31.92	29.65	11.39	102.94	18 51 39	1510.3	-29.81	21.07
110.00	10 23 49	3704.70	-.69	135.46	5.37	55.82	11 25 33	3104.7	-5.17	129.24

DIFFERENTIAL CORRECTIONS

TDE	.2233	TRA	-1.0556	TC3	4.4806	BAU	.6041
RDE	-.0865	RRA	-.0976	RC3	.6713	FAU	.22879
FDE	.1065	FRA	2.0871	FC	-19.8592	BSP	12265
BDE	.2395	BRA	1.0601	BC3	4.5306	FSP	3716

MID-COURSE EXECUTION ACCURACY

SGT	3504.7	SGR	489.5	SG3	1137.9		
RRT	.8840	RRF	-.9464	RTF	-.9435		
SGB	3538.7	R23	-.2328	R13	-.9453		
SG1	3531.4	SG2	227.1	THA	7.07		

ORBIT DETERMINATION ACCURACY

ST	735.7	SR	167.2	SS	520.0
CRT	-.2300	CRS	.4821	CST	.7304
LSA	846.3	MSA	349.8	SSA	29.9
EL1	736.7	EL2	162.5	ALF	176.85

LAUNCH DATE NOV 19 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 537.644 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.241	GAL	-.90	AZL	89.30	HCA	168.08	SMA	192.16	ECC	.23124	INC	.7033	V1	30.141
RP	233.62	LAP	.15	LOP	224.78	VP	21.107	GAP	4.89	AZP	90.69	TAL	355.19	TAP	163.27	RCA	147.72	APO	236.60	V2	23.536
RC	210.060	GL	7.51	GP	5.26	ZAL	93.07	ZAP	147.96	ETS	170.03	ZAE	169.78	ETE	36.99	ZAC	95.70	ETC	255.77	CLP	148.35

PLANETOCENTRIC CONIC

C3	9.778	VHL	3.127	DLA	18.56	RAL	154.67	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	4.620	DPA	.61	RAP	194.68	ECC	1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 55	2676.79	-27.45	72.89	10.73	97.23	15 56 32	2076.8	-26.17	64.46
90.00	8 21 29	4082.34	-3.75	165.41	6.24	61.91	9 29 32	3482.3	-7.48	158.72
100.00	16 44 28	2378.36	-28.61	50.75	10.55	99.04	17 24 6	1778.4	-27.07	42.29
100.00	9 31 38	3856.00	-2.73	148.20	5.67	60.22	10 35 54	3256.0	-6.67	141.64
110.00	18 17 5	2088.56	-31.58	28.05	9.85	103.83	18 51 54	1488.6	-29.35	19.55
110.00	10 15 30	3718.56	-.16	136.18	4.07	55.82	11 17 28	3118.6	-4.65	129.97

DIFFERENTIAL CORRECTIONS

TDE	.2281	TRA	-1.0198	TC3	4.5364	BAU	.6021	SGT	3479.8	SGR	554.0
RDE	-.0780	RRA	-.1023	RC3	.7954	FAU	.23823	RRT	.9032	RRF	-.9646
FDE	.0532	FRA	2.0656	FC	-21.0925	BSP	12176	SGB	3523.6	R23	-.2526
BDE	.2411	BRA	1.0249	BC3	4.6056	FSP	3892	SG1	3515.7	SG2	235.4

MID-COURSE EXECUTION ACCURACY

SG3	1190.8	RTF	-.9436	THA	8.22
R13	-.9460				

ORBIT DETERMINATION ACCURACY

ST	729.1	SR	155.4	SS	505.0
CRT	-.2062	CRS	.4622	CST	.7601
LSA	840.0	MSA	323.0	SSA	30.7
EL1	729.9	EL2	151.9	ALF	177.37

LAUNCH DATE NOV 19 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 541.343 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.219	GAL	-.84	AZL	89.40	HCA	169.07	SMA	191.75	ECC	.22954	INC	.5995	V1	30.141
RP	233.25	LAP	.11	LOP	225.77	VP	21.115	GAP	4.49	AZP	90.59	TAL	355.48	TAP	164.55	RCA	147.74	APO	235.76	V2	23.574
RC	212.144	GL	6.44	GP	5.87	ZAL	92.46	ZAP	146.80	ETS	169.46	ZAE	170.23	ETE	44.07	ZAC	96.27	ETC	255.75	CLP	147.27

PLANETOCENTRIC CONIC

C3	9.592	VHL	3.097	DLA	17.78	RAL	153.66	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	4.522	DPA	1.20	RAP	194.85	ECC	1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 57	2642.53	-27.14	70.43	9.14	98.42	15 59 59	2042.5	-25.69	62.06
90.00	8 9 23	4109.00	-2.90	166.90	4.81	61.82	9 17 52	3509.0	-6.64	160.23
100.00	16 47 44	2346.56	-28.25	48.45	8.94	100.20	17 26 50	1746.6	-26.55	40.06
100.00	9 20 17	3880.20	-1.91	149.53	4.26	60.16	10 24 57	3280.2	-5.86	142.98
110.00	18 18 51	2061.48	-31.12	26.07	8.20	104.92	18 53 12	1461.5	-28.76	17.66
110.00	10 5 39	3738.05	.58	137.20	2.70	55.82	11 7 58	3138.1	-3.90	130.99

DIFFERENTIAL CORRECTIONS

TDE	.2343	TRA	-.9872	TC3	4.5615	BAU	.5973	SGT	3442.3	SGR	633.2
RDE	-.0685	RRA	-.1084	RC3	.9421	FAU	.24720	RRT	.9166	RRF	-.9773
FDE	-.0144	FRA	2.0471	FC	-22.3127	BSP	12220	SGB	3500.1	R23	-.2708
BDE	.2441	BRA	.9932	BC3	4.6577	FSP	4110	SG1	3491.2	SG2	249.7

MID-COURSE EXECUTION ACCURACY

SG3	1242.6	RTF	-.9431	THA	9.62
R13	-.9464				

ORBIT DETERMINATION ACCURACY

ST	725.3	SR	142.6	SS	493.6
CRT	-.1649	CRS	.4399	CST	.8001
LSA	839.2	MSA	291.2	SSA	31.7
EL1	725.7	EL2	140.6	ALF	178.07

LAUNCH DATE NOV 19 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 545.057 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.197	GAL	-.79	AZL	89.53	HCA	170.07	SMA	191.36	ECC	.22792	INC	.4722	V1	30.141
RP	232.88	LAP	.08	LOP	226.77	VP	21.124	GAP	4.10	AZP	90.46	TAL	355.75	TAP	165.82	RCA	147.75	APO	234.98	V2	23.612
RC	214.210	GL	5.11	GP	6.59	ZAL	91.87	ZAP	145.59	ETS	168.78	ZAE	170.43	ETE	52.34	ZAC	96.96	ETC	255.73	CLP	146.15

PLANETOCENTRIC CONIC

C3	9.416	VHL	3.068	DLA	16.76	RAL	152.58	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	4.429	DPA	1.91	RAP	195.05	ECC	1.1550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 51	2599.99	-26.67	67.40	7.42	99.87	16 5 11	2000.0	-25.04	59.12
90.00	7 54 53	4144.28	-1.76	168.87	3.29	61.73	9 3 57	3544.3	-5.53	162.22
100.00	16 52 43	2306.97	-27.74	45.62	7.19	101.60	17 31 10	1707.0	-25.86	37.33
100.00	9 6 42	3912.54	-.81	151.31	2.76	60.12	10 11 55	3312.5	-4.78	144.77
110.00	18 21 59	2027.67	-30.50	23.63	6.41	106.24	18 55 47	1427.7	-27.97	15.34
110.00	9 53 55	3764.60	1.60	138.58	1.26	55.85	10 56 40	3164.6	-2.89	132.38

DIFFERENTIAL CORRECTIONS

TDE	.2491	TRA	-.9516	TC3	4.5844	BAU	.5941	SGT	3402.3	SGR	732.0
RDE	-.0561	RRA	-.1150	RC3	1.1225	FAU	.25677	RRT	.9258	RRF	-.9860
FDE	-.1300	FRA	2.0053	FC	-23.6090	BSP	12097	SGB	3480.1	R23	-.2850
BDE	.2553	BRA	.9585	BC3	4.7199	FSP	4295	SG1	3469.5	SG2	271.3

MID-COURSE EXECUTION ACCURACY

SG3	1296.8	RTF	-.9426	THA	11.34
R13	-.9472				

ORBIT DETERMINATION ACCURACY

ST	730.3	SR	126.2	SS	487.6
CRT	-.1031	CRS	.3888	CST	.8624
LSA	852.3	MSA	243.8	SSA	34.5
EL1	730.5	EL2	125.5	ALF	178.95

LAUNCH DATE NOV 19 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 548.785 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.177	GAL	-.73	AZL	89.68	HCA	171.07	SMA	190.99	ECC	.22638	INC	.3152	V1	30.141
RP	232.51	LAP	.05	LOP	227.77	VP	21.136	GAP	3.71	AZP	90.31	TAL	356.02	TAP	167.09	RCA	147.76	APO	234.23	V2	23.650
RC	216.258	GL	3.45	GP	7.49	ZAL	91.30	ZAP	144.31	ETS	167.95	ZAE	170.31	ETE	61.47	ZAC	97.80	ETC	255.71	CLP	145.00

PLANETOCENTRIC CONIC

C3	9.253	VHL	3.042	DLA	15.41	RAL	151.42	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	4.340	DPA	2.79	RAP	195.28	ECC	1.1523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 3	2546.99	-26.00	63.67	5.52	101.63	16 12 30	1947.0	-24.14	55.50
90.00	7 37 23	4190.49	-.27	171.45	1.67	61.68	8 47 13	3590.5	-4.05	164.81
100.00	16 59 49	2257.47	-27.01	42.12	5.26	103.31	17 37 27	1657.5	-24.91	33.95
100.00	8 50 18	3955.24	.64	153.65	1.17	60.11	9 56 13	3355.2	-3.34	147.13
110.00	18 26 50	1985.20	-29.65	20.61	4.43	107.84	18 59 55	1385.2	-26.93	12.48
110.00	9 39 46	3800.27	2.96	140.45	359.72	55.93	10 43 6	3200.3	-1.53	134.24

DIFFERENTIAL CORRECTIONS

TDE	.2721	TRA	-.9148	TC3	4.5915	BAU	.5919	SGT	3355.6	SGR	856.2
RDE	-.0393	RRA	-.1226	RC3	1.3456	FAU	.26644	RRT	.9318	RRF	-.9917
FDE	-.3012	FRA	1.9422	FC	-24.9299	BSP	12036	SGB	3463.1	R23	-.2947
BDE	.2749	BRA	.9230	BC3	4.7846	FSP	4486	SG1	3449.9	SG2	302.4

MID-COURSE EXECUTION ACCURACY

SG3	1351.7	RTF	-.9417	THA	13.48
R13	-.9481				

ORBIT DETERMINATION ACCURACY

ST	746.5	SR	106.1	SS	506.6
CRT	.0332	CRS	.3556	CST	.9315
LSA	888.9	MSA	182.7	SSA	40.4
EL1	746.5	EL2	106.0	ALF	.28

LAUNCH DATE NOV 19 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 552.529 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.158	GAL	-.68	AZL	89.88	HCA	172.07	SMA	190.65	ECC	.22492	INC	.1179	V1	30.141
RP	232.14	LAP	.02	LOP	228.78	VP	21.149	GAP	3.33	AZP	90.12	TAL	356.28	TAP	168.35	RCA	147.77	APO	233.53	V2	23.689
RC	218.287	GL	1.33	GP	8.61	ZAL	90.75	ZAP	142.93	ETS	166.93	ZAE	169.75	ETE	70.83	ZAC	98.85	ETC	255.67	CLP	143.81

PLANETOCENTRIC CONIC

C3	9.110	VHL	3.018	DLA	13.61	RAL	150.12	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	4.258	DPA	3.88	RAP	195.57	ECC	1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 4	2480.46	-25.01	59.05	3.38	103.74	16 22 25	1880.5	-22.87	51.03
90.00	7 16 0	4250.98	1.68	174.82	359.94	61.73	8 26 51	3651.0	-2.11	168.20
100.00	17 9 34	2195.08	-25.96	37.79	3.11	105.36	17 46 9	1595.1	-23.60	29.78
100.00	8 30 12	4011.59	2.55	156.74	359.46	60.21	9 37 3	3411.6	-1.44	150.22
110.00	18 33 51	1931.33	-28.47	16.86	2.22	109.77	19 6 2	1331.3	-25.51	8.94
110.00	9 22 24	3848.11	4.78	142.95	358.07	56.11	10 26 32	3248.1	.30	136.74

DIFFERENTIAL CORRECTIONS

TDE	.3184	TRA	-.8598	TC3	4.6658	BAU	.6021
RDE	-.0141	RRA	-.1294	RC3	1.6333	FAU	.27733
FDE	-.5642	FRA	1.8246	FC-	26.3555	BSP	11599
BDE	.3187	BRA	.8695	BC3	4.9435	FSP	4618

MID-COURSE EXECUTION ACCURACY

SGT	3334.4	SGR	1018.2	SG3	1411.7		
RRT	.9382	RRF	-.9953	RTF	-.9442		
SGB	3486.4	R23	-.2894	R13	-.9528		
SG1	3469.9	SG2	338.6	THA	16.14		

ORBIT DETERMINATION ACCURACY

ST	791.3	SR	85.7	SS	583.8
CRT	.3616	CRS	.4892	CST	.9766
LSA	978.7	MSA	117.8	SSA	50.6
EL1	791.9	EL2	79.8	ALF	2.26

LAUNCH DATE NOV 19 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 556.284 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.140	GAL	-.64	AZL	90.13	HCA	173.08	SMA	190.32	ECC	.22354	INC	.1030	V1	30.141
RP	231.76	LAP	-.02	LOP	229.78	VP	21.164	GAP	2.96	AZP	89.87	TAL	356.52	TAP	169.60	RCA	147.77	APO	232.86	V2	23.728
RC	220.299	GL	-1.45	GP	10.05	ZAL	90.23	ZAP	141.44	ETS	165.65	ZAE	168.64	ETE	79.55	ZAC	100.20	ETC	255.61	CLP	142.57

PLANETOCENTRIC CONIC

C3	9.002	VHL	3.000	DLA	11.17	RAL	148.64	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	4.185	DPA	5.29	RAP	195.96	ECC	1.1481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 53	2395.54	-23.51	53.28	.97	106.26	16 35 48	1795.5	-21.06	45.47
90.00	6 49 23	4331.30	4.26	179.32	358.10	61.98	8 1 35	3731.3	.48	172.68
100.00	17 22 50	2115.09	-24.41	32.35	.67	107.82	17 58 5	1515.1	-21.74	24.57
100.00	8 5 7	4086.99	5.09	160.90	357.64	60.50	9 13 14	3487.0	1.12	154.36
110.00	18 43 48	1861.73	-26.77	12.16	359.72	112.09	19 14 50	1261.7	-23.54	4.49
110.00	9 0 39	3913.10	7.24	146.38	356.32	56.50	10 5 52	3313.1	2.78	140.13

DIFFERENTIAL CORRECTIONS

TDE	.3642	TRA	-.8239	TC3	4.6229	BAU	.6060
RDE	.0244	RRA	-.1373	RC3	1.9955	FAU	.28694
FDE	-.9280	FRA	1.6875	FC-	27.5961	BSP	11572
BDE	.3651	BRA	.8352	BC3	5.0352	FSP	4752

MID-COURSE EXECUTION ACCURACY

SGT	3278.8	SGR	1227.8	SG3	1466.6		
RRT	.9397	RRF	-.9975	RTF	-.9421		
SGB	3501.2	R23	-.2895	R13	-.9547		
SG1	3478.7	SG2	395.9	THA	19.65		

ORBIT DETERMINATION ACCURACY

ST	849.8	SR	99.5	SS	754.9
CRT	.8753	CRS	.8643	CST	.9853
LSA	1135.9	MSA	96.9	SSA	47.8
EL1	854.3	EL2	47.8	ALF	5.87

LAUNCH DATE NOV 19 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 560.051 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.123	GAL	-.59	AZL	90.47	HCA	174.09	SMA	190.00	ECC	.22223	INC	.4599	V1	30.141
RP	231.38	LAP	-.05	LOP	230.79	VP	21.181	GAP	2.60	AZP	89.53	TAL	356.75	TAP	170.84	RCA	147.78	APO	232.23	V2	23.768
RC	222.292	GL	-5.22	GP	11.97	ZAL	89.73	ZAP	139.75	ETS	163.98	ZAE	166.84	ETE	86.94	ZAC	102.02	ETC	255.52	CLP	141.28

PLANETOCENTRIC CONIC

C3	8.962	VHL	2.994	DLA	7.80	RAL	146.88	RAD	6567.3	VEL	11.417	PTH	1.98	VHP	4.125	DPA	7.15	RAP	196.51	ECC	1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 54	2284.65	-21.20	45.97	358.21	109.22	16 53 59	1684.6	-18.39	38.43
90.00	6 15 18	4440.51	7.72	185.48	356.17	62.67	7 29 19	3840.5	4.00	178.78
100.00	17 41 0	2010.18	-22.05	25.45	357.89	110.71	18 14 30	1410.2	-19.03	17.96
100.00	7 32 54	4190.21	8.51	166.65	355.75	61.24	8 42 44	3590.2	4.61	160.04
110.00	18 57 49	1769.79	-24.28	6.18	356.87	114.84	19 27 19	1169.8	-20.73	358.84
110.00	8 32 34	4003.36	10.59	151.22	354.49	57.31	9 39 17	3403.4	6.21	144.87

DIFFERENTIAL CORRECTIONS

TDE	.4265	TRA	-.7817	TC3	4.5339	BAU	.6180
RDE	.0869	RRA	-.1439	RC3	2.4594	FAU	.29495
FDE	-1.4311	FRA	1.4911	FC-	28.4914	BSP	11748
BDE	.4353	BRA	.7948	BC3	5.1580	FSP	4891

MID-COURSE EXECUTION ACCURACY

SGT	3211.8	SGR	1507.8	SG3	1513.4		
RRT	.9402	RRF	-.9987	RTF	-.9402		
SGB	3548.1	R23	-.2798	R13	-.9587		
SG1	3517.0	SG2	469.1	THA	24.27		

ORBIT DETERMINATION ACCURACY

ST	937.1	SR	191.3	SS	1039.8
CRT	.9885	CRS	.9863	CST	.9763
LSA	1404.4	MSA	151.7	SSA	21.8
EL1	956.0	EL2	28.4	ALF	11.42

LAUNCH DATE NOV 19 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 563.831 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.106	GAL	-.55	AZL	90.95	HCA	175.10	SMA	189.71	ECC	.22099	INC	.9423	V1	30.141
RP	231.01	LAP	-.08	LOP	231.81	VP	21.200	GAP	2.24	AZP	89.05	TAL	356.96	TAP	172.07	RCA	147.79	APO	231.63	V2	23.807
RC	224.266	GL	-10.52	GP	14.64	ZAL	89.27	ZAP	137.76	ETS	161.75	ZAE	164.13	ETE	92.60	ZAC	104.54	ETC	255.37	CLP	139.92

PLANETOCENTRIC CONIC

C3	9.076	VHL	3.013	DLA	2.95	RAL	144.66	RAD	6567.3	VEL	11.422	PTH	1.98	VHP	4.088	DPA	9.72	RAP	197.33	ECC	1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 52	2134.61	-17.55	36.48	355.11	112.58	17 19 27	1534.6	-14.34	29.28
90.00	5 29 41	4595.38	12.44	194.41	354.32	64.35	6 46 16	3995.4	8.88	187.54
100.00	18 6 35	1867.79	-18.35	16.50	354.75	114.02	18 37 43	1267.8	-14.95	9.36
100.00	6 49 39	4337.43	13.21	175.05	353.92	62.94	8 1 56	3737.4	9.48	168.25
110.00	19 18 0	1644.30	-20.47	358.43	353.65	117.99	19 45 24	1044.3	-16.57	351.48
110.00	7 54 44	4133.69	15.28	158.40	352.74	59.04	9 3 37	3533.7	11.06	151.84

DIFFERENTIAL CORRECTIONS

TDE	.5213	TRA	-.7391	TC3	4.3545	BAU	.6455
RDE	.2011	RRA	-.1449	RC3	3.0560	FAU	.30042
FDE	-2.1763	FRA	1.2044	FC-	28.6577	BSP	12088
BDE	.5588	BRA	.7532	BC3	5.3199	FSP	4948

MID-COURSE EXECUTION ACCURACY

SGT	3138.2	SGR	1900.7	SG3	1546.8		
RRT	.9386	RRF	-.9994	RTF	-.9368		
SGB	3668.9	R23	-.2607	R13	-.9648		
SG1	3624.7	SG2	567.8	THA	30.44		

ORBIT DETERMINATION ACCURACY

ST	1080.5	SR	395.3	SS	1493.3
CRT	.9800	CRS	.9987	CST	.9709
LSA	1873.2	MSA	211.7	SSA	10.2
EL1	1148.2	EL2	73.9	ALF	19.81

LAUNCH DATE NOV 19 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 567.624 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.091	GAL	-.51	AZL	91.69	HCA	176.12	SMA	189.43	ECC	.21982	INC	1.6824
RP	230.62	LAP	-.11	LOP	232.82	VP	21.221	GAP	1.88	AZP	88.32	TAL	357.17	TAP	173.29	RCA	147.79	APO	231.07
RC	226.222	GL	-18.33	GP	18.58	ZAL	88.86	ZAP	135.18	ETS	158.68	ZAE	160.05	ETE	96.48	ZAC	108.27	ETC	255.09

V1	30.141	V2	23.847	CLP	138.44														

PLANETOCENTRIC CONIC

C3	9.575	VHL	3.094	DLA	-4.28	RAL	141.67	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	4.096	DPA	13.48	RAP	198.62
ECC	1.1576																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 44	1920.36	-11.52	23.65	351.88	116.05	17 57 44	1320.4	-7.92	16.81
90.00	4 23 58	4830.48	18.88	208.66	353.07	68.49	5 44 28	4230.5	15.79	201.35
100.00	18 45 4	1664.44	-12.31	4.42	351.47	117.46	19 12 48	1064.4	-8.54	357.66
100.00	5 47 19	4561.63	19.70	188.53	352.72	67.05	7 3 21	3961.6	16.42	181.27
110.00	19 48 42	1465.21	-14.42	348.08	350.25	121.33	20 13 8	865.2	-10.16	341.56
110.00	7 0 10	4333.62	21.89	170.13	351.62	63.07	8 12 24	3733.6	18.11	163.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6727	TRA	-.6847	TC3	3.9913	BAU	.7006	SGT	3044.6	SGR	2459.5	SG3	1533.2	ST	1304.9	SR	792.1	SS	2130.7
RDE	.4243	RRA	-.1326	RC3	3.7451	FAU	.29735	RRT	.9370	RRF	-.9997	RTF	-.9339	CRT	.9790	CRS	.9998	CST	.9752
FDE	-3.2311	FRA	.8063	FC	-26.8867	BSP	12892	SGB	3913.9	R23	-.2236	R13	-.9744	LSA	2609.1	MSA	249.6	SSA	5.2
BDE	.7954	BRA	.6974	BC3	5.4732	FSP	4966	SG1	3854.6	SG2	678.8	THA	38.54	EL1	1520.2	EL2	138.6	ALF	31.01

LAUNCH DATE NOV 19 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 571.427 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.076	GAL	-.47	AZL	92.94	HCA	177.14	SMA	189.17	ECC	.21871	INC	2.9410
RP	230.24	LAP	-.15	LOP	233.84	VP	21.243	GAP	1.53	AZP	87.06	TAL	357.36	TAP	174.50	RCA	147.79	APO	230.54
RC	228.159	GL	-30.42	GP	24.84	ZAL	88.58	ZAP	131.35	ETS	154.35	ZAE	153.59	ETE	98.75	ZAC	114.21	ETC	254.47

V1	30.141	V2	23.887	CLP	136.72														

PLANETOCENTRIC CONIC

C3	11.262	VHL	3.356	DLA	-15.54	RAL	137.20	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	4.216	DPA	19.40	RAP	200.83
ECC	1.1853																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 0	1580.83	-.84	4.41	349.84	118.31	19 6 21	980.8	2.95	357.78
90.00	2 34 0	5235.46	26.57	235.75	354.29	79.84	4 1 16	4635.5	24.90	227.48
100.00	19 52 48	1345.92	-1.81	346.60	349.30	119.84	20 15 14	745.9	2.17	340.08
100.00	4 3 53	4945.60	27.67	214.19	354.05	78.21	5 26 19	4345.6	25.76	205.91
110.00	20 42 3	1191.65	-4.31	333.35	347.75	123.94	21 1 55	591.7	.18	327.14
110.00	5 31 8	4672.63	30.52	192.65	353.24	73.79	6 49 0	4072.6	27.99	184.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9502	TRA	-.6076	TC3	3.2690	BAU	.8211	SGT	2933.4	SGR	3355.9	SG3	1445.7	ST	1655.4	SR	1636.6	SS	3023.9
RDE	.9570	RRA	-.0511	RC3	4.3652	FAU	.28169	RRT	.9322	RRF	-.9998	RTF	-.9276	CRT	.9838	CRS	.9999	CST	.9820
FDE	-4.8551	FRA	.1011	FC	-21.6552	BSP	14326	SGB	4457.2	R23	-.1707	R13	-.9852	LSA	3805.8	MSA	279.9	SSA	2.7
BDE	1.3486	BRA	.6097	BC3	5.4536	FSP	4564	SG1	4382.4	SG2	813.3	THA	49.12	EL1	2318.4	EL2	209.5	ALF	44.67

LAUNCH DATE NOV 19 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 575.239 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.062	GAL	-.44	AZL	95.60	HCA	178.16	SMA	188.92	ECC	.21766	INC	5.6062
RP	229.86	LAP	-.18	LOP	234.87	VP	21.266	GAP	1.19	AZP	84.40	TAL	357.55	TAP	175.71	RCA	147.80	APO	230.04
RC	230.076	GL	-49.41	GP	35.76	ZAL	88.60	ZAP	124.46	ETS	148.61	ZAE	142.44	ETE	100.16	ZAC	124.45	ETC	252.80

V1	30.141	V2	23.927	CLP	134.21														

PLANETOCENTRIC CONIC

C3	18.077	VHL	4.252	DLA	-33.13	RAL	129.27	RAD	6567.7	VEL	11.809	PTH	2.09	VHP	4.713	DPA	29.70	RAP	205.07
ECC	1.2975																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.03	19 46 16	1306.37	23.44	356.73	357.62	114.11	20 8 3	706.4	26.49	348.99
107.97	0 24 28	5718.75	23.45	269.55	357.63	114.10	1 59 47	5118.8	26.50	261.80
72.03	19 46 16	1306.37	23.44	356.73	357.62	114.11	20 8 3	706.4	26.49	348.99
107.97	0 24 28	5718.75	23.45	269.55	357.63	114.10	1 59 47	5118.8	26.50	261.80
110.00	23 28 59	5877.16	17.98	278.85	354.67	119.57	25 6 56	5277.2	21.78	271.78
110.00	1 40 56	5484.00	29.15	253.85	.12	108.70	3 12 20	4884.0	31.42	245.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5170	TRA	-.4962	TC3	1.8953	BAU	1.0540	SGT	2723.0	SGR	4696.3	SG3	1100.2	ST	2058.9	SR	3284.0	SS	3634.5
RDE	2.4344	RRA	.2291	RC3	3.9281	FAU	.22111	RRT	.9224	RRF	-.9998	RTF	-.9149	CRT	.9887	CRS	1.0000	CST	.9873
FDE	-6.6143	FRA	-.7884	FC	-10.5893	BSP	18862	SGB	5428.6	R23	-.1144	R13	-.9934	LSA	5305.3	MSA	295.0	SSA	1.6
BDE	2.8684	BRA	.5465	BC3	4.3615	FSP	3800	SG1	5349.5	SG2	923.2	THA	60.91	EL1	3867.2	EL2	262.1	ALF	58.04

LAUNCH DATE NOV 19 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 590.673 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.014	GAL	-.34	AZL	82.26	HCA	182.32	SMA	188.06	ECC	.21404	INC	7.7340
RP	228.31	LAP	-.31	LOP	239.00	VP	21.375	GAP	-.11	AZP	97.73	TAL	358.08	TAP	180.39	RCA	147.81	APO	228.31
RC	237.537	GL	59.87	GP	-32.10	ZAL	88.21	ZAP	122.25	ETS	201.69	ZAE	146.73	ETE	244.12	ZAC	58.23	ETC	253.43

V1	30.141	V2	24.090	CLP	129.04														

PLANETOCENTRIC CONIC

C3	26.401	VHL	5.138	DLA	65.97	RAL	189.58	RAD	6568.1	VEL	12.156	PTH	2.18	VHP	4.140	DPA	-30.89	RAP	172.94
ECC	1.4345																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
21.17	11 32 54	4256.37	-51.87	225.97	115.51	31.00	12 43 51	3656.4	-58.49	218.50
21.17	6 4 3	4713.65	-23.55	240.94	49.96	20.30	7 22 37	4113.7	-31.02	238.13
27.56	9 2 27	4466.29	-36.38	227.72	80.42	30.39	10 16 53	3866.3	-43.16	222.60
152.44	19 9 29	2741.64	-36.37	82.73	80.40	30.38	19 55 10	2141.6	-43.15	77.61
27.56	9 2 27	4466.29	-36.38	227.72	80.42	30.39	10 16 53	3866.3	-43.16	222.60
152.44	19 9 29	2741.64	-36.37	82.73	80.40	30.38	19 55 10	2141.6	-43.15	77.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2752	TRA	-.6189	TC3	.9429	BAU	1.0427	SGT	1976.0	SGR	4730.4	SG3	1465.7	ST	594.5	SR	1928.3	SS	2541.9
RDE	1.4691	RRA	1.2340	RC3	-2.7996	FAU	.31129	RRT	-.8570	RRF	.9997	RTF	-.8449	CRT	-.0132	CRS	-.9995	CST	-.0175
FDE	5.5149	FRA	4.3198	FC	-10.2078	BSP	16645	SGB	5126.5	R23	-.0935	R13	.9956	LSA	3190.2	MSA	596.4	SSA	1.6
BDE	1.4946	BRA	1.3805	BC3	2.9541	FSP	4693	SG1	5036.5	SG2	956.4	THA	110.47	EL1	1928.4	EL2	594.4	ALF	90.26

LAUNCH DATE NOV 19 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 594.544 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.003 GAL -.32 AZL 84.10 HCA 183.36 SMA 187.88 ECC .21327 INC 5.9061 V1 30.141
RP 227.92 LAP -.35 LOP 240.04 VP 21.405 GAP -.42 AZP 95.89 TAL 358.19 TAP 181.55 RCA 147.81 APO 227.95 V2 24.132
RC 239.350 GL 51.56 GP -24.12 ZAL 87.71 ZAP 124.25 ETS 196.24 ZAE 153.27 ETE 235.55 ZAC 65.98 ETC 254.59 CLP 128.07

PLANETOCENTRIC CONIC

C3 18.787 VHL 4.334 DLA 60.16 RAL 176.38 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.724 DPA -23.88 RAP 177.23 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.42	8 26 8	4356.57	-38.69	215.90	59.04	39.60	9 38 44	3756.6	-44.65	209.16
145.58	18 0 26	2686.62	-38.68	78.90	59.03	39.60	18 45 13	2086.6	-44.64	72.15
34.42	8 26 8	4356.57	-38.69	215.90	59.04	39.60	9 38 44	3756.6	-44.65	209.16
145.58	18 0 26	2686.62	-38.68	78.90	59.03	39.60	18 45 13	2086.6	-44.64	72.15
34.42	8 26 8	4356.57	-38.69	215.90	59.04	39.60	9 38 44	3756.6	-44.65	209.16
145.58	18 0 26	2686.62	-38.68	78.90	59.03	39.60	18 45 13	2086.6	-44.64	72.15

DIFFERENTIAL CORRECTIONS
TDE .0265 TRA -.6287 TC3 1.2179 BAU .7783
RDE 1.2660 RRA .8542 RC3-2.8492 FAU .36365
FDE 7.4403 FRA 4.7802 FC-16.7574 BSP 14814
BDE 1.2662 BRA 1.0606 BC3 3.0986 FSP 6515

MID-COURSE EXECUTION ACCURACY
SGT 1976.3 SGR 3748.4 SG3 1871.2
RRT -.8557 RRF .9997 RTF -.8459
SGB 4237.4 R23 -.1256 R13 .9920
SG1 4134.8 SG2 927.0 THA 115.67

ORBIT DETERMINATION ACCURACY
ST 503.3 SR 1808.1 SS 3396.8
CRT -.3130 CRS -.9999 CST .2970
LSA 3851.0 MSA 480.4 SSA 1.9
EL1 1815.5 EL2 476.1 ALF 95.35

LAUNCH DATE NOV 19 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 598.429 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.993 GAL -.30 AZL 85.06 HCA 184.40 SMA 187.71 ECC .21254 INC 4.9352 V1 30.141
RP 227.53 LAP -.38 LOP 241.09 VP 21.436 GAP -.73 AZP 94.92 TAL 358.29 TAP 182.69 RCA 147.81 APO 227.60 V2 24.173
RC 241.142 GL 46.03 GP -19.30 ZAL 87.33 ZAP 124.33 ETS 192.37 ZAE 156.22 ETE 226.36 ZAC 70.59 ETC 255.10 CLP 126.69

PLANETOCENTRIC CONIC

C3 15.556 VHL 3.944 DLA 55.80 RAL 169.93 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.520 DPA -19.43 RAP 179.25 ECC 1.2560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.68	8 14 18	4285.94	-38.68	207.12	46.99	46.05	9 25 44	3685.9	-43.97	199.53
140.32	17 20 52	2670.22	-38.67	76.84	46.98	46.04	18 5 22	2070.2	-43.96	69.26
39.68	8 14 18	4285.94	-38.68	207.12	46.99	46.05	9 25 44	3685.9	-43.97	199.53
140.32	17 20 52	2670.22	-38.67	76.84	46.98	46.04	18 5 22	2070.2	-43.96	69.26
39.68	8 14 18	4285.94	-38.68	207.12	46.99	46.05	9 25 44	3685.9	-43.97	199.53
140.32	17 20 52	2670.22	-38.67	76.84	46.98	46.04	18 5 22	2070.2	-43.96	69.26

DIFFERENTIAL CORRECTIONS
TDE .0085 TRA -.5937 TC3 1.3695 BAU .6499
RDE .9556 RRA .6141 RC3-2.8088 FAU .40847
FDE 7.5946 FRA 4.6615 FC-22.7322 BSP 12068
BDE .9557 BRA .8542 BC3 3.1249 FSP 7061

MID-COURSE EXECUTION ACCURACY
SGT 1876.7 SGR 3058.7 SG3 2095.9
RRT -.8383 RRF .9996 RTF -.8287
SGB 3588.6 R23 -.1615 R13 .9867
SG1 3473.7 SG2 901.0 THA 119.39

ORBIT DETERMINATION ACCURACY
ST 461.7 SR 1469.1 SS 3534.5
CRT -.3011 CRS -.9999 CST .2880
LSA 3830.0 MSA 442.0 SSA 2.5
EL1 1476.3 EL2 438.1 ALF 95.93

LAUNCH DATE NOV 19 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 602.324 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.984 GAL -.28 AZL 85.66 HCA 185.45 SMA 187.55 ECC .21186 INC 4.3352 V1 30.141
RP 227.14 LAP -.41 LOP 242.13 VP 21.469 GAP -1.03 AZP 94.32 TAL 358.37 TAP 183.82 RCA 147.81 APO 227.28 V2 24.214
RC 242.914 GL 42.13 GP -16.12 ZAL 87.03 ZAP 123.57 ETS 189.63 ZAE 157.21 ETE 217.90 ZAC 73.57 ETC 255.37 CLP 125.14

PLANETOCENTRIC CONIC

C3 13.824 VHL 3.718 DLA 52.58 RAL 166.15 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.391 DPA -16.36 RAP 180.26 ECC 1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.65	8 10 38	4234.98	-38.03	200.67	39.41	50.48	9 21 13	3635.0	-42.83	192.67
136.35	16 54 18	2668.65	-38.01	75.92	39.40	50.47	17 38 47	2068.7	-42.82	67.93
43.65	8 10 38	4234.98	-38.03	200.67	39.41	50.48	9 21 13	3635.0	-42.83	192.67
136.35	16 54 18	2668.65	-38.01	75.92	39.40	50.47	17 38 47	2068.7	-42.82	67.93
43.65	8 10 38	4234.98	-38.03	200.67	39.41	50.48	9 21 13	3635.0	-42.83	192.67
136.35	16 54 18	2668.65	-38.01	75.92	39.40	50.47	17 38 47	2068.7	-42.82	67.93

DIFFERENTIAL CORRECTIONS
TDE .0276 TRA -.5616 TC3 1.3764 BAU .5539
RDE .7615 RRA .4853 RC3-2.6622 FAU .43792
FDE 7.5501 FRA 4.6146 FC-27.4250 BSP 10467
BDE .7620 BRA .7422 BC3 2.9970 FSP 7631

MID-COURSE EXECUTION ACCURACY
SGT 1754.4 SGR 2609.7 SG3 2266.6
RRT -.8145 RRF .9995 RTF -.8049
SGB 3144.6 R23 -.1926 R13 .9809
SG1 3019.0 SG2 879.9 THA 121.71

ORBIT DETERMINATION ACCURACY
ST 430.5 SR 1231.6 SS 3564.6
CRT -.2067 CRS -.9999 CST .1953
LSA 3772.3 MSA 422.2 SSA 3.3
EL1 1235.2 EL2 419.9 ALF 94.67

LAUNCH DATE NOV 19 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 606.231 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.976 GAL -.27 AZL 86.07 HCA 186.50 SMA 187.40 ECC .21122 INC 3.9274 V1 30.141
RP 226.75 LAP -.44 LOP 243.19 VP 21.503 GAP -1.32 AZP 93.90 TAL 358.44 TAP 184.94 RCA 147.81 APO 226.98 V2 24.256
RC 244.666 GL 39.24 GP -13.88 ZAL 86.79 ZAP 122.40 ETS 187.63 ZAE 157.08 ETE 210.72 ZAC 75.62 ETC 255.54 CLP 123.50

PLANETOCENTRIC CONIC

C3 12.757 VHL 3.572 DLA 50.14 RAL 163.66 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 3.295 DPA -14.10 RAP 180.73 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.72	8 10 13	4195.67	-37.25	195.78	34.26	53.62	9 20 9	3595.7	-41.69	187.57
133.28	16 34 51	2673.15	-37.24	75.63	34.25	53.61	17 19 24	2073.2	-41.68	67.42
46.72	8 10 13	4195.67	-37.25	195.78	34.26	53.62	9 20 9	3595.7	-41.69	187.57
133.28	16 34 51	2673.15	-37.24	75.63	34.25	53.61	17 19 24	2073.2	-41.68	67.42
46.72	8 10 13	4195.67	-37.25	195.78	34.26	53.62	9 20 9	3595.7	-41.69	187.57
133.28	16 34 51	2673.15	-37.24	75.63	34.25	53.61	17 19 24	2073.2	-41.68	67.42

DIFFERENTIAL CORRECTIONS
TDE .0670 TRA -.5276 TC3 1.2770 BAU .4780
RDE .6309 RRA .4035 RC3-2.4947 FAU .46049
FDE 7.4309 FRA 4.5837 FC-31.2494 BSP 9253
BDE .6344 BRA .6642 BC3 2.8025 FSP 8137

MID-COURSE EXECUTION ACCURACY
SGT 1608.7 SGR 2284.7 SG3 2400.7
RRT -.7756 RRF .9992 RTF -.7659
SGB 2794.3 R23 -.2201 R13 .9748
SG1 2654.0 SG2 874.1 THA 122.61

ORBIT DETERMINATION ACCURACY
ST 411.4 SR 1057.7 SS 3537.6
CRT -.0293 CRS -.9999 CST .0198
LSA 3692.4 MSA 411.4 SSA 4.1
EL1 1057.8 EL2 411.2 ALF 90.77

LAUNCH DATE NOV 19 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 610.149 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.968 GAL -.26 AZL 86.37 HCA 187.56 SMA 187.26 ECC .21063 INC 3.6330 V1 30.141
RP 226.36 LAP -.48 LOP 244.24 VP 21.537 GAP -1.61 AZP 93.60 TAL 358.50 TAP 186.05 RCA 147.81 APO 226.70 V2 24.297
RC 246.398 GL 37.02 GP -12.23 ZAL 86.60 ZAP 121.00 ETS 186.11 ZAE 156.28 ETE 204.91 ZAC 77.09 ETC 255.65 CLP 121.80

PLANETOCENTRIC CONIC

C3 12.037 VHL 3.470 DLA 48.25 RAL 161.90 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 3.219 DPA -12.34 RAP 180.88 ECC 1.1981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.15	8 11 14	4163.98	-36.51	191.96	30.56	55.94	9 20 38	3564.0	-40.68	183.63
130.85	16 19 48	2680.14	-36.50	75.67	30.55	55.93	17 4 28	2080.1	-40.67	67.35
49.15	8 11 14	4163.98	-36.51	191.96	30.56	55.94	9 20 38	3564.0	-40.68	183.63
130.85	16 19 48	2680.14	-36.50	75.67	30.55	55.93	17 4 28	2080.1	-40.67	67.35
49.15	8 11 14	4163.98	-36.51	191.96	30.56	55.94	9 20 38	3564.0	-40.68	183.63
130.85	16 19 48	2680.14	-36.50	75.67	30.55	55.93	17 4 28	2080.1	-40.67	67.35

DIFFERENTIAL CORRECTIONS
TDE .1070 TRA -.4965 TC3 1.1237 BAU .4163
RDE .5461 RRA .3522 RC3-2.3303 FAU .47872
FDE 7.3916 FRA 4.6356 FC-34.4296 BSP 8297
BDE .5565 BRA .6088 BC3 2.5871 FSP 8691

MID-COURSE EXECUTION ACCURACY
SGT 1468.1 SGR 2047.1 SG3 2521.8
RRT -.7243 RRF .9988 RTF -.7147
SGB 2519.2 R23 -.2422 R13 .9691
SG1 2361.4 SG2 877.5 THA 122.47

ORBIT DETERMINATION ACCURACY
ST 410.1 SR 940.4 SS 3533.3
CRT .1592 CRS-1.0000 CST -.1662
LSA 3656.9 MSA 404.5 SSA 4.8
EL1 943.2 EL2 403.7 ALF 85.13

LAUNCH DATE NOV 19 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 614.078 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.960 GAL -.25 AZL 86.59 HCA 188.61 SMA 187.13 ECC .21008 INC 3.4089 V1 30.141
RP 225.97 LAP -.51 LOP 245.30 VP 21.573 GAP -1.89 AZP 93.37 TAL 358.54 TAP 187.15 RCA 147.81 APO 226.44 V2 24.339
RC 248.110 GL 35.27 GP -10.95 ZAL 86.45 ZAP 119.44 ETS 184.92 ZAE 155.05 ETE 200.28 ZAC 78.18 ETC 255.74 CLP 120.05

PLANETOCENTRIC CONIC

C3 11.519 VHL 3.394 DLA 46.73 RAL 160.60 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 3.154 DPA -10.89 RAP 180.81 ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.13	8 12 56	4137.62	-35.84	188.87	27.78	57.72	9 21 54	3537.6	-39.79	180.48
128.87	16 7 43	2688.06	-35.83	75.90	27.78	57.71	16 52 31	2088.1	-39.79	67.51
51.13	8 12 56	4137.62	-35.84	188.87	27.78	57.72	9 21 54	3537.6	-39.79	180.48
128.87	16 7 43	2688.06	-35.83	75.90	27.78	57.71	16 52 31	2088.1	-39.79	67.51
51.13	8 12 56	4137.62	-35.84	188.87	27.78	57.72	9 21 54	3537.6	-39.79	180.48
128.87	16 7 43	2688.06	-35.83	75.90	27.78	57.71	16 52 31	2088.1	-39.79	67.51

DIFFERENTIAL CORRECTIONS
TDE .1520 TRA -.4618 TC3 .9092 BAU .3651
RDE .4811 RRA .3108 RC3-2.1892 FAU .49698
FDE 7.2986 FRA 4.6283 FC-37.3508 BSP 7333
BDE .5045 BRA .5566 BC3 2.3705 FSP 9060

MID-COURSE EXECUTION ACCURACY
SGT 1319.3 SGR 1858.4 SG3 2627.2
RRT -.6441 RRF .9982 RTF -.6345
SGB 2279.1 R23 -.2566 R13 .9647
SG1 2096.2 SG2 894.7 THA 120.76

ORBIT DETERMINATION ACCURACY
ST 427.4 SR 845.2 SS 3490.9
CRT .3579 CRS-1.0000 CST -.3619
LSA 3595.1 MSA 398.1 SSA 5.7
EL1 862.6 EL2 391.0 ALF 77.03

LAUNCH DATE NOV 19 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 618.016 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.953 GAL -.25 AZL 86.77 HCA 189.68 SMA 187.01 ECC .20957 INC 3.2330 V1 30.141
RP 225.58 LAP -.54 LOP 246.36 VP 21.610 GAP -2.17 AZP 93.19 TAL 358.56 TAP 188.24 RCA 147.81 APO 226.20 V2 24.381
RC 249.803 GL 33.86 GP -9.94 ZAL 86.34 ZAP 117.79 ETS 183.97 ZAE 153.55 ETE 196.61 ZAC 79.01 ETC 255.82 CLP 118.25

PLANETOCENTRIC CONIC

C3 11.128 VHL 3.336 DLA 45.50 RAL 159.61 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 3.098 DPA -9.67 RAP 180.58 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.77	8 14 59	4115.17	-35.24	186.31	25.64	59.12	9 23 34	3515.2	-39.03	177.88
127.23	15 57 47	2696.18	-35.23	76.21	25.64	59.11	16 42 44	2096.2	-39.02	67.79
52.77	8 14 59	4115.17	-35.24	186.31	25.64	59.12	9 23 34	3515.2	-39.03	177.88
127.23	15 57 47	2696.18	-35.23	76.21	25.64	59.11	16 42 44	2096.2	-39.02	67.79
52.77	8 14 59	4115.17	-35.24	186.31	25.64	59.12	9 23 34	3515.2	-39.03	177.88
127.23	15 57 47	2696.18	-35.23	76.21	25.64	59.11	16 42 44	2096.2	-39.02	67.79

DIFFERENTIAL CORRECTIONS
TDE .2009 TRA -.4296 TC3 .6522 BAU .3216
RDE .4322 RRA .2807 RC3-2.0612 FAU .51375
FDE 7.2115 FRA 4.6510 FC-39.9701 BSP 6520
BDE .4766 BRA .5132 BC3 2.1620 FSP 9431

MID-COURSE EXECUTION ACCURACY
SGT 1190.1 SGR 1707.4 SG3 2724.6
RRT -.5248 RRF .9975 RTF -.5150
SGB 2081.3 R23 -.2597 R13 .9631
SG1 1862.6 SG2 928.7 THA 117.45

ORBIT DETERMINATION ACCURACY
ST 467.9 SR 771.5 SS 3446.2
CRT .5274 CRS-1.0000 CST -.5284
LSA 3540.2 MSA 396.3 SSA 6.6
EL1 821.4 EL2 373.4 ALF 67.33

LAUNCH DATE NOV 19 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 621.964 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.947 GAL -.25 AZL 86.91 HCA 190.75 SMA 186.89 ECC .20910 INC 3.0911 V1 30.141
RP 225.19 LAP -.58 LOP 247.43 VP 21.647 GAP -2.44 AZP 93.04 TAL 358.57 TAP 189.32 RCA 147.81 APO 225.97 V2 24.423
RC 251.477 GL 32.69 GP -9.11 ZAL 86.27 ZAP 116.06 ETS 183.19 ZAE 151.86 ETE 193.69 ZAC 79.65 ETC 255.88 CLP 116.41

PLANETOCENTRIC CONIC

C3 10.821 VHL 3.289 DLA 44.46 RAL 158.84 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 3.048 DPA -8.60 RAP 180.24 ECC 1.1781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.16	8 17 12	4095.69	-34.72	184.14	23.95	60.26	9 25 28	3495.7	-38.37	175.69
125.84	15 49 28	2704.18	-34.71	76.57	23.94	60.24	16 34 32	2104.2	-38.36	68.13
54.16	8 17 12	4095.69	-34.72	184.14	23.95	60.26	9 25 28	3495.7	-38.37	175.69
125.84	15 49 28	2704.18	-34.71	76.57	23.94	60.24	16 34 32	2104.2	-38.36	68.13
54.16	8 17 12	4095.69	-34.72	184.14	23.95	60.26	9 25 28	3495.7	-38.37	175.69
125.84	15 49 28	2704.18	-34.71	76.57	23.94	60.24	16 34 32	2104.2	-38.36	68.13

DIFFERENTIAL CORRECTIONS
TDE .2429 TRA -.3950 TC3 .3586 BAU .2862
RDE .3974 RRA .2568 RC3-1.9459 FAU .52952
FDE 7.1859 FRA 4.6693 FC-42.3665 BSP 5773
BDE .4657 BRA .4712 BC3 1.9787 FSP 9742

MID-COURSE EXECUTION ACCURACY
SGT 1079.0 SGR 1584.5 SG3 2817.5
RRT -.3588 RRF .9964 RTF -.3487
SGB 1917.0 R23 -.2279 R13 .9701
SG1 1657.8 SG2 962.6 THA 111.17

ORBIT DETERMINATION ACCURACY
ST 512.5 SR 718.2 SS 3424.5
CRT .6469 CRS -.9999 CST -.6453
LSA 3514.8 MSA 389.7 SSA 7.5
EL1 811.8 EL2 345.8 ALF 59.00

LAUNCH DATE NOV 19 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 625.922 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.941 GAL -.25 AZL 87.03 HCA 191.82 SMA 186.79 ECC .20867 INC 2.9743 V1 30.141
RP 224.80 LAP -.61 LOP 248.50 VP 21.685 GAP -2.71 AZP 92.91 TAL 358.57 TAP 190.38 RCA 147.81 APO 225.77 V2 24.465
RC 253.132 GL 31.72 GP -8.43 ZAL 86.23 ZAP 114.26 ETS 182.54 ZAE 150.03 ETE 191.34 ZAC 80.14 ETC 255.95 CLP 114.55

PLANETOCENTRIC CONIC

C3 10.573 VHL 3.252 DLA 43.59 RAL 158.25 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 3.004 DPA -7.65 RAP 179.81 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.36	8 19 32	4078.51	-34.25	182.27	22.59	61.20	9 27 30	3478.5	-37.79	173.81
124.64	15 42 23	2711.92	-34.24	76.96	22.58	61.19	16 27 35	2111.9	-37.78	68.50
55.36	8 19 32	4078.51	-34.25	182.27	22.59	61.20	9 27 30	3478.5	-37.79	173.81
124.64	15 42 23	2711.92	-34.24	76.96	22.58	61.19	16 27 35	2111.9	-37.78	68.50
55.36	8 19 32	4078.51	-34.25	182.27	22.59	61.20	9 27 30	3478.5	-37.79	173.81
124.64	15 42 23	2711.92	-34.24	76.96	22.58	61.19	16 27 35	2111.9	-37.78	68.50

DIFFERENTIAL CORRECTIONS
TDE .2977 TRA -.3648 TC3 .0467 BAU .2608
RDE .3664 RRA .2398 RC3-1.8446 FAU .54516
FDE 7.0894 FRA 4.7382 FC-44.6403 BSP 5180
BDE .4721 BRA .4366 BC3 1.8452 FSP 10052

MID-COURSE EXECUTION ACCURACY
SGT 1031.4 SGR 1482.0 SG3 2906.5
RRT -.1410 RRF .9952 RTF -.1314
SGB 1805.6 R23 -.1319 R13 .9865
SG1 1495.3 SG2 1012.0 THA 100.42

ORBIT DETERMINATION ACCURACY
ST 588.3 SR 669.9 SS 3372.3
CRT .7410 CRS -.9999 CST -.7369
LSA 3465.8 MSA 394.4 SSA 8.5
EL1 833.0 EL2 317.7 ALF 49.99

LAUNCH DATE NOV 19 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 629.891 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.935 GAL -.25 AZL 87.12 HCA 192.89 SMA 186.70 ECC .20827 INC 2.8765 V1 30.141
RP 224.41 LAP -.64 LOP 249.58 VP 21.724 GAP -2.97 AZP 92.80 TAL 358.55 TAP 191.44 RCA 147.81 APO 225.58 V2 24.506
RC 254.766 GL 30.89 GP -7.85 ZAL 86.22 ZAP 112.42 ETS 181.99 ZAE 148.10 ETE 189.44 ZAC 80.53 ETC 256.01 CLP 112.65

PLANETOCENTRIC CONIC

C3 10.368 VHL 3.220 DLA 42.83 RAL 157.78 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 2.965 DPA -6.78 RAP 179.31 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.42	8 21 57	4063.10	-33.83	180.62	21.49	62.00	9 29 40	3463.1	-37.27	172.16
123.58	15 36 17	2719.42	-33.82	77.35	21.48	61.98	16 21 36	2119.4	-37.26	68.89
56.42	8 21 57	4063.10	-33.83	180.62	21.49	62.00	9 29 40	3463.1	-37.27	172.16
123.58	15 36 17	2719.42	-33.82	77.35	21.48	61.98	16 21 36	2119.4	-37.26	68.89
56.42	8 21 57	4063.10	-33.83	180.62	21.49	62.00	9 29 40	3463.1	-37.27	172.16
123.58	15 36 17	2719.42	-33.82	77.35	21.48	61.98	16 21 36	2119.4	-37.26	68.89

DIFFERENTIAL CORRECTIONS
TDE .3450 TRA -.3258 TC3 -.3165 BAU .2456
RDE .3446 RRA .2240 RC3-1.7435 FAU .55762
FDE 7.0660 FRA 4.7634 FC-46.5634 BSP 4779
BDE .4876 BRA .3954 BC3 1.7719 FSP 10361

MID-COURSE EXECUTION ACCURACY
SGT 1021.4 SGR 1390.0 SG3 2981.5
RRT .1237 RRF .9936 RTF .1331
SGB 1724.9 R23 .1241 R13 .9859
SG1 1402.0 SG2 1004.9 THA 79.22

ORBIT DETERMINATION ACCURACY
ST 658.1 SR 635.5 SS 3349.4
CRT .8082 CRS -.9998 CST -.8021
LSA 3450.3 MSA 388.1 SSA 9.4
EL1 869.9 EL2 283.1 ALF 43.76

LAUNCH DATE NOV 19 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 633.868 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.931 GAL -.26 AZL 87.21 HCA 193.97 SMA 186.61 ECC .20791 INC 2.7933 V1 30.141
RP 224.02 LAP -.67 LOP 250.65 VP 21.764 GAP -3.23 AZP 92.71 TAL 358.52 TAP 192.48 RCA 147.81 APO 225.41 V2 24.548
RC 256.380 GL 30.17 GP -7.35 ZAL 86.24 ZAP 110.54 ETS 181.52 ZAE 146.10 ETE 187.88 ZAC 80.83 ETC 256.07 CLP 110.72

PLANETOCENTRIC CONIC

C3 10,195 VHL 3.193 DLA 42.16 RAL 157.43 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 2.930 DPA -5.97 RAP 178.75 ECC 1.1678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.36	8 24 27	4049.16	-33.45	179.16	20.59	62.68	9 31 56	3449.2	-36.81	170.69
122.64	15 30 59	2726.61	-33.44	77.75	20.58	62.67	16 16 26	2126.6	-36.80	69.28
57.36	8 24 27	4049.16	-33.45	179.16	20.59	62.68	9 31 56	3449.2	-36.81	170.69
122.64	15 30 59	2726.61	-33.44	77.75	20.58	62.67	16 16 26	2126.6	-36.80	69.28
57.36	8 24 27	4049.16	-33.45	179.16	20.59	62.68	9 31 56	3449.2	-36.81	170.69
122.64	15 30 59	2726.61	-33.44	77.75	20.58	62.67	16 16 26	2126.6	-36.80	69.28

DIFFERENTIAL CORRECTIONS
TDE .3961 TRA -.2929 TC3 -.6953 BAU .2444
RDE .3258 RRA .2133 RC3-1.6531 FAU .56996
FDE 7.0134 FRA 4.8501 FC-48.3989 BSP 4611
BDE .5129 BRA .3624 BC3 1.7934 FSP 10654

MID-COURSE EXECUTION ACCURACY
SGT 1097.8 SGR 1312.6 SG3 3056.5
RRT .3596 RRF .9917 RTF .3693
SGB 1711.2 R23 .3611 R13 .9237
SG1 1429.4 SG2 940.6 THA 58.27

ORBIT DETERMINATION ACCURACY
ST 742.0 SR 605.7 SS 3317.1
CRT .8523 CRS -.9997 CST -.8443
LSA 3430.5 MSA 390.7 SSA 10.4
EL1 923.4 EL2 254.6 ALF 38.26

LAUNCH DATE NOV 19 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 637.855 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.926 GAL -.26 AZL 87.28 HCA 195.05 SMA 186.53 ECC .20758 INC 2.7216 V1 30.141
RP 223.63 LAP -.71 LOP 251.74 VP 21.804 GAP -3.48 AZP 92.63 TAL 358.47 TAP 193.52 RCA 147.81 APO 225.25 V2 24.590
RC 257.974 GL 29.55 GP -6.91 ZAL 86.30 ZAP 108.62 ETS 181.12 ZAE 144.03 ETE 186.59 ZAC 81.07 ETC 256.14 CLP 108.76

PLANETOCENTRIC CONIC

C3 10.048 VHL 3.170 DLA 41.56 RAL 157.17 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 2.900 DPA -5.21 RAP 178.15 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.20	8 27 1	4036.37	-33.11	177.83	19.85	63.28	9 34 17	3436.4	-36.39	169.36
121.80	15 26 21	2733.58	-33.10	78.14	19.84	63.27	16 11 55	2133.6	-36.38	69.68
58.20	8 27 1	4036.37	-33.11	177.83	19.85	63.28	9 34 17	3436.4	-36.39	169.36
121.80	15 26 21	2733.58	-33.10	78.14	19.84	63.27	16 11 55	2133.6	-36.38	69.68
58.20	8 27 1	4036.37	-33.11	177.83	19.85	63.28	9 34 17	3436.4	-36.39	169.36
121.80	15 26 21	2733.58	-33.10	78.14	19.84	63.27	16 11 55	2133.6	-36.38	69.68

DIFFERENTIAL CORRECTIONS
TDE .4463 TRA -.2530 TC3-1.1005 BAU .2574
RDE .3107 RRA .2024 RC3-1.5683 FAU .58112
FDE 6.9682 FRA 4.8864 FC-50.0699 BSP 4716
BDE .5438 BRA .3240 BC3 1.9159 FSP 10885

MID-COURSE EXECUTION ACCURACY
SGT 1229.3 SGR 1242.2 SG3 3121.9
RRT .5552 RRF .9893 RTF .5649
SGB 1747.7 R23 .4431 R13 .8848
SG1 1541.2 SG2 824.1 THA 45.54

ORBIT DETERMINATION ACCURACY
ST 827.6 SR 581.3 SS 3286.7
CRT .8873 CRS -.9996 CST -.8780
LSA 3416.9 MSA 386.7 SSA 11.3
EL1 986.0 EL2 225.0 ALF 33.97

LAUNCH DATE NOV 19 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 641.851 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.922	GAL	-.27	AZL	87.34	HCA	196.14	SMA	186.46	ECC	.20728	INC	2.6589	V1	30.141
RP	223.24	LAP	-.74	LOP	252.82	VP	21.846	GAP	-3.73	AZP	92.55	TAL	358.41	TAP	194.54	RCA	147.81	APO	225.11	V2	24.632
RC	259.547	GL	29.00	GP	-6.53	ZAL	86.38	ZAP	106.68	ETS	180.76	ZAE	141.92	ETE	185.52	ZAC	81.25	ETC	256.20	CLP	106.79

PLANETOCENTRIC CONIC

C3	9.920	VHL	3.150	DLA	41.02	RAL	157.00	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	2.873	DPA	-4.49	RAP	177.51	ECC	1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.98	8 29 40	4024.49	-32.79	176.61	19.25	63.82	9 36 45	3424.5	-36.01	168.15
121.02	15 22 16	2740.37	-32.78	78.54	19.24	63.80	16 7 56	2140.4	-36.00	70.08
58.98	8 29 40	4024.49	-32.79	176.61	19.25	63.82	9 36 45	3424.5	-36.01	168.15
121.02	15 22 16	2740.37	-32.78	78.54	19.24	63.80	16 7 56	2140.4	-36.00	70.08
58.98	8 29 40	4024.49	-32.79	176.61	19.25	63.82	9 36 45	3424.5	-36.01	168.15
121.02	15 22 16	2740.37	-32.78	78.54	19.24	63.80	16 7 56	2140.4	-36.00	70.08

DIFFERENTIAL CORRECTIONS

TDE	.4960	TRA	-.2165	TC3	-1.5175	BAU	.2822	SGT	1414.3	SGR	1182.1
RDE	.2981	RRA	.1946	RC3	-1.4919	FAU	.59225	RRT	.6834	RRF	.9866
FDE	6.9154	FRA	4.9616	FC	-51.6847	BSP	5093	SGB	1843.3	R23	.4516
BDE	.5786	BRA	.2911	BC3	2.1280	FSP	11090	SG1	1697.2	SG2	719.1

MID-COURSE EXECUTION ACCURACY

SG3	3187.9	RTF	.6942	THA	37.61

ORBIT DETERMINATION ACCURACY

ST	916.2	SR	560.9	SS	3256.5
CRT	.9107	CRS	-.9994	CST	-.8999
LSA	3407.2	MSA	387.1	SSA	12.3
EL1	1055.2	EL2	201.2	ALF	30.36

LAUNCH DATE NOV 19 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 645.857 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.918	GAL	-.29	AZL	87.40	HCA	197.23	SMA	186.40	ECC	.20701	INC	2.6035	V1	30.141
RP	222.85	LAP	-.77	LOP	253.91	VP	21.887	GAP	-3.97	AZP	92.49	TAL	358.33	TAP	195.55	RCA	147.81	APO	224.99	V2	24.674
RC	261.100	GL	28.52	GP	-6.18	ZAL	86.50	ZAP	104.71	ETS	180.45	ZAE	139.77	ETE	184.61	ZAC	81.39	ETC	256.27	CLP	104.80

PLANETOCENTRIC CONIC

C3	9.809	VHL	3.132	DLA	40.53	RAL	156.89	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	2.850	DPA	-3.81	RAP	176.84	ECC	1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.70	8 32 25	4013.37	-32.49	175.48	18.76	64.30	9 39 18	3413.4	-35.65	167.02
120.30	15 18 39	2747.00	-32.48	78.93	18.76	64.29	16 4 26	2147.0	-35.64	70.48
59.70	8 32 25	4013.37	-32.49	175.48	18.76	64.30	9 39 18	3413.4	-35.65	167.02
120.30	15 18 39	2747.00	-32.48	78.93	18.76	64.29	16 4 26	2147.0	-35.64	70.48
59.70	8 32 25	4013.37	-32.49	175.48	18.76	64.30	9 39 18	3413.4	-35.65	167.02
120.30	15 18 39	2747.00	-32.48	78.93	18.76	64.29	16 4 26	2147.0	-35.64	70.48

DIFFERENTIAL CORRECTIONS

TDE	.5461	TRA	-.1771	TC3	-1.9740	BAU	.3186	SGT	1645.8	SGR	1123.9
RDE	.2865	RRA	.1866	RC3	-1.4161	FAU	.60124	RRT	.7725	RRF	.9833
FDE	6.8252	FRA	4.9942	FC	-53.0653	BSP	5677	SGB	1992.9	R23	.4265
BDE	.6167	BRA	.2573	BC3	2.4294	FSP	11246	SG1	1894.0	SG2	620.2

MID-COURSE EXECUTION ACCURACY

SG3	3238.8	RTF	.7853	THA	31.59

ORBIT DETERMINATION ACCURACY

ST	1007.9	SR	541.8	SS	3210.1
CRT	.9291	CRS	-.9992	CST	-.9172
LSA	3386.0	MSA	385.6	SSA	13.3
EL1	1130.2	EL2	178.7	ALF	27.28

LAUNCH DATE NOV 19 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 649.872 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.915	GAL	-.30	AZL	87.45	HCA	198.32	SMA	186.34	ECC	.20678	INC	2.5546	V1	30.141
RP	222.47	LAP	-.80	LOP	255.00	VP	21.929	GAP	-4.20	AZP	92.43	TAL	358.24	TAP	196.56	RCA	147.81	APO	224.87	V2	24.716
RC	262.633	GL	28.09	GP	-5.87	ZAL	86.64	ZAP	102.73	ETS	180.18	ZAE	137.60	ETE	183.84	ZAC	81.50	ETC	256.34	CLP	102.80

PLANETOCENTRIC CONIC

C3	9.711	VHL	3.116	DLA	40.07	RAL	156.84	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	2.831	DPA	-3.15	RAP	176.14	ECC	1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.38	8 35 18	4002.76	-32.20	174.42	18.38	64.74	9 42 1	3402.8	-35.31	165.97
119.62	15 15 23	2753.64	-32.19	79.34	18.37	64.72	16 1 17	2153.6	-35.30	70.89
60.38	8 35 18	4002.76	-32.20	174.42	18.38	64.74	9 42 1	3402.8	-35.31	165.97
119.62	15 15 23	2753.64	-32.19	79.34	18.37	64.72	16 1 17	2153.6	-35.30	70.89
60.38	8 35 18	4002.76	-32.20	174.42	18.38	64.74	9 42 1	3402.8	-35.31	165.97
119.62	15 15 23	2753.64	-32.19	79.34	18.37	64.72	16 1 17	2153.6	-35.30	70.89

DIFFERENTIAL CORRECTIONS

TDE	.5962	TRA	-.1388	TC3	-2.4378	BAU	.3614	SGT	1902.9	SGR	1073.1
RDE	.2772	RRA	.1816	RC3	-1.3438	FAU	.60887	RRT	.8255	RRF	.9794
FDE	6.7490	FRA	5.0912	FC	-54.2828	BSP	6461	SGB	2184.7	R23	.3916
BDE	.6575	BRA	.2285	BC3	2.7837	FSP	11415	SG1	2115.6	SG2	544.8

MID-COURSE EXECUTION ACCURACY

SG3	3287.9	RTF	.8413	THA	26.89

ORBIT DETERMINATION ACCURACY

ST	1101.7	SR	526.9	SS	3175.3
CRT	.9421	CRS	-.9989	CST	-.9288
LSA	3379.7	MSA	388.3	SSA	14.2
EL1	1210.5	EL2	160.8	ALF	24.72

LAUNCH DATE NOV 19 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 653.896 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.912	GAL	-.32	AZL	87.49	HCA	199.42	SMA	186.29	ECC	.20657	INC	2.5109	V1	30.141
RP	222.08	LAP	-.83	LOP	256.10	VP	21.972	GAP	-4.43	AZP	92.37	TAL	358.13	TAP	197.55	RCA	147.81	APO	224.77	V2	24.758
RC	264.145	GL	27.70	GP	-5.59	ZAL	86.82	ZAP	100.74	ETS	179.93	ZAE	135.40	ETE	183.19	ZAC	81.58	ETC	256.41	CLP	100.79

PLANETOCENTRIC CONIC

C3	9.623	VHL	3.102	DLA	39.64	RAL	156.85	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	2.816	DPA	-2.51	RAP	175.43	ECC	1.1584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.02	8 38 18	3992.62	-31.93	173.41	18.08	65.15	9 44 51	3392.6	-34.99	164.97
118.98	15 12 29	2760.22	-31.92	79.74	18.08	65.13	15 58 29	2160.2	-34.98	71.30
61.02	8 38 18	3992.62	-31.93	173.41	18.08	65.15	9 44 51	3392.6	-34.99	164.97
118.98	15 12 29	2760.22	-31.92	79.74	18.08	65.13	15 58 29	2160.2	-34.98	71.30
61.02	8 38 18	3992.62	-31.93	173.41	18.08	65.15	9 44 51	3392.6	-34.99	164.97
118.98	15 12 29	2760.22	-31.92	79.74	18.08	65.13	15 58 29	2160.2	-34.98	71.30

DIFFERENTIAL CORRECTIONS

TDE	.6453	TRA	-.0956	TC3	-2.9238	BAU	.4103	SGT	2182.7	SGR	1024.0
RDE	.2693	RRA	.1759	RC3	-1.2725	FAU	.61450	RRT	.8627	RRF	.9748
FDE	6.6621	FRA	5.1355	FC	-55.2812	BSP	7341	SGB	2410.9	R23	.3454
BDE	.6993	BRA	.2002	BC3	3.1887	FSP	11591	SG1	2363.0	SG2	478.3

MID-COURSE EXECUTION ACCURACY

SG3	3323.3	RTF	.8822	THA	23.03

ORBIT DETERMINATION ACCURACY

ST	1195.1	SR	513.8	SS	3135.8
CRT	.9534	CRS	-.9985	CST	-.9392
LSA	3372.9	MSA	385.9	SSA	15.2
EL1	1293.0	EL2	143.3	ALF	22.58

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LAUNCH DATE  NOV 19 1964                          FLIGHT TIME 294.00                                ARRIVAL DATE  SEP  9 1965

 HELIOCENTRIC CONIC                                DISTANCE 657.929                                   EARTH  TO  MARS
  RL  147.82 LAL     .00 LOL  56.70 VL  32.909 GAL   -.34 AZL  87.53 HCA 200.52 SMA 186.25 ECC .20640 INC 2.4718 V1  30.141
  RP  221.70 LAP    -.87 LOP 257.20 VP  22.015 GAP  -4.66 AZP  92.32 TAL 358.01 TAP 198.53 RCA 147.81 APO 224.69 V2  24.799
  RC 265.639 GL   27.35 GP   -5.33 ZAL  87.02 ZAP  98.73 ETS 179.71 ZAE 133.19 ETE 182.62 ZAC  81.63 ETC 256.49 CLP  98.77
 PLANETOCENTRIC CONIC
  C3   9.546 VHL  3.090 DLA  39.23 RAL 156.92 RAD 6567.3 VEL 11.443 PTH   1.98 VHP  2.804 DPA  -1.90 RAP 174.71 ECC 1.1571
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     61.63     8 41 27   3982.81     -31.67     172.45      17.86      65.52    9 47 50    3382.8     -34.68     164.01
    118.37    15  9 51   2766.84     -31.65      80.16      17.86      65.51   15 55 58    2166.8     -34.67      71.72
     61.63     8 41 27   3982.81     -31.67     172.45      17.86      65.52    9 47 50    3382.8     -34.68     164.01
    118.37    15  9 51   2766.84     -31.65      80.16      17.86      65.51   15 55 58    2166.8     -34.67      71.72
     61.63     8 41 27   3982.81     -31.67     172.45      17.86      65.52    9 47 50    3382.8     -34.68     164.01
    118.37    15  9 51   2766.84     -31.65      80.16      17.86      65.51   15 55 58    2166.8     -34.67      71.72
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
  TDE   .6947 TRA -.0514 TC3-3.4080 BAU  .4615     SGT 2471.8 SGR  980.6 SG3 3359.1       ST  1290.4 SR   501.9 SS  3089.7
  RDE   .2621 RRA  .1711 RC3-1.2085 FAU .62063     RRT  .8863 RRF  .9695 RTF  .9092       CRT  .9622 CRS -.9981 CST -.9470
  FDE 6.5528 FRA 5.1865 FC-56.2863 BSP   8370     SGB 2659.2 R23  .2993 R13  .9285       LSA 3363.7 MSA  385.1 SSA   16.2
  BDE   .7425 BRA  .1786 BC3 3.6160 FSP  11646     SG1 2624.6 SG2  427.7 THA  19.92       EL1 1378.6 EL2  128.0 ALF  20.70

LAUNCH DATE  NOV 19 1964                          FLIGHT TIME 296.00                                ARRIVAL DATE  SEP 11 1965

 HELIOCENTRIC CONIC                                DISTANCE 661.970                                   EARTH  TO  MARS
  RL  147.82 LAL     .00 LOL  56.70 VL  32.907 GAL   -.36 AZL  87.56 HCA 201.62 SMA 186.21 ECC .20625 INC 2.4361 V1  30.141
  RP  221.32 LAP    -.90 LOP 258.31 VP  22.059 GAP  -4.88 AZP  92.26 TAL 357.87 TAP 199.50 RCA 147.81 APO 224.62 V2  24.841
  RC 267.114 GL   27.03 GP   -5.09 ZAL  87.25 ZAP  96.73 ETS 179.52 ZAE 130.97 ETE 182.14 ZAC  81.67 ETC 256.57 CLP  96.76
 PLANETOCENTRIC CONIC
  C3   9.476 VHL  3.078 DLA  38.84 RAL 157.03 RAD 6567.3 VEL 11.440 PTH   1.98 VHP  2.796 DPA  -1.31 RAP 173.98 ECC 1.1560
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     62.23     8 44 45   3973.23     -31.41     171.51      17.72      65.88    9 50 59    3373.2     -34.37     163.08
    117.77    15  7 27   2773.56     -31.40      80.58      17.71      65.86   15 53 41    2173.6     -34.37      72.15
     62.23     8 44 45   3973.23     -31.41     171.51      17.72      65.88    9 50 59    3373.2     -34.37     163.08
    117.77    15  7 27   2773.56     -31.40      80.58      17.71      65.86   15 53 41    2173.6     -34.37      72.15
     62.23     8 44 45   3973.23     -31.41     171.51      17.72      65.88    9 50 59    3373.2     -34.37     163.08
    117.77    15  7 27   2773.56     -31.40      80.58      17.71      65.86   15 53 41    2173.6     -34.37      72.15
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
  TDE   .7419 TRA -.0070 TC3-3.9217 BAU  .5174     SGT 2781.5 SGR  938.7 SG3 3379.4       ST  1382.8 SR   492.6 SS  3051.4
  RDE   .2564 RRA  .1676 RC3-1.1404 FAU .62290     RRT  .8991 RRF  .9633 RTF  .9281       CRT  .9689 CRS -.9975 CST -.9527
  FDE 6.4526 FRA 5.2626 FC-56.9068 BSP   9430     SGB 2935.6 R23  .2553 R13  .9396       LSA 3364.1 MSA  385.3 SSA   17.1
  BDE   .7850 BRA  .1678 BC3 4.0841 FSP  11725     SG1 2909.2 SG2  392.8 THA  17.20       EL1 1463.4 EL2  115.2 ALF  19.16

LAUNCH DATE  NOV 19 1964                          FLIGHT TIME 298.00                                ARRIVAL DATE  SEP 13 1965

 HELIOCENTRIC CONIC                                DISTANCE 666.021                                   EARTH  TO  MARS
  RL  147.82 LAL     .00 LOL  56.70 VL  32.905 GAL   -.39 AZL  87.60 HCA 202.73 SMA 186.18 ECC .20613 INC 2.4037 V1  30.141
  RP  220.94 LAP    -.93 LOP 259.42 VP  22.103 GAP  -5.10 AZP  92.22 TAL 357.73 TAP 200.46 RCA 147.80 APO 224.56 V2  24.883
  RC 268.570 GL   26.73 GP   -4.87 ZAL  87.52 ZAP  94.73 ETS 179.34 ZAE 128.74 ETE 181.71 ZAC  81.69 ETC 256.65 CLP  94.74
 PLANETOCENTRIC CONIC
  C3   9.414 VHL  3.068 DLA  38.46 RAL 157.19 RAD 6567.3 VEL 11.437 PTH   1.98 VHP  2.791 DPA   -.74 RAP 173.25 ECC 1.1549
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     62.81     8 48 14   3963.79     -31.16     170.60      17.63      66.22    9 54 17    3363.8     -34.08     162.17
    117.19    15  5 15   2780.43     -31.14      81.02      17.63      66.20   15 51 36    2180.4     -34.07      72.60
     62.81     8 48 14   3963.79     -31.16     170.60      17.63      66.22    9 54 17    3363.8     -34.08     162.17
    117.19    15  5 15   2780.43     -31.14      81.02      17.63      66.20   15 51 36    2180.4     -34.07      72.60
     62.81     8 48 14   3963.79     -31.16     170.60      17.63      66.22    9 54 17    3363.8     -34.08     162.17
    117.19    15  5 15   2780.43     -31.14      81.02      17.63      66.20   15 51 36    2180.4     -34.07      72.60
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
  TDE   .7883 TRA  .0402 TC3-4.4331 BAU  .5743     SGT 3094.6 SGR  900.5 SG3 3399.1       ST  1474.6 SR   482.9 SS  2994.7
  RDE   .2507 RRA  .1637 RC3-1.0803 FAU .62637     RRT  .9078 RRF  .9562 RTF  .9422       CRT  .9746 CRS -.9968 CST -.9575
  FDE 6.3078 FRA 5.2975 FC-57.6008 BSP  10539     SGB 3223.0 R23  .2118 R13  .9491       LSA 3350.8 MSA  384.2 SSA   18.1
  BDE   .8272 BRA  .1685 BC3 4.5629 FSP  11717     SG1 3202.3 SG2  365.0 THA  15.00       EL1 1548.3 EL2  103.0 ALF  17.78

LAUNCH DATE  NOV 19 1964                          FLIGHT TIME 300.00                                ARRIVAL DATE  SEP 15 1965

 HELIOCENTRIC CONIC                                DISTANCE 670.080                                   EARTH  TO  MARS
  RL  147.82 LAL     .00 LOL  56.70 VL  32.904 GAL   -.42 AZL  87.63 HCA 203.84 SMA 186.15 ECC .20604 INC 2.3741 V1  30.141
  RP  220.56 LAP    -.96 LOP 260.53 VP  22.147 GAP  -5.32 AZP  92.17 TAL 357.56 TAP 201.41 RCA 147.80 APO 224.51 V2  24.924
  RC 270.009 GL   26.46 GP   -4.67 ZAL  87.81 ZAP  92.73 ETS 179.19 ZAE 126.52 ETE 181.35 ZAC  81.70 ETC 256.73 CLP  92.74
 PLANETOCENTRIC CONIC
  C3   9.359 VHL  3.059 DLA  38.09 RAL 157.39 RAD 6567.3 VEL 11.435 PTH   1.98 VHP  2.789 DPA   -.18 RAP 172.53 ECC 1.1540
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     63.39     8 51 53   3954.41     -30.90     169.70      17.61      66.54    9 57 48    3354.4     -33.79     161.28
    116.61    15  3 14   2787.49     -30.89      81.47      17.60      66.52   15 49 41    2187.5     -33.78      73.06
     63.39     8 51 53   3954.41     -30.90     169.70      17.61      66.54    9 57 48    3354.4     -33.79     161.28
    116.61    15  3 14   2787.49     -30.89      81.47      17.60      66.52   15 49 41    2187.5     -33.78      73.06
     63.39     8 51 53   3954.41     -30.90     169.70      17.61      66.54    9 57 48    3354.4     -33.79     161.28
    116.61    15  3 14   2787.49     -30.89      81.47      17.60      66.52   15 49 41    2187.5     -33.78      73.06
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
  TDE   .8342 TRA  .0881 TC3-4.9620 BAU  .6337     SGT 3420.8 SGR  863.3 SG3 3403.3       ST  1566.3 SR   474.3 SS  2934.8
  RDE   .2455 RRA  .1611 RC3-1.0168 FAU .62616     RRT  .9100 RRF  .9479 RTF  .9518       CRT  .9790 CRS -.9960 CST -.9606
  FDE 6.1455 FRA 5.3660 FC-57.9248 BSP  11675     SGB 3528.1 R23  .1751 R13  .9561       LSA 3337.9 MSA  387.0 SSA   19.0
  BDE   .8696 BRA  .1836 BC3 5.0651 FSP  11732     SG1 3510.8 SG2  348.8 THA  13.07       EL1 1633.9 EL2   92.7 ALF  16.57
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LAUNCH DATE NOV 19 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 674.148 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.903	GAL	-.45	AZL	87.65	HCA	204.96	SMA	186.13	ECC	.20597	INC	2.3469
RP	220.18	LAP	-.99	LOP	261.64	VP	22.192	GAP	-5.52	AZP	92.13	TAL	357.38	TAP	202.34	RCA	147.80	APO	224.47
RC	271.430	GL	26.21	GP	-4.48	ZAL	88.13	ZAP	90.74	ETS	179.05	ZAE	124.30	ETE	181.02	ZAC	81.71	ETC	256.82

V1 30.141 V2 24.965 CLP 90.74

PLANETOCENTRIC CONIC

C3	9.309	VHL	3.051	DLA	37.72	RAL	157.64	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	2.791	DPA	.35	RAP	171.81

ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.96	8 55 45	3944.99	-30.65	168.80	17.64	66.85	10 1 30	3345.0	-33.50	160.39
116.04	15 1 20	2794.83	-30.64	81.95	17.63	66.83	15 47 54	2194.8	-33.49	73.54
63.96	8 55 45	3944.99	-30.65	168.80	17.64	66.85	10 1 30	3345.0	-33.50	160.39
116.04	15 1 20	2794.83	-30.64	81.95	17.63	66.83	15 47 54	2194.8	-33.49	73.54
63.96	8 55 45	3944.99	-30.65	168.80	17.64	66.85	10 1 30	3345.0	-33.50	160.39
116.04	15 1 20	2794.83	-30.64	81.95	17.63	66.83	15 47 54	2194.8	-33.49	73.54

DIFFERENTIAL CORRECTIONS

TDE	.8778	TRA	.1388	TC3	-5.4867	BAU	.6931
RDE	.2415	RRA	.1586	RC3	-.9569	FAU	.62540
FDE	5.9988	FRA	5.4234	FC	-58.1639	BSP	12837
BDE	.9105	BRA	.2107	BC3	5.5695	FSP	11750

MID-COURSE EXECUTION ACCURACY

SGT	3746.4	SGR	829.7	SG3	3404.2
RRT	.9093	RRF	.9385	RTF	.9596
SGB	3837.1	R23	.1412	R13	.9623
SG1	3822.2	SG2	338.3	THA	11.48

ORBIT DETERMINATION ACCURACY

ST	1654.5	SR	467.7	SS	2883.6
CRT	.9829	CRS	-.9950	CST	-.9635
LSA	3334.8	MSA	387.2	SSA	19.9
EL1	1717.4	EL2	83.1	ALF	15.57

LAUNCH DATE NOV 19 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 678.224 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.902	GAL	-.48	AZL	87.68	HCA	206.08	SMA	186.12	ECC	.20593	INC	2.3217
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.237	GAP	-5.73	AZP	92.09	TAL	357.19	TAP	203.27	RCA	147.79	APO	224.45
RC	272.833	GL	25.97	GP	-4.30	ZAL	88.48	ZAP	88.77	ETS	178.92	ZAE	122.09	ETE	180.74	ZAC	81.70	ETC	256.90

V1 30.141 V2 25.006 CLP 88.76

PLANETOCENTRIC CONIC

C3	9.264	VHL	3.044	DLA	37.36	RAL	157.93	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	2.796	DPA	.87	RAP	171.10

ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.54	8 59 49	3935.54	-30.40	167.90	17.72	67.15	10 5 24	3335.5	-33.21	159.50
115.46	14 59 33	2802.42	-30.39	82.45	17.72	67.14	15 46 16	2202.4	-33.20	74.05
64.54	8 59 49	3935.54	-30.40	167.90	17.72	67.15	10 5 24	3335.5	-33.21	159.50
115.46	14 59 33	2802.42	-30.39	82.45	17.72	67.14	15 46 16	2202.4	-33.20	74.05
64.54	8 59 49	3935.54	-30.40	167.90	17.72	67.15	10 5 24	3335.5	-33.21	159.50
115.46	14 59 33	2802.42	-30.39	82.45	17.72	67.14	15 46 16	2202.4	-33.20	74.05

DIFFERENTIAL CORRECTIONS

TDE	.9192	TRA	.1907	TC3	-6.0241	BAU	.7543
RDE	.2373	RRA	.1564	RC3	-.8971	FAU	.62266
FDE	5.8051	FRA	5.4769	FC	-58.1867	BSP	14014
BDE	.9494	BRA	.2467	BC3	6.0905	FSP	11660

MID-COURSE EXECUTION ACCURACY

SGT	4080.0	SGR	796.9	SG3	3393.1
RRT	.9052	RRF	.9276	RTF	.9653
SGB	4157.1	R23	.1130	R13	.9670
SG1	4143.7	SG2	333.5	THA	10.09

ORBIT DETERMINATION ACCURACY

ST	1739.1	SR	460.6	SS	2814.3
CRT	.9860	CRS	-.9936	CST	-.9652
LSA	3317.3	MSA	389.9	SSA	20.8
EL1	1797.6	EL2	74.4	ALF	14.66

LAUNCH DATE NOV 19 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 682.305 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.901	GAL	-.52	AZL	87.70	HCA	207.21	SMA	186.11	ECC	.20591	INC	2.2984
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.282	GAP	-5.93	AZP	92.04	TAL	356.98	TAP	204.18	RCA	147.79	APO	224.43
RC	274.220	GL	25.75	GP	-4.13	ZAL	88.87	ZAP	86.82	ETS	178.80	ZAE	119.90	ETE	180.49	ZAC	81.70	ETC	256.99

V1 30.141 V2 25.047 CLP 86.81

PLANETOCENTRIC CONIC

C3	9.225	VHL	3.037	DLA	37.00	RAL	158.26	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	2.805	DPA	1.36	RAP	170.41

ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.12	9 4 9	3925.84	-30.15	166.99	17.86	67.45	10 9 35	3325.8	-32.92	158.60
114.88	14 57 50	2810.46	-30.13	82.98	17.85	67.43	15 44 41	2210.5	-32.91	74.59
65.12	9 4 9	3925.84	-30.15	166.99	17.86	67.45	10 9 35	3325.8	-32.92	158.60
114.88	14 57 50	2810.46	-30.13	82.98	17.85	67.43	15 44 41	2210.5	-32.91	74.59
65.12	9 4 9	3925.84	-30.15	166.99	17.86	67.45	10 9 35	3325.8	-32.92	158.60
114.88	14 57 50	2810.46	-30.13	82.98	17.85	67.43	15 44 41	2210.5	-32.91	74.59

DIFFERENTIAL CORRECTIONS

TDE	.9626	TRA	.2497	TC3	-6.5479	BAU	.8140
RDE	.2364	RRA	.1566	RC3	-.8303	FAU	.61385
FDE	5.7422	FRA	5.6308	FC	-57.6083	BSP	15306
BDE	.9912	BRA	.2948	BC3	6.6003	FSP	11829

MID-COURSE EXECUTION ACCURACY

SGT	4412.0	SGR	768.2	SG3	3367.2
RRT	.8953	RRF	.9153	RTF	.9695
SGB	4478.4	R23	.0946	R13	.9707
SG1	4465.6	SG2	338.1	THA	8.91

ORBIT DETERMINATION ACCURACY

ST	1828.4	SR	459.8	SS	2808.8
CRT	.9888	CRS	-.9924	CST	-.9673
LSA	3360.1	MSA	391.4	SSA	21.6
EL1	1884.1	EL2	66.7	ALF	13.98

LAUNCH DATE NOV 19 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 686.399 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.901	GAL	-.55	AZL	87.72	HCA	208.33	SMA	186.11	ECC	.20593	INC	2.2768
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.327	GAP	-6.13	AZP	92.00	TAL	356.76	TAP	205.09	RCA	147.78	APO	224.43
RC	275.589	GL	25.54	GP	-3.96	ZAL	89.28	ZAP	84.88	ETS	178.70	ZAE	117.72	ETE	180.28	ZAC	81.69	ETC	257.07

V1 30.141 V2 25.088 CLP 84.87

PLANETOCENTRIC CONIC

C3	9.190	VHL	3.032	DLA	36.64	RAL	158.62	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	2.816	DPA	1.84	RAP	169.74

ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.71	9 8 40	3916.03	-29.89	166.07	18.03	67.74	10 13 56	3316.0	-32.63	157.69
114.29	14 56 12	2818.82	-29.88	83.53	18.03	67.73	15 43 10	2218.8	-32.62	75.15
65.71	9 8 40	3916.03	-29.89	166.07	18.03	67.74	10 13 56	3316.0	-32.63	157.69
114.29	14 56 12	2818.82	-29.88	83.53	18.03	67.73	15 43 10	2218.8	-32.62	75.15
65.71	9 8 40	3916.03	-29.89	166.07	18.03	67.74	10 13 56	3316.0	-32.63	157.69
114.29	14 56 12	2818.82	-29.88	83.53	18.03	67.73	15 43 10	2218.8	-32.62	75.15

DIFFERENTIAL CORRECTIONS

TDE	.9976	TRA	.3042	TC3	-7.0854	BAU	.8758
RDE	.2322	RRA	.1542	RC3	-.7791	FAU	.61146
FDE	5.4808	FRA	5.6414	FC	-57.6000	BSP	16451
BDE	1.0243	BRA	.3411	BC3	7.1282	FSP	11570

MID-COURSE EXECUTION ACCURACY

SGT	4745.9	SGR	740.1	SG3	3350.2
RRT	.8875	RRF	.9015	RTF	.9731
SGB	4803.3	R23	.0726	R13	.9739
SG1	4791.4	SG2	337.8	THA	7.92

ORBIT DETERMINATION ACCURACY

ST	1902.0	SR	452.4	SS	2712.4
CRT	.9909	CRS	-.9904	CST	-.9678
LSA	3320.1	MSA	395.2	SSA	22.5
EL1	1954.2	EL2	59.2	ALF	13.27

LAUNCH DATE NOV 19 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 690.501 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.901 GAL -.59 AZL 87.74 HCA 209.46 SMA 186.11 ECC .20596 INC 2.2566 V1 30.141
RP 218.70 LAP -1.11 LOP 266.15 VP 22.373 GAP -6.32 AZP 91.96 TAL 356.52 TAP 205.99 RCA 147.78 APO 224.44 V2 25.128
RC 276.940 GL 25.34 GP -3.81 ZAL 89.71 ZAP 82.97 ETS 178.61 ZAE 115.57 ETE 180.08 ZAC 81.67 ETC 257.16 CLP 82.96

PLANETOCENTRIC CONIC

C3 9.160 VHL 3.027 DLA 36.28 RAL 159.01 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.830 DPA 2.30 RAP 169.09 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.31	9 13 28	3905.88	-29.63	165.13	18.25	68.03	10 18 34	3305.9	-32.33	156.76
113.69	14 54 34	2827.71	-29.61	84.12	18.25	68.01	15 41 42	2227.7	-32.32	75.76
66.31	9 13 28	3905.88	-29.63	165.13	18.25	68.03	10 18 34	3305.9	-32.33	156.76
113.69	14 54 34	2827.71	-29.61	84.12	18.25	68.01	15 41 42	2227.7	-32.32	75.76
66.31	9 13 28	3905.88	-29.63	165.13	18.25	68.03	10 18 34	3305.9	-32.33	156.76
113.69	14 54 34	2827.71	-29.61	84.12	18.25	68.01	15 41 42	2227.7	-32.32	75.76

DIFFERENTIAL CORRECTIONS
TDE 1.0299 TRA .3619 TC3-7.6221 BAU .9377
RDE .2291 RRA .1521 RC3 -.7260 FAU .60609
FDE 5.2447 FRA 5.6478 FC-57.2809 BSP 17586
BDE 1.0550 BRA .3926 BC3 7.6566 FSP 11404

MID-COURSE EXECUTION ACCURACY
SGT 5080.4 SGR 713.3 SG3 3320.2
RRT .8766 RRF .8858 RTF .9763
SGB 5130.2 R23 .0543 R13 .9768
SG1 5118.9 SG2 340.7 THA 7.05

ORBIT DETERMINATION ACCURACY
ST 1971.1 SR 446.9 SS 2627.9
CRT .9929 CRS -.9881 CST -.9685
LSA 3291.4 MSA 396.2 SSA 23.4
EL1 2020.4 EL2 51.9 ALF 12.70

LAUNCH DATE NOV 19 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 694.609 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.902 GAL -.64 AZL 87.76 HCA 210.60 SMA 186.11 ECC .20602 INC 2.2377 V1 30.141
RP 218.34 LAP -1.14 LOP 267.28 VP 22.419 GAP -6.51 AZP 91.93 TAL 356.27 TAP 206.87 RCA 147.77 APO 224.46 V2 25.168
RC 278.273 GL 25.15 GP -3.67 ZAL 90.18 ZAP 81.09 ETS 178.52 ZAE 113.44 ETE 179.91 ZAC 81.66 ETC 257.24 CLP 81.07

PLANETOCENTRIC CONIC

C3 9.135 VHL 3.022 DLA 35.92 RAL 159.44 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.848 DPA 2.73 RAP 168.46 ECC 1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.92	9 18 32	3895.39	-29.36	164.17	18.51	68.31	10 23 27	3295.4	-32.02	155.81
113.08	14 52 57	2837.11	-29.35	84.75	18.51	68.30	15 40 14	2237.1	-32.02	76.40
66.92	9 18 32	3895.39	-29.36	164.17	18.51	68.31	10 23 27	3295.4	-32.02	155.81
113.08	14 52 57	2837.11	-29.35	84.75	18.51	68.30	15 40 14	2237.1	-32.02	76.40
66.92	9 18 32	3895.39	-29.36	164.17	18.51	68.31	10 23 27	3295.4	-32.02	155.81
113.08	14 52 57	2837.11	-29.35	84.75	18.51	68.30	15 40 14	2237.1	-32.02	76.40

DIFFERENTIAL CORRECTIONS
TDE 1.0607 TRA .4229 TC3-8.1511 BAU .9988
RDE .2267 RRA .1506 RC3 -.6728 FAU .59877
FDE 5.0205 FRA 5.6698 FC-56.7471 BSP 18743
BDE 1.0846 BRA .4490 BC3 8.1788 FSP 11233

MID-COURSE EXECUTION ACCURACY
SGT 5412.9 SGR 688.8 SG3 3282.5
RRT .8629 RRF .8682 RTF .9788
SGB 5456.6 R23 .0400 R13 .9791
SG1 5445.6 SG2 346.1 THA 6.29

ORBIT DETERMINATION ACCURACY
ST 2037.9 SR 442.8 SS 2550.8
CRT .9945 CRS -.9855 CST -.9689
LSA 3270.6 MSA 398.0 SSA 24.3
EL1 2085.0 EL2 45.2 ALF 12.20

LAUNCH DATE NOV 19 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 698.726 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.902 GAL -.68 AZL 87.78 HCA 211.74 SMA 186.12 ECC .20611 INC 2.2200 V1 30.141
RP 217.98 LAP -1.17 LOP 268.42 VP 22.464 GAP -6.69 AZP 91.89 TAL 356.00 TAP 207.74 RCA 147.76 APO 224.48 V2 25.208
RC 279.589 GL 24.97 GP -3.53 ZAL 90.68 ZAP 79.24 ETS 178.45 ZAE 111.34 ETE 179.76 ZAC 81.65 ETC 257.32 CLP 79.22

PLANETOCENTRIC CONIC

C3 9.114 VHL 3.019 DLA 35.55 RAL 159.91 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.868 DPA 3.14 RAP 167.87 ECC 1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.56	9 23 54	3884.42	-29.08	163.17	18.82	68.59	10 28 39	3284.4	-31.71	154.83
112.44	14 51 17	2847.19	-29.07	85.43	18.81	68.58	15 38 44	2247.2	-31.71	77.09
67.56	9 23 54	3884.42	-29.08	163.17	18.82	68.59	10 28 39	3284.4	-31.71	154.83
112.44	14 51 17	2847.19	-29.07	85.43	18.81	68.58	15 38 44	2247.2	-31.71	77.09
67.56	9 23 54	3884.42	-29.08	163.17	18.82	68.59	10 28 39	3284.4	-31.71	154.83
112.44	14 51 17	2847.19	-29.07	85.43	18.81	68.58	15 38 44	2247.2	-31.71	77.09

DIFFERENTIAL CORRECTIONS
TDE 1.0881 TRA .4864 TC3-8.6742 BAU 1.0596
RDE .2247 RRA .1495 RC3 -.6210 FAU .59032
FDE 4.7856 FRA 5.6986 FC-56.0753 BSP 19886
BDE 1.1111 BRA .5089 BC3 8.6964 FSP 11055

MID-COURSE EXECUTION ACCURACY
SGT 5742.9 SGR 666.4 SG3 3239.1
RRT .8466 RRF .8487 RTF .9808
SGB 5781.5 R23 .0287 R13 .9809
SG1 5770.7 SG2 352.9 THA 5.63

ORBIT DETERMINATION ACCURACY
ST 2098.9 SR 439.2 SS 2470.6
CRT .9958 CRS -.9822 CST -.9687
LSA 3246.5 MSA 401.4 SSA 25.1
EL1 2144.0 EL2 39.3 ALF 11.77

LAUNCH DATE NOV 19 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 702.851 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.903 GAL -.73 AZL 87.80 HCA 212.88 SMA 186.14 ECC .20622 INC 2.2033 V1 30.141
RP 217.62 LAP -1.20 LOP 269.56 VP 22.510 GAP -6.87 AZP 91.85 TAL 355.72 TAP 208.61 RCA 147.75 APO 224.52 V2 25.248
RC 280.887 GL 24.80 GP -3.40 ZAL 91.21 ZAP 77.42 ETS 178.38 ZAE 109.27 ETE 179.63 ZAC 81.64 ETC 257.40 CLP 77.40

PLANETOCENTRIC CONIC

C3 9.097 VHL 3.016 DLA 35.17 RAL 160.41 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.891 DPA 3.54 RAP 167.30 ECC 1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.21	9 29 38	3872.84	-28.80	162.12	19.16	68.88	10 34 11	3272.8	-31.40	153.79
111.79	14 49 32	2858.06	-28.78	86.16	19.15	68.86	15 37 10	2258.1	-31.39	77.84
68.21	9 29 38	3872.84	-28.80	162.12	19.16	68.88	10 34 11	3272.8	-31.40	153.79
111.79	14 49 32	2858.06	-28.78	86.16	19.15	68.86	15 37 10	2258.1	-31.39	77.84
68.21	9 29 38	3872.84	-28.80	162.12	19.16	68.88	10 34 11	3272.8	-31.40	153.79
111.79	14 49 32	2858.06	-28.78	86.16	19.15	68.86	15 37 10	2258.1	-31.39	77.84

DIFFERENTIAL CORRECTIONS
TDE 1.1124 TRA .5523 TC3-9.1895 BAU 1.1198
RDE .2232 RRA .1485 RC3 -.5698 FAU .58042
FDE 4.5583 FRA 5.7188 FC-55.2364 BSP 21009
BDE 1.1345 BRA .5719 BC3 9.2071 FSP 10835

MID-COURSE EXECUTION ACCURACY
SGT 6069.7 SGR 645.7 SG3 3188.4
RRT .8277 RRF .8271 RTF .9825
SGB 6103.9 R23 .0197 R13 .9826
SG1 6093.2 SG2 361.0 THA 5.05

ORBIT DETERMINATION ACCURACY
ST 2154.3 SR 436.5 SS 2393.8
CRT .9968 CRS -.9785 CST -.9685
LSA 3224.7 MSA 403.7 SSA 25.9
EL1 2197.9 EL2 34.2 ALF 11.42

LAUNCH DATE NOV 19 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 706.982 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.904 GAL -.78 AZL 87.81 HCA 214.03 SMA 186.15 ECC .20635 INC 2.1876 V1 30.141
RP 217.27 LAP -1.22 LOP 270.71 VP 22.556 GAP -7.05 AZP 91.81 TAL 355.43 TAP 209.46 RCA 147.74 APO 224.57 V2 25.287
RC 282.167 GL 24.63 GP -3.27 ZAL 91.76 ZAP 75.64 ETS 178.32 ZAE 107.23 ETE 179.52 ZAC 81.63 ETC 257.48 CLP 75.62

PLANETOCENTRIC CONIC

C3 9.085 VHL 3.014 DLA 34.79 RAL 160.94 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.916 DPA 3.91 RAP 166.77 ECC 1.1495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.90	9 35 40	3860.74	-28.50	161.04	19.54	69.16	10 40 1	3260.7	-31.07	152.72
111.10	14 47 43	2869.63	-28.49	86.95	19.53	69.14	15 35 33	2269.6	-31.06	78.64
68.90	9 35 40	3860.74	-28.50	161.04	19.54	69.16	10 40 1	3260.7	-31.07	152.72
111.10	14 47 43	2869.63	-28.49	86.95	19.53	69.14	15 35 33	2269.6	-31.06	78.64
68.90	9 35 40	3860.74	-28.50	161.04	19.54	69.16	10 40 1	3260.7	-31.07	152.72
111.10	14 47 43	2869.63	-28.49	86.95	19.53	69.14	15 35 33	2269.6	-31.06	78.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1345 TRA .6227 TC3-9.6883 BAU 1.1784 SGT 6390.4 SGR 627.2 SG3 3132.7 ST 2206.5 SR 434.4 SS 2317.3
RDE .2220 RRA .1479 RC3 -.5198 FAU .56940 RRT .8067 RRF .8036 RTF .9838 CRT .9975 CRS -.9739 CST -.9679
FDE 4.3287 FRA 5.7471 FC-54.2627 BSP 22158 SGB 6421.1 R23 .0123 R13 .9839 LSA 3203.3 MSA 407.1 SSA 26.6
BDE 1.1560 BRA .6400 BC3 9.7023 FSP 10643 SG1 6410.4 SG2 369.4 THA 4.54 EL1 2248.6 EL2 30.1 ALF 11.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 711.122 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.905 GAL -.83 AZL 87.83 HCA 215.18 SMA 186.18 ECC .20651 INC 2.1728 V1 30.141
RP 216.91 LAP -1.25 LOP 271.86 VP 22.601 GAP -7.23 AZP 91.78 TAL 355.12 TAP 210.30 RCA 147.73 APO 224.62 V2 25.327
RC 283.431 GL 24.46 GP -3.15 ZAL 92.35 ZAP 73.89 ETS 178.26 ZAE 105.22 ETE 179.41 ZAC 81.63 ETC 257.55 CLP 73.87

PLANETOCENTRIC CONIC

C3 9.077 VHL 3.013 DLA 34.39 RAL 161.50 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.944 DPA 4.25 RAP 166.27 ECC 1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.61	9 42 6	3847.83	-28.20	159.90	19.95	69.44	10 46 14	3247.8	-30.73	151.60
110.39	14 45 45	2882.20	-28.19	87.81	19.95	69.42	15 33 47	2282.2	-30.72	79.51
69.61	9 42 6	3847.83	-28.20	159.90	19.95	69.44	10 46 14	3247.8	-30.73	151.60
110.39	14 45 45	2882.20	-28.19	87.81	19.95	69.42	15 33 47	2282.2	-30.72	79.51
69.61	9 42 6	3847.83	-28.20	159.90	19.95	69.44	10 46 14	3247.8	-30.73	151.60
110.39	14 45 45	2882.20	-28.19	87.81	19.95	69.42	15 33 47	2282.2	-30.72	79.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1522 TRA .6943 TC-10.1819 BAU 1.2368 SGT 6708.3 SGR 610.6 SG3 3074.6 ST 2250.8 SR 432.6 SS 2237.9
RDE .2210 RRA .1473 RC3 -.4721 FAU .55814 RRT .7835 RRF .7782 RTF .9850 CRT .9978 CRS -.9684 CST -.9668
FDE 4.0920 FRA 5.7690 FC-53.2363 BSP 23263 SGB 6736.0 R23 .0064 R13 .9850 LSA 3176.7 MSA 411.6 SSA 27.4
BDE 1.1732 BRA .7098 BC310.1928 FSP 10430 SG1 6725.4 SG2 378.4 THA 4.09 EL1 2291.8 EL2 28.0 ALF 10.86

LAUNCH DATE NOV 19 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 715.269 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.907 GAL -.89 AZL 87.84 HCA 216.33 SMA 186.20 ECC .20669 INC 2.1587 V1 30.141
RP 216.57 LAP -1.28 LOP 273.02 VP 22.647 GAP -7.40 AZP 91.74 TAL 354.79 TAP 211.13 RCA 147.72 APO 224.69 V2 25.365
RC 284.679 GL 24.30 GP -3.04 ZAL 92.96 ZAP 72.19 ETS 178.21 ZAE 103.26 ETE 179.32 ZAC 81.63 ETC 257.62 CLP 72.16

PLANETOCENTRIC CONIC

C3 9.073 VHL 3.012 DLA 33.99 RAL 162.09 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.975 DPA 4.58 RAP 165.80 ECC 1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.36	9 48 54	3834.17	-27.89	158.70	20.40	69.72	10 52 49	3234.2	-30.38	150.41
109.64	14 43 39	2895.71	-27.88	88.73	20.40	69.71	15 31 54	2295.7	-30.38	80.45
70.36	9 48 54	3834.17	-27.89	158.70	20.40	69.72	10 52 49	3234.2	-30.38	150.41
109.64	14 43 39	2895.71	-27.88	88.73	20.40	69.71	15 31 54	2295.7	-30.38	80.45
110.00	15 13 13	2805.49	-29.88	82.47	21.18	72.56	15 59 58	2205.5	-31.97	73.89
110.00	14 18 31	2972.39	-25.92	93.84	19.53	66.90	15 8 3	2372.4	-28.82	85.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1660 TRA .7694 TC-10.6602 BAU 1.2941 SGT 7019.8 SGR 595.5 SG3 3008.9 ST 2288.4 SR 431.2 SS 2157.2
RDE .2203 RRA .1468 RC3 -.4248 FAU .54546 RRT .7578 RRF .7505 RTF .9859 CRT .9978 CRS -.9619 CST -.9655
FDE 3.8531 FRA 5.7822 FC-52.0474 BSP 24341 SGB 7045.0 R23 .0017 R13 .9860 LSA 3146.9 MSA 415.8 SSA 28.0
BDE 1.1867 BRA .7833 BC310.6687 FSP 10182 SG1 7034.3 SG2 387.8 THA 3.69 EL1 2328.5 EL2 28.2 ALF 10.65

LAUNCH DATE NOV 19 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 719.423 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.909 GAL -.95 AZL 87.85 HCA 217.49 SMA 186.23 ECC .20689 INC 2.1453 V1 30.141
RP 216.22 LAP -1.31 LOP 274.17 VP 22.693 GAP -7.56 AZP 91.70 TAL 354.46 TAP 211.95 RCA 147.70 APO 224.76 V2 25.404
RC 285.910 GL 24.14 GP -2.93 ZAL 93.60 ZAP 70.52 ETS 178.17 ZAE 101.32 ETE 179.24 ZAC 81.64 ETC 257.69 CLP 70.49

PLANETOCENTRIC CONIC

C3 9.074 VHL 3.012 DLA 33.58 RAL 162.70 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 3.008 DPA 4.88 RAP 165.37 ECC 1.1493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.15	9 56 12	3819.39	-27.56	157.42	20.89	70.01	10 59 52	3219.4	-30.03	149.15
108.85	14 41 16	2910.53	-27.55	89.75	20.89	70.00	15 29 47	2310.5	-30.02	81.48
71.15	9 56 12	3819.39	-27.56	157.42	20.89	70.01	10 59 52	3219.4	-30.03	149.15
108.85	14 41 16	2910.53	-27.55	89.75	20.89	70.00	15 29 47	2310.5	-30.02	81.48
110.00	15 36 51	2740.45	-31.11	77.81	22.17	75.07	16 22 31	2140.4	-32.85	69.02
110.00	13 59 48	3037.47	-24.12	98.03	19.31	65.01	14 50 26	2437.5	-27.28	90.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1772 TRA .8487 TC-11.1213 BAU 1.3499 SGT 7325.3 SGR 582.5 SG3 2942.8 ST 2322.1 SR 430.2 SS 2076.3
RDE .2199 RRA .1465 RC3 -.3799 FAU .53269 RRT .7308 RRF .7214 RTF .9868 CRT .9973 CRS -.9540 CST -.9637
FDE 3.6124 FRA 5.7999 FC-50.8228 BSP 25427 SGB 7348.4 R23 -.0027 R13 .9867 LSA 3116.0 MSA 421.7 SSA 28.6
BDE 1.1976 BRA .8612 BC311.1278 FSP 9948 SG1 7337.7 SG2 396.9 THA 3.34 EL1 2361.4 EL2 30.9 ALF 10.47

LAUNCH DATE NOV 19 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 723.584 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.911 GAL -1.01 AZL 87.87 HCA 218.65 SMA 186.27 ECC .20712 INC 2.1326 V1 30.141
RP 215.88 LAP -1.33 LOP 275.34 VP 22.738 GAP -7.73 AZP 91.67 TAL 354.10 TAP 212.76 RCA 147.69 APO 224.85 V2 25.442
RC 287.127 GL 23.98 GP -2.83 ZAL 94.27 ZAP 68.88 ETS 178.13 ZAE 99.43 ETE 179.18 ZAC 81.64 ETC 257.75 CLP 68.86

PLANETOCENTRIC CONIC

C3 9.080 VHL 3.013 DLA 33.16 RAL 163.35 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 3.043 DPA 5.17 RAP 164.98 ECC 1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.98	10 3 59	3803.51	-27.23	156.05	21.41	70.30	11 7 23	3203.5	-29.66	147.80
108.02	14 38 39	2926.66	-27.22	90.86	21.41	70.29	15 27 25	2326.7	-29.65	82.61
71.98	10 3 59	3803.51	-27.23	156.05	21.41	70.30	11 7 23	3203.5	-29.66	147.80
108.02	14 38 39	2926.66	-27.22	90.86	21.41	70.29	15 27 25	2326.7	-29.65	82.61
110.00	15 54 7	2694.97	-31.86	74.48	22.98	76.91	16 39 2	2095.0	-33.33	65.56
110.00	13 47 41	3083.20	-22.77	100.90	19.33	63.79	14 39 4	2483.2	-26.10	93.33

DIFFERENTIAL CORRECTIONS
TDE 1.1842 TRA .9297 TC-11.5700 BAU 1.4051
RDE .2199 RRA .1463 RC3 -.3362 FAU .51929
FDE 3.3819 FRA 5.8075 FC-49.5128 BSP 26462
BDE 1.2045 BRA .9411 BC311.5749 FSP 9684

MID-COURSE EXECUTION ACCURACY
SGT 7625.5 SGR 571.2 SG3 2873.0
RRT .7016 RRF .6906 RTF .9875
SGB 7646.9 R23 -.0058 R13 .9875
SG1 7636.1 SG2 406.5 THA 3.02

ORBIT DETERMINATION ACCURACY
ST 2348.5 SR 429.9 SS 1999.2
CRT .9964 CRS -.9450 CST -.9618
LSA 3084.5 MSA 426.6 SSA 29.3
EL1 2387.2 EL2 35.9 ALF 10.34

LAUNCH DATE NOV 19 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 727.753 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.913 GAL -1.07 AZL 87.88 HCA 219.82 SMA 186.31 ECC .20737 INC 2.1205 V1 30.141
RP 215.54 LAP -1.36 LOP 276.50 VP 22.784 GAP -7.89 AZP 91.63 TAL 353.74 TAP 213.55 RCA 147.67 APO 224.94 V2 25.480
RC 288.329 GL 23.82 GP -2.73 ZAL 94.97 ZAP 67.29 ETS 178.09 ZAE 97.57 ETE 179.11 ZAC 81.66 ETC 257.81 CLP 67.27

PLANETOCENTRIC CONIC

C3 9.091 VHL 3.015 DLA 32.73 RAL 164.02 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 3.081 DPA 5.42 RAP 164.63 ECC 1.1496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.87	10 12 22	3786.11	-26.88	154.58	21.96	70.60	11 15 28	3186.1	-29.27	146.34
107.13	14 35 37	2944.51	-26.87	92.09	21.96	70.58	15 24 42	2344.5	-29.27	83.86
72.87	10 12 22	3786.11	-26.88	154.58	21.96	70.60	11 15 28	3186.1	-29.27	146.34
107.13	14 35 37	2944.51	-26.87	92.09	21.96	70.58	15 24 42	2344.5	-29.27	83.86
110.00	16 8 55	2657.21	-32.41	71.67	23.72	78.48	16 53 12	2057.2	-33.66	62.66
110.00	13 38 15	3121.42	-21.60	103.25	19.47	62.84	14 30 16	2521.4	-25.07	95.81

DIFFERENTIAL CORRECTIONS
TDE 1.1870 TRA 1.0143 TC-12.0012 BAU 1.4590
RDE .2200 RRA .1461 RC3 -.2939 FAU .50536
FDE 3.1457 FRA 5.8077 FC-48.1273 BSP 27485
BDE 1.2072 BRA 1.0247 BC312.0048 FSP 9437

MID-COURSE EXECUTION ACCURACY
SGT 7918.9 SGR 561.4 SG3 2799.8
RRT .6707 RRF .6581 RTF .9881
SGB 7938.8 R23 -.0087 R13 .9881
SG1 7927.9 SG2 415.9 THA 2.73

ORBIT DETERMINATION ACCURACY
ST 2368.0 SR 429.7 SS 1919.1
CRT .9949 CRS -.9340 CST -.9593
LSA 3047.5 MSA 432.4 SSA 29.8
EL1 2406.3 EL2 42.8 ALF 10.24

LAUNCH DATE NOV 19 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 731.928 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.915 GAL -1.14 AZL 87.89 HCA 220.99 SMA 186.35 ECC .20765 INC 2.1089 V1 30.141
RP 215.21 LAP -1.38 LOP 277.67 VP 22.829 GAP -8.05 AZP 91.59 TAL 353.35 TAP 214.34 RCA 147.65 APO 225.04 V2 25.517
RC 289.516 GL 23.66 GP -2.63 ZAL 95.70 ZAP 65.74 ETS 178.06 ZAE 95.76 ETE 179.06 ZAC 81.67 ETC 257.86 CLP 65.72

PLANETOCENTRIC CONIC

C3 9.107 VHL 3.018 DLA 32.28 RAL 164.72 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.121 DPA 5.66 RAP 164.32 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.82	10 21 23	3767.12	-26.52	152.98	22.55	70.89	11 24 10	3167.1	-28.88	144.76
106.18	14 32 11	2964.18	-26.51	93.46	22.54	70.87	15 21 35	2364.2	-28.87	85.24
73.82	10 21 23	3767.12	-26.52	152.98	22.55	70.89	11 24 10	3167.1	-28.88	144.76
106.18	14 32 11	2964.18	-26.51	93.46	22.54	70.87	15 21 35	2364.2	-28.87	85.24
110.00	16 22 21	2623.82	-32.84	69.16	24.44	79.91	17 6 5	2023.8	-33.88	60.08
110.00	13 30 23	3155.48	-20.53	105.31	19.70	62.05	14 22 58	2555.5	-24.10	97.99

DIFFERENTIAL CORRECTIONS
TDE 1.1856 TRA 1.1023 TC-12.4133 BAU 1.5116
RDE .2203 RRA .1461 RC3 -.2534 FAU .49129
FDE 2.9086 FRA 5.8072 FC-46.7061 BSP 28478
BDE 1.2059 BRA 1.1119 BC312.4158 FSP 9175

MID-COURSE EXECUTION ACCURACY
SGT 8205.1 SGR 553.2 SG3 2725.6
RRT .6388 RRF .6245 RTF .9886
SGB 8223.7 R23 -.0113 R13 .9886
SG1 8212.7 SG2 425.2 THA 2.47

ORBIT DETERMINATION ACCURACY
ST 2381.1 SR 429.8 SS 1838.9
CRT .9927 CRS -.9208 CST -.9561
LSA 3006.9 MSA 439.7 SSA 30.3
EL1 2419.0 EL2 51.1 ALF 10.16

LAUNCH DATE NOV 19 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 736.110 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.918 GAL -1.21 AZL 87.90 HCA 222.16 SMA 186.39 ECC .20796 INC 2.0979 V1 30.141
RP 214.88 LAP -1.41 LOP 278.84 VP 22.874 GAP -8.20 AZP 91.56 TAL 352.96 TAP 215.12 RCA 147.63 APO 225.15 V2 25.554
RC 290.691 GL 23.50 GP -2.54 ZAL 96.45 ZAP 64.23 ETS 178.03 ZAE 93.98 ETE 179.02 ZAC 81.70 ETC 257.90 CLP 64.21

PLANETOCENTRIC CONIC

C3 9.128 VHL 3.021 DLA 31.82 RAL 165.44 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.162 DPA 5.88 RAP 164.04 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.84	10 31 8	3746.10	-26.15	151.24	23.16	71.19	11 33 34	3146.1	-28.47	143.04
105.16	14 28 11	2986.10	-26.14	94.99	23.16	71.17	15 17 57	2386.1	-28.46	86.79
74.84	10 31 8	3746.10	-26.15	151.24	23.16	71.19	11 33 34	3146.1	-28.47	143.04
105.16	14 28 11	2986.10	-26.14	94.99	23.16	71.17	15 17 57	2386.1	-28.46	86.79
110.00	16 34 55	2593.29	-33.18	66.84	25.14	81.25	17 18 9	1993.3	-34.03	57.70
110.00	13 23 34	3186.91	-19.52	107.19	20.00	61.36	14 16 41	2586.9	-23.18	99.97

DIFFERENTIAL CORRECTIONS
TDE 1.1810 TRA 1.1941 TC-12.8063 BAU 1.5630
RDE .2210 RRA .1460 RC3 -.2143 FAU .47691
FDE 2.6811 FRA 5.8013 FC-45.2335 BSP 29458
BDE 1.2015 BRA 1.2030 BC312.8081 FSP 8912

MID-COURSE EXECUTION ACCURACY
SGT 8485.1 SGR 546.5 SG3 2649.7
RRT .6058 RRF .5901 RTF .9891
SGB 8502.7 R23 -.0135 R13 .9891
SG1 8491.6 SG2 434.5 THA 2.24

ORBIT DETERMINATION ACCURACY
ST 2389.4 SR 430.4 SS 1762.6
CRT .9897 CRS -.9055 CST -.9526
LSA 2966.6 MSA 446.8 SSA 30.8
EL1 2427.1 EL2 60.7 ALF 10.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 740.294 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.921 GAL -1.28 AZL 87.91 HCA 223.33 SMA 186.44 ECC .20828 INC 2.0872 V1 30.141
RP 214.56 LAP -1.43 LOP 280.02 VP 22.918 GAP -8.35 AZP 91.52 TAL 352.54 TAP 215.88 RCA 147.61 APO 225.27 V2 25.590
RC 291.851 GL 23.34 GP -2.46 ZAL 97.24 ZAP 62.77 ETS 178.00 ZAE 92.24 ETE 178.98 ZAC 81.72 ETC 257.94 CLP 62.74

PLANETOCENTRIC CONIC

C3 9.155 VHL 3.026 DLA 31.35 RAL 166.19 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.206 DPA 6.07 RAP 163.81 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.96	10 41 49	3722.55	-25.76	149.31	23.81	71.49	11 43 51	3122.5	-28.05	141.13
104.04	14 23 29	3010.79	-25.75	96.71	23.81	71.48	15 13 39	2410.8	-28.04	88.53
75.96	10 41 49	3722.55	-25.76	149.31	23.81	71.49	11 43 51	3122.5	-28.05	141.13
104.04	14 23 29	3010.79	-25.75	96.71	23.81	71.48	15 13 39	2410.8	-28.04	88.53
110.00	16 46 56	2564.73	-33.45	64.66	25.85	82.51	17 29 40	1964.7	-34.12	55.48
110.00	13 17 32	3216.61	-18.54	108.93	20.36	60.75	14 11 9	2616.6	-22.29	101.81

DIFFERENTIAL CORRECTIONS
TDE 1.1899 TRA 1.3071 TC-13.1085 BAU 1.6045
RDE .2229 RRA .1471 RC3 -.1720 FAU .45802
FDE 2.5455 FRA 5.8739 FC-43.3143 BSP 30841
BDE 1.2106 BRA 1.3153 BC313.1096 FSP 8820

MID-COURSE EXECUTION ACCURACY
SGT 8740.7 SGR 543.5 SG3 2562.9
RRT .5730 RRF .5589 RTF .9894
SGB 8757.5 R23 -.0116 R13 .9894
SG1 8746.2 SG2 445.1 THA 2.05

ORBIT DETERMINATION ACCURACY
ST 2426.9 SR 433.3 SS 1732.7
CRT .9860 CRS -.8927 CST -.9517
LSA 2979.2 MSA 450.9 SSA 31.1
EL1 2464.2 EL2 71.0 ALF 9.99

LAUNCH DATE NOV 19 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 744.491 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.923 GAL -1.36 AZL 87.92 HCA 224.51 SMA 186.49 ECC .20864 INC 2.0770 V1 30.141
RP 214.24 LAP -1.46 LOP 281.20 VP 22.963 GAP -8.50 AZP 91.48 TAL 352.12 TAP 216.63 RCA 147.58 APO 225.40 V2 25.626
RC 292.998 GL 23.18 GP -2.38 ZAL 98.05 ZAP 61.34 ETS 177.97 ZAE 90.54 ETE 178.94 ZAC 81.75 ETC 257.98 CLP 61.31

PLANETOCENTRIC CONIC

C3 9.187 VHL 3.031 DLA 30.86 RAL 166.96 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.252 DPA 6.25 RAP 163.61 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.18	10 53 35	3695.80	-25.36	147.15	24.49	71.80	11 55 10	3095.8	-27.61	138.98
102.82	14 17 50	3038.93	-25.35	98.68	24.48	71.78	15 8 29	2438.9	-27.60	90.52
77.18	10 53 35	3695.80	-25.36	147.15	24.49	71.80	11 55 10	3095.8	-27.61	138.98
102.82	14 17 50	3038.93	-25.35	98.68	24.48	71.78	15 8 29	2438.9	-27.60	90.52
110.00	16 58 28	2537.78	-33.67	62.58	26.55	83.72	17 40 45	1937.8	-34.17	53.38
110.00	13 12 7	3244.94	-17.59	110.58	20.77	60.20	14 6 12	2644.9	-21.42	103.55

DIFFERENTIAL CORRECTIONS
TDE 1.1696 TRA 1.3981 TC-13.4890 BAU 1.6569
RDE .2236 RRA .1467 RC3 -.1381 FAU .44529
FDE 2.2874 FRA 5.8194 FC-41.9594 BSP 31587
BDE 1.1907 BRA 1.4058 BC313.4897 FSP 8478

MID-COURSE EXECUTION ACCURACY
SGT 9013.0 SGR 538.4 SG3 2489.1
RRT .5385 RRF .5220 RTF .9898
SGB 9029.0 R23 -.0148 R13 .9898
SG1 9017.6 SG2 453.5 THA 1.85

ORBIT DETERMINATION ACCURACY
ST 2408.5 SR 433.6 SS 1639.8
CRT .9810 CRS -.8701 CST -.9460
LSA 2909.5 MSA 460.3 SSA 31.5
EL1 2445.8 EL2 82.9 ALF 10.03

LAUNCH DATE NOV 19 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 748.693 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.927 GAL -1.44 AZL 87.93 HCA 225.70 SMA 186.54 ECC .20902 INC 2.0672 V1 30.141
RP 213.93 LAP -1.48 LOP 282.38 VP 23.007 GAP -8.65 AZP 91.44 TAL 351.68 TAP 217.38 RCA 147.55 APO 225.53 V2 25.662
RC 294.131 GL 23.01 GP -2.30 ZAL 98.88 ZAP 59.95 ETS 177.95 ZAE 88.87 ETE 178.91 ZAC 81.79 ETC 258.01 CLP 59.92

PLANETOCENTRIC CONIC

C3 9.227 VHL 3.038 DLA 30.36 RAL 167.75 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.300 DPA 6.40 RAP 163.45 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.56	11 6 45	3664.86	-24.95	144.68	25.19	72.11	12 7 50	3064.9	-27.16	136.54
101.44	14 10 58	3071.52	-24.94	100.97	25.19	72.09	15 2 9	2471.5	-27.15	92.83
78.56	11 6 45	3664.86	-24.95	144.68	25.19	72.11	12 7 50	3064.9	-27.16	136.54
101.44	14 10 58	3071.52	-24.94	100.97	25.19	72.09	15 2 9	2471.5	-27.15	92.83
110.00	17 9 41	2512.00	-33.84	60.59	27.27	84.89	17 51 33	1912.0	-34.18	51.36
110.00	13 7 12	3272.37	-16.65	112.16	21.23	59.71	14 1 44	2672.4	-20.55	105.20

DIFFERENTIAL CORRECTIONS
TDE 1.1470 TRA 1.4956 TC-13.8428 BAU 1.7076
RDE .2246 RRA .1466 RC3 -.1051 FAU .43206
FDE 2.0477 FRA 5.7828 FC-40.5405 BSP 32365
BDE 1.1687 BRA 1.5028 BC313.8432 FSP 8166

MID-COURSE EXECUTION ACCURACY
SGT 9278.6 SGR 535.1 SG3 2415.0
RRT .5039 RRF .4855 RTF .9902
SGB 9294.0 R23 -.0170 R13 .9902
SG1 9282.5 SG2 462.0 THA 1.67

ORBIT DETERMINATION ACCURACY
ST 2388.8 SR 434.4 SS 1557.7
CRT .9745 CRS -.8437 CST -.9396
LSA 2845.8 MSA 471.4 SSA 31.9
EL1 2426.1 EL2 95.9 ALF 10.07

LAUNCH DATE NOV 19 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 752.901 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.930 GAL -1.52 AZL 87.94 HCA 226.88 SMA 186.60 ECC .20942 INC 2.0577 V1 30.141
RP 213.62 LAP -1.50 LOP 283.57 VP 23.051 GAP -8.80 AZP 91.41 TAL 351.22 TAP 218.11 RCA 147.52 APO 225.68 V2 25.697
RC 295.251 GL 22.84 GP -2.22 ZAL 99.74 ZAP 58.59 ETS 177.92 ZAE 87.25 ETE 178.89 ZAC 81.83 ETC 258.03 CLP 58.57

PLANETOCENTRIC CONIC

C3 9.272 VHL 3.045 DLA 29.85 RAL 168.56 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.350 DPA 6.53 RAP 163.33 ECC 1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.14	11 21 53	3627.90	-24.52	141.77	25.93	72.42	12 22 21	3027.9	-26.69	133.65
99.86	14 2 17	3110.39	-24.51	103.72	25.92	72.41	14 54 8	2510.4	-26.69	95.60
100.00	14 16 52	3063.84	-25.40	100.56	26.22	73.69	15 7 56	2463.8	-27.39	92.33
100.00	13 49 59	3149.68	-23.64	106.33	25.61	71.15	14 42 29	2549.7	-25.99	98.32
110.00	17 20 39	2487.15	-33.98	58.66	27.99	86.02	18 2 7	1887.1	-34.16	49.42
110.00	13 2 41	3299.14	-15.73	113.68	21.73	59.25	13 57 40	2699.1	-19.69	106.80

DIFFERENTIAL CORRECTIONS
TDE 1.1226 TRA 1.5986 TC-14.1646 BAU 1.7559
RDE .2260 RRA .1466 RC3 -.0730 FAU .41829
FDE 1.8275 FRA 5.7476 FC-39.0559 BSP 33157
BDE 1.1451 BRA 1.6053 BC314.1648 FSP 7871

MID-COURSE EXECUTION ACCURACY
SGT 9534.3 SGR 533.0 SG3 2339.2
RRT .4694 RRF .4495 RTF .9905
SGB 9549.1 R23 -.0187 R13 .9905
SG1 9537.6 SG2 470.5 THA 1.51

ORBIT DETERMINATION ACCURACY
ST 2368.8 SR 435.9 SS 1484.9
CRT .9666 CRS -.8140 CST -.9330
LSA 2788.0 MSA 481.9 SSA 32.1
EL1 2406.1 EL2 110.0 ALF 10.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 757.114 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.933	GAL	-1.60	AZL	87.95	HCA	228.07	SMA	186.66	ECC	.20985	INC	2.0486
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.094	GAP	-8.94	AZP	91.37	TAL	350.75	TAP	218.83	RCA	147.49	APO	225.83
RC	296.356	GL	22.67	GP	-2.15	ZAL	100.63	ZAP	57.28	ETS	177.90	ZAE	85.66	ETE	178.87	ZAC	81.88	ETC	258.05

V1	30.141	V2	25.731	CLP	57.26														

PLANETOCENTRIC CONIC

C3	9.325	VHL	3.054	DLA	29.32	RAL	169.39	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	3.401	DPA	6.65	RAP	163.24
ECC	1.1535																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.06	11 40 4	3581.36	-24.08	138.17	26.69	72.74	12 39 45	2981.4	-26.21	130.07
97.94	13 50 44	3159.13	-24.07	107.18	26.69	72.73	14 43 23	2559.1	-26.21	99.08
100.00	14 55 47	2950.67	-27.33	92.71	27.65	77.40	15 44 58	2350.7	-28.79	84.21
100.00	13 17 41	3265.06	-20.90	113.80	25.47	68.13	14 12 6	2665.1	-23.68	106.11
110.00	17 31 27	2463.07	-34.08	56.79	28.72	87.13	18 12 30	1863.1	-34.10	47.54
110.00	12 58 31	3325.42	-14.81	115.16	22.27	58.83	13 53 56	2725.4	-18.83	108.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0954	TRA	1.7070	TC-14.4560	BAU	1.8021	SGT	9780.8	SGR	532.0	SG3	2262.5	ST	2347.2	SR	437.7	SS	1418.3
RDE	.2278	RRA	.1468	RC3 -.0419	FAU	.40419	RRT	.4352	RRF	.4140	RTF	.9908	CRT	.9568	CRS	-.7797	CST	-.9257
FDE	1.6180	FRA	5.7143	FC-37.5267	BSP	33968	SGB	9795.3	R23	-.0202	R13	.9907	LSA	2732.8	MSA	493.5	SSA	32.3
BDE	1.1189	BRA	1.7133	BC314.4560	FSP	7595	SG1	9783.6	SG2	478.9	THA	1.36	EL1	2384.4	EL2	125.4	ALF	10.14

LAUNCH DATE NOV 19 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 761.333 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.937	GAL	-1.69	AZL	87.96	HCA	229.27	SMA	186.72	ECC	.21031	INC	2.0398
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.137	GAP	-9.08	AZP	91.33	TAL	350.27	TAP	219.54	RCA	147.45	APO	225.99
RC	297.448	GL	22.49	GP	-2.08	ZAL	101.54	ZAP	56.01	ETS	177.88	ZAE	84.10	ETE	178.85	ZAC	81.93	ETC	258.06

V1	30.141	V2	25.765	CLP	55.98														

PLANETOCENTRIC CONIC

C3	9.385	VHL	3.063	DLA	28.78	RAL	170.23	RAD	6567.3	VEL	11.436	PTH	1.98	VHP	3.454	DPA	6.74	RAP	163.19
ECC	1.1544																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.64	12 4 16	3515.59	-23.62	133.17	27.48	73.07	13 2 51	2915.6	-25.72	125.09
95.36	13 33 18	3227.39	-23.61	112.06	27.48	73.05	14 27 5	2627.4	-25.71	103.98
100.00	15 18 35	2888.95	-28.17	88.31	28.71	79.56	16 6 44	2288.9	-29.32	79.70
100.00	13 1 40	3329.27	-19.22	117.83	25.75	66.65	13 57 9	2729.3	-22.21	110.31
110.00	17 42 5	2439.63	-34.14	54.96	29.46	88.21	18 22 45	1839.6	-34.01	45.72
110.00	12 54 39	3351.35	-13.89	116.61	22.86	58.45	13 50 30	2751.4	-17.96	109.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0642	TRA	1.8198	TC-14.7270	BAU	1.8477	SGT	10022.8	SGR	532.0	SG3	2186.9	ST	2322.0	SR	439.9	SS	1357.8
RDE	.2297	RRA	.1470	RC3 -.0122	FAU	.39028	RRT	.4014	RRF	.3793	RTF	.9910	CRT	.9447	CRS	-.7404	CST	-.9176
FDE	1.4178	FRA	5.6826	FC-36.0036	BSP	34757	SGB	10036.9	R23	-.0213	R13	.9910	LSA	2678.1	MSA	506.0	SSA	32.4
BDE	1.0887	BRA	1.8257	BC314.7270	FSP	7326	SG1	10025.0	SG2	487.2	THA	1.22	EL1	2359.1	EL2	142.0	ALF	10.18

LAUNCH DATE NOV 19 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 765.557 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.941	GAL	-1.78	AZL	87.97	HCA	230.46	SMA	186.79	ECC	.21080	INC	2.0313
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.179	GAP	-9.22	AZP	91.29	TAL	349.77	TAP	220.24	RCA	147.41	APO	226.16
RC	298.526	GL	22.31	GP	-2.02	ZAL	102.48	ZAP	54.77	ETS	177.86	ZAE	82.59	ETE	178.83	ZAC	81.99	ETC	258.07

V1	30.141	V2	25.798	CLP	54.74														

PLANETOCENTRIC CONIC

C3	9.452	VHL	3.074	DLA	28.22	RAL	171.10	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	3.509	DPA	6.82	RAP	163.18
ECC	1.1556																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 49	3306.16	-24.45	118.09	28.70	75.26	14 7 55	2706.2	-26.24	109.87
90.00	12 31 39	3439.64	-21.85	127.00	27.86	71.53	13 28 59	2839.6	-24.17	119.10
100.00	15 37 22	2840.04	-28.72	84.78	29.69	81.34	16 24 42	2240.0	-29.62	76.09
100.00	12 49 47	3380.98	-17.79	121.01	26.16	65.58	13 46 8	2781.0	-20.94	113.63
110.00	17 52 37	2416.74	-34.18	53.17	30.21	89.26	18 32 53	1816.7	-33.90	43.94
110.00	12 51 2	3377.05	-12.97	118.03	23.48	58.09	13 47 19	2777.0	-17.09	111.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0307	TRA	1.9382	TC-14.9629	BAU	1.8908	SGT	10254.0	SGR	532.9	SG3	2110.9	ST	2297.4	SR	442.4	SS	1304.5
RDE	.2320	RRA	.1472	RC3 .0163	FAU	.37616	RRT	.3686	RRF	.3456	RTF	.9912	CRT	.9302	CRS	-.6965	CST	-.9091
FDE	1.2297	FRA	5.6518	FC-34.4522	BSP	35560	SGB	10267.8	R23	-.0222	R13	.9911	LSA	2627.7	MSA	519.2	SSA	32.5
BDE	1.0565	BRA	1.9438	BC314.9629	FSP	7067	SG1	10255.9	SG2	495.3	THA	1.10	EL1	2334.1	EL2	159.8	ALF	10.20

LAUNCH DATE NOV 19 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 769.786 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.945	GAL	-1.87	AZL	87.98	HCA	231.66	SMA	186.86	ECC	.21132	INC	2.0230
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.221	GAP	-9.35	AZP	91.26	TAL	349.26	TAP	220.92	RCA	147.37	APO	226.34
RC	299.592	GL	22.12	GP	-1.95	ZAL	103.45	ZAP	53.57	ETS	177.85	ZAE	81.10	ETE	178.82	ZAC	82.05	ETC	258.07

V1	30.141	V2	25.831	CLP	53.54														

PLANETOCENTRIC CONIC

C3	9.528	VHL	3.087	DLA	27.65	RAL	171.98	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.565	DPA	6.88	RAP	163.20
ECC	1.1568																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 48	3198.55	-26.11	110.64	30.08	78.63	14 43 6	2598.6	-27.42	102.22
90.00	12 1 43	3550.38	-19.29	134.11	27.92	68.86	13 0 53	2950.4	-21.99	126.48
100.00	15 54 7	2797.79	-29.12	81.70	30.63	82.92	16 40 45	2197.8	-29.79	72.96
100.00	12 40 5	3426.37	-16.49	123.75	26.66	64.71	13 37 11	2826.4	-19.76	116.48
110.00	18 3 2	2394.34	-34.18	51.42	30.98	90.30	18 42 56	1794.3	-33.76	42.20
110.00	12 47 39	3402.59	-12.04	119.43	24.14	57.76	13 44 22	2802.6	-16.21	112.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9921	TRA	2.0603	TC-15.1813	BAU	1.9338	SGT	10481.8	SGR	534.5	SG3	2036.4	ST	2268.8	SR	445.0	SS	1255.5
RDE	.2345	RRA	.1475	RC3 .0433	FAU	.36241	RRT	.3364	RRF	.3126	RTF	.9913	CRT	.9125	CRS	-.6464	CST	-.9000
FDE	1.0468	FRA	5.6166	FC-32.9287	BSP	36324	SGB	10495.5	R23	-.0230	R13	.9913	LSA	2576.1	MSA	533.3	SSA	32.5
BDE	1.0194	BRA	2.0656	BC315.1814	FSP	6812	SG1	10483.4	SG2	503.2	THA	.99	EL1	2305.1	EL2	179.2	ALF	10.21

LAUNCH DATE NOV 19 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 774.020 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.949	GAL	-1.96	AZL	87.98	HCA	232.87	SMA	186.93	ECC	.21186	INC	2.0150
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.263	GAP	-9.49	AZP	91.22	TAL	348.73	TAP	221.60	RCA	147.32	APO	226.53
RC	300.645	GL	21.93	GP	-1.89	ZAL	104.43	ZAP	52.40	ETS	177.83	ZAE	79.65	ETE	178.81	ZAC	82.11	ETC	258.07

V1	30.141	V2	25.863	CLP	52.37														

PLANETOCENTRIC CONIC

C3	9.613	VHL	3.100	DLA	27.06	RAL	172.88	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.623	DPA	6.92	RAP	163.26
ECC	1.1582																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 20	3134.45	-26.89	106.11	31.18	80.78	15 5 34	2534.5	-27.89	97.59
90.00	11 45 20	3617.95	-17.58	138.33	28.32	67.44	12 45 38	3018.0	-20.49	130.86
100.00	16 9 34	2759.74	-29.40	78.91	31.55	84.36	16 55 34	2159.7	-29.87	70.14
100.00	12 31 47	3467.90	-15.27	126.23	27.23	63.99	13 29 35	2867.9	-18.64	119.06
110.00	18 13 22	2372.36	-34.16	49.71	31.76	91.31	18 52 54	1772.4	-33.60	40.51
110.00	12 44 29	3428.04	-11.11	120.82	24.84	57.46	13 41 37	2828.0	-15.33	114.25

DIFFERENTIAL CORRECTIONS

TDE	.9500	TRA	2.1877	TC-15.3694	BAU	1.9752					
RDE	.2372	RRA	.1477	RC3 .0690	FAU	.34876					
FDE	.8727	FRA	5.5817	FC-31.4099	BSP	37087					
BDE	.9792	BRA	2.1927	BC315.3696	FSP	6569					

MID-COURSE EXECUTION ACCURACY

SGT10701.4	SGR	536.7	SG3	1962.8			
RRT	.3053	RRF	.2808	RTF	.9915		
SGB10714.9	R23	-.0237	R13	.9914			
SG110702.7	SG2	511.0	THA	.88			

ORBIT DETERMINATION ACCURACY

ST	2240.3	SR	448.0	SS	1213.0		
CRT	.8914	CRS	-.5910	CST	-.8905		
LSA	2527.8	MSA	548.3	SSA	32.4		
EL1	2275.9	EL2	199.8	ALF	10.19		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 778.259 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.953	GAL	-2.06	AZL	87.99	HCA	234.07	SMA	187.00	ECC	.21244	INC	2.0072
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.304	GAP	-9.62	AZP	91.18	TAL	348.19	TAP	222.26	RCA	147.27	APO	226.72
RC	301.687	GL	21.73	GP	-1.84	ZAL	105.44	ZAP	51.27	ETS	177.81	ZAE	78.24	ETE	178.81	ZAC	82.18	ETC	258.06

V1	30.141	V2	25.895	CLP	51.24														

PLANETOCENTRIC CONIC

C3	9.707	VHL	3.116	DLA	26.46	RAL	173.79	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.683	DPA	6.94	RAP	163.35
ECC	1.1597																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 54	3083.22	-27.40	102.45	32.21	82.55	15 24 18	2483.2	-28.15	93.86
90.00	11 33 2	3673.01	-16.11	141.70	28.84	66.39	12 34 15	3073.0	-19.16	134.36
100.00	16 24 8	2724.64	-29.61	76.32	32.47	85.71	17 9 33	2124.6	-29.89	67.53
100.00	12 24 29	3506.82	-14.09	128.52	27.86	63.36	13 22 56	2906.8	-17.56	121.44
110.00	18 23 38	2350.76	-34.11	48.02	32.56	92.31	19 2 48	1750.8	-33.42	38.85
110.00	12 41 29	3453.47	-10.18	122.20	25.58	57.19	13 39 3	2853.5	-14.43	115.68

DIFFERENTIAL CORRECTIONS

TDE	.9045	TRA	2.3190	TC-15.5319	BAU	2.0156					
RDE	.2402	RRA	.1479	RC3 .0933	FAU	.33538					
FDE	.7079	FRA	5.5422	FC-29.9126	BSP	37834					
BDE	.9359	BRA	2.3237	BC315.5322	FSP	6332					

MID-COURSE EXECUTION ACCURACY

SGT10914.4	SGR	539.4	SG3	1890.4			
RRT	.2752	RRF	.2501	RTF	.9916		
SGB10927.7	R23	-.0243	R13	.9915			
SG110915.4	SG2	518.5	THA	.78			

ORBIT DETERMINATION ACCURACY

ST	2212.2	SR	451.1	SS	1176.5		
CRT	.8665	CRS	-.5309	CST	-.8813		
LSA	2482.5	MSA	563.4	SSA	32.3		
EL1	2246.8	EL2	221.7	ALF	10.12		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 782.499 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.957	GAL	-2.16	AZL	88.00	HCA	235.28	SMA	187.07	ECC	.21304	INC	1.9996
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.345	GAP	-9.75	AZP	91.14	TAL	347.63	TAP	222.91	RCA	147.22	APO	226.93
RC	302.717	GL	21.53	GP	-1.78	ZAL	106.47	ZAP	50.17	ETS	177.79	ZAE	76.85	ETE	178.80	ZAC	82.26	ETC	258.05

V1	30.141	V2	25.926	CLP	50.14														

PLANETOCENTRIC CONIC

C3	9.810	VHL	3.132	DLA	25.84	RAL	174.72	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	3.744	DPA	6.95	RAP	163.47
ECC	1.1615																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 24	3038.80	-27.75	99.24	33.21	84.11	15 41 3	2438.8	-28.27	90.62
90.00	11 22 55	3721.63	-14.76	144.64	29.44	65.56	12 24 57	3121.6	-17.94	137.40
100.00	16 38 4	2691.72	-29.75	73.88	33.39	86.98	17 22 55	2091.7	-29.85	65.08
100.00	12 17 57	3543.94	-12.95	130.68	28.54	62.82	13 17 1	2943.9	-16.49	123.68
110.00	18 33 50	2329.48	-34.04	46.36	33.37	93.29	19 12 40	1729.5	-33.21	37.22
110.00	12 38 40	3478.94	-9.24	123.57	26.34	56.94	13 36 39	2878.9	-13.53	117.09

DIFFERENTIAL CORRECTIONS

TDE	.8714	TRA	2.4731	TC-15.6034	BAU	2.0465					
RDE	.2438	RRA	.1485	RC3 .1177	FAU	.32009					
FDE	.5924	FRA	5.5425	FC-28.2477	BSP	38967					
BDE	.9048	BRA	2.4776	BC315.6039	FSP	6187					

MID-COURSE EXECUTION ACCURACY

SGT11106.1	SGR	543.5	SG3	1814.8			
RRT	.2497	RRF	.2258	RTF	.9916		
SGB11119.4	R23	-.0230	R13	.9915			
SG111106.9	SG2	526.3	THA	.70			

ORBIT DETERMINATION ACCURACY

ST	2213.8	SR	455.1	SS	1160.7		
CRT	.8405	CRS	-.4826	CST	-.8785		
LSA	2475.0	MSA	573.1	SSA	32.2		
EL1	2247.0	EL2	242.9	ALF	9.92		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 786.750 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.962	GAL	-2.27	AZL	88.01	HCA	236.49	SMA	187.15	ECC	.21368	INC	1.9923
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.385	GAP	-9.88	AZP	91.10	TAL	347.06	TAP	223.55	RCA	147.16	APO	227.14
RC	303.736	GL	21.31	GP	-1.73	ZAL	107.52	ZAP	49.10	ETS	177.78	ZAE	75.50	ETE	178.80	ZAC	82.34	ETC	258.03

V1	30.141	V2	25.956	CLP	49.07														

PLANETOCENTRIC CONIC

C3	9.924	VHL	3.150	DLA	25.21	RAL	175.65	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	3.806	DPA	6.94	RAP	163.63
ECC	1.1633																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 31	2998.90	-27.99	96.35	34.19	85.55	15 56 30	2398.9	-28.32	87.70
90.00	11 14 16	3766.11	-13.49	147.29	30.10	64.87	12 17 2	3166.1	-16.77	140.14
100.00	16 51 27	2660.63	-29.84	71.58	34.30	88.19	17 35 47	2060.6	-29.77	62.77
100.00	12 12 1	3579.62	-11.83	132.74	29.26	62.35	13 11 41	2979.6	-15.44	125.81
110.00	18 43 57	2308.60	-33.95	44.74	34.20	94.25	19 22 26	1708.6	-32.99	35.63
110.00	12 36 0	3504.41	-8.29	124.93	27.14	56.72	13 34 24	2904.4	-12.61	118.50

DIFFERENTIAL CORRECTIONS

TDE	.7989	TRA	2.5956	TC-15.7876	BAU	2.0947					
RDE	.2469	RRA	.1483	RC3 .1376	FAU	.30977					
FDE	.3948	FRA	5.4538	FC-27.0227	BSP	39236					
BDE	.8362	BRA	2.5999	BC315.7882	FSP	5865					

MID-COURSE EXECUTION ACCURACY

SGT11326.1	SGR	545.9	SG3	1750.7			
RRT	.2176	RRF	.1912	RTF	.9917		
SGB11339.2	R23	-.0258	R13	.9917			
SG111326.7	SG2	532.8	THA	.60			

ORBIT DETERMINATION ACCURACY

ST	2156.5	SR	457.9	SS	1119.7		
CRT	.8017	CRS	-.3946	CST	-.8640		
LSA	2399.6	MSA	595.5	SSA	31.9		
EL1	2188.0	EL2	269.7	ALF	9.81		

LAUNCH DATE NOV 19 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 791.002 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.966 GAL -2.38 AZL 88.01 HCA 237.71 SMA 187.23 ECC .21435 INC 1.9851 V1 30.141
RP 211.08 LAP -1.68 LOP 294.40 VP 23.424 GAP -10.01 AZP 91.06 TAL 346.47 TAP 224.18 RCA 147.10 APO 227.36 V2 25.986
RC 304.746 GL 21.10 GP -1.68 ZAL 108.59 ZAP 48.06 ETS 177.76 ZAE 74.17 ETE 178.80 ZAC 82.42 ETC 258.01 CLP 48.04

PLANETOCENTRIC CONIC

C3 10.049 VHL 3.170 DLA 24.56 RAL 176.60 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.870 DPA 6.91 RAP 163.81 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 43	2962.09	-28.16	93.67	35.16	86.88	16 11 5	2362.1	-28.29	85.01
90.00	11 6 37	3807.90	-12.27	149.75	30.82	64.28	12 10 5	3207.9	-15.63	142.68
100.00	17 4 26	2630.92	-29.89	69.37	35.23	89.35	17 48 17	2030.9	-29.66	60.57
100.00	12 6 35	3614.31	-10.73	134.72	30.03	61.93	13 6 50	3014.3	-14.40	127.86
110.00	18 54 2	2288.00	-33.83	43.14	35.04	95.19	19 32 10	1688.0	-32.75	34.07
110.00	12 33 28	3529.99	-7.33	126.29	27.98	56.52	13 32 18	2930.0	-11.68	119.90

DIFFERENTIAL CORRECTIONS
TDE .7414 TRA 2.7418 TC-15.8741 BAU 2.1327
RDE .2506 RRA .1484 RC3 .1578 FAU .29723
FDE .2512 FRA 5.4068 FC-25.6066 BSP 39928
BDE .7826 BRA 2.7458 BC315.8749 FSP 5645

MID-COURSE EXECUTION ACCURACY
SGT11522.8 SGR 549.7 SG3 1682.5
RRT .1905 RRF .1634 RTF .9918
SGB11535.9 R23 -.0264 R13 .9918
SG111523.2 SG2 539.6 THA .52

ORBIT DETERMINATION ACCURACY
ST 2135.1 SR 461.6 SS 1100.6
CRT .7618 CRS -.3221 CST -.8572
LSA 2368.2 MSA 611.5 SSA 31.5
EL1 2164.5 EL2 295.0 ALF 9.53

LAUNCH DATE NOV 19 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 795.257 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.971 GAL -2.49 AZL 88.02 HCA 238.93 SMA 187.31 ECC .21505 INC 1.9781 V1 30.141
RP 210.82 LAP -1.69 LOP 295.61 VP 23.463 GAP -10.14 AZP 91.02 TAL 345.87 TAP 224.80 RCA 147.03 APO 227.60 V2 26.015
RC 305.746 GL 20.87 GP -1.63 ZAL 109.68 ZAP 47.05 ETS 177.75 ZAE 72.88 ETE 178.80 ZAC 82.51 ETC 257.98 CLP 47.03

PLANETOCENTRIC CONIC

C3 10.186 VHL 3.191 DLA 23.91 RAL 177.56 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 3.936 DPA 6.87 RAP 164.03 ECC 1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 12	2927.67	-28.26	91.16	36.14	88.14	16 25 0	2327.7	-28.22	82.49
90.00	10 59 46	3847.73	-11.08	152.07	31.59	63.77	12 3 53	3247.7	-14.52	145.08
100.00	17 17 5	2602.41	-29.89	67.25	36.16	90.47	18 0 28	2002.4	-29.50	58.47
100.00	12 1 34	3648.22	-9.63	136.65	30.83	61.57	13 2 22	3048.2	-13.36	129.84
110.00	19 4 4	2267.71	-33.70	41.57	35.90	96.10	19 41 52	1667.7	-32.49	32.55
110.00	12 31 4	3555.68	-6.36	127.65	28.85	56.34	13 30 20	2955.7	-10.74	121.30

DIFFERENTIAL CORRECTIONS
TDE .6795 TRA 2.8929 TC-15.9350 BAU 2.1700
RDE .2547 RRA .1484 RC3 .1767 FAU .28510
FDE .1159 FRA 5.3578 FC-24.2325 BSP 40595
BDE .7257 BRA 2.8967 BC315.9359 FSP 5429

MID-COURSE EXECUTION ACCURACY
SGT11713.9 SGR 553.8 SG3 1616.4
RRT .1644 RRF .1368 RTF .9918
SGB11726.9 R23 -.0270 R13 .9918
SG111714.2 SG2 546.2 THA .45

ORBIT DETERMINATION ACCURACY
ST 2118.0 SR 465.5 SS 1087.1
CRT .7158 CRS -.2483 CST -.8528
LSA 2343.3 MSA 626.3 SSA 31.2
EL1 2144.6 EL2 321.0 ALF 9.15

LAUNCH DATE NOV 19 1964 FLIGHT TIME 362.00 ARRIVAL DA 1 NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 799.516 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.976 GAL -2.60 AZL 88.03 HCA 240.15 SMA 187.40 ECC .21579 INC 1.9712 V1 30.141
RP 210.58 LAP -1.71 LOP 296.84 VP 23.501 GAP -10.26 AZP 90.98 TAL 345.25 TAP 225.40 RCA 146.96 APO 227.84 V2 26.043
RC 306.737 GL 20.64 GP -1.59 ZAL 110.79 ZAP 46.08 ETS 177.73 ZAE 71.61 ETE 178.80 ZAC 82.60 ETC 257.95 CLP 46.05

PLANETOCENTRIC CONIC

C3 10.335 VHL 3.215 DLA 23.23 RAL 178.52 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.002 DPA 6.82 RAP 164.27 ECC 1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 8	2895.15	-28.31	88.78	37.12	89.33	16 38 23	2295.1	-28.10	80.12
90.00	10 53 31	3886.08	-9.92	154.29	32.41	63.34	11 58 17	3286.1	-13.42	147.36
100.00	17 29 27	2574.93	-29.86	65.21	37.10	91.54	18 12 22	1974.9	-29.32	56.44
100.00	11 56 54	3681.53	-8.55	138.53	31.68	61.25	12 58 15	3081.5	-12.32	131.77
110.00	19 14 2	2247.73	-33.54	40.03	36.78	97.00	19 51 30	1647.7	-32.21	31.05
110.00	12 28 48	3581.50	-5.39	129.01	29.74	56.19	13 28 29	2981.5	-9.79	122.69

DIFFERENTIAL CORRECTIONS
TDE .6134 TRA 3.0488 TC-15.9710 BAU 2.2068
RDE .2589 RRA .1484 RC3 .1943 FAU .27326
FDE -.0149 FRA 5.3059 FC-22.8909 BSP 41236
BDE .6658 BRA 3.0524 BC315.9721 FSP 5215

MID-COURSE EXECUTION ACCURACY
SGT11899.9 SGR 558.0 SG3 1551.6
RRT .1391 RRF .1109 RTF .9918
SGB11912.9 R23 -.0276 R13 .9918
SG111900.1 SG2 552.6 THA .37

ORBIT DETERMINATION ACCURACY
ST 2106.4 SR 469.5 SS 1078.6
CRT .6638 CRS -.1726 CST -.8500
LSA 2325.7 MSA 641.1 SSA 30.8
EL1 2130.0 EL2 347.2 ALF 8.65

LAUNCH DATE NOV 19 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 803.777 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 32.981 GAL -2.72 AZL 88.04 HCA 241.37 SMA 187.48 ECC .21657 INC 1.9646 V1 30.141
RP 210.34 LAP -1.72 LOP 298.06 VP 23.538 GAP -10.39 AZP 90.94 TAL 344.62 TAP 225.99 RCA 146.88 APO 228.09 V2 26.071
RC 307.719 GL 20.40 GP -1.54 ZAL 111.91 ZAP 45.13 ETS 177.71 ZAE 70.37 ETE 178.80 ZAC 82.70 ETC 257.91 CLP 45.11

PLANETOCENTRIC CONIC

C3 10.497 VHL 3.240 DLA 22.55 RAL 179.49 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.071 DPA 6.75 RAP 164.54 ECC 1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 37	2864.19	-28.31	86.52	38.10	90.46	16 51 21	2264.2	-27.95	77.87
90.00	10 47 48	3923.32	-8.77	156.42	33.26	62.97	11 53 11	3323.3	-12.33	149.55
100.00	17 41 34	2548.37	-29.79	63.24	38.06	92.58	18 24 3	1948.4	-29.12	54.50
100.00	11 52 32	3714.38	-7.47	140.37	32.56	60.97	12 54 26	3114.4	-11.28	133.66
110.00	19 23 57	2228.05	-33.37	38.52	37.67	97.88	20 1 5	1628.0	-31.92	29.59
110.00	12 26 38	3607.46	-4.40	130.38	30.68	56.07	13 26 46	3007.5	-8.83	124.08

DIFFERENTIAL CORRECTIONS
TDE .5437 TRA 3.2106 TC-15.9798 BAU 2.2426
RDE .2635 RRA .1483 RC3 .2106 FAU .26172
FDE -.1359 FRA 5.2533 FC-21.5859 BSP 41873
BDE .6042 BRA 3.2140 BC315.9812 FSP 5012

MID-COURSE EXECUTION ACCURACY
SGT12080.3 SGR 562.5 SG3 1488.7
RRT .1149 RRF .0863 RTF .9918
SGB12093.4 R23 -.0282 R13 .9918
SG112080.5 SG2 558.7 THA .31

ORBIT DETERMINATION ACCURACY
ST 2103.0 SR 473.7 SS 1074.9
CRT .6062 CRS -.0990 CST -.8503
LSA 2318.4 MSA 653.4 SSA 30.3
EL1 2123.2 EL2 373.1 ALF 8.02

LAUNCH DATE NOV 19 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 808.042 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.986	GAL	-2.84	AZL	88.04	HCA	242.60	SMA	187.57	ECC	.21738	INC	1.9580	V1	30.141
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.575	GAP	-10.52	AZP	90.90	TAL	343.98	TAP	226.58	RCA	146.80	APO	228.35	V2	26.098
RC	308.691	GL	20.16	GP	-1.50	ZAL	113.05	ZAP	44.20	ETS	177.70	ZAE	69.16	ETE	178.80	ZAC	82.80	ETC	257.88	CLP	44.18

PLANETOCENTRIC CONIC

C3	10.673	VHL	3.267	DLA	21.86	RAL	180.47	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	4.140	DPA	6.67	RAP	164.84	ECC	1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 44	2834.57	-28.28	84.35	39.10	91.55	17 3 58	2234.6	-27.76	75.72
90.00	10 42 30	3959.69	-7.64	158.50	34.16	62.65	11 48 29	3359.7	-11.25	151.67
100.00	17 53 28	2522.63	-29.70	61.33	39.03	93.58	18 35 31	1922.6	-28.88	52.62
100.00	11 48 26	3746.86	-6.39	142.18	33.48	60.74	12 50 53	3146.9	-10.24	135.51
110.00	19 33 49	2208.67	-33.18	37.04	38.59	98.74	20 10 38	1608.7	-31.62	28.16
110.00	12 24 34	3633.58	-3.41	131.75	31.64	55.97	13 25 8	3033.6	-7.85	125.48

DIFFERENTIAL CORRECTIONS

TDE	.4709	TRA	3.3781	TC-15.9631	BAU	2.2779	
RDE	.2683	RRA	.1481	RC3 .2256	FAU	.25053	
FDE	-.2500	FRA	5.1982	FC-20.3223	BSP	42501	
BDE	.5420	BRA	3.3814	BC315.9647	FSP	4816	

MID-COURSE EXECUTION ACCURACY

SGT12256.2	SGR	567.0	SG3	1427.5			
RRT	.0918	RRF	.0625	RTF	.9918		
SGB12269.4	R23	-.0288	R13	.9917			
SG112256.4	SG2	564.6	THA	.24			

ORBIT DETERMINATION ACCURACY

ST	2108.9	SR	478.0	SS	1075.3
CRT	.5436	CRS	-.0274	CST	-.8528
LSA	2321.7	MSA	664.0	SSA	29.8
EL1	2125.4	EL2	398.1	ALF	7.28

LAUNCH DATE NOV 19 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 812.309 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.991	GAL	-2.97	AZL	88.05	HCA	243.83	SMA	187.66	ECC	.21823	INC	1.9516	V1	30.141
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.611	GAP	-10.64	AZP	90.86	TAL	343.31	TAP	227.14	RCA	146.71	APO	228.61	V2	26.124
RC	309.654	GL	19.90	GP	-1.46	ZAL	114.21	ZAP	43.31	ETS	177.68	ZAE	67.97	ETE	178.81	ZAC	82.90	ETC	257.84	CLP	43.29

PLANETOCENTRIC CONIC

C3	10.863	VHL	3.296	DLA	21.15	RAL	181.45	RAD	6567.4	VEL	11.500	PTH	2.00	VHP	4.212	DPA	6.57	RAP	165.17	ECC	1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 30	2806.10	-28.21	82.27	40.10	92.59	17 16 17	2206.1	-27.55	73.67
90.00	10 37 34	3995.37	-6.52	160.52	35.09	62.38	11 44 9	3395.4	-10.17	153.74
100.00	18 5 10	2497.64	-29.58	59.48	40.01	94.55	18 46 48	1897.6	-28.63	50.80
100.00	11 44 35	3779.07	-5.32	143.96	34.44	60.54	12 47 34	3179.1	-9.20	137.33
110.00	19 43 38	2189.61	-32.97	35.59	39.52	99.57	20 20 7	1589.6	-31.30	26.77
110.00	12 22 37	3659.86	-2.41	133.12	32.63	55.89	13 23 37	3059.9	-6.87	126.87

DIFFERENTIAL CORRECTIONS

TDE	.3934	TRA	3.5500	TC-15.9232	BAU	2.3128	
RDE	.2735	RRA	.1478	RC3 .2394	FAU	.23963	
FDE	-.3572	FRA	5.1391	FC-19.0973	BSP	43094	
BDE	.4791	BRA	3.5531	BC315.9250	FSP	4622	

MID-COURSE EXECUTION ACCURACY

SGT12426.8	SGR	571.6	SG3	1367.8			
RRT	.0692	RRF	.0394	RTF	.9917		
SGB12439.9	R23	-.0294	R13	.9917			
SG112426.9	SG2	570.3	THA	.18			

ORBIT DETERMINATION ACCURACY

ST	2123.1	SR	482.5	SS	1078.6
CRT	.4760	CRS	.0416	CST	-.8579
LSA	2334.8	MSA	672.0	SSA	29.3
EL1	2135.9	EL2	421.8	ALF	6.43

LAUNCH DATE NOV 19 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 816.577 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	32.996	GAL	-3.10	AZL	88.05	HCA	245.06	SMA	187.75	ECC	.21912	INC	1.9453	V1	30.141
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.647	GAP	-10.76	AZP	90.82	TAL	342.64	TAP	227.70	RCA	146.61	APO	228.89	V2	26.149
RC	310.607	GL	19.84	GP	-1.43	ZAL	115.37	ZAP	42.44	ETS	177.66	ZAE	66.81	ETE	178.81	ZAC	83.01	ETC	257.79	CLP	42.42

PLANETOCENTRIC CONIC

C3	11.069	VHL	3.327	DLA	20.43	RAL	182.44	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	4.284	DPA	6.46	RAP	165.52	ECC	1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 0	2778.68	-28.11	80.27	41.12	93.59	17 28 19	2178.7	-27.31	71.69
90.00	10 32 56	4030.51	-5.41	162.50	36.07	62.16	11 40 7	3430.5	-9.09	155.76
100.00	18 16 41	2473.36	-29.43	57.69	41.00	95.48	18 57 55	1873.4	-28.36	49.05
100.00	11 40 56	3811.06	-4.24	145.73	35.42	60.38	12 44 28	3211.1	-8.15	139.13
110.00	19 53 23	2170.87	-32.75	34.18	40.46	100.38	20 29 33	1570.9	-30.97	25.41
110.00	12 20 45	3686.32	-1.40	134.50	33.65	55.84	13 22 11	3086.3	-5.87	128.27

DIFFERENTIAL CORRECTIONS

TDE	.3139	TRA	3.7294	TC-15.8538	BAU	2.3465	
RDE	.2789	RRA	.1474	RC3 .2520	FAU	.22895	
FDE	-.4553	FRA	5.0797	FC-17.9061	BSP	43715	
BDE	.4199	BRA	3.7323	BC315.8558	FSP	4440	

MID-COURSE EXECUTION ACCURACY

SGT12591.8	SGR	576.3	SG3	1309.5			
RRT	.0478	RRF	.0175	RTF	.9916		
SGB12605.0	R23	-.0299	R13	.9916			
SG112591.9	SG2	575.7	THA	.13			

ORBIT DETERMINATION ACCURACY

ST	2149.4	SR	487.2	SS	1084.5
CRT	.4060	CRS	.1057	CST	-.8649
LSA	2361.0	MSA	677.1	SSA	28.8
EL1	2158.9	EL2	443.2	ALF	5.49

LAUNCH DATE NOV 19 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 820.848 EARTH TO MARS

RL	147.82	LAL	.00	LOL	56.70	VL	33.001	GAL	-3.23	AZL	88.06	HCA	246.30	SMA	187.85	ECC	.22005	INC	1.9391	V1	30.141
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.681	GAP	-10.89	AZP	90.78	TAL	341.95	TAP	228.24	RCA	146.51	APO	229.18	V2	26.174
RC	311.551	GL	19.38	GP	-1.39	ZAL	116.55	ZAP	41.59	ETS	177.64	ZAE	65.67	ETE	178.82	ZAC	83.12	ETC	257.74	CLP	41.57

PLANETOCENTRIC CONIC

C3	11.292	VHL	3.360	DLA	19.71	RAL	183.43	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.358	DPA	6.34	RAP	165.89	ECC	1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 15	2752.19	-27.98	78.34	42.15	94.54	17 40 7	2152.2	-27.06	69.80
90.00	10 28 36	4065.22	-4.30	164.45	37.07	61.98	11 36 21	3465.2	-8.01	157.74
100.00	18 28 2	2449.75	-29.27	55.95	42.01	96.38	19 8 52	1849.7	-28.07	47.35
100.00	11 37 30	3842.90	-3.17	147.48	36.45	60.26	12 41 32	3242.9	-7.10	140.91
110.00	20 3 4	2152.46	-32.52	32.79	41.43	101.17	20 38 56	1552.5	-30.64	24.08
110.00	12 18 58	3712.95	-.38	135.89	34.71	55.82	13 20 51	3113.0	-4.86	129.67

DIFFERENTIAL CORRECTIONS

TDE	.2300	TRA	3.9134	TC-15.7646	BAU	2.3803	
RDE	.2847	RRA	.1468	RC3 .2634	FAU	.21870	
FDE	-.5487	FRA	5.0176	FC-16.7669	BSP	44286	
BDE	.3650	BRA	3.9162	BC315.7668	FSP	4257	

MID-COURSE EXECUTION ACCURACY

SGT12753.2	SGR	581.0	SG3	1253.4			
RRT	.0269	RRF	-.0039	RTF	.9915		
SGB12766.4	R23	-.0306	R13	.9915			
SG112753.2	SG2	580.8	THA	.07			

ORBIT DETERMINATION ACCURACY

ST	2185.4	SR	491.9	SS	1092.7
CRT	.3332	CRS	.1670	CST	-.8731
LSA	2397.6	MSA	680.0	SSA	28.2
EL1	2191.8	EL2	462.4	ALF	4.49

LAUNCH DATE NOV 19 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 825.119 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.007 GAL -3.36 AZL 88.07 HCA 247.53 SMA 187.94 ECC .22103 INC 1.9330 V1 30.141
RP 209.24 LAP -1.79 LOP 304.22 VP 23.715 GAP -11.01 AZP 90.74 TAL 341.24 TAP 228.77 RCA 146.40 APO 229.48 V2 26.198
RC 312.486 GL 19.10 GP -1.35 ZAL 117.74 ZAP 40.77 ETS 177.63 ZAE 64.55 ETE 178.82 ZAC 83.24 ETC 257.69 CLP 40.75

PLANETOCENTRIC CONIC

C3 11.533 VHL 3.396 DLA 18.97 RAL 184.42 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 4.433 DPA 6.21 RAP 166.29 ECC 1.1898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 16	2726.57	-27.83	76.48	43.20	95.46	17 51 42	2126.6	-26.78	67.97
90.00	10 24 30	4099.59	-3.20	166.38	38.11	61.85	11 32 50	3499.6	-6.94	159.69
100.00	18 39 14	2426.77	-29.08	54.27	43.04	97.24	19 19 41	1826.8	-27.77	45.71
100.00	11 34 13	3874.62	-2.10	149.23	37.50	60.17	12 38 48	3274.6	-6.05	142.67
110.00	20 12 41	2134.39	-32.27	31.44	42.41	101.94	20 48 15	1534.4	-30.29	22.78
110.00	12 17 15	3739.76	.65	137.29	35.79	55.82	13 19 35	3139.8	-3.84	131.08

DIFFERENTIAL CORRECTIONS
TDE .1433 TRA 4.1048 TC-15.6491 BAU 2.4131
RDE .2907 RRA .1461 RC3 .2735 FAU .20867
FDE -.6347 FRA 4.9543 FC-15.6649 BSP 44887
BDE .3241 BRA 4.1074 BC315.6515 FSP 4087

MID-COURSE EXECUTION ACCURACY
SGT12909.6 SGR 585.7 SG3 1198.7
RRT .0070 RRF -.0244 RTF .9914
SGB12922.9 R23 -.0313 R13 .9914
SG112909.6 SG2 585.7 THA .02

ORBIT DETERMINATION ACCURACY
ST 2233.1 SR 496.7 SS 1102.2
CRT .2602 CRS .2237 CST -.8821
LSA 2446.4 MSA 680.4 SSA 27.7
EL1 2237.1 EL2 478.8 ALF 3.47

LAUNCH DATE NOV 19 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 829.392 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.012 GAL -3.50 AZL 88.07 HCA 248.77 SMA 188.04 ECC .22205 INC 1.9270 V1 30.141
RP 209.04 LAP -1.80 LOP 305.46 VP 23.748 GAP -11.14 AZP 90.70 TAL 340.52 TAP 229.29 RCA 146.28 APO 229.79 V2 26.221
RC 313.411 GL 18.82 GP -1.32 ZAL 118.94 ZAP 39.97 ETS 177.61 ZAE 63.46 ETE 178.83 ZAC 83.36 ETC 257.64 CLP 39.96

PLANETOCENTRIC CONIC

C3 11.791 VHL 3.434 DLA 18.23 RAL 185.42 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 4.510 DPA 6.06 RAP 166.71 ECC 1.1941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 4	2701.77	-27.65	74.69	44.26	96.35	18 3 6	2101.8	-26.49	66.22
90.00	10 20 38	4133.67	-2.10	168.28	39.19	61.75	11 29 32	3533.7	-5.86	161.62
100.00	18 50 16	2404.42	-28.88	52.64	44.08	98.08	19 30 21	1804.4	-27.46	44.12
100.00	11 31 7	3906.25	-1.02	150.96	38.59	60.12	12 36 13	3306.2	-4.99	144.42
110.00	20 22 14	2116.68	-32.01	30.12	43.42	102.68	20 57 31	1516.7	-29.94	21.52
110.00	12 15 38	3766.75	1.68	138.70	36.90	55.85	13 18 25	3166.8	-2.81	132.49

DIFFERENTIAL CORRECTIONS
TDE .0543 TRA 4.3034 TC-15.5075 BAU 2.4450
RDE .2971 RRA .1452 RC3 .2826 FAU .19885
FDE -.7128 FRA 4.8901 FC-14.5998 BSP 45482
BDE .3020 BRA 4.3059 BC315.5101 FSP 3921

MID-COURSE EXECUTION ACCURACY
SGT13060.8 SGR 590.4 SG3 1145.4
RRT -.0121 RRF -.0439 RTF .9912
SGB13074.2 R23 .0319 R13 -.9912
SG113060.8 SG2 590.3 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 2292.1 SR 501.7 SS 1112.2
CRT .1884 CRS .2752 CST -.8916
LSA 2506.3 MSA 678.3 SSA 27.1
EL1 2294.2 EL2 492.3 ALF 2.48

LAUNCH DATE NOV 19 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 833.664 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.018 GAL -3.65 AZL 88.08 HCA 250.02 SMA 188.14 ECC .22311 INC 1.9211 V1 30.141
RP 208.85 LAP -1.81 LOP 306.71 VP 23.780 GAP -11.26 AZP 90.66 TAL 339.78 TAP 229.80 RCA 146.16 APO 230.11 V2 26.243
RC 314.329 GL 18.54 GP -1.29 ZAL 120.14 ZAP 39.20 ETS 177.59 ZAE 62.39 ETE 178.84 ZAC 83.49 ETC 257.59 CLP 39.18

PLANETOCENTRIC CONIC

C3 12.070 VHL 3.474 DLA 17.48 RAL 186.41 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 4.588 DPA 5.90 RAP 167.15 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 40	2677.73	-27.46	72.96	45.34	97.20	18 14 18	2077.7	-26.18	64.52
90.00	10 16 58	4167.53	-1.01	170.17	40.30	61.70	11 26 25	3567.5	-4.79	163.52
100.00	19 1 10	2382.67	-28.66	51.06	45.14	98.88	19 40 53	1782.7	-27.13	42.59
100.00	11 28 9	3937.82	.05	152.70	39.71	60.11	12 33 47	3337.8	-3.93	146.17
110.00	20 31 43	2099.34	-31.75	28.84	44.44	103.39	21 6 43	1499.3	-29.58	20.30
110.00	12 14 5	3793.91	2.72	140.11	38.04	55.91	13 17 19	3193.9	-1.77	133.91

DIFFERENTIAL CORRECTIONS
TDE -.0395 TRA 4.5064 TC-15.3511 BAU 2.4776
RDE .3039 RRA .1442 RC3 .2905 FAU .18951
FDE -.7855 FRA 4.8217 FC-13.5925 BSP 46036
BDE .3064 BRA 4.5087 BC315.3539 FSP 3756

MID-COURSE EXECUTION ACCURACY
SGT13209.4 SGR 595.0 SG3 1094.2
RRT -.0309 RRF -.0633 RTF .9910
SGB13222.8 R23 .0326 R13 -.9910
SG113209.4 SG2 594.7 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 2360.2 SR 506.7 SS 1122.2
CRT .1173 CRS .3234 CST -.9012
LSA 2575.2 MSA 674.0 SSA 26.5
EL1 2361.0 EL2 503.1 ALF 1.51

LAUNCH DATE NOV 19 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 837.937 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.024 GAL -3.80 AZL 88.08 HCA 251.26 SMA 188.24 ECC .22423 INC 1.9153 V1 30.141
RP 208.67 LAP -1.81 LOP 307.95 VP 23.812 GAP -11.38 AZP 90.62 TAL 339.03 TAP 230.29 RCA 146.03 APO 230.45 V2 26.264
RC 315.238 GL 18.25 GP -1.26 ZAL 121.36 ZAP 38.44 ETS 177.57 ZAE 61.34 ETE 178.84 ZAC 83.62 ETC 257.53 CLP 38.43

PLANETOCENTRIC CONIC

C3 12.370 VHL 3.517 DLA 16.73 RAL 187.41 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 4.668 DPA 5.74 RAP 167.62 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 5	2654.44	-27.25	71.28	46.43	98.01	18 25 20	2054.4	-25.86	62.89
90.00	10 13 28	4201.20	.08	172.05	41.44	61.68	11 23 29	3601.2	-3.71	165.41
100.00	19 11 55	2361.51	-28.43	49.53	46.22	99.66	19 51 17	1761.5	-26.80	41.11
100.00	11 25 19	3969.36	1.12	154.43	40.87	60.13	12 31 29	3369.4	-2.87	147.90
110.00	20 41 8	2082.39	-31.47	27.59	45.48	104.08	21 15 50	1482.4	-29.22	19.11
110.00	12 12 36	3821.25	3.76	141.54	39.22	56.00	13 16 17	3221.2	-.73	135.34

DIFFERENTIAL CORRECTIONS
TDE -.1352 TRA 4.7170 TC-15.1696 BAU 2.5091
RDE .3109 RRA .1430 RC3 .2973 FAU .18033
FDE -.8522 FRA 4.7510 FC-12.6210 BSP 46585
BDE .3391 BRA 4.7191 BC315.1725 FSP 3599

MID-COURSE EXECUTION ACCURACY
SGT13352.4 SGR 599.6 SG3 1044.2
RRT -.0489 RRF -.0820 RTF .9908
SGB13365.9 R23 .0335 R13 -.9908
SG113352.5 SG2 598.8 THA 179.87

ORBIT DETERMINATION ACCURACY
ST 2438.3 SR 511.8 SS 1131.9
CRT .0497 CRS .3676 CST -.9100
LSA 2653.4 MSA 668.7 SSA 26.0
EL1 2438.4 EL2 511.2 ALF .63

LAUNCH DATE NOV 19 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 842.209 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.029 GAL -3.95 AZL 88.09 HCA 252.51 SMA 188.34 ECC .22539 INC 1.9095 V1 30.141
RP 208.49 LAP -1.82 LOP 309.20 VP 23.842 GAP -11.51 AZP 90.57 TAL 338.27 TAP 230.77 RCA 145.89 APO 230.79 V2 26.285
RC 316.140 GL 17.95 GP -1.23 ZAL 122.57 ZAP 37.71 ETS 177.55 ZAE 60.30 ETE 178.85 ZAC 83.75 ETC 257.47 CLP 37.69

PLANETOCENTRIC CONIC

C3 12.691 VHL 3.562 DLA 15.97 RAL 188.40 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 4.749 DPA 5.56 RAP 168.10 ECC 1.2089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 19	2631.87	-27.03	69.67	47.54	98.79	18 36 11	2031.9	-25.53	61.32
90.00	10 10 9	4234.72	1.16	173.92	42.62	61.70	11 20 43	3634.7	-2.63	167.29
100.00	19 22 32	2340.95	-28.18	48.05	47.32	100.40	20 1 33	1741.0	-26.46	39.67
100.00	11 22 37	4000.88	2.19	156.16	42.05	60.18	12 29 18	3400.9	-1.80	149.64
110.00	20 50 28	2065.84	-31.19	26.39	46.55	104.75	21 24 54	1465.8	-28.85	17.96
110.00	12 11 11	3848.75	4.80	142.99	40.42	56.12	13 15 20	3248.7	.32	136.77

DIFFERENTIAL CORRECTIONS
TDE -.2343 TRA 4.9340 TC-14.9704 BAU 2.5406
RDE .3184 RRA .1415 RC3 .3030 FAU .17148
FDE -.9129 FRA 4.6784 FC-11.6976 BSP 47146
BDE .3953 BRA 4.9360 BC314.9734 FSP 3449

MID-COURSE EXECUTION ACCURACY
SGT13492.1 SGR 604.0 SG3 995.9
RRT -.0664 RRF -.1003 RTF .9905
SGB13505.6 R23 .0344 R13 -.9905
SG113492.2 SG2 602.7 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 2525.0 SR 517.0 SS 1140.8
CRT -.0147 CRS .4081 CST -.9183
LSA 2739.6 MSA 662.0 SSA 25.3
EL1 2525.0 EL2 516.9 ALF 179.82

LAUNCH DATE NOV 19 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 846.480 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.035 GAL -4.10 AZL 88.10 HCA 253.75 SMA 188.44 ECC .22660 INC 1.9039 V1 30.141
RP 208.32 LAP -1.83 LOP 310.45 VP 23.872 GAP -11.64 AZP 90.53 TAL 337.48 TAP 231.24 RCA 145.74 APO 231.14 V2 26.304
RC 317.035 GL 17.65 GP -1.20 ZAL 123.79 ZAP 37.00 ETS 177.53 ZAE 59.29 ETE 178.86 ZAC 83.88 ETC 257.41 CLP 36.98

PLANETOCENTRIC CONIC

C3 13.036 VHL 3.611 DLA 15.20 RAL 189.39 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 4.831 DPA 5.37 RAP 168.60 ECC 1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 24	2610.00	-26.79	68.11	48.67	99.53	18 46 54	2010.0	-25.20	59.81
90.00	10 6 58	4268.13	2.24	175.78	43.83	61.76	11 18 7	3668.1	-1.56	169.15
100.00	19 33 1	2320.98	-27.93	46.62	48.43	101.11	20 11 42	1721.0	-26.11	38.29
100.00	11 20 2	4032.38	3.25	157.89	43.27	60.27	12 27 15	3432.4	-.73	151.36
110.00	20 59 43	2049.72	-30.91	25.22	47.63	105.39	21 33 52	1449.7	-28.49	16.85
110.00	12 9 50	3876.41	5.85	144.44	41.65	56.26	13 14 26	3276.4	1.38	138.21

DIFFERENTIAL CORRECTIONS
TDE -.3362 TRA 5.1590 TC-14.7501 BAU 2.5713
RDE .3262 RRA .1399 RC3 .3077 FAU .16284
FDE -.9667 FRA 4.6045 FC-10.8138 BSP 47703
BDE .4684 BRA 5.1609 BC314.7534 FSP 3302

MID-COURSE EXECUTION ACCURACY
SGT13627.4 SGR 608.4 SG3 949.1
RRT -.0834 RRF -.1178 RTF .9902
SGB13641.0 R23 .0352 R13 -.9902
SG113627.5 SG2 606.3 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 2619.9 SR 522.2 SS 1148.4
CRT -.0750 CRS .4447 CST -.9260
LSA 2833.2 MSA 654.1 SSA 24.8
EL1 2620.2 EL2 520.7 ALF 179.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 850.750 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.041 GAL -4.26 AZL 88.10 HCA 255.00 SMA 188.55 ECC .22787 INC 1.8983 V1 30.141
RP 208.16 LAP -1.83 LOP 311.70 VP 23.901 GAP -11.76 AZP 90.49 TAL 336.69 TAP 231.69 RCA 145.58 APO 231.51 V2 26.323
RC 317.924 GL 17.34 GP -1.17 ZAL 125.02 ZAP 36.30 ETS 177.51 ZAE 58.30 ETE 178.87 ZAC 84.02 ETC 257.35 CLP 36.29

PLANETOCENTRIC CONIC

C3 13.407 VHL 3.661 DLA 14.44 RAL 190.38 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 4.915 DPA 5.16 RAP 169.12 ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 18	2588.82	-26.54	66.61	49.81	100.25	18 57 27	1988.8	-24.86	58.35
90.00	10 3 56	4301.43	3.31	177.64	45.07	61.86	11 15 38	3701.4	-.48	171.01
100.00	19 43 22	2301.59	-27.67	45.24	49.56	101.79	20 21 43	1701.6	-25.76	36.96
100.00	11 17 34	4063.89	4.31	159.62	44.51	60.39	12 25 18	3463.9	.34	153.09
110.00	21 8 53	2034.02	-30.62	24.08	48.73	106.00	21 42 47	1434.0	-28.12	15.78
110.00	12 8 32	3904.23	6.90	145.91	42.91	56.44	13 13 37	3304.2	2.44	139.66

DIFFERENTIAL CORRECTIONS
TDE -.4410 TRA 5.3898 TC-14.5157 BAU 2.6023
RDE .3343 RRA .1380 RC3 .3114 FAU .15450
FDE-1.0153 FRA 4.5272 FC3-9.9770 BSP 48241
BDE .5534 BRA 5.3916 BC314.5190 FSP 3160

MID-COURSE EXECUTION ACCURACY
SGT13759.3 SGR 612.7 SG3 903.8
RRT -.0999 RRF -.1351 RTF .9899
SGB13772.9 R23 .0361 R13 -.9899
SG113759.4 SG2 609.7 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 2721.1 SR 527.5 SS 1154.4
CRT -.1313 CRS .4783 CST -.9329
LSA 2932.2 MSA 645.7 SSA 24.3
EL1 2722.0 EL2 522.7 ALF 178.49

LAUNCH DATE NOV 19 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 855.017 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.047 GAL -4.43 AZL 88.11 HCA 256.26 SMA 188.65 ECC .22919 INC 1.8927 V1 30.141
RP 208.01 LAP -1.84 LOP 312.95 VP 23.929 GAP -11.89 AZP 90.45 TAL 335.88 TAP 232.13 RCA 145.42 APO 231.89 V2 26.341
RC 318.808 GL 17.03 GP -1.15 ZAL 126.24 ZAP 35.63 ETS 177.49 ZAE 57.32 ETE 178.87 ZAC 84.17 ETC 257.29 CLP 35.61

PLANETOCENTRIC CONIC

C3 13.803 VHL 3.715 DLA 13.67 RAL 191.36 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 5.001 DPA 4.95 RAP 169.66 ECC 1.2272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 3	2568.31	-26.29	65.17	50.97	100.93	19 7 51	1968.3	-24.51	56.95
90.00	10 1 2	4334.65	4.37	179.50	46.34	61.99	11 13 17	3734.7	.59	172.86
100.00	19 53 35	2282.80	-27.40	43.91	50.71	102.44	20 31 38	1682.8	-25.41	35.67
100.00	11 15 12	4095.40	5.37	161.37	45.79	60.55	12 23 27	3495.4	1.41	154.82
110.00	21 17 58	2018.77	-30.33	22.99	49.85	106.58	21 51 36	1418.8	-27.76	14.74
110.00	12 7 18	3932.19	7.95	147.40	44.21	56.64	13 12 50	3332.2	3.51	141.13

DIFFERENTIAL CORRECTIONS
TDE -.5491 TRA 5.6280 TC-14.2665 BAU 2.6333
RDE .3428 RRA .1359 RC3 .3142 FAU .14645
FDE-1.0591 FRA 4.4478 FC3-9.1857 BSP 48761
BDE .6474 BRA 5.6297 BC314.2699 FSP 3021

MID-COURSE EXECUTION ACCURACY
SGT13888.1 SGR 616.9 SG3 860.0
RRT -.1162 RRF -.1521 RTF .9895
SGB13901.8 R23 .0372 R13 -.9895
SG113888.2 SG2 612.7 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 2828.3 SR 532.7 SS 1159.0
CRT -.1836 CRS .5095 CST -.9390
LSA 3036.4 MSA 637.1 SSA 23.8
EL1 2830.0 EL2 523.3 ALF 177.95

LAUNCH DATE NOV 19 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 859.282 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.053 GAL -4.60 AZL 88.11 HCA 257.51 SMA 188.76 ECC .23058 INC 1.8872 V1 30.141
RP 207.86 LAP -1.84 LOP 314.21 VP 23.955 GAP -12.02 AZP 90.41 TAL 335.05 TAP 232.56 RCA 145.24 APO 232.29 V2 26.357
RC 319.885 GL 16.72 GP -1.12 ZAL 127.46 ZAP 34.97 ETS 177.47 ZAE 56.37 ETE 178.88 ZAC 84.31 ETC 257.22 CLP 34.95

PLANETOCENTRIC CONIC

C3 14.227 VHL 3.772 DLA 12.90 RAL 192.34 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 5.088 DPA 4.73 RAP 170.22 ECC 1.2341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 38	2548.48	-26.02	63.77	52.15	101.58	19 18 7	1948.5	-24.16	55.60
90.00	9 58 16	4367.80	5.43	181.37	47.65	62.17	11 11 3	3767.8	1.66	174.71
100.00	20 3 40	2264.61	-27.13	42.62	51.88	103.07	20 41 24	1664.6	-25.06	34.44
100.00	11 12 55	4126.91	6.42	163.11	47.10	60.74	12 21 42	3526.9	2.47	156.55
110.00	21 26 57	2003.99	-30.04	21.94	50.99	107.14	22 0 21	1404.0	-27.40	13.74
110.00	12 6 7	3960.29	9.00	148.90	45.53	56.88	13 12 8	3360.3	4.58	142.60

DIFFERENTIAL CORRECTIONS
TDE -.6610 TRA 5.8729 TC-14.0056 BAU 2.6647
RDE .3517 RRA .1336 RC3 .3160 FAU .13869
FDE-1.0988 FRA 4.3652 FC3-8.4393 BSP 49256
BDE .7488 BRA 5.8744 BC314.0092 FSP 2885

MID-COURSE EXECUTION ACCURACY
SGT14014.2 SGR 621.0 SG3 817.8
RRT -.1322 RRF -.1691 RTF .9891
SGB14028.0 R23 .0384 R13 -.9891
SG114014.4 SG2 615.5 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 2940.5 SR 538.0 SS 1162.0
CRT -.2322 CRS .5385 CST -.9443
LSA 3145.0 MSA 628.4 SSA 23.3
EL1 2943.3 EL2 522.8 ALF 177.49

LAUNCH DATE NOV 19 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 863.543 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.059 GAL -4.77 AZL 88.12 HCA 258.77 SMA 188.87 ECC .23202 INC 1.8818 V1 30.141
RP 207.73 LAP -1.85 LOP 315.46 VP 23.982 GAP -12.15 AZP 90.37 TAL 334.21 TAP 232.97 RCA 145.05 APO 232.69 V2 26.373
RC 320.558 GL 16.40 GP -1.10 ZAL 128.69 ZAP 34.33 ETS 177.45 ZAE 55.43 ETE 178.89 ZAC 84.46 ETC 257.16 CLP 34.32

PLANETOCENTRIC CONIC

C3 14.682 VHL 3.832 DLA 12.13 RAL 193.31 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 5.177 DPA 4.50 RAP 170.80 ECC 1.2416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 5	2529.32	-25.75	62.44	53.35	102.20	19 28 14	1929.3	-23.81	54.30
90.00	9 55 36	4400.89	6.48	183.23	48.98	62.37	11 8 56	3800.9	2.73	176.56
100.00	20 13 37	2247.01	-26.85	41.39	53.07	103.66	20 51 4	1647.0	-24.70	33.25
100.00	11 10 44	4158.44	7.47	164.87	48.45	60.97	12 20 3	3558.4	3.54	158.29
110.00	21 35 51	1989.69	-29.74	20.93	52.15	107.68	22 9 1	1389.7	-27.04	12.78
110.00	12 5 0	3988.52	10.05	150.41	46.88	57.15	13 11 28	3388.5	5.65	144.08

DIFFERENTIAL CORRECTIONS
TDE -.7740 TRA 6.1263 TC-13.7278 BAU 2.6952
RDE .3610 RRA .1309 RC3 .3170 FAU .13110
FDE-1.1314 FRA 4.2813 FC3-7.7309 BSP 49769
BDE .8541 BRA 6.1277 BC313.7314 FSP 2755

MID-COURSE EXECUTION ACCURACY
SGT14135.3 SGR 624.9 SG3 776.8
RRT -.1476 RRF -.1853 RTF .9886
SGB14149.1 R23 .0395 R13 -.9886
SG114135.6 SG2 618.1 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 3056.3 SR 543.3 SS 1162.3
CRT -.2760 CRS .5643 CST -.9489
LSA 3256.2 MSA 619.5 SSA 22.8
EL1 3060.1 EL2 521.5 ALF 177.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 867.801 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.066 GAL -4.95 AZL 88.12 HCA 260.02 SMA 188.98 ECC .23352 INC 1.8763 V1 30.141
RP 207.60 LAP -1.85 LOP 316.72 VP 24.007 GAP -12.28 AZP 90.33 TAL 333.35 TAP 233.37 RCA 144.85 APO 233.11 V2 26.388
RC 321.425 GL 16.08 GP -1.08 ZAL 129.91 ZAP 33.71 ETS 177.43 ZAE 54.50 ETE 178.90 ZAC 84.62 ETC 257.09 CLP 33.69

PLANETOCENTRIC CONIC

C3 15.167 VHL 3.895 DLA 11.36 RAL 194.28 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 5.267 DPA 4.27 RAP 171.39 ECC 1.2496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 22	2510.83	-25.48	61.15	54.57	102.79	19 38 13	1910.8	-23.47	53.06
90.00	9 53 2	4433.93	7.52	185.11	50.35	62.62	11 6 56	3833.9	3.79	178.41
100.00	20 23 27	2230.01	-26.57	40.20	54.28	104.23	21 0 37	1630.0	-24.35	32.11
100.00	11 8 39	4189.98	8.50	166.64	49.82	61.24	12 18 29	3590.0	4.60	160.02
110.00	21 44 39	1975.88	-29.46	19.96	53.33	108.19	22 17 35	1375.9	-26.69	11.86
110.00	12 3 55	4016.87	11.09	151.95	48.26	57.46	13 10 52	3416.9	6.72	145.58

DIFFERENTIAL CORRECTIONS
TDE -.8902 TRA 6.3869 TC-13.4405 BAU 2.7261
RDE .3707 RRA .1280 RC3 .3171 FAU .12377
FDE-1.1596 FRA 4.1941 FC3-7.0650 BSP 50267
BDE .9643 BRA 6.3882 BC313.4442 FSP 2628

MID-COURSE EXECUTION ACCURACY
SGT14253.7 SGR 628.8 SG3 737.2
RRT -.1628 RRF -.2015 RTF .9880
SGB14267.5 R23 .0408 R13 -.9880
SG114254.0 SG2 620.4 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 3175.1 SR 548.5 SS 1160.5
CRT -.3164 CRS .5883 CST -.9529
LSA 3369.7 MSA 610.9 SSA 22.3
EL1 3179.9 EL2 519.5 ALF 176.79

LAUNCH DATE NOV 19 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 872.053 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.072 GAL -5.14 AZL 88.13 HCA 261.28 SMA 189.09 ECC .23509 INC 1.8710 V1 30.141
RP 207.48 LAP -1.85 LOP 317.98 VP 24.031 GAP -12.42 AZP 90.28 TAL 332.48 TAP 233.76 RCA 144.64 APO 233.55 V2 26.402
RC 322.286 GL 15.76 GP -1.06 ZAL 131.12 ZAP 33.11 ETS 177.41 ZAE 53.59 ETE 178.90 ZAC 84.77 ETC 257.03 CLP 33.09

PLANETOCENTRIC CONIC

C3 15.686 VHL 3.961 DLA 10.60 RAL 195.24 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 5.360 DPA 4.02 RAP 172.00 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 31	2492.99	-25.21	59.92	55.80	103.35	19 48 4	1893.0	-23.12	51.87
90.00	9 50 34	4466.92	8.54	186.98	51.75	62.90	11 5 1	3866.9	4.84	180.26
100.00	20 33 8	2213.62	-26.29	39.07	55.50	104.76	21 10 2	1613.6	-24.00	31.01
100.00	11 6 38	4221.53	9.53	168.41	51.22	61.53	12 16 59	3621.5	5.66	161.77
110.00	21 53 22	1962.58	-29.17	19.03	54.52	108.67	22 26 5	1362.6	-26.34	10.98
110.00	12 2 54	4045.34	12.13	153.50	49.68	57.79	13 10 19	3445.3	7.79	147.09

DIFFERENTIAL CORRECTIONS
TDE-1.0099 TRA 6.6548 TC-13.1466 BAU 2.7578
RDE .3808 RRA .1248 RC3 .3165 FAU .11673
FDE-1.1838 FRA 4.1041 FC3-6.4425 BSP 50729
BDE 1.0793 BRA 6.6560 BC313.1504 FSP 2504

MID-COURSE EXECUTION ACCURACY
SGT14370.3 SGR 632.5 SG3 699.0
RRT -.1779 RRF -.2176 RTF .9874
SGB14384.2 R23 .0423 R13 -.9874
SG114370.7 SG2 622.4 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 3296.3 SR 553.7 SS 1156.7
CRT -.3536 CRS .6108 CST -.9563
LSA 3485.2 MSA 602.5 SSA 21.9
EL1 3302.2 EL2 517.0 ALF 176.52

LAUNCH DATE NOV 19 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 876.301 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.078 GAL -5.33 AZL 88.13 HCA 262.54 SMA 189.21 ECC .23673 INC 1.8656 V1 30.141
RP 207.36 LAP -1.85 LOP 319.24 VP 24.054 GAP -12.56 AZP 90.24 TAL 331.59 TAP 234.13 RCA 144.42 APO 234.00 V2 26.416
RC 323.141 GL 15.43 GP -1.03 ZAL 132.33 ZAP 32.52 ETS 177.38 ZAE 52.70 ETE 178.91 ZAC 84.93 ETC 256.96 CLP 32.50

PLANETOCENTRIC CONIC

C3 16.241 VHL 4.030 DLA 9.83 RAL 196.20 RAD 6567.7 VEL 11.731 PTH 2.07 VHP 5.453 DPA 3.76 RAP 172.62 ECC 1.2673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 31	2475.83	-24.93	58.73	57.06	103.88	19 57 47	1875.8	-22.78	50.72
90.00	9 48 12	4499.87	9.56	188.87	53.18	63.22	11 3 12	3899.9	5.89	182.11
100.00	20 42 43	2197.84	-26.01	37.98	56.74	105.27	21 19 21	1597.8	-23.66	29.96
100.00	11 4 42	4252.86	10.55	170.20	52.66	61.87	12 15 34	3652.9	6.71	163.52
110.00	22 1 59	1949.79	-28.89	18.14	55.74	109.13	22 34 29	1349.8	-26.01	10.14
110.00	12 1 55	4073.90	13.16	155.07	51.12	58.16	13 9 49	3473.9	8.86	148.62

DIFFERENTIAL CORRECTIONS
TDE-1.1324 TRA 6.9304 TC-12.8439 BAU 2.7895
RDE .3913 RRA .1212 RC3 .3152 FAU .10991
FDE-1.2040 FRA 4.0112 FC3-5.8592 BSP 51177
BDE 1.1981 BRA 6.9315 BC312.8477 FSP 2383

MID-COURSE EXECUTION ACCURACY
SGT14483.1 SGR 636.1 SG3 662.1
RRT -.1928 RRF -.2337 RTF .9868
SGB14497.1 R23 .0440 R13 -.9868
SG114483.6 SG2 624.1 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 3418.9 SR 558.8 SS 1150.8
CRT -.3876 CRS .6317 CST -.9592
LSA 3601.6 MSA 594.4 SSA 21.4
EL1 3425.9 EL2 514.1 ALF 176.29

LAUNCH DATE NOV 19 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 880.542 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.085 GAL -5.52 AZL 88.14 HCA 263.80 SMA 189.32 ECC .23844 INC 1.8603 V1 30.141
RP 207.26 LAP -1.85 LOP 320.50 VP 24.076 GAP -12.70 AZP 90.20 TAL 330.69 TAP 234.49 RCA 144.18 APO 234.46 V2 26.428
RC 323.990 GL 15.10 GP -1.01 ZAL 133.54 ZAP 31.94 ETS 177.36 ZAE 51.83 ETE 178.92 ZAC 85.10 ETC 256.90 CLP 31.93

PLANETOCENTRIC CONIC

C3 16.833 VHL 4.103 DLA 9.08 RAL 197.15 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 5.549 DPA 3.50 RAP 173.26 ECC 1.2770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 22	2459.32	-24.66	57.60	58.33	104.38	20 7 22	1859.3	-22.44	49.63
90.00	9 45 55	4532.77	10.56	190.77	54.64	63.57	11 1 28	3932.8	6.93	183.97
100.00	20 52 9	2182.68	-25.74	36.93	58.01	105.76	21 28 32	1582.7	-23.33	28.96
100.00	11 2 50	4284.65	11.56	172.01	54.12	62.24	12 14 14	3684.6	7.75	165.28
110.00	22 10 30	1937.53	-28.61	17.29	56.98	109.56	22 42 47	1337.5	-25.68	9.34
110.00	12 0 59	4102.56	14.18	156.66	52.60	58.57	13 9 21	3502.6	9.92	150.15

DIFFERENTIAL CORRECTIONS
TDE-1.2576 TRA 7.2134 TC-12.5351 BAU 2.8217
RDE .4021 RRA .1174 RC3 .3132 FAU .10329
FDE-1.2196 FRA 3.9149 FC3-5.3126 BSP 51606
BDE 1.3204 BRA 7.2143 BC312.5390 FSP 2264

MID-COURSE EXECUTION ACCURACY
SGT14592.7 SGR 639.5 SG3 626.4
RRT -.2075 RRF -.2497 RTF .9860
SGB14606.7 R23 .0458 R13 -.9860
SG114593.3 SG2 625.6 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 3542.0 SR 563.9 SS 1142.3
CRT -.4187 CRS .6512 CST -.9616
LSA 3718.1 MSA 586.5 SSA 21.0
EL1 3550.0 EL2 510.9 ALF 176.11

LAUNCH DATE NOV 19 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 884.776 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.091 GAL -5.72 AZL 88.15 HCA 265.07 SMA 189.44 ECC .24022 INC 1.8549 V1 30.141
RP 207.16 LAP -1.85 LOP 321.77 VP 24.097 GAP -12.84 AZP 90.16 TAL 329.77 TAP 234.84 RCA 143.93 APO 234.94 V2 26.439
RC 324.833 GL 14.78 GP -1.00 ZAL 134.74 ZAP 31.39 ETS 177.34 ZAE 50.96 ETE 178.92 ZAC 85.27 ETC 256.84 CLP 31.37

PLANETOCENTRIC CONIC

C3 17.465 VHL 4.179 DLA 8.32 RAL 198.09 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 5.646 DPA 3.22 RAP 173.91 ECC 1.2874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 6	2443.48	-24.38	56.52	59.62	104.86	20 16 49	1843.5	-22.11	48.59
90.00	9 43 44	4565.62	11.55	192.67	56.14	63.97	10 59 49	3965.6	7.96	185.84
100.00	21 1 28	2168.13	-25.46	35.94	59.29	106.21	21 37 36	1568.1	-23.00	28.01
100.00	11 1 2	4316.21	12.55	173.82	55.62	62.65	12 12 58	3716.2	8.79	167.05
110.00	22 18 54	1925.80	-28.34	16.49	58.23	109.97	22 51 0	1325.8	-25.36	8.58
110.00	12 0 6	4131.30	15.20	158.27	54.10	59.01	13 8 57	3531.3	10.98	151.71

DIFFERENTIAL CORRECTIONS
TDE-1.3854 TRA 7.5049 TC-12.2208 BAU 2.8543
RDE .4134 RRA .1132 RC3 .3106 FAU .09690
FDE-1.2308 FRA 3.8165 FC3-4.8036 BSP 52019
BDE 1.4458 BRA 7.5058 BC312.2248 FSP 2149

MID-COURSE EXECUTION ACCURACY
SGT14699.5 SGR 642.9 SG3 591.9
RRT -.2220 RRF -.2655 RTF .9851
SGB14713.6 R23 .0477 R13 -.9852
SG114700.2 SG2 626.8 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 3665.2 SR 568.8 SS 1131.4
CRT -.4472 CRS .6692 CST -.9636
LSA 3834.3 MSA 579.0 SSA 20.6
EL1 3674.2 EL2 507.5 ALF 175.95

LAUNCH DATE NOV 19 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 889.003 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.098 GAL -5.92 AZL 88.15 HCA 266.33 SMA 189.55 ECC .24208 INC 1.8496 V1 30.141
RP 207.08 LAP -1.85 LOP 323.03 VP 24.117 GAP -12.99 AZP 90.12 TAL 328.84 TAP 235.17 RCA 143.67 APO 235.44 V2 26.449
RC 325.671 GL 14.45 GP -.98 ZAL 135.93 ZAP 30.84 ETS 177.31 ZAE 50.12 ETE 178.93 ZAC 85.44 ETC 256.77 CLP 30.83

PLANETOCENTRIC CONIC

C3 18.139 VHL 4.259 DLA 7.57 RAL 199.03 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 5.746 DPA 2.94 RAP 174.58 ECC 1.2985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 41	2428.29	-24.12	55.49	60.92	105.31	20 26 9	1828.3	-21.78	47.60
90.00	9 41 37	4598.44	12.53	194.59	57.66	64.40	10 58 15	3998.4	8.98	187.71
100.00	21 10 40	2154.20	-25.20	34.99	60.58	106.64	21 46 34	1554.2	-22.67	27.10
100.00	10 59 19	4347.76	13.53	175.65	57.15	63.09	12 11 46	3747.8	9.82	168.83
110.00	22 27 13	1914.62	-28.08	15.72	59.50	110.35	22 59 8	1314.6	-25.05	7.86
110.00	11 59 15	4160.11	16.20	159.90	55.64	59.48	13 8 35	3560.1	12.03	153.28

DIFFERENTIAL CORRECTIONS
TDE-1.5167 TRA 7.8045 TC-11.9040 BAU 2.8877
RDE .4251 RRA .1086 RC3 .3074 FAU .09072
FDE-1.2383 FRA 3.7150 FC3-4.3297 BSP 52416
BDE 1.5751 BRA 7.8052 BC311.9080 FSP 2037

MID-COURSE EXECUTION ACCURACY
SGT14804.1 SGR 646.1 SG3 558.6
RRT -.2364 RRF -.2814 RTF .9842
SGB14818.2 R23 .0497 R13 -.9842
SG114804.9 SG2 627.7 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 3788.4 SR 573.7 SS 1118.4
CRT -.4734 CRS .6861 CST -.9653
LSA 3950.3 MSA 571.7 SSA 20.2
EL1 3798.3 EL2 504.0 ALF 175.83

LAUNCH DATE NOV 19 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 893.221 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.104 GAL -6.14 AZL 88.16 HCA 267.59 SMA 189.67 ECC .24402 INC 1.8444 V1 30.141
RP 207.00 LAP -1.84 LOP 324.30 VP 24.137 GAP -13.13 AZP 90.08 TAL 327.89 TAP 235.49 RCA 143.39 APO 235.96 V2 26.459
RC 326.503 GL 14.12 GP -.96 ZAL 137.11 ZAP 30.32 ETS 177.29 ZAE 49.28 ETE 178.93 ZAC 85.61 ETC 256.71 CLP 30.30

PLANETOCENTRIC CONIC

C3 18.858 VHL 4.343 DLA 6.83 RAL 199.96 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 5.847 DPA 2.65 RAP 175.26 ECC 1.3104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 8	2413.76	-23.85	54.51	62.25	105.73	20 35 22	1813.8	-21.46	46.65
90.00	9 39 34	4631.21	13.48	196.53	59.22	64.86	10 56 45	4031.2	9.98	189.59
100.00	21 19 44	2140.89	-24.93	34.09	61.90	107.05	21 55 25	1540.9	-22.36	26.23
100.00	10 57 39	4379.31	14.50	177.50	58.71	63.57	12 10 38	3779.3	10.83	170.63
110.00	22 35 26	1903.98	-27.82	15.00	60.80	110.71	23 7 10	1304.0	-24.75	7.17
110.00	11 58 26	4188.98	17.19	161.55	57.21	59.99	13 8 15	3589.0	13.07	154.86

DIFFERENTIAL CORRECTIONS
TDE-1.6502 TRA 8.1131 TC-11.5840 BAU 2.9215
RDE .4373 RRA .1037 RC3 .3037 FAU .08471
FDE-1.2422 FRA 3.6108 FC3-3.8888 BSP 52808
BDE 1.7071 BRA 8.1138 BC311.5879 FSP 1928

MID-COURSE EXECUTION ACCURACY
SGT14906.0 SGR 649.2 SG3 526.4
RRT -.2506 RRF -.2972 RTF .9831
SGB14920.1 R23 .0521 R13 -.9831
SG114906.9 SG2 628.4 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 3910.4 SR 578.4 SS 1103.1
CRT -.4972 CRS .7021 CST -.9667
LSA 4064.9 MSA 564.8 SSA 19.8
EL1 3921.2 EL2 500.5 ALF 175.72

LAUNCH DATE NOV 19 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 897.430 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.111 GAL -6.35 AZL 88.16 HCA 268.86 SMA 189.79 ECC .24604 INC 1.8391 V1 30.141
RP 206.93 LAP -1.84 LOP 325.56 VP 24.155 GAP -13.29 AZP 90.04 TAL 326.93 TAP 235.79 RCA 143.09 APO 236.49 V2 26.467
RC 327.330 GL 13.79 GP -.94 ZAL 138.29 ZAP 29.80 ETS 177.27 ZAE 48.46 ETE 178.94 ZAC 85.79 ETC 256.65 CLP 29.79

PLANETOCENTRIC CONIC

C3 19.625 VHL 4.430 DLA 6.09 RAL 200.88 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 5.950 DPA 2.36 RAP 175.95 ECC 1.3230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 27	2399.89	-23.59	53.57	63.59	106.13	20 44 27	1799.9	-21.15	45.75
90.00	9 37 36	4663.93	14.42	198.47	60.81	65.36	10 55 20	4063.9	10.98	191.48
100.00	21 28 41	2128.20	-24.68	33.23	63.23	107.43	22 4 9	1528.2	-22.06	25.41
100.00	10 56 3	4410.85	15.44	179.36	60.31	64.08	12 9 34	3810.8	11.83	172.43
110.00	22 43 33	1893.90	-27.58	14.32	62.10	111.05	23 15 6	1293.9	-24.47	6.53
110.00	11 57 40	4217.91	18.17	163.23	58.82	60.53	13 7 58	3617.9	14.10	156.47

DIFFERENTIAL CORRECTIONS
TDE-1.7874 TRA 8.4285 TC-11.2645 BAU 2.9565
RDE .4498 RRA .0984 RC3 .2996 FAU .07891
FDE-1.2423 FRA 3.5031 FC3-3.4809 BSP 53121
BDE 1.8432 BRA 8.4291 BC311.2684 FSP 1820

MID-COURSE EXECUTION ACCURACY
SGT15004.6 SGR 652.1 SG3 495.2
RRT -.2649 RRF -.3131 RTF .9819
SGB15018.8 R23 .0545 R13 -.9819
SG115005.6 SG2 628.8 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4031.2 SR 583.1 SS 1085.5
CRT -.5195 CRS .7172 CST -.9678
LSA 4178.2 MSA 558.0 SSA 19.5
EL1 4042.8 EL2 496.8 ALF 175.64

LAUNCH DATE NOV 19 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 901.628 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.118 GAL -6.57 AZL 88.17 HCA 270.13 SMA 189.91 ECC .24815 INC 1.8338 V1 30.141
RP 206.86 LAP -1.83 LOP 326.83 VP 24.172 GAP -13.44 AZP 90.00 TAL 325.95 TAP 236.08 RCA 142.78 APO 237.04 V2 26.474
RC 328.152 GL 13.47 GP -.93 ZAL 139.45 ZAP 29.31 ETS 177.24 ZAE 47.66 ETE 178.94 ZAC 85.96 ETC 256.58 CLP 29.29

PLANETOCENTRIC CONIC

C3 20.443 VHL 4.521 DLA 5.37 RAL 201.79 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 6.056 DPA 2.06 RAP 176.65 ECC 1.3364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 38	2386.66	-23.34	52.69	64.95	106.51	20 53 24	1786.7	-20.85	44.89
90.00	9 35 42	4696.60	15.34	200.43	62.43	65.90	10 53 58	4096.6	11.95	193.39
100.00	21 37 30	2116.12	-24.43	32.42	64.58	107.79	22 12 46	1516.1	-21.77	24.64
100.00	10 54 30	4442.36	16.37	181.24	61.93	64.64	12 8 03	3842.4	12.82	174.25
110.00	22 51 33	1884.38	-27.35	13.67	63.43	111.36	23 22 57	1284.4	-24.20	5.92
110.00	11 56 57	4246.87	19.13	164.92	60.45	61.11	13 7 44	3646.9	15.13	158.09

DIFFERENTIAL CORRECTIONS
TDE-1.9274 TRA 8.7533 TC-10.9460 BAU 2.9927
RDE .4628 RRA .0927 RC3 .2951 FAU .07332
FDE-1.2391 FRA 3.3923 FC3-3.1052 BSP 53431
BDE 1.9821 BRA 8.7538 BC310.9500 FSP 1715

MID-COURSE EXECUTION ACCURACY
SGT15101.8 SGR 655.0 SG3 465.2
RRT -.2790 RRF -.3292 RTF .9805
SGB15116.0 R23 .0574 R13 -.9806
SG115102.9 SG2 628.9 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4150.2 SR 587.5 SS 1065.9
CRT -.5398 CRS .7316 CST -.9686
LSA 4289.6 MSA 551.6 SSA 19.1
EL1 4162.5 EL2 493.1 ALF 175.57

LAUNCH DATE NOV 19 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 905.815 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.124 GAL -6.80 AZL 88.17 HCA 271.39 SMA 190.03 ECC .25035 INC 1.8285 V1 30.141
RP 206.81 LAP -1.83 LOP 328.10 VP 24.188 GAP -13.60 AZP 89.96 TAL 324.96 TAP 236.35 RCA 142.46 APO 237.61 V2 26.480
RC 328.970 GL 13.14 GP -.91 ZAL 140.60 ZAP 28.82 ETS 177.22 ZAE 46.87 ETE 178.95 ZAC 86.15 ETC 256.52 CLP 28.81

PLANETOCENTRIC CONIC

C3 21.315 VHL 4.617 DLA 4.65 RAL 202.70 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 6.163 DPA 1.74 RAP 177.37 ECC 1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 41	2374.08	-23.09	51.85	66.33	106.86	21 2 15	1774.1	-20.56	44.08
90.00	9 33 52	4729.21	16.23	202.41	64.08	66.48	10 52 41	4129.2	12.91	195.30
100.00	21 46 12	2104.66	-24.19	31.66	65.95	108.12	22 21 17	1504.7	-21.48	23.90
100.00	10 53 1	4473.85	17.28	183.14	63.59	65.22	12 7 35	3873.9	13.80	176.08
110.00	22 59 27	1875.41	-27.12	13.07	64.77	111.65	23 30 43	1275.4	-23.94	5.35
110.00	11 56 16	4275.88	20.07	166.64	62.12	61.73	13 7 31	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-2.0706 TRA 9.0872 TC-10.6277 BAU 3.0296
RDE .4762 RRA .0865 RC3 .2902 FAU .06786
FDE-1.2324 FRA 3.2787 FC3-2.7564 BSP 53720
BDE 2.1247 BRA 9.0877 BC310.6316 FSP 1613

MID-COURSE EXECUTION ACCURACY
SGT15196.2 SGR 657.7 SG3 436.1
RRT -.2931 RRF -.3451 RTF .9790
SGB15210.4 R23 .0604 R13 -.9790
SG115197.4 SG2 628.8 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4267.5 SR 591.9 SS 1044.1
CRT -.5587 CRS .7452 CST -.9691
LSA 4399.4 MSA 545.4 SSA 18.8
EL1 4280.5 EL2 489.4 ALF 175.51

LAUNCH DATE NOV 19 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 909.988 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.131 GAL -7.04 AZL 88.18 HCA 272.66 SMA 190.16 ECC .25265 INC 1.8232 V1 30.141
RP 206.77 LAP -1.82 LOP 329.37 VP 24.203 GAP -13.77 AZP 89.92 TAL 323.95 TAP 236.61 RCA 142.11 APO 238.20 V2 26.486
RC 329.784 GL 12.82 GP -.89 ZAL 141.75 ZAP 28.35 ETS 177.19 ZAE 46.09 ETE 178.95 ZAC 86.33 ETC 256.47 CLP 28.34

PLANETOCENTRIC CONIC

C3 22.244 VHL 4.716 DLA 3.94 RAL 203.59 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 6.273 DPA 1.43 RAP 178.10 ECC 1.3661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 36	2362.13	-22.85	51.05	67.72	107.19	21 10 59	1762.1	-20.29	43.32
90.00	9 32 5	4761.77	17.11	204.40	65.76	67.09	10 51 27	4161.8	13.86	197.23
100.00	21 54 48	2093.82	-23.96	30.93	67.34	108.44	22 29 41	1493.8	-21.21	23.21
100.00	10 51 35	4505.31	18.17	185.05	65.28	65.85	12 6 41	3905.3	14.75	177.92
110.00	23 7 16	1866.99	-26.91	12.51	66.13	111.92	23 38 23	1267.0	-23.69	4.82
110.00	11 55 36	4304.90	21.00	168.38	63.82	62.39	13 7 21	3704.9	17.14	161.39

DIFFERENTIAL CORRECTIONS
TDE-2.2160 TRA 9.4299 TC-10.3105 BAU 3.0673
RDE .4900 RRA .0800 RC3 .2849 FAU .06260
FDE-1.2219 FRA 3.1617 FC3-2.4363 BSP 53991
BDE 2.2695 BRA 9.4302 BC310.3144 FSP 1513

MID-COURSE EXECUTION ACCURACY
SGT15286.9 SGR 660.3 SG3 408.1
RRT -.3069 RRF -.3612 RTF .9772
SGB15301.1 R23 .0638 R13 -.9772
SG115288.2 SG2 628.4 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 4381.7 SR 596.0 SS 1020.0
CRT -.5760 CRS .7581 CST -.9695
LSA 4506.0 MSA 539.5 SSA 18.4
EL1 4395.3 EL2 485.7 ALF 175.46

LAUNCH DATE NOV 19 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 914.149 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.138 GAL -7.28 AZL 88.18 HCA 273.93 SMA 190.28 ECC .25504 INC 1.8180 V1 30.141
RP 206.73 LAP -1.81 LOP 330.63 VP 24.217 GAP -13.94 AZP 89.88 TAL 322.92 TAP 236.86 RCA 141.75 APO 238.81 V2 26.490
RC 330.595 GL 12.49 GP -.88 ZAL 142.88 ZAP 27.89 ETS 177.17 ZAE 45.32 ETE 178.95 ZAC 86.52 ETC 256.41 CLP 27.88

PLANETOCENTRIC CONIC

C3 23.234 VHL 4.820 DLA 3.23 RAL 204.48 RAD 6567.9 VEL 12.026 PTH 2.15 VHP 6.385 DPA 1.10 RAP 178.85 ECC 1.3824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 25	2350.81	-22.62	50.30	69.13	107.50	21 19 35	1750.8	-20.02	42.60
90.00	9 30 23	4794.26	17.96	206.40	67.47	67.73	10 50 17	4194.3	14.78	199.16
100.00	22 3 16	2083.57	-23.73	30.25	68.74	108.73	22 37 59	1483.6	-20.96	22.56
100.00	10 50 13	4536.73	19.03	186.99	67.00	66.50	12 5 49	3936.7	15.69	179.79
110.00	23 14 58	1859.14	-26.71	11.99	67.51	112.17	23 45 57	1259.1	-23.46	4.33
110.00	11 55 0	4333.93	21.90	170.15	65.55	63.08	13 7 13	3733.9	18.12	163.07

DIFFERENTIAL CORRECTIONS
TDE-2.3645 TRA 9.7821 TC3-9.9972 BAU 3.1065
RDE .5042 RRA .0729 RC3 .2794 FAU .05748
FDE-1.2087 FRA 3.0415 FC3-2.1416 BSP 54221
BDE 2.4177 BRA 9.7824 BC310.0011 FSP 1416

MID-COURSE EXECUTION ACCURACY
SGT15375.8 SGR 662.8 SG3 380.9
RRT -.3208 RRF -.3774 RTF .9752
SGB15390.1 R23 .0676 R13 -.9752
SG115377.3 SG2 627.7 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 4493.3 SR 600.0 SS 994.2
CRT -.5920 CRS .7706 CST -.9695
LSA 4610.1 MSA 533.8 SSA 18.1
EL1 4507.5 EL2 482.0 ALF 175.43

LAUNCH DATE NOV 19 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 918.294 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.145 GAL -7.53 AZL 88.19 HCA 275.20 SMA 190.40 ECC .25754 INC 1.8126 V1 30.141
RP 206.70 LAP -1.81 LOP 331.90 VP 24.230 GAP -14.11 AZP 89.84 TAL 321.89 TAP 237.09 RCA 141.37 APO 239.44 V2 26.493
RC 331.403 GL 12.17 GP -.87 ZAL 144.00 ZAP 27.45 ETS 177.14 ZAE 44.57 ETE 178.96 ZAC 86.71 ETC 256.35 CLP 27.43

PLANETOCENTRIC CONIC

C3 24.289 VHL 4.928 DLA 2.54 RAL 205.36 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 6.499 DPA .77 RAP 179.60 ECC 1.3997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 5	2340.12	-22.40	49.59	70.56	107.79	21 28 6	1740.1	-19.76	41.92
90.00	9 28 43	4826.69	18.78	208.42	69.22	68.41	10 49 10	4226.7	15.68	201.12
100.00	22 11 37	2073.93	-23.52	29.61	70.15	109.00	22 46 11	1473.9	-20.71	21.95
100.00	10 48 53	4568.11	19.87	188.94	68.75	67.20	12 5 1	3968.1	16.61	181.66
110.00	23 22 35	1851.83	-26.52	11.50	68.90	112.40	23 53 26	1251.8	-23.25	3.87
110.00	11 54 25	4362.97	22.79	171.94	67.32	63.80	13 7 8	3763.0	19.08	164.77

DIFFERENTIAL CORRECTIONS
TDE-2.5159 TRA10.1442 TC3-9.6884 BAU 3.1473
RDE .5189 RRA .0655 RC3 .2737 FAU .05251
FDE-1.1920 FRA 2.9181 FC3-1.8715 BSP 54417
BDE 2.5689 BRA10.1444 BC3 9.6923 FSP 1321

MID-COURSE EXECUTION ACCURACY
SGT15463.1 SGR 665.2 SG3 354.7
RRT -.3346 RRF -.3936 RTF .9728
SGB15477.4 R23 .0717 R13 -.9728
SG115464.7 SG2 626.8 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4602.1 SR 603.8 SS 966.3
CRT -.6068 CRS .7827 CST -.9694
LSA 4711.5 MSA 528.3 SSA 17.8
EL1 4616.8 EL2 478.4 ALF 175.40

LAUNCH DATE NOV 19 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 922.422 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.152 GAL -7.79 AZL 88.19 HCA 276.47 SMA 190.53 ECC .26014 INC 1.8073 V1 30.141
RP 206.68 LAP -1.80 LOP 333.17 VP 24.242 GAP -14.29 AZP 89.80 TAL 320.83 TAP 237.30 RCA 140.97 APO 240.09 V2 26.495
RC 332.208 GL 11.86 GP -.85 ZAL 145.11 ZAP 27.01 ETS 177.12 ZAE 43.83 ETE 178.96 ZAC 86.91 ETC 256.30 CLP 27.00

PLANETOCENTRIC CONIC

C3 25.413 VHL 5.041 DLA 1.86 RAL 206.24 RAD 6568.0 VEL 12.116 PTH 2.17 VHP 6.616 DPA .44 RAP 180.37 ECC 1.4182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 39	2330.03	-22.19	48.93	72.00	108.05	21 36 29	1730.0	-19.52	41.28
90.00	9 27 7	4859.04	19.58	210.46	70.99	69.13	10 48 7	4259.0	16.57	203.08
100.00	22 19 52	2064.87	-23.32	29.02	71.58	109.25	22 54 16	1464.9	-20.48	21.37
100.00	10 47 36	4599.43	20.69	190.91	70.53	67.93	12 4 16	3999.4	17.51	183.55
110.00	23 30 5	1845.06	-26.34	11.06	70.31	112.62	24 0 50	1245.1	-23.05	3.45
110.00	11 53 52	4392.00	23.65	173.76	69.12	64.57	13 7 4	3792.0	20.03	166.49

DIFFERENTIAL CORRECTIONS
TDE-2.6707 TRA10.5152 TC3-9.3828 BAU 3.1891
RDE .5340 RRA .0575 RC3 .2678 FAU .04768
FDE-1.1726 FRA 2.7912 FC3-1.6244 BSP 54564
BDE 2.7236 BRA10.5154 BC3 9.3866 FSP 1228

MID-COURSE EXECUTION ACCURACY
SGT15546.3 SGR 667.5 SG3 329.4
RRT -.3483 RRF -.4100 RTF .9701
SGB15560.6 R23 .0764 R13 -.9701
SG115548.1 SG2 625.6 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 4707.7 SR 607.3 SS 936.7
CRT -.6206 CRS .7944 CST -.9690
LSA 4809.9 MSA 522.9 SSA 17.5
EL1 4723.0 EL2 474.7 ALF 175.38

LAUNCH DATE NOV 19 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 926.533 EARTH TO MARS

RL 147.82 LAL .00 LOL 56.70 VL 33.159 GAL -8.05 AZL 88.20 HCA 277.74 SMA 190.66 ECC .26285 INC 1.8019 V1 30.141
RP 206.67 LAP -1.79 LOP 334.44 VP 24.253 GAP -14.47 AZP 89.76 TAL 319.76 TAP 237.50 RCA 140.54 APO 240.77 V2 26.497
RC 333.009 GL 11.54 GP -.84 ZAL 146.20 ZAP 26.59 ETS 177.09 ZAE 43.10 ETE 178.96 ZAC 87.10 ETC 256.25 CLP 26.58

PLANETOCENTRIC CONIC

C3 / 26.611 VHL 5.159 DLA 1.18 RAL 207.10 RAD 6568.1 VEL 12.165 PTH 2.18 VHP 6.735 DPA .09 RAP 181.15 ECC 1.4379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 6	2320.54	-21.99	48.31	73.45	108.30	21 44 46	1720.5	-19.29	40.68
90.00	9 25 35	4891.31	20.35	212.52	72.79	69.87	10 47 6	4291.3	17.42	205.06
100.00	22 27 59	2056.39	-23.13	28.46	73.03	109.49	23 2 16	1456.4	-20.26	20.84
100.00	10 46 22	4630.70	21.47	192.90	72.34	68.69	12 3 33	4030.7	18.39	185.46
110.00	23 37 30	1838.84	-26.18	10.65	71.73	112.81	24 8 9	1238.8	-22.86	3.06
110.00	11 53 21	4421.02	24.48	175.59	70.95	65.37	13 7 2	3821.0	20.95	168.23

DIFFERENTIAL CORRECTIONS
TDE-2.8274 TRA10.8965 TC3-9.0830 BAU 3.2328
RDE .5495 RRA .0491 RC3 .2617 FAU .04298
FDE-1.1497 FRA 2.6613 FC3-1.3982 BSP 54706
BDE 2.8804 BRA10.8966 BC3 9.0868 FSP 1139

MID-COURSE EXECUTION ACCURACY
SGT15627.4 SGR 669.7 SG3 304.9
RRT -.3619 RRF -.4264 RTF .9668
SGB15641.8 R23 .0815 R13 -.9669
SG115629.3 SG2 624.2 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 4809.3 SR 610.6 SS 905.1
CRT -.6332 CRS .8057 CST -.9683
LSA 4904.4 MSA 517.7 SSA 17.2
EL1 4825.0 EL2 471.1 ALF 175.36

LAUNCH DATE NOV 20 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 422.149 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 35.239 GAL -4.95 AZL 88.43 HCA 133.48 SMA 239.49 ECC .39109 INC 1.5731 V1 30.147
RP 244.46 LAP 1.14 LOP 191.20 VP 23.057 GAP 22.99 AZP 91.08 TAL 342.31 TAP 115.79 RCA 145.83 APO 333.15 V2 22.440
RC 130.354 GL 9.71 GP .76 ZAL 118.07 ZAP 173.46 ETS 172.02 ZAE 154.50 ETE 359.35 ZAC 89.46 ETC 256.07 CLP 173.50

PLANETOCENTRIC CONIC

C3 32.666 VHL 5.715 DLA 10.40 RAL 180.44 RAD 6568.3 VEL 12.411 PTH 2.24 VHP 10.397 DPA .01 RAP 185.15 ECC 1.5376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 10	2663.76	-27.34	71.95	54.16	97.69	18 49 34	2063.8	-25.99	63.54
90.00	8 45 59	4650.72	14.04	197.68	48.01	65.16	10 3 30	4050.7	10.58	190.72
100.00	19 31 40	2384.75	-28.68	51.21	53.94	98.81	20 11 25	1784.7	-27.17	42.74
100.00	10 2 10	4404.96	15.27	179.01	47.41	63.99	11 15 35	3805.0	11.65	172.09
110.00	20 51 39	2134.49	-32.27	31.45	53.17	101.93	21 27 13	1534.5	-30.29	22.79
110.00	10 58 41	4227.99	18.50	163.81	45.64	60.73	12 9 9	3628.0	14.46	157.03

DIFFERENTIAL CORRECTIONS
TDE .8489 TRA-2.1828 TC3 .8434 BAU .3692
RDE -.4636 RRA -.1852 RC3 -.0565 FAU .06460
FDE -.3595 FRA 1.4380 FC3-1.7120 BSP 8632
BDE .9673 BRA 2.1906 BC3 .8453 FSP 586

MID-COURSE EXECUTION ACCURACY
SGT 2569.6 SGR 505.8 SG3 213.5
RRT -.0292 RRF .0138 RTF -.8588
SGB 2618.9 R23 .0123 R13 .8588
SG1 2569.7 SG2 505.5 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 1081.9 SR 468.2 SS 513.4
CRT -.7063 CRS -.5333 CST .9733
LSA 1237.7 MSA 347.1 SSA 30.9
EL1 1135.8 EL2 315.7 ALF 161.52

LAUNCH DATE NOV 20 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 424.331 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 35.132 GAL -4.77 AZL 88.44 HCA 134.39 SMA 236.27 ECC .38232 INC 1.5648 V1 30.147
RP 244.23 LAP 1.12 LOP 192.11 VP 22.915 GAP 22.40 AZP 91.09 TAL 342.68 TAP 117.07 RCA 145.94 APO 326.60 V2 22.463
RC 132.477 GL 9.88 GP .79 ZAL 117.45 ZAP 172.97 ETS 172.26 ZAE 154.32 ETE 359.57 ZAC 89.58 ETC 256.05 CLP 173.01

PLANETOCENTRIC CONIC

C3 31.065 VHL 5.574 DLA 10.80 RAL 179.95 RAD 6568.2 VEL 12.347 PTH 2.23 VHP 10.160 DPA -.13 RAP 185.54 ECC 1.5113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 55	2664.32	-27.34	71.99	52.88	97.67	18 44 19	2064.3	-26.00	63.58
90.00	8 47 17	4624.87	13.30	196.15	46.70	64.77	10 4 21	4024.9	9.79	189.23
100.00	19 26 39	2384.57	-28.68	51.20	52.67	98.81	20 6 24	1784.6	-27.16	42.72
100.00	10 3 13	4379.85	14.51	177.53	46.09	63.58	11 16 13	3779.8	10.85	170.66
110.00	20 47 8	2132.72	-32.25	31.31	51.90	102.01	21 22 41	1532.7	-30.26	22.66
110.00	10 59 14	4204.46	17.71	162.45	44.31	60.28	12 9 18	3604.5	13.63	155.72

DIFFERENTIAL CORRECTIONS
TDE .8285 TRA-2.1532 TC3 .9169 BAU .3816
RDE -.4460 RRA -.1780 RC3 -.0577 FAU .06652
FDE -.3554 FRA 1.4612 FC3-1.8538 BSP 8806
BDE .9410 BRA 2.1605 BC3 .9187 FSP 620

MID-COURSE EXECUTION ACCURACY
SGT 2616.8 SGR 499.0 SG3 224.3
RRT -.0279 RRF .0119 RTF -.8638
SGB 2663.9 R23 .0131 R13 .8638
SG1 2616.8 SG2 498.8 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 1087.8 SR 461.9 SS 517.7
CRT -.7021 CRS -.5213 CST .9714
LSA 1242.3 MSA 347.0 SSA 31.3
EL1 1139.3 EL2 314.0 ALF 161.98

LAUNCH DATE NOV 20 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 426.626 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	35.029	GAL	-4.59	AZL	88.44	HCA	135.30	SMA	233.28	ECC	.37393	INC	1.5562	V1	30.147
RP	243.99	LAP	1.09	LOP	193.02	VP	22.781	GAP	21.81	AZP	91.11	TAL	343.06	TAP	118.36	RCA	146.05	APO	320.50	V2	22.486
RC	134.631	GL	10.04	GP	.82	ZAL	116.81	ZAP	172.46	ETS	172.45	ZAE	154.18	ETE	359.78	ZAC	89.70	ETC	256.03	CLP	172.51

PLANETOCENTRIC CONIC

C3	29.566	VHL	5.437	DLA	11.20	RAL	179.43	RAD	6568.2	VEL	12.286	PTH	2.21	VHP	9.929	DPA	-.28	RAP	185.93	ECC	1.4866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 30	2665.40	-27.35	72.07	51.61	97.63	18 38 56	2065.4	-26.01	63.66
90.00	8 48 34	4598.97	12.54	194.62	45.38	64.40	10 5 13	3999.0	8.99	187.74
100.00	19 21 29	2384.88	-28.68	51.22	51.39	98.80	20 1 14	1784.9	-27.17	42.75
100.00	10 4 16	4354.72	13.75	176.06	44.77	63.19	11 16 51	3754.7	10.04	169.23
110.00	20 42 29	2131.39	-32.23	31.22	50.64	102.06	21 18 1	1531.4	-30.23	22.57
110.00	10 59 45	4180.97	16.92	161.09	42.99	59.84	12 9 26	3581.0	12.78	154.42

DIFFERENTIAL CORRECTIONS

TDE	.8074	TRA	-2.1232	TC3	.9938	BAU	.3935
RDE	-.4289	RRA	-.1711	RC3	-.0586	FAU	.06852
FDE	-.3500	FRA	1.4844	FC3	-2.0062	BSP	8983
BDE	.9143	BRA	2.1301	BC3	.9956	FSP	656

MID-COURSE EXECUTION ACCURACY

SGT	2663.4	SGR	492.1	SG3	235.6		
RRT	-.0260	RRF	.0095	RTF	-.8684		
SGB	2708.5	R23	.0140	R13	.8684		
SG1	2663.5	SG2	491.9	THA	179.71		

ORBIT DETERMINATION ACCURACY

ST	1092.3	SR	455.3	SS	521.2		
CRT	-.6974	CRS	-.5077	CST	.9692		
LSA	1245.2	MSA	347.1	SSA	31.6		
EL1	1141.4	EL2	312.2	ALF	162.43		

LAUNCH DATE NOV 20 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 429.025 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	34.931	GAL	-4.42	AZL	88.45	HCA	136.21	SMA	230.48	ECC	.36590	INC	1.5474	V1	30.147
RP	243.75	LAP	1.07	LOP	193.93	VP	22.653	GAP	21.22	AZP	91.12	TAL	343.44	TAP	119.65	RCA	146.15	APO	314.82	V2	22.510
RC	136.814	GL	10.21	GP	.85	ZAL	116.15	ZAP	171.96	ETS	172.62	ZAE	154.10	ETE	.00	ZAC	89.82	ETC	256.02	CLP	172.00

PLANETOCENTRIC CONIC

C3	28.162	VHL	5.307	DLA	11.62	RAL	178.90	RAD	6568.1	VEL	12.229	PTH	2.20	VHP	9.703	DPA	-.42	RAP	186.31	ECC	1.4635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 57	2666.98	-27.37	72.18	50.34	97.57	18 33 24	2067.0	-26.04	63.77
90.00	8 49 51	4573.06	11.77	193.11	44.08	64.06	10 6 4	3973.1	8.19	186.26
100.00	19 16 10	2385.67	-28.69	51.28	50.12	98.77	19 55 56	1785.7	-27.18	42.80
100.00	10 5 18	4329.60	12.97	174.60	43.47	62.83	11 17 28	3729.6	9.23	167.81
110.00	20 37 43	2130.50	-32.22	31.15	49.37	102.10	21 13 14	1530.5	-30.21	22.51
110.00	11 0 15	4157.54	16.11	159.75	41.68	59.44	12 9 32	3557.5	11.93	153.14

DIFFERENTIAL CORRECTIONS

TDE	.7861	TRA	-2.0927	TC3	1.0757	BAU	.4056
RDE	-.4124	RRA	-.1646	RC3	-.0594	FAU	.07062
FDE	-.3439	FRA	1.5074	FC3	-2.1711	BSP	9159
BDE	.8877	BRA	2.0991	BC3	1.0773	FSP	695

MID-COURSE EXECUTION ACCURACY

SGT	2710.0	SGR	484.9	SG3	247.5		
RRT	-.0239	RRF	.0066	RTF	-.8730		
SGB	2753.1	R23	.0150	R13	.8730		
SG1	2710.1	SG2	484.7	THA	179.75		

ORBIT DETERMINATION ACCURACY

ST	1095.6	SR	448.5	SS	524.3		
CRT	-.6924	CRS	-.4931	CST	.9668		
LSA	1246.9	MSA	347.2	SSA	32.0		
EL1	1142.4	EL2	310.3	ALF	162.87		

LAUNCH DATE NOV 20 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 431.519 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	34.836	GAL	-4.25	AZL	88.46	HCA	137.13	SMA	227.88	ECC	.35821	INC	1.5383	V1	30.147
RP	243.50	LAP	1.05	LOP	194.85	VP	22.531	GAP	20.64	AZP	91.13	TAL	343.83	TAP	120.95	RCA	146.25	APO	309.51	V2	22.535
RC	139.022	GL	10.37	GP	.88	ZAL	115.48	ZAP	171.44	ETS	172.76	ZAE	154.05	ETE	.22	ZAC	89.94	ETC	256.00	CLP	171.49

PLANETOCENTRIC CONIC

C3	26.846	VHL	5.181	DLA	12.03	RAL	178.34	RAD	6568.1	VEL	12.175	PTH	2.18	VHP	9.483	DPA	-.55	RAP	186.68	ECC	1.4418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 15	2669.05	-27.39	72.33	49.07	97.50	18 27 44	2069.1	-26.06	63.92
90.00	8 51 7	4547.18	11.00	191.60	42.79	63.74	10 6 55	3947.2	7.38	184.79
100.00	19 10 44	2386.93	-28.70	51.37	48.85	98.73	19 50 30	1786.9	-27.20	42.89
100.00	10 6 20	4304.53	12.19	173.15	42.17	62.49	11 18 4	3704.5	8.41	166.40
110.00	20 32 50	2130.03	-32.21	31.11	48.11	102.12	21 8 20	1530.0	-30.21	22.47
110.00	11 0 43	4134.20	15.30	158.43	40.38	59.05	12 9 37	3534.2	11.08	151.87

DIFFERENTIAL CORRECTIONS

TDE	.7641	TRA	-2.0617	TC3	1.1611	BAU	.4173
RDE	-.3963	RRA	-.1583	RC3	-.0599	FAU	.07283
FDE	-.3367	FRA	1.5301	FC3	-2.3486	BSP	9320
BDE	.8608	BRA	2.0678	BC3	1.1626	FSP	734

MID-COURSE EXECUTION ACCURACY

SGT	2756.0	SGR	477.5	SG3	260.0		
RRT	-.0211	RRF	.0031	RTF	-.8773		
SGB	2797.1	R23	.0160	R13	.8773		
SG1	2756.1	SG2	477.4	THA	179.78		

ORBIT DETERMINATION ACCURACY

ST	1097.4	SR	441.6	SS	526.7		
CRT	-.6869	CRS	-.4771	CST	.9641		
LSA	1247.0	MSA	347.4	SSA	32.3		
EL1	1142.0	EL2	308.4	ALF	163.30		

LAUNCH DATE NOV 20 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 434.102 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	34.746	GAL	-4.08	AZL	88.47	HCA	138.04	SMA	225.44	ECC	.35085	INC	1.5287	V1	30.147
RP	243.25	LAP	1.02	LOP	195.76	VP	22.416	GAP	20.05	AZP	91.14	TAL	344.22	TAP	122.27	RCA	146.35	APO	304.54	V2	22.560
RC	141.251	GL	10.53	GP	.92	ZAL	114.78	ZAP	170.92	ETS	172.87	ZAE	154.05	ETE	.44	ZAC	90.06	ETC	255.98	CLP	170.96

PLANETOCENTRIC CONIC

C3	25.613	VHL	5.061	DLA	12.45	RAL	177.77	RAD	6568.0	VEL	12.124	PTH	2.17	VHP	9.267	DPA	-.68	RAP	187.05	ECC	1.4215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 24	2671.64	-27.41	72.52	47.80	97.41	18 21 55	2071.6	-26.10	64.10
90.00	8 52 24	4521.30	10.22	190.11	41.50	63.45	10 7 45	3921.3	6.57	183.32
100.00	19 5 8	2388.67	-28.72	51.50	47.59	98.66	19 44 57	1788.7	-27.23	43.01
100.00	10 7 20	4279.50	11.40	171.71	40.88	62.18	11 18 40	3679.5	7.58	165.00
110.00	20 27 48	2129.99	-32.21	31.11	46.84	102.12	21 3 18	1530.0	-30.20	22.47
110.00	11 1 9	4110.95	14.48	157.13	39.09	58.69	12 9 40	3511.0	10.23	150.61

DIFFERENTIAL CORRECTIONS

TDE	.7509	TRA	-2.0214	TC3	1.2648	BAU	.4336
RDE	-.3810	RRA	-.1525	RC3	-.0603	FAU	.07504
FDE	-.3264	FRA	1.5547	FC3	-2.5365	BSP	9289
BDE	.8421	BRA	2.0271	BC3	1.2662	FSP	781

MID-COURSE EXECUTION ACCURACY

SGT	2802.5	SGR	470.1	SG3	272.9		
RRT	-.0232	RRF	-.0017	RTF	-.8840		
SGB	2841.6	R23	.0229	R13	.8840		
SG1	2802.5	SG2	470.0	THA	179.77		

ORBIT DETERMINATION ACCURACY

ST	1103.9	SR	434.6	SS	528.0		
CRT	-.6868	CRS	-.4566	CST	.9579		
LSA	1250.6	MSA	348.1	SSA	32.2		
EL1	1146.7	EL2	304.1	ALF	163.69		

LAUNCH DATE NOV 20 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 436.764 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.659 GAL -3.92 AZL 88.48 HCA 138.96 SMA 223.16 ECC .34381 INC 1.5188 V1 30.147
RP 243.00 LAP 1.00 LOP 196.68 VP 22.308 GAP 19.48 AZP 91.15 TAL 344.62 TAP 123.58 RCA 146.44 APO 299.89 V2 22.585
RC 143.499 GL 10.68 GP .96 ZAL 114.07 ZAP 170.38 ETS 172.97 ZAE 154.10 ETE .66 ZAC 90.18 ETC 255.97 CLP 170.43

PLANETOCENTRIC CONIC

C3 24.460 VHL 4.946 DLA 12.88 RAL 177.18 RAD 6568.0 VEL 12.076 PTH 2.16 VHP 9.057 DPA -.81 RAP 187.42 ECC 1.4026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 25	2674.68	-27.43	72.74	46.53	97.30	18 16 0	2074.7	-26.14	64.31
90.00	8 53 39	4495.57	9.43	188.62	40.23	63.18	10 8 34	3895.6	5.75	181.87
100.00	18 59 26	2390.85	-28.74	51.65	46.32	98.58	19 39 17	1790.8	-27.26	43.17
100.00	10 8 19	4254.65	10.60	170.29	39.61	61.89	11 19 14	3654.7	6.76	163.61
110.00	20 22 41	2130.34	-32.21	31.14	45.59	102.11	20 58 12	1530.3	-30.21	22.49
110.00	11 1 34	4087.90	13.66	155.85	37.81	58.36	12 9 41	3487.9	9.38	149.37

DIFFERENTIAL CORRECTIONS
TDE .7233 TRA-1.9947 TC3 1.3516 BAU .4424
RDE -.3659 RRA -.1466 RC3 -.0599 FAU .07755
FDE -.3187 FRA 1.5757 FC3-2.7448 BSP 9574
BDE .8106 BRA 2.0001 BC3 1.3529 FSP 822

MID-COURSE EXECUTION ACCURACY
SGT 2847.5 SGR 462.2 SG3 286.7
RRT -.0163 RRF -.0058 RTF -.8865
SGB 2884.8 R23 .0206 R13 .8865
SG1 2847.5 SG2 462.1 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 1099.7 SR 427.1 SS 529.9
CRT -.6772 CRS -.4402 CST .9563
LSA 1245.1 MSA 348.2 SSA 32.8
EL1 1140.2 EL2 303.1 ALF 164.11

LAUNCH DATE NOV 20 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 439.502 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.576 GAL -3.76 AZL 88.49 HCA 139.88 SMA 221.03 ECC .33707 INC 1.5086 V1 30.147
RP 242.74 LAP .97 LOP 197.60 VP 22.205 GAP 18.91 AZP 91.15 TAL 345.03 TAP 124.91 RCA 146.53 APO 295.53 V2 22.611
RC 145.763 GL 10.83 GP 1.00 ZAL 113.35 ZAP 169.84 ETS 173.05 ZAE 154.18 ETE .89 ZAC 90.30 ETC 255.96 CLP 169.89

PLANETOCENTRIC CONIC

C3 23.380 VHL 4.835 DLA 13.30 RAL 176.67 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 8.852 DPA -.93 RAP 187.78 ECC 1.3848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 19	2678.18	-27.46	72.99	45.27	97.18	18 9 57	2078.2	-26.19	64.56
90.00	8 54 53	4469.94	8.64	187.16	38.96	62.93	10 9 23	3869.9	4.94	180.43
100.00	18 53 36	2393.46	-28.77	51.84	45.06	98.49	19 33 30	1793.5	-27.30	43.35
100.00	10 9 17	4229.89	9.80	168.89	38.34	61.62	11 19 47	3629.9	5.94	162.23
110.00	20 17 27	2131.08	-32.22	31.19	44.34	102.08	20 52 59	1531.1	-30.23	22.55
110.00	11 1 55	4065.03	12.84	154.58	36.54	58.04	12 9 40	3465.0	8.52	148.14

DIFFERENTIAL CORRECTIONS
TDE .6983 TRA-1.9647 TC3 1.4456 BAU .4522
RDE -.3514 RRA -.1411 RC3 -.0592 FAU .08012
FDE -.3091 FRA 1.5971 FC3-2.9666 BSP 9796
BDE .7818 BRA 1.9698 BC3 1.4468 FSP 868

MID-COURSE EXECUTION ACCURACY
SGT 2891.7 SGR 454.1 SG3 301.1
RRT -.0103 RRF -.0110 RTF -.8896
SGB 2927.1 R23 .0204 R13 .8896
SG1 2891.7 SG2 454.0 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 1096.2 SR 419.6 SS 531.0
CRT -.6689 CRS -.4209 CST .9533
LSA 1239.7 MSA 348.6 SSA 33.2
EL1 1134.4 EL2 301.4 ALF 164.52

AUNCH DATE NOV 20 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 442.308 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.497 GAL -3.60 AZL 88.50 HCA 140.80 SMA 219.03 ECC .33062 INC 1.4979 V1 30.147
RP 242.47 LAP .95 LOP 198.52 VP 22.108 GAP 18.34 AZP 91.16 TAL 345.44 TAP 126.24 RCA 146.61 APO 291.44 V2 22.638
RC 148.041 GL 10.97 GP 1.04 ZAL 112.61 ZAP 169.29 ETS 173.11 ZAE 154.30 ETE 1.13 ZAC 90.43 ETC 255.95 CLP 169.34

PLANETOCENTRIC CONIC

C3 22.367 VHL 4.729 DLA 13.72 RAL 175.94 RAD 6567.9 VEL 11.989 PTH 2.14 VHP 8.652 DPA -1.05 RAP 188.14 ECC 1.3881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 6	2682.12	-27.50	73.27	44.01	97.04	18 3 48	2082.1	-26.24	64.83
90.00	8 56 6	4444.45	7.84	185.70	37.71	62.70	10 10 11	3844.5	4.13	179.00
100.00	18 47 40	2396.49	-28.80	52.06	43.81	98.37	19 27 36	1796.5	-27.34	43.56
100.00	10 10 13	4205.32	9.01	167.50	37.08	61.38	11 20 18	3605.3	5.12	160.87
110.00	20 12 8	2132.20	-32.24	31.28	43.09	102.03	20 47 40	1532.2	-30.25	22.63
110.00	11 2 15	4042.37	12.02	153.34	35.28	57.76	12 9 37	3442.4	7.68	146.93

DIFFERENTIAL CORRECTIONS
TDE .6738 TRA-1.9332 TC3 1.5462 BAU .4627
RDE -.3373 RRA -.1359 RC3 -.0580 FAU .08280
FDE -.2977 FRA 1.6189 FC3-3.2049 BSP 9996
BDE .7536 BRA 1.9380 BC3 1.5473 FSP 917

MID-COURSE EXECUTION ACCURACY
SGT 2935.5 SGR 445.8 SG3 316.2
RRT -.0040 RRF -.0174 RTF -.8931
SGB 2969.2 R23 .0211 R13 .8931
SG1 2935.5 SG2 445.8 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 1091.5 SR 411.8 SS 531.3
CRT -.6605 CRS -.3989 CST .9493
LSA 1232.9 MSA 349.4 SSA 33.6
EL1 1127.6 EL2 299.3 ALF 164.92

LAUNCH DATE NOV 20 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 445.178 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.421 GAL -3.45 AZL 88.51 HCA 141.72 SMA 217.14 ECC .32444 INC 1.4867 V1 30.147
RP 242.20 LAP .92 LOP 199.44 VP 22.017 GAP 17.77 AZP 91.17 TAL 345.85 TAP 127.57 RCA 146.69 APO 287.59 V2 22.664
RC 150.330 GL 11.11 GP 1.08 ZAL 111.86 ZAP 168.73 ETS 173.16 ZAE 154.47 ETE 1.37 ZAC 90.55 ETC 255.93 CLP 168.78

PLANETOCENTRIC CONIC

C3 21.419 VHL 4.628 DLA 14.15 RAL 175.29 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 8.456 DPA -1.16 RAP 188.49 ECC 1.3525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 45	2686.49	-27.53	73.59	42.75	96.89	17 57 32	2086.5	-26.29	65.14
90.00	8 57 17	4419.15	7.05	184.27	36.46	62.50	10 10 57	3819.2	3.31	177.58
100.00	18 41 37	2399.91	-28.83	52.31	42.55	98.25	19 21 37	1799.9	-27.39	43.81
100.00	10 11 7	4180.96	8.21	166.13	35.84	61.16	11 20 48	3581.0	4.30	159.53
110.00	20 6 42	2133.67	-32.26	31.39	41.84	101.97	20 42 16	1533.7	-30.28	22.73
110.00	11 2 31	4019.97	11.20	152.12	34.04	57.49	12 9 31	3420.0	6.84	145.75

DIFFERENTIAL CORRECTIONS
TDE .6504 TRA-1.9004 TC3 1.6516 BAU .4732
RDE -.3238 RRA -.1310 RC3 -.0563 FAU .08563
FDE -.2857 FRA 1.6400 FC3-3.4610 BSP 10161
BDE .7265 BRA 1.9049 BC3 1.6526 FSP 968

MID-COURSE EXECUTION ACCURACY
SGT 2978.7 SGR 437.4 SG3 332.1
RRT .0025 RRF -.0246 RTF -.8964
SGB 3010.6 R23 -.0223 R13 -.8964
SG1 2978.7 SG2 437.4 THA .02

ORBIT DETERMINATION ACCURACY
ST 1086.4 SR 404.0 SS 531.3
CRT -.6524 CRS -.3758 CST .9447
LSA 1225.5 MSA 350.2 SSA 34.0
EL1 1120.4 EL2 296.9 ALF 165.31

LAUNCH DATE NOV 20 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 448.108 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.348 GAL -3.31 AZL 88.52 HCA 142.65 SMA 215.37 ECC .31853 INC 1.4751 V1 30.147
RP 241.93 LAP .89 LOP 200.37 VP 21.931 GAP 17.22 AZP 91.17 TAL 346.27 TAP 128.91 RCA 146.77 APO 283.98 V2 22.692
RC 152.629 GL 11.23 GP 1.13 ZAL 111.09 ZAP 168.16 ETS 173.19 ZAE 154.67 ETE 1.62 ZAC 90.67 ETC 255.92 CLP 168.21

PLANETOCENTRIC CONIC

C3 20.531 VHL 4.531 DLA 14.57 RAL 174.63 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 8.265 DPA -1.27 RAP 188.83 ECC 1.3379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 19	2691.23	-27.57	73.93	41.50	96.72	17 51 10	2091.2	-26.35	65.47
90.00	8 58 27	4394.08	6.26	182.85	35.23	62.33	10 11 41	3794.1	2.51	176.18
100.00	18 35 29	2403.69	-28.87	52.59	41.31	98.11	19 15 32	1803.7	-27.45	44.07
100.00	10 11 58	4156.85	7.41	164.78	34.60	60.96	11 21 15	3556.9	3.49	158.20
110.00	20 1 12	2135.46	-32.29	31.52	40.61	101.89	20 36 48	1535.5	-30.31	22.86
110.00	11 2 44	3997.84	10.39	150.92	32.80	57.25	12 9 22	3397.8	6.00	144.58

DIFFERENTIAL CORRECTIONS
TDE .6264 TRA-1.8673 TC3 1.7619 BAU .4838
RDE -.3107 RRA -.1263 RC3 -.0541 FAU .08858
FDE -.2718 FRA 1.6613 FC3-3.7351 BSP 10314
BDE .6993 BRA 1.8715 BC3 1.7627 FSP 1022

MID-COURSE EXECUTION ACCURACY
SGT 3021.3 SGR 428.9 SG3 348.7
RRT .0102 RRF -.0331 RTF -.8998
SGB 3051.6 R23 -.0238 R13 -.8999
SG1 3021.4 SG2 428.9 THA .08

ORBIT DETERMINATION ACCURACY
ST 1079.5 SR 396.0 SS 530.7
CRT -.6434 CRS -.3498 CST .9393
LSA 1216.3 MSA 351.3 SSA 34.3
EL1 1111.5 EL2 294.4 ALF 165.70

LAUNCH DATE NOV 20 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 451.093 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.278 GAL -3.16 AZL 88.54 HCA 143.57 SMA 213.71 ECC .31288 INC 1.4629 V1 30.147
RP 241.65 LAP .87 LOP 201.29 VP 21.850 GAP 16.66 AZP 91.18 TAL 346.68 TAP 130.26 RCA 146.85 APO 280.57 V2 22.720
RC 154.936 GL 11.35 GP 1.18 ZAL 110.31 ZAP 167.58 ETS 173.22 ZAE 154.91 ETE 1.89 ZAC 90.80 ETC 255.91 CLP 167.63

PLANETOCENTRIC CONIC

C3 19.700 VHL 4.438 DLA 14.99 RAL 173.95 RAD 6567.8 VEL 11.878 PTH 2.11 VHP 8.078 DPA -1.36 RAP 189.17 ECC 1.3242

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 47	2696.33	-27.61	74.30	40.25	96.54	17 44 43	2096.3	-26.42	65.83
90.00	8 59 34	4369.28	5.48	181.45	34.01	62.17	10 12 23	3769.3	1.71	174.79
100.00	18 29 15	2407.81	-28.91	52.89	40.06	97.95	19 9 23	1807.8	-27.51	44.36
100.00	10 12 47	4133.03	6.62	163.45	33.38	60.78	11 21 40	3533.0	2.68	156.89
110.00	19 55 37	2137.56	-32.32	31.68	39.37	101.80	20 31 15	1537.6	-30.35	23.01
110.00	11 2 54	3976.05	9.59	149.74	31.58	57.03	12 9 10	3376.0	5.18	143.43

DIFFERENTIAL CORRECTIONS
TDE .6028 TRA-1.8332 TC3 1.8751 BAU .4940
RDE -.2980 RRA -.1219 RC3 -.0511 FAU .09168
FDE -.2567 FRA 1.6819 FC3-4.0290 BSP 10478
BDE .6724 BRA 1.8373 BC3 1.8758 FSP 1080

MID-COURSE EXECUTION ACCURACY
SGT 3062.4 SGR 420.3 SG3 366.1
RRT .0189 RRF -.0430 RTF -.9030
SGB 3091.1 R23 -.0256 R13 -.9031
SG1 3062.4 SG2 420.2 THA .15

ORBIT DETERMINATION ACCURACY
ST 1071.5 SR 387.8 SS 529.7
CRT -.6341 CRS -.3217 CST .9331
LSA 1205.6 MSA 352.8 SSA 34.5
EL1 1101.6 EL2 291.7 ALF 166.08

LAUNCH DATE NOV 20 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 454.130 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.211 GAL -3.02 AZL 88.55 HCA 144.50 SMA 212.14 ECC .30746 INC 1.4502 V1 30.147
RP 241.36 LAP .84 LOP 202.22 VP 21.774 GAP 16.11 AZP 91.18 TAL 347.10 TAP 131.61 RCA 146.92 APO 277.37 V2 22.748
RC 157.250 GL 11.47 GP 1.24 ZAL 109.53 ZAP 166.98 ETS 173.23 ZAE 155.18 ETE 2.17 ZAC 90.93 ETC 255.90 CLP 167.04

PLANETOCENTRIC CONIC

C3 18.920 VHL 4.350 DLA 15.41 RAL 173.26 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 7.895 DPA -1.46 RAP 189.50 ECC 1.3114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 10	2701.76	-27.65	74.69	39.00	96.35	17 38 12	2101.8	-26.49	66.22
90.00	9 0 38	4344.76	4.69	180.07	32.79	62.04	10 13 3	3744.8	.92	173.43
100.00	18 22 57	2412.22	-28.95	53.21	38.82	97.79	19 3 9	1812.2	-27.57	44.68
100.00	10 13 32	4109.52	5.84	162.15	32.16	60.63	11 22 2	3509.5	1.89	155.60
110.00	19 49 58	2139.92	-32.35	31.85	38.14	101.70	20 25 38	1539.9	-30.40	23.18
110.00	11 3 0	3954.59	8.79	148.59	30.36	56.83	12 8 54	3354.6	4.36	142.30

DIFFERENTIAL CORRECTIONS
TDE .5862 TRA-1.7924 TC3 2.0057 BAU .5075
RDE -.2859 RRA -.1179 RC3 -.0476 FAU .09488
FDE -.2401 FRA 1.7029 FC3-4.3412 BSP 10463
BDE .6522 BRA 1.7962 BC3 2.0063 FSP 1142

MID-COURSE EXECUTION ACCURACY
SGT 3104.6 SGR 411.7 SG3 384.2
RRT .0247 RRF -.0543 RTF -.9077
SGB 3131.8 R23 -.0316 R13 -.9077
SG1 3104.6 SG2 411.6 THA .19

ORBIT DETERMINATION ACCURACY
ST 1067.1 SR 379.7 SS 528.4
CRT -.6302 CRS -.2907 CST .9229
LSA 1197.8 MSA 355.3 SSA 34.3
EL1 1095.7 EL2 287.2 ALF 166.41

LAUNCH DATE NOV 20 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 457.214 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 34.147 GAL -2.89 AZL 88.56 HCA 145.44 SMA 210.66 ECC .30229 INC 1.4369 V1 30.147
RP 241.08 LAP .82 LOP 203.15 VP 21.703 GAP 15.57 AZP 91.18 TAL 347.52 TAP 132.96 RCA 146.98 APO 274.35 V2 22.777
RC 159.568 GL 11.57 GP 1.29 ZAL 108.73 ZAP 166.38 ETS 173.23 ZAE 155.49 ETE 2.46 ZAC 91.05 ETC 255.89 CLP 166.44

PLANETOCENTRIC CONIC

C3 18.191 VHL 4.265 DLA 15.82 RAL 172.55 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 7.717 DPA -1.54 RAP 189.82 ECC 1.2994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 30	2707.41	-27.70	75.10	37.77	96.15	17 31 38	2107.4	-26.55	66.62
90.00	9 1 38	4320.66	3.92	178.72	31.59	61.93	10 13 39	3720.7	.14	172.08
100.00	18 16 36	2416.86	-28.99	53.55	37.59	97.62	18 56 53	1816.9	-27.64	45.01
100.00	10 14 13	4086.45	5.07	160.87	30.96	60.50	11 22 20	3486.5	1.10	154.33
110.00	19 44 18	2142.48	-32.38	32.04	36.92	101.60	20 20 0	1542.5	-30.45	23.36
110.00	11 3 1	3933.59	8.00	147.47	29.16	56.66	12 8 35	3333.6	3.56	141.20

DIFFERENTIAL CORRECTIONS
TDE .5556 TRA-1.7645 TC3 2.1117 BAU .5137
RDE -.2740 RRA -.1139 RC3 -.0427 FAU .09832
FDE -.2232 FRA 1.7221 FC3-4.6792 BSP 10764
BDE .6195 BRA 1.7682 BC3 2.1122 FSP 1204

MID-COURSE EXECUTION ACCURACY
SGT 3142.0 SGR 402.6 SG3 403.4
RRT .0408 RRF -.0675 RTF -.9091
SGB 3167.7 R23 -.0298 R13 -.9091
SG1 3142.0 SG2 402.3 THA .30

ORBIT DETERMINATION ACCURACY
ST 1051.8 SR 371.2 SS 526.9
CRT -.6135 CRS -.2593 CST .9184
LSA 1180.5 MSA 356.4 SSA 35.0
EL1 1078.1 EL2 286.0 ALF 166.84

LAUNCH DATE NOV 20 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 460.344 EARTH TO MARS

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RL  147.79 LAL    .00 LOL  57.71 VL  34.085 GAL  -2.75 AZL  88.58 HCA 146.37 SMA 209.27 ECC .29734 INC 1.4229 V1  30.147
RP  240.79 LAP    .79 LOP 204.09 VP  21.637 GAP  15.03 AZP  91.18 TAL 347.95 TAP 134.32 RCA 147.05 APO 271.49 V2  22.806
RC 161.890 GL   11.66 GP    1.35 ZAL 107.92 ZAP 165.76 ETS 173.22 ZAE 155.84 ETE   2.78 ZAC  91.18 ETC 255.89 CLP 165.82
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PLANETOCENTRIC CONIC

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C3  17.508 VHL  4.184 DLA  16.23 RAL 171.82 RAD 6567.7 VEL 11.785 PTH   2.08 VHP  7.542 DPA  -1.62 RAP 190.14 ECC 1.2881
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 46	2713.31	-27.74	75.52	36.53	95.94	17 25 0	2113.3	-26.63	67.03
90.00	9 2 35	4296.93	3.16	177.39	30.40	61.85	10 14 11	3696.9	-.63	170.76
100.00	18 10 12	2421.71	-29.04	53.90	36.36	97.43	18 50 33	1821.7	-27.70	45.35
100.00	10 14 50	4063.76	4.31	159.62	29.77	60.39	11 22 34	3463.8	.33	153.08
110.00	19 38 33	2145.24	-32.42	32.25	35.70	101.48	20 14 19	1545.2	-30.50	23.56
110.00	11 2 58	3913.00	7.23	146.38	27.96	56.50	12 8 11	3313.0	2.78	140.12

DIFFERENTIAL CORRECTIONS

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TDE  .5366 TRA-1.7252 TC3 2.2455 BAU  .5257
RDE -.2627 RRA -.1104 RC3 -.0372 FAU .10187
FDE -.2039 FRA 1.7423 FC3-5.0374 BSP  10782
BDE  .5975 BRA 1.7287 BC3 2.2458 FSP   1271
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MID-COURSE EXECUTION ACCURACY

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SGT 3182.0 SGR  393.9 SG3  423.5
RRT  .0514 RRF -.0825 RTF -.9131
SGB 3206.2 R23 -.0349 R13 -.9131
SG1 3182.0 SG2  393.4 THA    .37
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ORBIT DETERMINATION ACCURACY

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ST  1043.0 SR   362.8 SS   525.2
CRT -.6065 CRS -.2235 CST  .9070
LSA 1168.3 MSA  359.5 SSA   34.8
EL1 1067.8 EL2  281.8 ALF 167.18
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LAUNCH DATE NOV 20 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 463.515 EARTH TO MARS

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RL  147.79 LAL    .00 LOL  57.71 VL  34.026 GAL  -2.63 AZL  88.59 HCA 147.31 SMA 207.95 ECC .29261 INC 1.4080 V1  30.147
RP  240.49 LAP    .76 LOP 205.02 VP  21.576 GAP  14.50 AZP  91.19 TAL 348.37 TAP 135.67 RCA 147.11 APO 268.80 V2  22.836
RC 164.213 GL   11.73 GP    1.42 ZAL 107.11 ZAP 165.13 ETS 173.20 ZAE 156.22 ETE   3.11 ZAC  91.32 ETC 255.88 CLP 165.20
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PLANETOCENTRIC CONIC

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C3  16.868 VHL  4.107 DLA  16.62 RAL 171.08 RAD 6567.7 VEL 11.758 PTH   2.08 VHP  7.371 DPA  -1.68 RAP 190.44 ECC 1.2776
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 2	2719.34	-27.78	75.96	35.30	95.72	17 18 21	2119.3	-26.70	67.46
90.00	9 3 26	4273.71	2.42	176.09	29.22	61.78	10 14 40	3673.7	-1.38	169.47
100.00	18 3 47	2426.69	-29.08	54.26	35.13	97.25	18 44 13	1826.7	-27.77	45.71
100.00	10 15 22	4041.60	3.56	158.40	28.59	60.30	11 22 44	3441.6	-.42	151.87
110.00	19 32 49	2148.12	-32.46	32.47	34.49	101.36	20 8 37	1548.1	-30.55	23.77
110.00	11 2 49	3892.93	6.48	145.32	26.78	56.36	12 7 42	3292.9	2.01	139.08

DIFFERENTIAL CORRECTIONS

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TDE  .5093 TRA-1.6947 TC3 2.3611 BAU  .5325
RDE -.2516 RRA -.1069 RC3 -.0303 FAU .10569
FDE -.1853 FRA 1.7604 FC3-5.4242 BSP  11041
BDE  .5680 BRA 1.6987 BC3 2.3613 FSP   1341
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MID-COURSE EXECUTION ACCURACY

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SGT 3217.8 SGR  384.8 SG3  444.7
RRT  .0698 RRF -.0996 RTF -.9147
SGB 3240.7 R23 -.0350 R13 -.9148
SG1 3217.9 SG2  383.8 THA    .49
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ORBIT DETERMINATION ACCURACY

```
ST  1027.6 SR   354.1 SS   523.6
CRT -.5904 CRS -.1887 CST  .9002
LSA 1150.7 MSA  360.9 SSA   35.3
EL1 1050.4 EL2  279.6 ALF 167.61
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LAUNCH DATE NOV 20 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 466.728 EARTH TO MARS

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RL  147.79 LAL    .00 LOL  57.71 VL  33.970 GAL  -2.50 AZL  88.61 HCA 148.24 SMA 206.71 ECC .28807 INC 1.3923 V1  30.147
RP  240.19 LAP    .73 LOP 205.96 VP  21.519 GAP  13.97 AZP  91.18 TAL 348.79 TAP 137.04 RCA 147.16 APO 266.26 V2  22.866
RC 166.536 GL   11.80 GP    1.49 ZAL 106.29 ZAP 164.49 ETS 173.17 ZAE 156.64 ETE   3.47 ZAC  91.45 ETC 255.87 CLP 164.56
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PLANETOCENTRIC CONIC

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C3  16.268 VHL  4.033 DLA  17.01 RAL 170.33 RAD 6567.7 VEL 11.732 PTH   2.07 VHP  7.204 DPA  -1.74 RAP 190.74 ECC 1.2677
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 15	2725.50	-27.82	76.41	34.07	95.50	17 11 40	2125.5	-26.77	67.90
90.00	9 4 12	4250.94	1.68	174.82	28.05	61.73	10 15 3	3650.9	-2.11	168.19
100.00	17 57 20	2431.79	-29.12	54.64	33.91	97.06	18 37 51	1831.8	-27.84	46.07
100.00	10 15 48	4019.90	2.83	157.20	27.41	60.23	11 22 48	3419.9	-1.15	150.68
110.00	19 27 2	2151.11	-32.50	32.69	33.28	101.23	20 2 53	1551.1	-30.61	23.98
110.00	11 2 35	3873.34	5.74	144.28	25.61	56.24	12 7 8	3273.3	1.26	138.05

DIFFERENTIAL CORRECTIONS

```
TDE  .5003 TRA-1.6452 TC3 2.5239 BAU  .5489
RDE -.2412 RRA -.1040 RC3 -.0229 FAU .10967
FDE -.1649 FRA 1.7776 FC3-5.8363 BSP  10833
BDE  .5554 BRA 1.6485 BC3 2.5240 FSP   1414
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MID-COURSE EXECUTION ACCURACY

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SGT 3259.3 SGR  376.4 SG3  466.8
RRT  .0786 RRF -.1184 RTF -.9202
SGB 3281.0 R23 -.0452 R13 -.9203
SG1 3259.5 SG2  375.2 THA    .53
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ORBIT DETERMINATION ACCURACY

```
ST  1023.0 SR   345.8 SS   521.7
CRT -.5925 CRS -.1506 CST  .8818
LSA 1141.5 MSA  366.1 SSA   34.4
EL1 1044.8 EL2  272.7 ALF 167.83
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LAUNCH DATE NOV 20 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 469.975 EARTH TO MARS

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RL  147.79 LAL    .00 LOL  57.71 VL  33.916 GAL  -2.38 AZL  88.62 HCA 149.18 SMA 205.54 ECC .28375 INC 1.3759 V1  30.147
RP  239.88 LAP    .70 LOP 206.90 VP  21.466 GAP  13.45 AZP  91.18 TAL 349.21 TAP 138.40 RCA 147.21 APO 263.86 V2  22.897
RC 168.857 GL   11.85 GP    1.57 ZAL 105.48 ZAP 163.83 ETS 173.14 ZAE 157.08 ETE   3.86 ZAC  91.59 ETC 255.87 CLP 163.90
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PLANETOCENTRIC CONIC

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C3  15.707 VHL  3.963 DLA  17.38 RAL 169.57 RAD 6567.6 VEL 11.709 PTH   2.06 VHP  7.042 DPA  -1.79 RAP 191.04 ECC 1.2585
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 31	2731.60	-27.86	76.85	32.85	95.28	17 5 3	2131.6	-26.84	68.33
90.00	9 4 50	4228.92	.97	173.59	26.89	61.70	10 15 19	3628.9	-2.82	166.96
100.00	17 50 56	2436.82	-29.16	55.01	32.70	96.87	18 31 33	1836.8	-27.91	46.43
100.00	10 16 7	3998.93	2.12	156.05	26.25	60.18	11 22 46	3398.9	-1.67	149.53
110.00	19 21 18	2154.06	-32.54	32.91	32.07	101.10	19 57 13	1554.1	-30.67	24.19
110.00	11 2 14	3854.45	5.02	143.29	24.44	56.14	12 6 28	3254.5	.54	137.07

DIFFERENTIAL CORRECTIONS

```
TDE  .4613 TRA-1.6253 TC3 2.6132 BAU  .5488
RDE -.2307 RRA -.1009 RC3 -.0130 FAU .11376
FDE -.1417 FRA 1.7963 FC3-6.2705 BSP  11325
BDE  .5157 BRA 1.6284 BC3 2.6133 FSP   1493
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MID-COURSE EXECUTION ACCURACY

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SGT 3285.9 SGR  367.1 SG3  489.9
RRT  .1100 RRF -.1425 RTF -.9195
SGB 3306.3 R23 -.0403 R13 -.9196
SG1 3286.1 SG2  364.8 THA    .71
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ORBIT DETERMINATION ACCURACY

```
ST   997.1 SR   336.7 SS   520.0
CRT -.5617 CRS -.1075 CST  .8787
LSA 1114.6 MSA  366.6 SSA   35.6
EL1 1016.3 EL2  273.3 ALF 168.41
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LAUNCH DATE NOV 20 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 473.259 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.864 GAL -2.26 AZL 88.64 HCA 150.13 SMA 204.42 ECC .27961 INC 1.3584 V1 30.147
RP 239.58 LAP .68 LOP 207.85 VP 21.417 GAP 12.93 AZP 91.18 TAL 349.63 TAP 139.76 RCA 147.26 APO 261.58 V2 22.928
RC 171.174 GL 11.88 GP 1.65 ZAL 104.65 ZAP 163.16 ETS 173.09 ZAE 157.57 ETE 4.29 ZAC 91.73 ETC 255.86 CLP 163.23

PLANETOCENTRIC CONIC

C3 15.181 VHL 3.896 DLA 17.74 RAL 168.79 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 6.882 DPA -1.83 RAP 191.32 ECC 1.2498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 49	2737.66	-27.90	77.29	31.64	95.07	16 58 26	2137.7	-26.90	68.76
90.00	9 5 22	4207.50	.28	172.40	25.73	61.68	10 15 29	3607.5	-3.51	165.77
100.00	17 44 33	2441.83	-29.20	55.37	31.48	96.68	18 25 15	1841.8	-27.97	46.79
100.00	10 16 18	3978.57	1.43	154.93	25.09	60.14	11 22 37	3378.6	-2.55	148.41
110.00	19 15 35	2156.99	-32.58	33.13	30.87	100.98	19 51 32	1557.0	-30.72	24.40
110.00	11 1 45	3836.16	4.33	142.33	23.29	56.06	12 5 42	3236.2	-.16	136.11

DIFFERENTIAL CORRECTIONS
TDE .4385 TRA-1.5910 TC3 2.7428 BAU .5567
RDE -.2208 RRA -.0983 RC3 -.0021 FAU .11812
FDE -.1187 FRA 1.8141 FC3-6.7360 BSP 11448
BDE .4910 BRA 1.5941 BC3 2.7428 FSP 1574

MID-COURSE EXECUTION ACCURACY
SGT 3319.4 SGR 358.4 SG3 514.3
RRT .1343 RRF -.1686 RTF -.9218
SGB 3338.7 R23 -.0437 R13 -.9218
SG1 3319.7 SG2 355.2 THA .84

ORBIT DETERMINATION ACCURACY
ST 981.4 SR 327.9 SS 518.8
CRT -.5465 CRS -.0645 CST .8664
LSA 1096.2 MSA 369.8 SSA 35.7
EL1 998.9 EL2 269.8 ALF 168.83

LAUNCH DATE NOV 20 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 476.577 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.814 GAL -2.15 AZL 88.66 HCA 151.07 SMA 203.37 ECC .27566 INC 1.3399 V1 30.147
RP 239.26 LAP .65 LOP 208.79 VP 21.373 GAP 12.42 AZP 91.17 TAL 350.05 TAP 141.12 RCA 147.31 APO 259.44 V2 22.959
RC 173.485 GL 11.90 GP 1.74 ZAL 103.83 ZAP 162.47 ETS 173.03 ZAE 158.08 ETE 4.76 ZAC 91.87 ETC 255.85 CLP 162.55

PLANETOCENTRIC CONIC

C3 14.688 VHL 3.832 DLA 18.08 RAL 168.00 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 6.726 DPA -1.86 RAP 191.60 ECC 1.2417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 10	2743.57	-27.93	77.72	30.42	94.85	16 51 53	2143.6	-26.97	69.18
90.00	9 5 44	4186.83	-.39	171.25	24.59	61.69	10 15 30	3586.8	-4.17	164.61
100.00	17 38 14	2446.68	-29.24	55.73	30.28	96.49	18 19 0	1846.7	-28.04	47.13
100.00	10 16 21	3958.95	.76	153.85	23.95	60.12	11 22 20	3359.0	-3.22	147.33
110.00	19 9 55	2159.82	-32.61	33.34	29.68	100.86	19 45 55	1559.8	-30.77	24.61
110.00	11 1 9	3818.58	3.66	141.40	22.14	55.99	12 4 47	3218.6	-.83	135.20

DIFFERENTIAL CORRECTIONS
TDE .4170 TRA-1.5544 TC3 2.8736 BAU .5643
RDE -.2113 RRA -.0959 RC3 .0104 FAU .12264
FDE -.0944 FRA 1.8304 FC3-7.2290 BSP 11548
BDE .4675 BRA 1.5574 BC3 2.8736 FSP 1661

MID-COURSE EXECUTION ACCURACY
SGT 3349.1 SGR 350.2 SG3 539.6
RRT .1616 RRF -.1984 RTF -.9241
SGB 3367 R23 -.0481 R13 -.9242
SG1 3349.6 SG2 345.5 THA .98

ORBIT DETERMINATION ACCURACY
ST 964.8 SR 319.1 SS 517.6
CRT -.5317 CRS -.0191 CST .8521
LSA 1076.9 MSA 373.7 SSA 35.6
EL1 980.8 EL2 265.9 ALF 169.22

LAUNCH DATE NOV 20 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 479.925 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.767 GAL -2.03 AZL 88.68 HCA 152.02 SMA 202.38 ECC .27188 INC 1.3201 V1 30.147
RP 238.95 LAP .62 LOP 209.74 VP 21.332 GAP 11.92 AZP 91.17 TAL 350.46 TAP 142.48 RCA 147.36 APO 257.40 V2 22.991
RC 175.790 GL 11.90 GP 1.83 ZAL 103.01 ZAP 161.76 ETS 172.96 ZAE 158.63 ETE 5.27 ZAC 92.02 ETC 255.85 CLP 161.85

PLANETOCENTRIC CONIC

C3 14.225 VHL 3.772 DLA 18.41 RAL 167.20 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 6.574 DPA -1.88 RAP 191.86 ECC 1.2341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 36	2749.22	-27.96	78.13	29.21	94.65	16 45 25	2149.2	-27.02	69.59
90.00	9 5 55	4167.00	-1.03	170.14	23.45	61.70	10 15 22	3567.0	-4.80	163.49
100.00	17 31 59	2451.30	-29.28	56.07	29.07	96.32	18 12 51	1851.3	-28.09	47.46
100.00	10 16 13	3940.15	.13	152.82	22.80	60.11	11 21 53	3340.2	-3.85	146.30
110.00	19 4 18	2162.46	-32.65	33.54	28.48	100.75	19 40 21	1562.5	-30.82	24.80
110.00	11 0 23	3801.76	3.02	140.52	21.00	55.93	12 3 45	3201.8	-1.47	134.32

DIFFERENTIAL CORRECTIONS
TDE .3997 TRA-1.5150 TC3 3.0157 BAU .5736
RDE -.2021 RRA -.0939 RC3 .0247 FAU .12746
FDE -.0703 FRA 1.8456 FC3-7.7573 BSP 11557
BDE .4479 BRA 1.5179 BC3 3.0158 FSP 1749

MID-COURSE EXECUTION ACCURACY
SGT 3380.4 SGR 342.4 SG3 566.5
RRT .1906 RRF -.2319 RTF -.9270
SGB 3397.7 R23 -.0545 R13 -.9271
SG1 3381.1 SG2 336.1 THA 1.12

ORBIT DETERMINATION ACCURACY
ST 950.2 SR 310.4 SS 516.9
CRT -.5209 CRS .0258 CST .8349
LSA 1059.2 MSA 378.3 SSA 35.2
EL1 965.0 EL2 260.9 ALF 169.57

LAUNCH DATE NOV 20 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 483.303 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.721 GAL -1.93 AZL 88.70 HCA 152.97 SMA 201.44 ECC .26827 INC 1.2990 V1 30.147
RP 238.63 LAP .59 LOP 210.69 VP 21.295 GAP 11.42 AZP 91.16 TAL 350.87 TAP 143.85 RCA 147.40 APO 255.48 V2 23.024
RC 178.086 GL 11.87 GP 1.94 ZAL 102.19 ZAP 161.04 ETS 172.88 ZAE 159.20 ETE 5.85 ZAC 92.17 ETC 255.84 CLP 161.14

PLANETOCENTRIC CONIC

C3 13.792 VHL 3.714 DLA 18.71 RAL 166.40 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 6.425 DPA -1.88 RAP 192.12 ECC 1.2270

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 11	2754.47	-27.99	78.51	28.01	94.46	16 39 6	2154.5	-27.08	69.96
90.00	9 5 55	4148.16	-1.63	169.09	22.31	61.73	10 15 3	3548.2	-5.40	162.44
100.00	17 25 53	2455.55	-29.31	56.38	27.87	96.16	18 6 48	1855.5	-28.15	47.77
100.00	10 15 54	3922.32	-.48	151.85	21.67	60.11	11 21 16	3322.3	-4.45	145.31
110.00	18 58 48	2164.81	-32.68	33.72	27.29	100.64	19 34 53	1564.8	-30.86	24.91
110.00	10 59 28	3785.81	2.41	139.69	19.87	55.89	12 2 33	3185.8	-2.08	133.49

DIFFERENTIAL CORRECTIONS
TDE .3734 TRA-1.4841 TC3 3.1326 BAU .5777
RDE -.1932 RRA -.0920 RC3 .0415 FAU .13249
FDE -.0438 FRA 1.8605 FC3-8.3160 BSP 11762
BDE .4204 BRA 1.4870 BC3 3.1328 FSP 1844

MID-COURSE EXECUTION ACCURACY
SGT 3404.3 SGR 335.0 SG3 594.5
RRT .2299 RRF -.2709 RTF -.9280
SGB 3420.8 R23 -.0570 R13 -.9281
SG1 3405.2 SG2 325.9 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 928.8 SR 301.4 SS 516.4
CRT -.4966 CRS .0746 CST .8231
LSA 1036.3 MSA 380.9 SSA 35.6
EL1 941.7 EL2 258.0 ALF 170.10

LAUNCH DATE NOV 20 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 486.709 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.678 GAL -1.82 AZL 88.72 HCA 153.93 SMA 200.54 ECC .26483 INC 1.2764 V1 30.147
RP 238.31 LAP .56 LOP 211.64 VP 21.261 GAP 10.93 AZP 91.15 TAL 351.28 TAP 145.21 RCA 147.43 APO 253.65 V2 23.056
RC 180.373 GL 11.83 GP 2.05 ZAL 101.37 ZAP 160.30 ETS 172.79 ZAE 159.81 ETE 6.49 ZAC 92.33 ETC 255.84 CLP 160.40

PLANETOCENTRIC CONIC

C3 13.386 VHL 3.659 DLA 18.99 RAL 165.58 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 6.280 DPA -1.87 RAP 192.37 ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 55	2759.21	-28.02	78.85	26.80	94.29	16 32 55	2159.2	-27.13	70.30
90.00	9 5 40	4130.37	-2.21	168.10	21.19	61.76	10 14 30	3530.4	-5.97	161.43
100.00	17 19 55	2459.34	-29.34	56.66	26.67	96.01	18 0 54	1859.3	-28.19	48.04
100.00	10 15 21	3905.48	-1.05	150.92	20.54	60.12	11 20 27	3305.5	-5.02	144.38
110.00	18 53 25	2166.80	-32.70	33.87	26.10	100.56	19 29 32	1566.8	-30.90	25.11
110.00	10 58 21	3770.78	1.83	138.91	18.74	55.86	12 1 11	3170.8	-2.66	132.70

DIFFERENTIAL CORRECTIONS
TDE .3523 TRA-1.4501 TC3 3.2597 BAU .5835
RDE -.1846 RRA -.0904 RC3 .0605 FAU .13773
FDE -.0172 FRA 1.8757 FC3-8.9077 BSP 11882
BDE .3978 BRA 1.4529 BC3 3.2603 FSP 1946

MID-COURSE EXECUTION ACCURACY
SGT 3429.5 SGR 328.5 SG3 623.9
RRT .2712 RRF -.3144 RTF -.9297
SGB 3445.2 R23 -.0624 R13 -.9299
SG1 3430.7 SG2 316.1 THA 1.50

ORBIT DETERMINATION ACCURACY
ST 910.3 SR 292.5 SS 516.9
CRT -.4771 CRS .1232 CST .8075
LSA 1015.9 MSA 384.8 SSA 35.5
EL1 921.8 EL2 253.9 ALF 170.56

LAUNCH DATE NOV 20 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 490.142 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.636 GAL -1.72 AZL 88.75 HCA 154.88 SMA 199.70 ECC .26154 INC 1.2522 V1 30.147
RP 237.98 LAP .53 LOP 212.60 VP 21.232 GAP 10.44 AZP 91.13 TAL 351.68 TAP 146.56 RCA 147.47 APO 251.93 V2 23.089
RC 182.651 GL 11.76 GP 2.17 ZAL 100.56 ZAP 159.54 ETS 172.69 ZAE 160.45 ETE 7.20 ZAC 92.49 ETC 255.83 CLP 159.65

PLANETOCENTRIC CONIC

C3 13.005 VHL 3.606 DLA 19.25 RAL 164.76 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 6.138 DPA -1.84 RAP 192.61 ECC 1.2140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 52	2763.31	-28.04	79.15	25.60	94.14	16 26 55	2163.3	-27.17	70.59
90.00	9 5 9	4113.77	-2.74	167.17	20.06	61.81	10 13 43	3513.8	-6.49	160.50
100.00	17 14 8	2462.54	-29.36	56.89	25.47	95.89	17 55 11	1862.5	-28.23	48.27
100.00	10 14 34	3889.77	-1.58	150.06	19.42	60.15	11 19 24	3289.8	-5.54	143.51
110.00	18 48 11	2168.33	-32.72	33.98	24.90	100.49	19 24 19	1568.3	-30.93	25.22
110.00	10 57 1	3756.75	1.30	138.17	17.62	55.84	11 59 38	3156.7	-3.19	131.97

DIFFERENTIAL CORRECTIONS
TDE .3330 TRA-1.4137 TC3 3.3875 BAU .5891
RDE -.1763 RRA -.0891 RC3 .0822 FAU .14325
FDE .0095 FRA 1.8880 FC3-9.5364 BSP 11958
BDE .3768 BRA 1.4165 BC3 3.3885 FSP 2050

MID-COURSE EXECUTION ACCURACY
SGT 3451.0 SGR 323.2 SG3 654.6
RRT .3167 RRF -.3627 RTF -.9315
SGB 3466.1 R23 -.0689 R13 -.9317
SG1 3452.5 SG2 306.4 THA 1.71

ORBIT DETERMINATION ACCURACY
ST 891.5 SR 283.7 SS 517.2
CRT -.4586 CRS .1714 CST .7906
LSA 995.2 MSA 388.8 SSA 35.3
EL1 901.7 EL2 249.2 ALF 171.00

LAUNCH DATE NOV 20 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 493.600 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.596 GAL -1.62 AZL 88.77 HCA 155.84 SMA 198.90 ECC .25840 INC 1.2260 V1 30.147
RP 237.65 LAP .50 LOP 213.56 VP 21.205 GAP 9.97 AZP 91.12 TAL 352.08 TAP 147.92 RCA 147.50 APO 250.29 V2 23.123
RC 184.919 GL 11.66 GP 2.30 ZAL 99.75 ZAP 158.76 ETS 172.57 ZAE 161.11 ETE 8.02 ZAC 92.67 ETC 255.83 CLP 158.88

PLANETOCENTRIC CONIC

C3 12.647 VHL 3.556 DLA 19.48 RAL 163.93 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 5.999 DPA -1.80 RAP 192.83 ECC 1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 3	2766.60	-28.05	79.39	24.40	94.02	16 21 10	2166.6	-27.20	70.83
90.00	9 4 20	4098.49	-3.23	166.31	18.94	61.85	10 12 38	3498.5	-6.97	159.63
100.00	17 8 35	2465.01	-29.38	57.08	24.27	95.80	17 49 40	1865.0	-28.26	48.45
100.00	10 13 29	3875.31	-2.07	149.27	18.29	60.17	11 18 5	3275.3	-6.03	142.71
110.00	18 43 6	2169.28	-32.73	34.06	23.71	100.45	19 19 16	1569.3	-30.94	25.29
110.00	10 55 27	3743.81	.80	137.50	16.49	55.83	11 57 51	3143.8	-3.69	131.29

DIFFERENTIAL CORRECTIONS
TDE .3162 TRA-1.3767 TC3 3.5160 BAU .5947
RDE -.1683 RRA -.0880 RC3 .1068 FAU .14905
FDE .0351 FRA 1.8991 FC-10.2033 BSP 11999
BDE .3582 BRA 1.3795 BC3 3.5176 FSP 2159

MID-COURSE EXECUTION ACCURACY
SGT 3471.1 SGR 319.3 SG3 686.9
RRT .3662 RRF -.4157 RTF -.9333
SGB 3485.7 R23 -.0767 R13 -.9335
SG1 3473.0 SG2 296.9 THA 1.94

ORBIT DETERMINATION ACCURACY
ST 873.7 SR 274.9 SS 517.9
CRT -.4419 CRS .2176 CST .7728
LSA 975.5 MSA 392.8 SSA 34.9
EL1 882.8 EL2 244.1 ALF 171.42

LAUNCH DATE NOV 20 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 497.083 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.558 GAL -1.53 AZL 88.80 HCA 156.80 SMA 198.14 ECC .25540 INC 1.1979 V1 30.147
RP 237.31 LAP .47 LOP 214.52 VP 21.182 GAP 9.49 AZP 91.10 TAL 352.47 TAP 149.27 RCA 147.53 APO 248.74 V2 23.157
RC 187.176 GL 11.53 GP 2.45 ZAL 98.95 ZAP 157.97 ETS 172.44 ZAE 161.80 ETE 8.94 ZAC 92.85 ETC 255.83 CLP 158.10

PLANETOCENTRIC CONIC

C3 12.310 VHL 3.509 DLA 19.67 RAL 163.09 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 5.863 DPA -1.74 RAP 193.05 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 33	2768.89	-28.06	79.56	23.19	93.94	16 15 42	2168.9	-27.22	70.99
90.00	9 3 9	4084.72	-3.68	165.54	17.81	61.90	10 11 14	3484.7	-7.41	158.85
100.00	17 3 18	2466.57	-29.39	57.19	23.07	95.74	17 44 25	1866.6	-28.28	48.56
100.00	10 12 5	3862.27	-2.51	148.55	17.17	60.20	11 16 27	3262.3	-6.46	141.99
110.00	18 38 15	2169.51	-32.74	34.07	22.51	100.44	19 14 25	1569.5	-30.95	25.31
110.00	10 53 38	3732.09	.36	136.89	15.38	55.82	11 55 50	3132.1	-4.13	130.68

DIFFERENTIAL CORRECTIONS
TDE .2953 TRA-1.3437 TC3 3.6263 BAU .5972
RDE -.1606 RRA -.0873 RC3 .1349 FAU .15499
FDE .0633 FRA 1.9108 FC-10.8996 BSP 12137
BDE .3361 BRA 1.3465 BC3 3.6288 FSP 2279

MID-COURSE EXECUTION ACCURACY
SGT 3483.9 SGR 317.2 SG3 720.2
RRT .4228 RRF -.4738 RTF -.9343
SGB 3498.3 R23 -.0840 R13 -.9346
SG1 3486.5 SG2 287.2 THA 2.22

ORBIT DETERMINATION ACCURACY
ST 852.6 SR 266.1 SS 519.5
CRT -.4163 CRS .2671 CST .7578
LSA 953.8 MSA 395.8 SSA 34.9
EL1 860.4 EL2 239.8 ALF 171.97

LAUNCH DATE NOV 20 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 500.588 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.522 GAL -1.44 AZL 88.83 HCA 157.77 SMA 197.42 ECC .25254 INC 1.1671 V1 30.147
RP 236.98 LAP .44 LOP 215.48 VP 21.162 GAP 9.03 AZP 91.08 TAL 352.85 TAP 150.62 RCA 147.56 APO 247.27 V2 23.191
RC 189.421 GL 11.37 GP 2.61 ZAL 98.16 ZAP 157.15 ETS 172.30 ZAE 162.52 ETE 10.01 ZAC 93.04 ETC 255.82 CLP 157.29

PLANETOCENTRIC CONIC

C3 11.994 VHL 3.463 DLA 19.83 RAL 162.25 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 5.731 DPA -1.65 RAP 193.26 ECC 1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 24	2770.00	-28.07	79.64	21.99	93.90	16 10 34	2170.0	-27.23	71.07
90.00	9 1 34	4072.60	-4.06	164.86	16.69	61.95	10 9 27	3472.6	-7.78	158.16
100.00	16 58 20	2467.09	-29.39	57.23	21.86	95.72	17 39 27	1867.1	-28.29	48.60
100.00	10 10 19	3850.75	-2.90	147.92	16.04	60.24	11 14 30	3250.8	-6.84	141.34
110.00	18 33 39	2168.92	-32.73	34.03	21.31	100.47	19 9 47	1568.9	-30.94	25.27
110.00	10 51 30	3721.68	-.04	136.35	14.26	55.82	11 53 32	3121.7	-4.53	130.13

DIFFERENTIAL CORRECTIONS
TDE .2806 TRA-1.3071 TC3 3.7496 BAU .6019
RDE -.1530 RRA -.0868 RC3 .1670 FAU .16143
FDE .0864 FRA 1.9182 FC-11.6518 BSP 12158
BDE .3196 BRA 1.3100 BC3 3.7533 FSP 2396

MID-COURSE EXECUTION ACCURACY
SGT 3499.3 SGR 317.5 SG3 755.9
RRT .4805 RRF -.5346 RTF -.9358
SGB 3513.7 R23 -.0936 R13 -.9362
SG1 3502.6 SG2 278.1 THA 2.51

ORBIT DETERMINATION ACCURACY
ST 834.9 SR 257.3 SS 520.1
CRT -.3988 CRS .3084 CST .7417
LSA 934.9 MSA 398.2 SSA 34.6
EL1 841.7 EL2 234.1 ALF 172.40

LAUNCH DATE NOV 20 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 504.116 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.487 GAL -1.35 AZL 88.87 HCA 158.73 SMA 196.73 ECC .24982 INC 1.1342 V1 30.147
RP 236.64 LAP .41 LOP 216.45 VP 21.145 GAP 8.57 AZP 91.06 TAL 353.23 TAP 151.97 RCA 147.59 APO 245.88 V2 23.226
RC 191.655 GL 11.17 GP 2.79 ZAL 97.39 ZAP 156.30 ETS 172.14 ZAE 163.26 ETE 11.24 ZAC 93.24 ETC 255.82 CLP 156.46

PLANETOCENTRIC CONIC

C3 11.697 VHL 3.420 DLA 19.95 RAL 161.40 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 5.601 DPA -1.55 RAP 193.46 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 40	2769.71	-28.07	79.62	20.78	93.91	16 5 49	2169.7	-27.23	71.05
90.00	8 59 31	4062.35	-4.39	164.29	15.55	62.00	10 7 14	3462.3	-8.10	157.58
100.00	16 53 44	2466.33	-29.39	57.17	20.65	95.75	17 34 51	1866.3	-28.28	48.54
100.00	10 8 7	3840.96	-3.23	147.38	14.91	60.27	11 12 8	3241.0	-7.17	140.80
110.00	18 29 19	2167.33	-32.71	33.91	20.09	100.54	19 5 26	1567.3	-30.91	25.15
110.00	10 49 3	3712.73	-.39	135.88	13.14	55.82	11 50 55	3112.7	-4.87	129.66

DIFFERENTIAL CORRECTIONS
TDE .2649 TRA-1.2723 TC3 3.8628 BAU .6049
RDE -.1458 RRA -.0867 RC3 .2034 FAU .16800
FDE .1120 FRA 1.9273 FC-12.4345 BSP 12224
BDE .3024 BRA 1.2752 BC3 3.8681 FSP 2528

MID-COURSE EXECUTION ACCURACY
SGT 3510.0 SGR 320.8 SG3 792.7
RRT .5413 RRF -.5980 RTF -.9371
SGB 3524.6 R23 -.1043 R13 -.9375
SG1 3514.3 SG2 269.4 THA 2.85

ORBIT DETERMINATION ACCURACY
ST 816.1 SR 248.7 SS 521.7
CRT -.3772 CRS .3531 CST .7251
LSA 915.4 MSA 401.2 SSA 34.2
EL1 821.9 EL2 228.7 ALF 172.89

LAUNCH DATE NOV 20 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 507.665 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.454 GAL -1.27 AZL 88.90 HCA 159.70 SMA 196.09 ECC .24722 INC 1.0974 V1 30.147
RP 236.29 LAP .38 LOP 217.42 VP 21.130 GAP 8.11 AZP 91.03 TAL 353.60 TAP 153.31 RCA 147.61 APO 244.56 V2 23.261
RC 193.877 GL 10.93 GP 2.98 ZAL 96.62 ZAP 155.44 ETS 171.96 ZAE 164.02 ETE 12.67 ZAC 93.46 ETC 255.81 CLP 155.61

PLANETOCENTRIC CONIC

C3 11.416 VHL 3.379 DLA 20.03 RAL 160.54 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 5.475 DPA -1.42 RAP 193.65 ECC 1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 24	2767.77	-28.06	79.48	19.56	93.98	16 1 32	2167.8	-27.21	70.91
90.00	8 56 57	4054.18	-4.65	163.83	14.42	62.04	10 4 31	3454.2	-8.36	157.11
100.00	16 49 34	2464.10	-29.37	57.01	19.43	95.83	17 30 38	1864.1	-28.25	48.38
100.00	10 5 27	3833.08	-3.50	146.94	13.78	60.29	11 9 20	3233.1	-7.43	140.36
110.00	18 25 18	2164.57	-32.67	33.70	18.87	100.65	19 1 23	1564.6	-30.86	24.95
110.00	10 46 12	3705.38	-.67	135.49	12.01	55.82	11 47 58	3105.4	-5.15	129.27

DIFFERENTIAL CORRECTIONS
TDE .2519 TRA-1.2367 TC3 3.9732 BAU .6076
RDE -.1387 RRA -.0868 RC3 .2451 FAU .17502
FDE .1315 FRA 1.9312 FC-13.2720 BSP 12216
BDE .2876 BRA 1.2398 BC3 3.9808 FSP 2655

MID-COURSE EXECUTION ACCURACY
SGT 3517.7 SGR 327.6 SG3 831.6
RRT .6022 RRF -.6610 RTF -.9382
SGB 3532.9 R23 -.1163 R13 -.9387
SG1 3523.2 SG2 261.1 THA 3.23

ORBIT DETERMINATION ACCURACY
ST 798.3 SR 239.9 SS 521.5
CRT -.3581 CRS .3892 CST .7119
LSA 897.0 MSA 401.4 SSA 34.0
EL1 803.3 EL2 222.6 ALF 173.34

LAUNCH DATE NOV 20 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 511.234 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.422 GAL -1.19 AZL 88.94 HCA 160.68 SMA 195.47 ECC .24474 INC 1.0575 V1 30.147
RP 235.94 LAP .35 LOP 218.39 VP 21.119 GAP 7.66 AZP 91.00 TAL 353.97 TAP 154.64 RCA 147.63 APO 243.31 V2 23.297
RC 196.086 GL 10.64 GP 3.20 ZAL 95.87 ZAP 154.54 ETS 171.75 ZAE 164.80 ETE 14.36 ZAC 93.69 ETC 255.81 CLP 154.73

PLANETOCENTRIC CONIC

C3 11.152 VHL 3.339 DLA 20.05 RAL 159.67 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 5.352 DPA -1.26 RAP 193.82 ECC 1.1835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 41	2763.90	-28.04	79.19	18.33	94.12	15 57 45	2163.9	-27.17	70.64
90.00	8 53 46	4048.35	-4.84	163.50	13.27	62.07	10 1 14	3448.3	-8.54	156.78
100.00	16 45 53	2460.14	-29.34	56.72	18.20	95.98	17 26 53	1860.1	-28.20	48.10
100.00	10 2 15	3827.34	-3.69	146.63	12.63	60.32	11 6 2	3227.3	-7.62	140.04
110.00	18 21 41	2160.45	-32.62	33.39	17.63	100.83	18 57 41	1560.4	-30.78	24.65
110.00	10 42 57	3699.80	-.88	135.20	10.88	55.83	11 44 36	3099.8	-5.36	128.98

DIFFERENTIAL CORRECTIONS
TDE .2404 TRA-1.2003 TC3 4.0726 BAU .6088
RDE -.1318 RRA -.0873 RC3 .2925 FAU .18220
FDE .1493 FRA 1.9329 FC-14.1442 BSP 12266
BDE .2742 BRA 1.2034 BC3 4.0831 FSP 2798

MID-COURSE EXECUTION ACCURACY
SGT 3517.7 SGR 338.7 SG3 871.6
RRT .6610 RRF -.7218 RTF -.9392
SGB 3534.0 R23 -.1302 R13 -.9398
SG1 3524.9 SG2 253.6 THA 3.66

ORBIT DETERMINATION ACCURACY
ST 780.6 SR 231.2 SS 520.6
CRT -.3399 CRS .4235 CST .6986
LSA 878.5 MSA 401.1 SSA 33.7
EL1 784.9 EL2 216.3 ALF 173.78

LAUNCH DATE NOV 20 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 514.822 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.391 GAL -1.11 AZL 88.99 HCA 161.65 SMA 194.89 ECC .24238 INC 1.0136 V1 30.147
RP 235.59 LAP .32 LOP 219.36 VP 21.111 GAP 7.22 AZP 90.96 TAL 354.32 TAP 155.97 RCA 147.65 APO 242.13 V2 23.333
RC 198.280 GL 10.30 GP 3.45 ZAL 95.13 ZAP 153.62 ETS 171.53 ZAE 165.59 ETE 16.37 ZAC 93.95 ETC 255.80 CLP 153.83

PLANETOCENTRIC CONIC

C3 10.902 VHL 3.302 DLA 20.01 RAL 158.80 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 5.232 DPA -1.07 RAP 193.99 ECC 1.1794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 36	2757.80	-28.01	78.75	17.09	94.34	15 54 34	2157.8	-27.11	70.20
90.00	8 49 53	4045.15	-4.94	163.32	12.10	62.08	9 57 18	3445.1	-8.64	156.60
100.00	16 42 45	2454.17	-29.30	56.28	16.95	96.21	17 23 39	1854.2	-28.13	47.67
100.00	9 58 25	3824.00	-3.81	146.44	11.48	60.33	11 2 9	3224.0	-7.73	139.85
110.00	18 18 28	2154.72	-32.55	32.96	16.37	101.08	18 54 23	1554.7	-30.68	24.24
110.00	10 39 11	3696.22	-1.02	135.02	9.74	55.83	11 40 48	3096.2	-5.49	128.79

DIFFERENTIAL CORRECTIONS
TDE .2278 TRA-1.1680 TC3 4.1650 BAU .6092
RDE -.1251 RRA -.0883 RC3 .3466 FAU .18964
FDE .1677 FRA 1.9381 FC-15.0590 BSP 12296
BDE .2599 BRA 1.1713 BC3 4.1794 FSP 2949

MID-COURSE EXECUTION ACCURACY
SGT 3517.7 SGR 355.1 SG3 913.5
RRT .7168 RRF -.7785 RTF -.9399
SGB 3535.6 R23 -.1455 R13 -.9407
SG1 3526.9 SG2 247.0 THA 4.16

ORBIT DETERMINATION ACCURACY
ST 762.8 SR 222.6 SS 520.7
CRT -.3157 CRS .4591 CST .6880
LSA 861.0 MSA 400.1 SSA 33.3
EL1 766.3 EL2 210.3 ALF 174.31

LAUNCH DATE NOV 20 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 518.429 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.362 GAL -1.03 AZL 89.04 HCA 162.63 SMA 194.33 ECC .24013 INC .9642 V1 30.147
RP 235.24 LAP .29 LOP 220.34 VP 21.105 GAP 6.79 AZP 90.92 TAL 354.67 TAP 157.30 RCA 147.67 APO 241.00 V2 23.369
RC 200.460 GL 9.90 GP 3.72 ZAL 94.40 ZAP 152.67 ETS 171.27 ZAE 166.38 ETE 18.78 ZAC 94.22 ETC 255.80 CLP 152.91

PLANETOCENTRIC CONIC

C3 10.666 VHL 3.266 DLA 19.91 RAL 157.92 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.115 DPA -.84 RAP 194.16 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 13	2749.10	-27.96	78.12	15.82	94.66	15 52 2	2149.1	-27.02	69.58
90.00	8 45 14	4044.90	-4.95	163.31	10.92	62.08	9 52 39	3444.9	-8.65	156.58
100.00	16 40 15	2445.87	-29.24	55.67	15.68	96.52	17 21 1	1845.9	-28.03	47.08
100.00	9 53 53	3823.36	-3.83	146.41	10.30	60.33	10 57 36	3223.4	-7.75	139.82
110.00	18 15 45	2147.13	-32.45	32.39	15.09	101.40	18 51 32	1547.1	-30.54	23.70
110.00	10 34 53	3694.86	-1.07	134.95	8.58	55.83	11 36 28	3094.9	-5.54	128.72

DIFFERENTIAL CORRECTIONS
TDE .2187 TRA-1.1336 TC3 4.2568 BAU .6098
RDE -.1184 RRA -.0896 RC3 .4091 FAU .19760
FDE .1770 FRA 1.9358 FC-16.0387 BSP 12278
BDE .2487 BRA 1.1372 BC3 4.2764 FSP 3099

MID-COURSE EXECUTION ACCURACY
SGT 3514.6 SGR 377.5 SG3 957.8
RRT .7664 RRF -.8287 RTF -.9407
SGB 3534.8 R23 -.1624 R13 -.9416
SG1 3526.6 SG2 241.6 THA 4.73

ORBIT DETERMINATION ACCURACY
ST 746.2 SR 213.8 SS 517.2
CRT -.2958 CRS .4849 CST .6811
LSA 844.1 MSA 395.6 SSA 33.2
EL1 749.1 EL2 203.5 ALF 174.77

LAUNCH DATE NOV 20 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 522.054 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.335 GAL -.96 AZL 89.09 HCA 163.61 SMA 193.81 ECC .23800 INC .9092 V1 30.147
RP 234.89 LAP .26 LOP 221.32 VP 21.101 GAP 6.36 AZP 90.87 TAL 355.01 TAP 158.62 RCA 147.68 APO 239.94 V2 23.405
RC 202.623 GL 9.42 GP 4.03 ZAL 93.69 ZAP 151.70 ETS 170.99 ZAE 167.17 ETE 21.68 ZAC 94.53 ETC 255.79 CLP 151.96

PLANETOCENTRIC CONIC

C3 10.442 VHL 3.231 DLA 19.74 RAL 157.03 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 5.001 DPA -.58 RAP 194.31 ECC 1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 39	2737.43	-27.90	77.27	14.53	95.08	15 50 16	2137.4	-26.90	68.75
90.00	8 39 40	4047.97	-4.85	163.48	9.71	62.07	9 47 8	3448.0	-8.55	156.76
100.00	16 38 29	2434.87	-29.15	54.86	14.38	96.94	17 19 3	1834.9	-27.88	46.29
100.00	9 48 32	3825.76	-3.75	146.54	9.10	60.32	10 52 18	3225.8	-7.67	139.95
110.00	18 13 34	2137.37	-32.31	31.66	13.77	101.81	18 49 11	1537.4	-30.35	23.00
110.00	10 29 56	3696.02	-1.02	135.01	7.41	55.83	11 31 32	3096.0	-5.50	128.78

DIFFERENTIAL CORRECTIONS
TDE .2143 TRA-1.0985 TC3 4.3438 BAU .6101
RDE -.1116 RRA -.0913 RC3 .4811 FAU .20587
FDE .1755 FRA 1.9296 FC-17.0684 BSP 12244
BDE .2416 BRA 1.1023 BC3 4.3703 FSP 3256

MID-COURSE EXECUTION ACCURACY
SGT 3508.2 SGR 406.7 SG3 1003.8
RRT .8085 RRF -.8712 RTF -.9414
SGB 3531.7 R23 -.1811 R13 -.9426
SG1 3523.6 SG2 238.3 THA 5.38

ORBIT DETERMINATION ACCURACY
ST 732.7 SR 204.7 SS 510.5
CRT -.2825 CRS .5000 CST .6777
LSA 829.2 MSA 388.2 SSA 33.1
EL1 735.1 EL2 195.7 ALF 175.14

LAUNCH DATE NOV 20 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 525.696 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.308 GAL -.89 AZL 89.15 HCA 164.59 SMA 193.31 ECC .23596 INC .8468 V1 30.147
RP 234.53 LAP .22 LOP 222.31 VP 21.101 GAP 5.94 AZP 90.82 TAL 355.33 TAP 159.93 RCA 147.70 APO 238.93 V2 23.442
RC 204.770 GL 8.86 GP 4.38 ZAL 93.00 ZAP 150.68 ETS 170.66 ZAE 167.93 ETE 25.21 ZAC 94.88 ETC 255.78 CLP 150.98

PLANETOCENTRIC CONIC

C3 10.230 VHL 3.198 DLA 19.47 RAL 156.12 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.891 DPA -.26 RAP 194.46 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 0	2722.29	-27.80	76.17	13.21	95.62	15 49 22	2122.3	-26.73	67.67
90.00	8 33 5	4054.83	-4.63	163.87	8.48	62.03	9 40 40	3454.8	-8.34	157.15
100.00	16 37 31	2420.73	-29.03	53.83	13.05	97.47	17 17 51	1820.7	-27.69	45.28
100.00	9 42 15	3831.63	-3.55	146.86	7.88	60.30	10 46 7	3231.6	-7.48	140.28
110.00	18 12 1	2125.05	-32.14	30.74	12.42	102.33	18 47 26	1525.1	-30.11	22.12
110.00	10 24 14	3700.07	-.87	135.22	6.21	55.83	11 25 54	3100.1	-5.35	129.00

DIFFERENTIAL CORRECTIONS
TDE .2113 TRA-1.0648 TC3 4.4056 BAU .6074
RDE -.1046 RRA -.0934 RC3 .5641 FAU .21424
FDE .1648 FRA 1.9196 FC-18.1315 BSP 12250
BDE .2358 BRA 1.0689 BC3 4.4416 FSP 3425

MID-COURSE EXECUTION ACCURACY
SGT 3489.8 SGR 443.6 SG3 1050.8
RRT .8430 RRF -.9059 RTF -.9414
SGB 3517.9 R23 -.2020 R13 -.9428
SG1 3509.9 SG2 237.3 THA 6.14

ORBIT DETERMINATION ACCURACY
ST 720.3 SR 195.1 SS 501.0
CRT -.2681 CRS .5074 CST .6813
LSA 815.5 MSA 376.6 SSA 33.2
EL1 722.3 EL2 187.4 ALF 175.55

LAUNCH DATE NOV 20 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 529.354 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.283 GAL -.82 AZL 89.22 HCA 165.58 SMA 192.84 ECC .23402 INC .7759 V1 30.147
RP 234.17 LAP .19 LOP 223.29 VP 21.102 GAP 5.52 AZP 90.75 TAL 355.65 TAP 161.23 RCA 147.71 APO 237.97 V2 23.479
RC 206.900 GL 8.19 GP 4.78 ZAL 92.33 ZAP 149.64 ETS 170.29 ZAE 168.65 ETE 29.51 ZAC 95.27 ETC 255.78 CLP 149.98

PLANETOCENTRIC CONIC

C3 10.028 VHL 3.167 DLA 19.10 RAL 155.19 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.784 DPA .11 RAP 194.61 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 22	2703.14	-27.66	74.79	11.84	96.30	15 49 25	2103.1	-26.50	66.31
90.00	8 25 20	4066.01	-4.27	164.50	7.20	61.98	9 33 6	3466.0	-7.99	157.79
100.00	16 37 28	2402.91	-28.86	52.53	11.66	98.14	17 17 31	1802.9	-27.44	44.02
100.00	9 34 54	3841.47	-3.22	147.41	6.62	60.27	10 38 56	3241.5	-7.15	140.83
110.00	18 11 11	2109.71	-31.91	29.61	11.01	102.97	18 46 21	1509.7	-29.80	21.03
110.00	10 17 41	3707.44	-.59	135.60	4.98	55.82	11 19 28	3107.4	-5.07	129.38

DIFFERENTIAL CORRECTIONS
TDE .2116 TRA-1.0290 TC3 4.4802 BAU .6071
RDE -.0972 RRA -.0960 RC3 .6617 FAU .22331
FDE .1407 FRA 1.9009 FC-19.2790 BSP 12200
BDE .2329 BRA 1.0335 BC3 4.5288 FSP 3595

MID-COURSE EXECUTION ACCURACY
SGT 3475.6 SGR 490.3 SG3 1101.0
RRT .8709 RRF -.9333 RTF -.9419
SGB 3510.0 R23 -.2219 R13 -.9438
SG1 3501.9 SG2 239.2 THA 7.04

ORBIT DETERMINATION ACCURACY
ST 709.4 SR 184.8 SS 487.5
CRT -.2569 CRS .5028 CST .6922
LSA 802.7 MSA 360.1 SSA 33.6
EL1 711.1 EL2 178.1 ALF 175.91

LAUNCH DATE NOV 20 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 533.030 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.259 GAL -.76 AZL 89.30 HCA 166.57 SMA 192.39 ECC .23218 INC .6964 V1 30.147
RP 233.80 LAP .16 LOP 224.28 VP 21.106 GAP 5.12 AZP 90.68 TAL 355.96 TAP 162.53 RCA 147.72 APO 237.06 V2 23.517
RC 209.011 GL 7.40 GP 5.24 ZAL 91.68 ZAP 148.55 ETS 169.86 ZAE 169.30 ETE 34.76 ZAC 95.71 ETC 255.76 CLP 148.94

PLANETOCENTRIC CONIC

C3 9.836 VHL 3.136 DLA 18.60 RAL 154.24 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.680 DPA .56 RAP 194.76 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 54	2679.31	-27.47	73.07	10.40	97.14	15 50 34	2079.3	-26.20	64.64
90.00	8 16 12	4082.15	-3.76	165.40	5.89	61.91	9 24 14	3482.2	-7.49	158.70
100.00	16 38 29	2380.78	-28.64	50.92	10.22	98.95	17 18 10	1780.8	-27.10	42.46
100.00	9 26 18	3855.93	-2.73	148.20	5.32	60.22	10 30 34	3255.9	-6.67	141.63
110.00	18 11 11	2090.76	-31.61	28.21	9.53	103.74	18 46 2	1490.8	-29.40	19.70
110.00	10 10 6	3718.70	-.16	136.19	3.71	55.82	11 12 5	3118.7	-4.64	129.97

DIFFERENTIAL CORRECTIONS
TDE .2129 TRA -.9945 TC3 4.5325 BAU .6047
RDE -.0895 RRA -.0994 RC3 .7746 FAU .23218
FDE .1091 FRA 1.8832 FC-20.4362 BSP 12145
BDE .2310 BRA .9995 BC3 4.5982 FSP 3785

MID-COURSE EXECUTION ACCURACY
SGT 3450.9 SGR 547.3 SG3 1151.2
RRT .8921 RRF -.9539 RTF -.9422
SGB 3494.1 R23 -.2415 R13 -.9447
SG1 3485.5 SG2 244.8 THA 8.09

ORBIT DETERMINATION ACCURACY
ST 699.5 SR 174.0 SS 473.9
CRT -.2411 CRS .4942 CST .7094
LSA 791.8 MSA 340.8 SSA 34.0
EL1 700.9 EL2 168.5 ALF 176.36

LAUNCH DATE NOV 20 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 536.720 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.236 GAL -.70 AZL 89.40 HCA 167.56 SMA 191.97 ECC .23043 INC .6007 V1 30.147
RP 233.44 LAP .13 LOP 225.28 VP 21.112 GAP 4.71 AZP 90.59 TAL 356.26 TAP 163.82 RCA 147.73 APO 236.21 V2 23.555
RC 211.104 GL 6.45 GP 5.79 ZAL 91.04 ZAP 147.42 ETS 169.37 ZAE 169.82 ETE 41.09 ZAC 96.22 ETC 255.75 CLP 147.88

PLANETOCENTRIC CONIC

C3 9.654 VHL 3.107 DLA 17.94 RAL 153.26 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.580 DPA 1.08 RAP 194.92 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 47	2649.96	-27.21	70.96	8.90	98.16	15 52 57	2050.0	-25.80	62.58
90.00	8 5 28	4104.14	-3.05	166.63	4.52	61.83	9 13 52	3504.1	-6.80	159.95
100.00	16 40 43	2353.50	-28.33	48.95	8.69	99.95	17 19 57	1753.5	-26.67	40.55
100.00	9 16 13	3875.83	-2.05	149.29	3.97	60.17	10 20 49	3275.8	-6.01	142.74
110.00	18 12 8	2067.48	-31.22	26.51	7.97	104.68	18 46 36	1467.5	-28.89	18.08
110.00	10 1 18	3734.61	.45	137.02	2.40	55.82	11 3 32	3134.6	-4.04	130.81

DIFFERENTIAL CORRECTIONS
TDE .2193 TRA -.9615 TC3 4.5757 BAU .6021
RDE -.0803 RRA -.1030 RC3 .9099 FAU .24179
FDE .0436 FRA 1.8499 FC-21.6828 BSP 12099
BDE .2336 BRA .9670 BC3 4.6653 FSP 3962

MID-COURSE EXECUTION ACCURACY
SGT 3423.7 SGR 617.7 SG3 1204.7
RRT .9079 RRF -.9691 RTF -.9419
SGB 3479.0 R23 -.2605 R13 -.9451
SG1 3469.6 SG2 255.5 THA 9.35

ORBIT DETERMINATION ACCURACY
ST 695.3 SR 160.7 SS 455.9
CRT -.2234 CRS .4497 CST .7533
LSA 788.3 MSA 307.3 SSA 35.9
EL1 696.3 EL2 156.4 ALF 176.89

LAUNCH DATE NOV 20 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 540.426 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.214 GAL -.64 AZL 89.51 HCA 168.56 SMA 191.57 ECC .22877 INC .4909 V1 30.147
RP 233.07 LAP .10 LOP 226.27 VP 21.120 GAP 4.32 AZP 90.48 TAL 356.54 TAP 165.10 RCA 147.74 APO 235.39 V2 23.593
RC 213.179 GL 5.31 GP 6.43 ZAL 90.43 ZAP 146.23 ETS 168.80 ZAE 170.16 ETE 48.57 ZAC 96.82 ETC 255.74 CLP 146.78

PLANETOCENTRIC CONIC

C3 9.483 VHL 3.079 DLA 17.09 RAL 152.23 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 4.484 DPA 1.70 RAP 195.09 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 13	2614.01	-26.83	68.40	7.29	99.40	15 56 47	2014.0	-25.26	60.08
90.00	7 52 51	4133.04	-2.12	168.25	3.09	61.76	9 1 44	3533.0	-5.88	161.58
100.00	16 44 22	2320.06	-27.92	46.56	7.07	101.14	17 23 2	1720.1	-26.10	38.23
100.00	9 4 22	3902.23	-1.16	150.74	2.56	60.13	10 9 25	3302.2	-5.13	144.20
110.00	18 14 14	2038.91	-30.71	24.44	6.30	105.81	18 48 13	1438.9	-28.24	16.11
110.00	9 51 0	3756.14	1.28	138.14	1.03	55.84	10 53 36	3156.1	-3.22	131.94

DIFFERENTIAL CORRECTIONS
TDE .2320 TRA -.9260 TC3 4.6002 BAU .5987
RDE -.0695 RRA -.1074 RC3 1.0696 FAU .25120
FDE -.0472 FRA 1.8092 FC-22.9340 BSP 12019
BDE .2422 BRA .9322 BC3 4.7229 FSP 4154

MID-COURSE EXECUTION ACCURACY
SGT 3385.6 SGR 703.1 SG3 1257.7
RRT .9189 RRF -.9799 RTF -.9415
SGB 3457.9 R23 -.2765 R13 -.9458
SG1 3447.1 SG2 272.4 THA 10.87

ORBIT DETERMINATION ACCURACY
ST 697.2 SR 145.0 SS 442.4
CRT -.1998 CRS .3823 CST .8107
LSA 793.7 MSA 267.0 SSA 38.3
EL1 697.8 EL2 142.0 ALF 177.52

LAUNCH DATE NOV 20 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 544.146 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.193 GAL -.59 AZL 89.64 HCA 169.56 SMA 191.19 ECC .22719 INC .3596 V1 30.147
RP 232.70 LAP .07 LOP 227.27 VP 21.131 GAP 3.93 AZP 90.35 TAL 356.82 TAP 166.38 RCA 147.75 APO 234.62 V2 23.631
RC 215.236 GL 3.92 GP 7.19 ZAL 89.84 ZAP 144.99 ETS 168.12 ZAE 170.24 ETE 57.03 ZAC 97.54 ETC 255.71 CLP 145.65

PLANETOCENTRIC CONIC

C3 9.323 VHL 3.053 DLA 16.00 RAL 151.14 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 4.393 DPA 2.46 RAP 195.29 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 27	2570.04	-26.31	65.29	5.56	100.87	16 2 17	1970.0	-24.54	57.06
90.00	7 37 55	4170.38	-.92	170.33	1.59	61.70	8 47 26	3570.4	-4.69	163.68
100.00	16 49 41	2279.04	-27.34	43.64	5.32	102.57	17 27 40	1679.0	-25.34	35.42
100.00	8 50 22	3936.62	.01	152.63	1.07	60.11	9 55 59	3336.6	-3.97	146.10
110.00	18 17 40	2003.75	-30.03	21.92	4.51	107.15	18 51 4	1403.8	-27.39	13.73
110.00	9 38 53	3784.67	2.36	139.63	359.60	55.89	10 41 57	3184.7	-2.13	133.43

DIFFERENTIAL CORRECTIONS
TDE .2477 TRA -.8917 TC3 4.6227 BAU .5973
RDE -.0559 RRA -.1125 RC3 1.2631 FAU .26100
FDE -.1729 FRA 1.7556 FC-24.2364 BSP 11956
BDE .2539 BRA .8988 BC3 4.7922 FSP 4351

MID-COURSE EXECUTION ACCURACY
SGT 3348.9 SGR 808.8 SG3 1312.9
RRT .9270 RRF -.9873 RTF -.9412
SGB 3445.2 R23 -.2877 R13 -.9470
SG1 3432.4 SG2 296.0 THA 12.72

ORBIT DETERMINATION ACCURACY
ST 704.2 SR 126.1 SS 442.5
CRT -.1401 CRS .2987 CST .8834
LSA 812.0 MSA 215.3 SSA 43.1
EL1 704.4 EL2 124.8 ALF 178.52

LAUNCH DATE NOV 20 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 547.880 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.174 GAL -.54 AZL 89.80 HCA 170.56 SMA 190.83 ECC .22570 INC .2023 V1 30.147
RP 232.32 LAP .03 LOP 228.27 VP 21.143 GAP 3.55 AZP 90.20 TAL 357.08 TAP 167.64 RCA 147.76 APO 233.89 V2 23.670
RC 217.275 GL 2.20 GP 8.12 ZAL 89.27 ZAP 143.68 ETS 167.30 ZAE 169.97 ETE 66.05 ZAC 98.41 ETC 255.68 CLP 144.48

PLANETOCENTRIC CONIC

C3 9.179 VHL 3.030 DLA 14.58 RAL 149.97 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 4.307 DPA 3.37 RAP 195.52 ECC 1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 52	2516.08	-25.56	61.51	3.67	102.62	16 9 48	1916.1	-23.57	53.41
90.00	7 20 10	4218.28	.63	173.00	.01	61.69	8 30 28	3618.3	-3.16	166.37
100.00	16 57 2	2228.52	-26.54	40.10	3.41	104.28	17 34 10	1628.5	-24.32	32.01
100.00	8 33 41	3981.07	1.51	155.07	359.52	60.14	9 40 2	3381.1	-2.47	148.55
110.00	18 22 46	1960.25	-29.12	18.87	2.54	108.75	18 55 26	1360.3	-26.28	10.83
110.00	9 24 26	3822.11	3.79	141.59	358.09	56.00	10 28 8	3222.1	-.70	135.38

DIFFERENTIAL CORRECTIONS
TDE .2703 TRA -.8574 TC3 4.6047 BAU .5941
RDE -.0379 RRA -.1181 RC3 1.4961 FAU .27025
FDE -.3484 FRA 1.6860 FC-25.4892 BSP 11947
BDE .2729 BRA .8655 BC3 4.8416 FSP 4559

MID-COURSE EXECUTION ACCURACY
SGT 3294.4 SGR 938.2 SG3 1365.6
RRT .9316 RRF -.9923 RTF -.9400
SGB 3425.4 R23 -.2961 R13 -.9480
SG1 3409.5 SG2 329.5 THA 15.00

ORBIT DETERMINATION ACCURACY
ST 721.7 SR 103.3 SS 474.5
CRT .0058 CRS .2565 CST .9480
LSA 854.3 MSA 155.5 SSA 52.2
EL1 721.7 EL2 103.3 ALF .05

LAUNCH DATE NOV 20 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 551.630 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.155 GAL -.49 AZL 90.00 HCA 171.57 SMA 190.48 ECC .22428 INC .0232 V1 30.147
RP 231.95 LAP .00 LOP 229.28 VP 21.157 GAP 3.17 AZP 90.00 TAL 357.33 TAP 168.90 RCA 147.76 APO 233.20 V2 23.709
RC 219.295 GL .03 GP 9.27 ZAL 88.72 ZAP 142.27 ETS 166.31 ZAE 169.27 ETE 74.95 ZAC 99.48 ETC 255.64 CLP 143.26

PLANETOCENTRIC CONIC

C3 9.058 VHL 3.010 DLA 12.74 RAL 148.68 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 4.227 DPA 4.50 RAP 195.81 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 57	2449.38	-24.49	56.92	1.58	104.68	16 19 46	1849.4	-22.23	48.98
90.00	6 58 46	4279.84	2.61	176.44	358.34	61.79	8 10 6	3679.8	-1.18	169.81
100.00	17 6 52	2165.84	-25.42	35.78	1.29	106.28	17 42 58	1565.8	-22.94	27.86
100.00	8 13 32	4038.61	3.46	158.23	357.87	60.29	9 20 51	3438.6	-.52	151.71
110.00	18 29 55	1905.94	-27.87	15.13	.38	110.64	19 1 41	1305.9	-24.81	7.30
110.00	9 6 58	3871.28	5.66	144.17	356.50	56.23	10 11 29	3271.3	1.18	137.95

DIFFERENTIAL CORRECTIONS
TDE .3192 TRA -.8050 TC3 4.6502 BAU .6035
RDE -.0099 RRA -.1217 RC3 1.7937 FAU .28090
FDE -.6299 FRA 1.5560 FC-26.8486 BSP 11444
BDE .3194 BRA .8141 BC3 4.9841 FSP 4671

MID-COURSE EXECUTION ACCURACY
SGT 3266.8 SGR 1105.7 SG3 1424.5
RRT .9368 RRF -.9955 RTF -.9419
SGB 3448.9 R23 -.2905 R13 -.9525
SG1 3429.1 SG2 368.4 THA 17.80

ORBIT DETERMINATION ACCURACY
ST 773.6 SR 80.5 SS 577.8
CRT .3995 CRS .4560 CST .9795
LSA 961.7 MSA 99.3 SSA 65.3
EL1 774.3 EL2 73.8 ALF 2.40

LAUNCH DATE NOV 20 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 555.391 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.137 GAL -.44 AZL 90.25 HCA 172.58 SMA 190.16 ECC .22293 INC .2451 V1 30.147
RP 231.57 LAP -.03 LOP 230.29 VP 21.173 GAP 2.80 AZP 89.75 TAL 357.57 TAP 170.15 RCA 147.77 APO 232.55 V2 23.748
RC 221.297 GL -2.76 GP 10.73 ZAL 88.21 ZAP 140.74 ETS 165.09 ZAE 168.04 ETE 83.01 ZAC 100.85 ETC 255.58 CLP 142.01

PLANETOCENTRIC CONIC

C3 8.975 VHL 2.996 DLA 10.29 RAL 147.22 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 4.156 DPA 5.93 RAP 196.19 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 33	2365.68	-22.93	51.29	359.25	107.09	16 32 58	1765.7	-20.37	43.55
90.00	6 32 33	4360.02	5.18	180.93	356.59	62.12	7 45 13	3760.0	1.41	174.28
100.00	17 19 59	2086.87	-23.81	30.47	358.94	108.63	17 54 46	1486.9	-21.04	22.77
100.00	7 48 47	4114.06	5.99	162.40	356.15	60.66	8 57 21	3514.1	2.04	155.84
110.00	18 39 49	1837.05	-26.13	10.53	357.97	112.86	19 10 27	1237.1	-22.81	2.95
110.00	8 45 27	3936.64	8.12	147.63	354.85	56.68	9 51 3	3336.6	3.68	141.36

DIFFERENTIAL CORRECTIONS
TDE .3604 TRA -.7723 TC3 4.5761 BAU .6070
RDE .0302 RRA -.1265 RC3 2.1564 FAU .28973
FDE -.9838 FRA 1.4198 FC-27.9477 BSP 11678
BDE .3617 BRA .7826 BC3 5.0587 FSP 4869

MID-COURSE EXECUTION ACCURACY
SGT 3201.0 SGR 1316.5 SG3 1475.3
RRT .9377 RRF -.9975 RTF -.9395
SGB 3461.1 R23 -.2891 R13 -.9547
SG1 3434.8 SG2 426.4 THA 21.44

ORBIT DETERMINATION ACCURACY
ST 827.5 SR 101.3 SS 759.9
CRT .9084 CRS .8818 CST .9772
LSA 1120.8 MSA 120.2 SSA 41.9
EL1 832.6 EL2 42.1 ALF 6.36

LAUNCH DATE NOV 20 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 559.165 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.120 GAL -.40 AZL 90.58 HCA 173.59 SMA 189.86 ECC .22166 INC .5790 V1 30.147
RP 231.20 LAP -.06 LOP 231.30 VP 21.191 GAP 2.44 AZP 89.42 TAL 357.80 TAP 171.38 RCA 147.77 APO 231.94 V2 23.788
RC 223.281 GL -6.44 GP 12.63 ZAL 87.73 ZAP 139.03 ETS 163.53 ZAE 166.19 ETE 89.71 ZAC 102.64 ETC 255.49 CLP 140.70

PLANETOCENTRIC CONIC

C3 8.964 VHL 2.994 DLA 6.98 RAL 145.51 RAD 6567.3 VEL 11.417 PTH 1.98 VHP 4.099 DPA 7.78 RAP 196.72 ECC 1.1475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 54	2258.54	-20.61	44.28	356.65	109.86	16 50 32	1658.5	-17.72	36.80
90.00	5 59 35	4466.69	8.54	186.97	354.82	62.90	7 14 2	3866.7	4.84	180.25
100.00	17 37 34	1985.42	-21.44	23.86	356.32	111.34	18 10 40	1385.4	-18.35	16.43
100.00	7 17 35	4215.03	9.32	168.05	354.40	61.47	8 27 50	3615.0	5.44	161.41
110.00	18 53 26	1748.00	-23.65	4.80	355.28	115.43	19 22 34	1148.0	-20.03	357.53
110.00	8 18 13	4025.23	11.40	152.40	353.16	57.55	9 25 18	3425.2	7.03	146.02

DIFFERENTIAL CORRECTIONS
TDE .4209 TRA -.7385 TC3 4.4477 BAU .6178
RDE .0945 RRA -.1297 RC3 2.6059 FAU .29668
FDE-1.4761 FRA 1.2411 FC-28.6524 BSP 11797
BDE .4314 BRA .7498 BC3 5.1549 FSP 5010

MID-COURSE EXECUTION ACCURACY
SGT 3125.5 SGR 1590.6 SG3 1516.5
RRT .9368 RRF -.9987 RTF -.9365
SGB 3507.0 R23 -.2799 R13 -.9586
SG1 3471.0 SG2 501.1 THA 26.07

ORBIT DETERMINATION ACCURACY
ST 915.2 SR 201.2 SS 1048.1
CRT .9849 CRS .9882 CST .9684
LSA 1395.1 MSA 173.4 SSA 20.8
EL1 936.4 EL2 34.1 ALF 12.24

LAUNCH DATE NOV 20 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 562.951 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.104 GAL -.36 AZL 91.04 HCA 174.60 SMA 189.57 ECC .22045 INC 1.0389 V1 30.147
RP 230.82 LAP -.10 LOP 232.32 VP 21.210 GAP 2.08 AZP 88.97 TAL 358.01 TAP 172.61 RCA 147.78 APO 231.36 V2 23.827
RC 225.247 GL -11.47 GP 15.20 ZAL 87.30 ZAP 137.03 ETS 161.51 ZAE 163.52 ETE 94.81 ZAC 105.07 ETC 255.34 CLP 139.32

PLANETOCENTRIC CONIC

C3 9.101 VHL 3.017 DLA 2.38 RAL 143.42 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 4.062 DPA 10.27 RAP 197.48 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 16	2117.22	-17.09	35.41	353.80	112.92	17 14 33	1517.2	-13.84	28.24
90.00	5 16 30	4613.84	12.98	195.50	353.16	64.61	6 33 24	4013.8	9.45	188.59
100.00	18 1 43	1851.27	-17.89	15.49	353.43	114.36	18 32 34	1251.3	-14.45	8.38
100.00	6 36 44	4355.01	13.76	176.07	352.77	63.20	7 49 19	3755.0	10.05	169.25
110.00	19 12 30	1629.72	-20.00	357.56	352.33	118.31	19 39 40	1029.7	-16.06	350.65
110.00	7 42 26	4149.33	15.83	159.29	351.59	59.30	8 51 35	3549.3	11.64	152.69

DIFFERENTIAL CORRECTIONS
TDE .5087 TRA -.6985 TC3 4.2423 BAU .6433
RDE .2047 RRA -.1272 RC3 3.1562 FAU .30039
FDE-2.1637 FRA .9898 FC-28.5757 BSP 12305
BDE .5483 BRA .7100 BC3 5.2876 FSP 5157

MID-COURSE EXECUTION ACCURACY
SGT 3041.0 SGR 1958.6 SG3 1540.0
RRT .9353 RRF -.9993 RTF -.9335
SGB 3617.1 R23 -.2586 R13 -.9653
SG1 3568.6 SG2 590.4 THA 32.05

ORBIT DETERMINATION ACCURACY
ST 1047.8 SR 399.7 SS 1467.2
CRT .9766 CRS .9987 CST .9668
LSA 1833.5 MSA 220.1 SSA 10.8
EL1 1118.6 EL2 80.6 ALF 20.54

LAUNCH DATE NOV 20 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 566.749 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.089 GAL -.32 AZL 91.71 HCA 175.62 SMA 189.29 ECC .21931 INC 1.7116 V1 30.147
RP 230.43 LAP -.13 LOP 233.33 VP 21.231 GAP 1.73 AZP 88.30 TAL 358.21 TAP 173.83 RCA 147.78 APO 230.81 V2 23.867
RC 227.193 GL -18.60 GP 18.85 ZAL 86.96 ZAP 134.54 ETS 158.82 ZAE 159.68 ETE 98.32 ZAC 108.51 ETC 255.07 CLP 137.83

PLANETOCENTRIC CONIC

C3 9.578 VHL 3.095 DLA -4.22 RAL 140.69 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 4.066 DPA 13.76 RAP 198.65 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 25	1922.32	-11.57	23.76	350.90	116.02	17 49 28	1322.3	-7.98	16.93
90.00	4 16 34	4828.66	18.83	208.55	352.08	68.45	5 37 2	4228.7	15.74	201.24
100.00	18 36 47	1666.31	-12.37	4.53	350.49	117.43	19 4 33	1066.3	-8.60	357.77
100.00	5 39 53	4559.90	19.65	188.43	351.72	67.01	6 55 53	3959.9	16.37	181.17
110.00	19 40 29	1466.87	-14.48	348.17	349.27	121.31	20 4 56	866.9	-10.23	341.65
110.00	6 52 40	4332.10	21.85	170.04	350.63	63.03	8 4 52	3732.1	18.06	162.96

DIFFERENTIAL CORRECTIONS
TDE .6382 TRA -.6560 TC3 3.8559 BAU .6909
RDE .4109 RRA -.1104 RC3 3.7745 FAU .29718
FDE-3.1328 FRA .6342 FC-26.8615 BSP 13302
BDE .7590 BRA .6652 BC3 5.3958 FSP 5225

MID-COURSE EXECUTION ACCURACY
SGT 2928.3 SGR 2465.5 SG3 1524.8
RRT .9314 RRF -.9996 RTF -.9282
SGB 3828.1 R23 -.2254 R13 -.9739
SG1 3763.8 SG2 698.4 THA 39.74

ORBIT DETERMINATION ACCURACY
ST 1238.8 SR 766.3 SS 2048.9
CRT .9756 CRS .9998 CST .9713
LSA 2500.9 MSA 255.5 SSA 5.8
EL1 1449.5 EL2 143.7 ALF 31.46

LAUNCH DATE NOV 20 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 570.558 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.074 GAL -.29 AZL 92.79 HCA 176.64 SMA 189.04 ECC .21824 INC 2.7873 V1 30.147
RP 230.05 LAP -.16 LOP 234.36 VP 21.254 GAP 1.38 AZP 87.21 TAL 358.40 TAP 175.04 RCA 147.78 APO 230.29 V2 23.907
RC 229.120 GL -29.07 GP 24.34 ZAL 86.80 ZAP 131.07 ETS 155.18 ZAE 153.97 ETE 100.39 ZAC 113.71 ETC 254.53 CLP 136.15

PLANETOCENTRIC CONIC

C3 10.978 VHL 3.313 DLA -13.99 RAL 136.82 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.159 DPA 18.98 RAP 200.54 ECC 1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 23	1630.94	-2.46	7.21	348.92	118.22	18 47 34	1030.9	1.34	.58
90.00	2 42 42	5174.85	25.77	231.49	352.94	77.85	4 8 57	4574.8	23.84	223.36
100.00	19 34 20	1392.38	-3.39	349.16	348.40	119.72	19 57 32	792.4	.59	342.63
100.00	4 11 27	4888.64	26.81	210.18	352.68	76.26	5 32 55	4288.6	24.65	202.04
110.00	20 25 58	1230.63	-5.79	335.40	346.91	123.75	20 46 29	630.6	-1.31	329.17
110.00	5 36 18	4623.15	29.52	189.14	351.80	71.93	6 53 21	4023.2	26.77	181.03

DIFFERENTIAL CORRECTIONS
TDE .8813 TRA -.5805 TC3 3.2803 BAU .8058
RDE .8767 RRA -.0201 RC3 4.4030 FAU .28812
FDE-4.6562 FRA -.0509 FC-22.7213 BSP 14260
BDE 1.2431 BRA .5808 BC3 5.4906 FSP 4750

MID-COURSE EXECUTION ACCURACY
SGT 2849.1 SGR 3288.2 SG3 1475.2
RRT .9275 RRF -.9998 RTF -.9231
SGB 4350.9 R23 -.1734 R13 -.9847
SG1 4273.0 SG2 819.5 THA 49.41

ORBIT DETERMINATION ACCURACY
ST 1556.6 SR 1518.6 SS 2898.1
CRT .9812 CRS .9999 CST .9792
LSA 3612.1 MSA 283.6 SSA 3.1
EL1 2164.4 EL2 210.8 ALF 44.28

LAUNCH DATE NOV 20 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 574.376 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.061 GAL -.25 AZL 94.82 HCA 177.66 SMA 188.79 ECC .21722 INC 4.8206 V1 30.147
RP 229.67 LAP -.20 LOP 235.38 VP 21.278 GAP 1.04 AZP 85.18 TAL 358.58 TAP 176.25 RCA 147.78 APO 229.80 V2 23.948
RC 231.027 GL -44.72 GP 33.21 ZAL 87.04 ZAP 125.50 ETS 150.45 ZAE 144.87 ETE 101.52 ZAC 122.04 ETC 253.28 CLP 133.95

PLANETOCENTRIC CONIC

C3 15.594 VHL 3.949 DLA -28.52 RAL 130.58 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 4.503 DPA 27.35 RAP 203.90 ECC 1.2566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.41	21 34 34	932.18	21.13	327.78	355.24	109.62	21 50 6	332.2	23.61	319.97
93.59	22 34 48	737.03	21.14	313.50	355.24	109.61	22 47 5	137.0	23.62	305.69
100.00	22 10 13	816.44	15.49	316.83	352.75	115.89	22 23 49	216.4	18.85	309.65
100.00	0 45 46	5616.04	27.00	263.16	357.14	103.33	2 19 22	5016.0	28.57	254.71
110.00	22 7 17	825.62	9.58	314.12	349.34	122.97	22 21 3	225.6	13.86	307.63
110.00	3 5 11	5179.63	33.69	231.37	358.47	96.18	4 31 30	4579.6	34.17	222.16

DIFFERENTIAL CORRECTIONS
TDE 1.3000 TRA -.4882 TC3 2.1763 BAU 1.0033
RDE 1.9771 RRA .2165 RC3 4.2923 FAU .24470
FDE-6.3330 FRA -.8527 FC-13.5854 BSP 17261
BDE 2.3662 BRA .5341 BC3 4.8125 FSP 4029

MID-COURSE EXECUTION ACCURACY
SGT 2676.2 SGR 4455.2 SG3 1226.6
RRT .9183 RRF -.9998 RTF -.9117
SGB 5197.2 R23 -.1195 R13 -.9928
SG1 5114.7 SG2 922.7 THA 60.04

ORBIT DETERMINATION ACCURACY
ST 1902.4 SR 2872.4 SS 3580.8
CRT .9864 CRS 1.0000 CST .9850
LSA 4960.1 MSA 298.9 SSA 1.8
EL1 3435.4 EL2 261.3 ALF 56.62

LAUNCH DATE NOV 20 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 578.194 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.048 GAL -.22 AZL 100.01 HCA 178.68 SMA 188.56 ECC .21626 INC10.0128 V1 30.147
RP 229.28 LAP -.23 LOP 236.41 VP 21.304 GAP .70 AZP 79.99 TAL 358.76 TAP 177.45 RCA 147.79 APO 229.34 V2 23.988
RC 232.913 GL -67.24 GP 48.04 ZAL 87.95 ZAP 115.13 ETS 146.48 ZAE 129.63 ETE 103.90 ZAC 135.53 ETC 249.74 CLP 129.44

PLANETOCENTRIC CONIC

C3 38.803 VHL 6.229 DLA -48.77 RAL 117.71 RAD 6568.5 VEL 12.656 PTH 2.30 VHP 5.879 DPA 41.46 RAP 210.35 ECC 1.6386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.47	17 6 41	1804.47	24.80	39.86	3.81	133.45	17 36 45	1204.5	30.15	33.56
131.53	1 23 59	5596.94	24.82	260.34	3.82	133.44	2 57 16	4996.9	30.16	254.05
48.47	17 6 41	1804.47	24.80	39.86	3.81	133.45	17 36 45	1204.5	30.15	33.56
131.53	1 23 59	5596.94	24.82	260.34	3.82	133.44	2 57 16	4996.9	30.16	254.05
48.47	17 6 41	1804.47	24.80	39.86	3.81	133.45	17 36 45	1204.5	30.15	33.56
131.53	1 23 59	5596.94	24.82	260.34	3.82	133.44	2 57 16	4996.9	30.16	254.05

DIFFERENTIAL CORRECTIONS
TDE 2.1951 TRA -.3340 TC3 .7453 BAU 1.4060
RDE 5.3474 RRA 1.1133 RC3 2.6058 FAU .14063
FDE-6.4651 FRA-1.5292 FC3-3.1375 BSP 24476
BDE 5.7804 BRA 1.1623 BC3 2.7103 FSP 2369

MID-COURSE EXECUTION ACCURACY
SGT 2270.7 SGR 6094.7 SG3 641.9
RRT .8831 RRF -.9994 RTF -.8679
SGB 6503.9 R23 -.0844 R13 -.9964
SG1 6424.9 SG2 1010.8 THA 71.31

ORBIT DETERMINATION ACCURACY
ST 2024.1 SR 4941.5 SS 3038.5
CRT .9866 CRS .9999 CST .9845
LSA 6135.6 MSA 320.2 SSA 1.6
EL1 5331.2 EL2 305.8 ALF 67.92

LAUNCH DATE NOV 20 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 593.717 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.003 GAL -.14 AZL 82.77 HCA 182.87 SMA 187.78 ECC .21296 INC 7.2295 V1 30.147
RP 227.73 LAP -.36 LOP 240.56 VP 21.420 GAP -.56 AZP 97.22 TAL 359.19 TAP 182.07 RCA 147.79 APO 227.77 V2 24.152
RC 240.248 GL 57.86 GP -30.65 ZAL 86.87 ZAP 121.11 ETS 199.37 ZAE 147.10 ETE 239.16 ZAC 59.51 ETC 253.68 CLP 126.91

PLANETOCENTRIC CONIC

C3 24.069 VHL 4.906 DLA 65.19 RAL 184.81 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 3.960 DPA -29.40 RAP 173.26 ECC 1.3961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.00	11 10 28	4225.82	-53.19	223.13	107.91	33.39	12 20 54	3625.8	-59.59	214.85
22.00	5 44 2	4694.41	-24.54	239.82	44.72	21.25	7 2 17	4094.4	-31.95	236.83
28.46	8 41 33	4440.34	-37.44	225.75	74.09	31.90	9 55 33	3840.3	-44.10	220.29
151.54	18 44 26	2721.99	-37.44	81.78	74.08	31.90	19 29 48	2122.0	-44.09	76.32
28.46	8 41 33	4440.34	-37.44	225.75	74.09	31.90	9 55 33	3840.3	-44.10	220.29
151.54	18 44 26	2721.99	-37.44	81.78	74.08	31.90	19 29 48	2122.0	-44.09	76.32

DIFFERENTIAL CORRECTIONS
TDE .2377 TRA -.5512 TC3 .8964 BAU .9937
RDE 1.6084 RRA 1.1033 RC3-2.9551 FAU .33661
FDE 6.6714 FRA 4.3277 FC-12.1075 BSP 16156
BDE 1.6259 BRA 1.2334 BC3 3.0881 FSP 5215

MID-COURSE EXECUTION ACCURACY
SGT 1790.1 SGR 4622.5 SG3 1609.3
RRT -.8146 RRF .9997 RTF -.8028
SGB 4957.0 R23 -.0870 R13 .9961
SG1 4857.5 SG2 988.1 THA 108.29

ORBIT DETERMINATION ACCURACY
ST 538.1 SR 2094.0 SS 2940.7
CRT .0844 CRS -.9998 CST -.1059
LSA 3610.3 MSA 536.7 SSA 1.9
EL1 2094.5 EL2 536.1 ALF 88.67

LAUNCH DATE NOV 20 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 597.604 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.994 GAL -.12 AZL 84.21 HCA 183.92 SMA 187.61 ECC .21226 INC 5.7869 V1 30.147
RP 227.34 LAP -.39 LOP 241.61 VP 21.452 GAP -.86 AZP 95.77 TAL 359.29 TAP 183.21 RCA 147.79 APO 227.43 V2 24.193
RC 242.030 GL 50.99 GP -24.12 ZAL 86.28 ZAP 122.20 ETS 194.88 ZAE 151.88 ETE 230.78 ZAC 65.81 ETC 254.60 CLP 125.73

PLANETOCENTRIC CONIC

C3 18.330 VHL 4.281 DLA 60.20 RAL 174.45 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 3.631 DPA -23.56 RAP 176.54 ECC 1.3017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.37	8 14 23	4351.00	-39.01	215.66	56.82	39.76	9 26 54	3751.0	-44.95	208.86
145.63	17 48 56	2680.63	-39.00	78.60	56.80	39.75	18 33 36	2080.6	-44.94	71.79
34.37	8 14 23	4351.00	-39.01	215.66	56.82	39.76	9 26 54	3751.0	-44.95	208.86
145.63	17 48 56	2680.63	-39.00	78.60	56.80	39.75	18 33 36	2080.6	-44.94	71.79
34.37	8 14 23	4351.00	-39.01	215.66	56.82	39.76	9 26 54	3751.0	-44.95	208.86
145.63	17 48 56	2680.63	-39.00	78.60	56.80	39.75	18 33 36	2080.6	-44.94	71.79

DIFFERENTIAL CORRECTIONS
TDE .0870 TRA -.5481 TC3 1.0542 BAU .7768
RDE 1.3358 RRA .7954 RC3-2.9895 FAU .38518
FDE 8.0598 FRA 4.5880 FC-18.1922 BSP 14084
BDE 1.3386 BRA .9660 BC3 3.1699 FSP 6635

MID-COURSE EXECUTION ACCURACY
SGT 1734.2 SGR 3786.4 SG3 1954.4
RRT -.8017 RRF .9997 RTF -.7914
SGB 4164.6 R23 -.1104 R13 .9937
SG1 4050.3 SG2 968.9 THA 111.45

ORBIT DETERMINATION ACCURACY
ST 458.7 SR 1901.2 SS 3580.7
CRT -.0900 CRS -.9999 CST .0760
LSA 4054.3 MSA 457.9 SSA 2.3
EL1 1901.7 EL2 456.7 ALF 91.32

LAUNCH DATE NOV 20 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 601.504 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.985 GAL -.11 AZL 85.05 HCA 184.97 SMA 187.46 ECC .21160 INC 4.9468 V1 30.147
RP 226.95 LAP -.43 LOP 242.66 VP 21.485 GAP -1.16 AZP 94.93 TAL 359.37 TAP 184.33 RCA 147.79 APO 227.12 V2 24.235
RC 243.792 GL 46.16 GP -19.88 ZAL 85.84 ZAP 121.95 ETS 191.59 ZAE 154.01 ETE 222.41 ZAC 69.83 ETC 255.06 CLP 124.24

PLANETOCENTRIC CONIC

C3 15.556 VHL 3.944 DLA 56.36 RAL 168.87 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.449 DPA -19.59 RAP 178.20 ECC 1.2560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.00	8 4 16	4289.76	-38.98	207.94	46.31	45.45	9 15 46	3689.8	-44.33	200.39
141.00	17 14 33	2666.40	-38.97	76.77	46.30	45.44	17 59 0	2066.4	-44.32	69.22
39.00	8 4 16	4289.76	-38.98	207.94	46.31	45.45	9 15 46	3689.8	-44.33	200.39
141.00	17 14 33	2666.40	-38.97	76.77	46.30	45.44	17 59 0	2066.4	-44.32	69.22
39.00	8 4 16	4289.76	-38.98	207.94	46.31	45.45	9 15 46	3689.8	-44.33	200.39
141.00	17 14 33	2666.40	-38.97	76.77	46.30	45.44	17 59 0	2066.4	-44.32	69.22

DIFFERENTIAL CORRECTIONS
TDE .0742 TRA -.5167 TC3 1.1210 BAU .6543
RDE 1.0547 RRA .5987 RC3-2.9394 FAU .42558
FDE 8.2938 FRA 4.5141 FC-23.6843 BSP 11944
BDE 1.0573 BRA .7909 BC3 3.1459 FSP 7341

MID-COURSE EXECUTION ACCURACY
SGT 1621.5 SGR 3191.9 SG3 2176.0
RRT -.7752 RRF .9996 RTF -.7654
SGB 3580.2 R23 -.1325 R13 .9909
SG1 3452.7 SG2 946.9 THA 113.36

ORBIT DETERMINATION ACCURACY
ST 421.4 SR 1604.4 SS 3746.5
CRT -.0417 CRS -.9999 CST .0301
LSA 4075.6 MSA 421.5 SSA 2.9
EL1 1604.5 EL2 421.0 ALF 90.67

LAUNCH DATE NOV 20 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 605.417 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.976 GAL -.10 AZL 85.60 HCA 186.02 SMA 187.31 ECC .21099 INC 4.3990 V1 30.147
RP 226.56 LAP -.46 LOP 243.71 VP 21.519 GAP -1.45 AZP 94.37 TAL 359.43 TAP 185.45 RCA 147.79 APO 226.83 V2 24.277
RC 245.534 GL 42.60 GP -16.94 ZAL 85.51 ZAP 121.05 ETS 189.16 ZAE 154.59 ETE 214.93 ZAC 72.57 ETC 255.33 CLP 122.63

PLANETOCENTRIC CONIC

C3 13.959 VHL 3.736 DLA 53.41 RAL 165.41 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 3.328 DPA -16.71 RAP 179.05 ECC 1.2297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.62	8 0 43	4243.91	-38.43	202.07	39.35	49.54	9 11 27	3643.9	-43.33	194.11
137.38	16 50 31	2663.99	-38.41	75.84	39.33	49.53	17 34 55	2064.0	-43.32	67.89
42.62	8 0 43	4243.91	-38.43	202.07	39.35	49.54	9 11 27	3643.9	-43.33	194.11
137.38	16 50 31	2663.99	-38.41	75.84	39.33	49.53	17 34 55	2064.0	-43.32	67.89
42.62	8 0 43	4243.91	-38.43	202.07	39.35	49.54	9 11 27	3643.9	-43.33	194.11
137.38	16 50 31	2663.99	-38.41	75.84	39.33	49.53	17 34 55	2064.0	-43.32	67.89

DIFFERENTIAL CORRECTIONS
TDE .1036 TRA -.4872 TC3 1.0294 BAU .5525
RDE .8645 RRA .4891 RC3-2.7756 FAU .44930
FDE 8.3164 FRA 4.5265 FC-27.8651 BSP 10691
BDE .8707 BRA .6903 BC3 2.9604 FSP 8124

MID-COURSE EXECUTION ACCURACY
SGT 1479.2 SGR 2764.6 SG3 2337.3
RRT -.7243 RRF .9995 RTF -.7144
SGB 3135.4 R23 -.1506 R13 .9882
SG1 2990.3 SG2 942.9 THA 113.68

ORBIT DETERMINATION ACCURACY
ST 408.9 SR 1379.9 SS 3806.0
CRT .1193 CRS -.9999 CST -.1290
LSA 4048.7 MSA 405.7 SSA 3.6
EL1 1380.8 EL2 405.7 ALF 87.78

LAUNCH DATE NOV 20 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 609.339 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.969 GAL -.09 AZL 85.99 HCA 187.08 SMA 187.18 ECC .21042 INC 4.0121 V1 30.147
RP 226.17 LAP -.49 LOP 244.77 VP 21.554 GAP -1.74 AZP 93.98 TAL 359.48 TAP 186.55 RCA 147.79 APO 226.56 V2 24.318
RC 247.256 GL 39.89 GP -14.79 ZAL 85.25 ZAP 119.80 ETS 187.32 ZAE 154.24 ETE 208.64 ZAC 74.52 ETC 255.50 CLP 120.93

PLANETOCENTRIC CONIC

C3 12.932 VHL 3.596 DLA 51.11 RAL 163.07 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.237 DPA -14.51 RAP 179.44 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.49	8 0 4	4207.67	-37.74	197.49	34.45	52.55	9 10 12	3607.7	-42.30	189.31
134.51	16 32 27	2667.01	-37.73	75.46	34.44	52.54	17 16 54	2067.0	-42.29	67.29
45.49	8 0 4	4207.67	-37.74	197.49	34.45	52.55	9 10 12	3607.7	-42.30	189.31
134.51	16 32 27	2667.01	-37.73	75.46	34.44	52.54	17 16 54	2067.0	-42.29	67.29
45.49	8 0 4	4207.67	-37.74	197.49	34.45	52.55	9 10 12	3607.7	-42.30	189.31
134.51	16 32 27	2667.01	-37.73	75.46	34.44	52.54	17 16 54	2067.0	-42.29	67.29

DIFFERENTIAL CORRECTIONS
TDE .1463 TRA -.4619 TC3 .8982 BAU .4807
RDE .7275 RRA .4148 RC3-2.6312 FAU .47274
FDE 8.2138 FRA 4.5245 FC-31.6468 BSP 9589
BDE .7421 BRA .6208 BC3 2.7803 FSP 8719

MID-COURSE EXECUTION ACCURACY
SGT 1358.5 SGR 2456.2 SG3 2475.9
RRT -.6552 RRF .9992 RTF -.6451
SGB 2806.9 R23 -.1651 R13 .9856
SG1 2639.4 SG2 955.1 THA 113.12

ORBIT DETERMINATION ACCURACY
ST 422.3 SR 1202.7 SS 3789.4
CRT .3110 CRS-1.0000 CST -.3190
LSA 3978.0 MSA 400.2 SSA 4.3
EL1 1210.7 EL2 398.7 ALF 83.00

LAUNCH DATE NOV 20 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 613.271 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.961 GAL -.08 AZL 86.28 HCA 188.14 SMA 187.05 ECC .20988 INC 3.7238 V1 30.147
RP 225.78 LAP -.53 LOP 245.83 VP 21.590 GAP -2.02 AZP 93.69 TAL 359.51 TAP 187.65 RCA 147.79 APO 226.31 V2 24.360
RC 248.959 GL 37.77 GP -13.16 ZAL 85.06 ZAP 118.34 ETS 185.89 ZAE 153.31 ETE 203.51 ZAC 75.96 ETC 255.63 CLP 119.17

PLANETOCENTRIC CONIC

C3 12.220 VHL 3.496 DLA 49.27 RAL 161.38 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 3.164 DPA -12.75 RAP 179.53 ECC 1.2011

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.83	8 0 50	4177.92	-37.06	193.81	30.85	54.84	9 10 28	3577.9	-41.35	185.51
132.17	16 18 15	2672.55	-37.05	75.40	30.84	54.83	17 2 48	2072.6	-41.35	67.10
47.83	8 0 50	4177.92	-37.06	193.81	30.85	54.84	9 10 28	3577.9	-41.35	185.51
132.17	16 18 15	2672.55	-37.05	75.40	30.84	54.83	17 2 48	2072.6	-41.35	67.10
47.83	8 0 50	4177.92	-37.06	193.81	30.85	54.84	9 10 28	3577.9	-41.35	185.51
132.17	16 18 15	2672.55	-37.05	75.40	30.84	54.83	17 2 48	2072.6	-41.35	67.10

DIFFERENTIAL CORRECTIONS
TDE .1831 TRA -.4443 TC3 .7159 BAU .4247
RDE .6326 RRA .3646 RC3-2.4993 FAU .49512
FDE 8.1393 FRA 4.5579 FC-35.0775 BSP .8485
BDE .6586 BRA .5748 BC3 2.5998 FSP 9115

MID-COURSE EXECUTION ACCURACY
SGT 1259.6 SGR 2220.8 SG3 2607.1
RRT -.5649 RRF .9988 RTF -.5539
SGB 2560.1 R23 -.1739 R13 .9837
SG1 2365.4 SG2 979.4 THA 111.59

ORBIT DETERMINATION ACCURACY
ST 450.0 SR 1074.0 SS 3771.3
CRT .4520 CRS-1.0000 CST -.4580
LSA 3926.7 MSA 399.6 SSA 5.1
EL1 1096.0 EL2 393.3 ALF 77.66

LAUNCH DATE NOV 20 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 21 1965

DISTANCE 617.215 EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.79 LAL .00 LOL 57.71 VL 32.955 GAL -.08 AZL 86.50 HCA 189.20 SMA 186.93 ECC .20939 INC 3.5014 V1 30.147
RP 225.38 LAP -.56 LOP 246.90 VP 21.627 GAP -2.30 AZP 93.46 TAL 359.53 TAP 188.73 RCA 147.79 APO 226.08 V2 24.402
RC 250.643 GL 36.05 GP -11.88 ZAL 84.92 ZAP 116.73 ETS 184.75 ZAE 152.00 ETE 199.37 ZAC 77.05 ETC 255.73 CLP 117.37

PLANETOCENTRIC CONIC
C3 11.697 VHL 3.420 DLA 47.78 RAL 160.13 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 3.103 DPA -11.28 RAP 179.43 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.76	8 2 22	4152.76	-36.42	190.79	28.11	56.63	9 11 35	3552.8	-40.51	182.42
130.24	16 6 43	2679.29	-36.41	75.52	28.10	56.62	16 51 22	2079.3	-40.50	67.15
49.76	8 2 22	4152.76	-36.42	190.79	28.11	56.63	9 11 35	3552.8	-40.51	182.42
130.24	16 6 43	2679.29	-36.41	75.52	28.10	56.62	16 51 22	2079.3	-40.50	67.15
49.76	8 2 22	4152.76	-36.42	190.79	28.11	56.63	9 11 35	3552.8	-40.51	182.42
130.24	16 6 43	2679.29	-36.41	75.52	28.10	56.62	16 51 22	2079.3	-40.50	67.15

DIFFERENTIAL CORRECTIONS
TDE .2396 TRA -.4007 TC3 .4821 BAU .3779
RDE .5569 RRA .3186 RC3-2.3683 FAU .51421
FDE 7.9940 FRA 4.4744 FC-38.0600 BSP 7628
BDE .6062 BRA .5120 BC3 2.4169 FSP 9557

MID-COURSE EXECUTION ACCURACY
SGT 1126.0 SGR 2031.1 SG3 2706.8
RRT -.4168 RRF .9983 RTF -.4068
SGB 2322.4 R23 -.1511 R13 .9869
SG1 2101.0 SG2 989.5 THA 106.85

ORBIT DETERMINATION ACCURACY
ST 501.1 SR 964.1 SS 3706.6
CRT .6264 CRS-1.0000 CST -.6301
LSA 3843.0 MSA 387.9 SSA 6.0
EL1 1022.2 EL2 368.4 ALF 69.13

LAUNCH DATE NOV 20 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 23 1965

DISTANCE 621.169 EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.79 LAL .00 LOL 57.71 VL 32.949 GAL -.08 AZL 86.68 HCA 190.27 SMA 186.83 ECC .20894 INC 3.3242 V1 30.147
RP 224.99 LAP -.59 LOP 247.97 VP 21.665 GAP -2.57 AZP 93.27 TAL 359.53 TAP 189.81 RCA 147.79 APO 225.86 V2 24.444
RC 252.307 GL 34.65 GP -10.84 ZAL 84.82 ZAP 115.04 ETS 183.82 ZAE 150.43 ETE 196.04 ZAC 77.89 ETC 255.82 CLP 115.52

PLANETOCENTRIC CONIC
C3 11.296 VHL 3.361 DLA 46.53 RAL 159.17 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.050 DPA -10.02 RAP 179.18 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.40	8 4 17	4131.11	-35.84	188.26	25.96	58.07	9 13 8	3531.1	-39.76	179.84
128.60	15 57 9	2686.43	-35.83	75.75	25.96	58.06	16 41 55	2086.4	-39.75	67.33
51.40	8 4 17	4131.11	-35.84	188.26	25.96	58.07	9 13 8	3531.1	-39.76	179.84
128.60	15 57 9	2686.43	-35.83	75.75	25.96	58.06	16 41 55	2086.4	-39.75	67.33
51.40	8 4 17	4131.11	-35.84	188.26	25.96	58.07	9 13 8	3531.1	-39.76	179.84
128.60	15 57 9	2686.43	-35.83	75.75	25.96	58.06	16 41 55	2086.4	-39.75	67.33

DIFFERENTIAL CORRECTIONS
TDE .2885 TRA -.3728 TC3 .1751 BAU .3384
RDE .5027 RRA .2899 RC3-2.2342 FAU .52918
FDE 7.9143 FRA 4.5044 FC-40.5576 BSP 6667
BDE .5796 BRA .4722 BC3 2.2411 FSP 9760

MID-COURSE EXECUTION ACCURACY
SGT 1053.1 SGR 1872.4 SG3 2799.5
RRT -.2124 RRF .9976 RTF -.2017
SGB 2148.2 R23 -.1012 R13 .9925
SG1 1891.2 SG2 1018.8 THA 99.63

ORBIT DETERMINATION ACCURACY
ST 564.5 SR 884.7 SS 3669.9
CRT .7239 CRS-1.0000 CST -.7257
LSA 3797.4 MSA 386.2 SSA 6.9
EL1 990.1 EL2 348.0 ALF 61.34

LAUNCH DATE NOV 20 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 25 1965

DISTANCE 625.132 EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.79 LAL .00 LOL 57.71 VL 32.943 GAL -.08 AZL 86.82 HCA 191.35 SMA 186.73 ECC .20852 INC 3.1799 V1 30.147
RP 224.60 LAP -.63 LOP 249.04 VP 21.703 GAP -2.83 AZP 93.12 TAL 359.52 TAP 190.87 RCA 147.79 APO 225.66 V2 24.486
RC 253.951 GL 33.47 GP -9.98 ZAL 84.76 ZAP 113.27 ETS 183.05 ZAE 148.70 ETE 193.36 ZAC 78.55 ETC 255.89 CLP 113.64

PLANETOCENTRIC CONIC
C3 10.978 VHL 3.313 DLA 45.47 RAL 158.43 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 3.004 DPA -8.91 RAP 178.82 ECC 1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.80	8 6 30	4112.07	-35.32	186.08	24.26	59.26	9 15 2	3512.1	-39.09	177.63
127.20	15 49 3	2693.73	-35.31	76.04	24.25	59.24	16 33 57	2093.7	-39.09	67.60
52.80	8 6 30	4112.07	-35.32	186.08	24.26	59.26	9 15 2	3512.1	-39.09	177.63
127.20	15 49 3	2693.73	-35.31	76.04	24.25	59.24	16 33 57	2093.7	-39.09	67.60
52.80	8 6 30	4112.07	-35.32	186.08	24.26	59.26	9 15 2	3512.1	-39.09	177.63
127.20	15 49 3	2693.73	-35.31	76.04	24.25	59.24	16 33 57	2093.7	-39.09	67.60

DIFFERENTIAL CORRECTIONS
TDE .3354 TRA -.3394 TC3 -.1531 BAU .3107
RDE .4628 RRA .2665 RC3-2.1117 FAU .54289
FDE 7.8870 FRA 4.5275 FC-42.8111 BSP 6112
BDE .5716 BRA .4316 BC3 2.1172 FSP 10144

MID-COURSE EXECUTION ACCURACY
SGT 1023.4 SGR 1740.8 SG3 2885.7
RRT .0315 RRF .9967 RTF .0422
SGB 2019.4 R23 .0057 R13 .9967
SG1 1741.3 SG2 1022.7 THA 88.38

ORBIT DETERMINATION ACCURACY
ST 632.1 SR 825.3 SS 3652.2
CRT .7952 CRS-1.0000 CST -.7953
LSA 3778.2 MSA 379.7 SSA 7.8
EL1 989.1 EL2 319.8 ALF 54.37

LAUNCH DATE NOV 20 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 27 1965

DISTANCE 629.104 EARTH TO MARS

HELIOCENTRIC CONIC
RL 147.79 LAL .00 LOL 57.71 VL 32.938 GAL -.09 AZL 86.94 HCA 192.42 SMA 186.64 ECC .20814 INC 3.0595 V1 30.147
RP 224.21 LAP -.66 LOP 250.12 VP 21.743 GAP -3.09 AZP 92.99 TAL 359.50 TAP 191.92 RCA 147.79 APO 225.48 V2 24.527
RC 255.576 GL 32.48 GP -9.26 ZAL 84.74 ZAP 111.44 ETS 182.41 ZAE 146.83 ETE 191.16 ZAC 79.07 ETC 255.97 CLP 111.73

PLANETOCENTRIC CONIC
C3 10.720 VHL 3.274 DLA 44.56 RAL 157.86 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 2.964 DPA -7.91 RAP 178.37 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.03	8 8 53	4095.09	-34.85	184.18	22.89	60.25	9 17 8	3495.1	-38.50	175.72
125.97	15 42 8	2700.98	-34.84	76.37	22.88	60.24	16 27 9	2101.0	-38.49	67.91
54.03	8 8 53	4095.09	-34.85	184.18	22.89	60.25	9 17 8	3495.1	-38.50	175.72
125.97	15 42 8	2700.98	-34.84	76.37	22.88	60.24	16 27 9	2101.0	-38.49	67.91
54.03	8 8 53	4095.09	-34.85	184.18	22.89	60.25	9 17 8	3495.1	-38.50	175.72
125.97	15 42 8	2700.98	-34.84	76.37	22.88	60.24	16 27 9	2101.0	-38.49	67.91

DIFFERENTIAL CORRECTIONS
TDE .3929 TRA -.3090 TC3 -.4697 BAU .2970
RDE .4261 RRA .2483 RC3-2.0180 FAU .56012
FDE 7.7649 FRA 4.5642 FC-45.2330 BSP 5646
BDE .5796 BRA .3964 BC3 2.0719 FSP 10325

MID-COURSE EXECUTION ACCURACY
SGT 1069.2 SGR 1635.2 SG3 2977.6
RRT .2610 RRF .9956 RTF .2699
SGB 1953.8 R23 .1529 R13 .9839
SG1 1673.2 SG2 1008.7 THA 74.60

ORBIT DETERMINATION ACCURACY
ST 724.3 SR 768.7 SS 3592.3
CRT .8465 CRS -.9999 CST -.8450
LSA 3724.8 MSA 381.9 SSA 8.7
EL1 1015.0 EL2 292.0 ALF 47.01

LAUNCH DATE NOV 20 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 633.087 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.933	GAL	-.09	AZL	87.04	HCA	193.50	SMA	186.56	ECC	.20779	INC	2.9575
RP	223.82	LAP	-.69	LOP	251.20	VP	21.783	GAP	-3.34	AZP	92.88	TAL	359.46	TAP	192.96	RCA	147.79	APO	225.32
RC	257.180	GL	31.62	GP	-8.64	ZAL	84.76	ZAP	109.56	ETS	181.86	ZAE	144.87	ETE	189.37	ZAC	79.48	ETC	256.04

V1	30.147	V2	24.569	CLP	109.80														

PLANETOCENTRIC CONIC

C3	10.506	VHL	3.241	DLA	43.76	RAL	157.43	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	2.929	DPA	-6.99	RAP	177.86

ECC	1.1729																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.12	8 11 23	4079.77	-34.42	182.50	21.77	61.10	9 19 23	3479.8	-37.97	174.02
124.88	15 36 9	2708.10	-34.41	76.72	21.76	61.09	16 21 17	2108.1	-37.96	68.25
55.12	8 11 23	4079.77	-34.42	182.50	21.77	61.10	9 19 23	3479.8	-37.97	174.02
124.88	15 36 9	2708.10	-34.41	76.72	21.76	61.09	16 21 17	2108.1	-37.96	68.25
55.12	8 11 23	4079.77	-34.42	182.50	21.77	61.10	9 19 23	3479.8	-37.97	174.02
124.88	15 36 9	2708.10	-34.41	76.72	21.76	61.09	16 21 17	2108.1	-37.96	68.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4479	TRA	-.2748	TC3	-.8594	BAU	.2948	SGT	1178.9	SGR	1534.9	SG3	3046.8	ST	817.2	SR	722.4	SS	3534.9
RDE	.3966	RRA	.2321	RC3	-1.9152	FAU	.57242	RRT	.4778	RRF	.9943	RTF	.4861	CRT	.8829	CRS	-.9999	CST	-.8801
FDE	7.6518	FRA	4.5782	FC	-47.1688	BSP	5507	SGB	1935.4	R23	.2960	R13	.9492	LSA	3679.8	MSA	380.3	SSA	9.7
BDE	.5982	BRA	.3598	BC3	2.0992	FSP	10687	SG1	1692.1	SG2	939.4	THA	59.60	EL1	1058.9	EL2	261.8	ALF	41.02

LAUNCH DATE NOV 20 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 637.079 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.929	GAL	-.10	AZL	87.13	HCA	194.59	SMA	186.48	ECC	.20747	INC	2.8706
RP	223.44	LAP	-.72	LOP	252.28	VP	21.824	GAP	-3.59	AZP	92.78	TAL	359.40	TAP	193.99	RCA	147.79	APO	225.17
RC	258.763	GL	30.88	GP	-8.11	ZAL	84.81	ZAP	107.65	ETS	181.38	ZAE	142.84	ETE	187.87	ZAC	79.82	ETC	256.11

V1	30.147	V2	24.611	CLP	107.84														

PLANETOCENTRIC CONIC

C3	10.325	VHL	3.213	DLA	43.06	RAL	157.10	RAD	6567.4	VEL	11.477	PTH	1.99	VHP	2.899	DPA	-6.14	RAP	177.30

ECC	1.1699																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.10	8 14 0	4065.76	-34.02	180.98	20.85	61.84	9 21 46	3465.8	-37.48	172.51
123.90	15 30 56	2715.09	-34.01	77.09	20.84	61.82	16 16 11	2115.1	-37.47	68.61
56.10	8 14 0	4065.76	-34.02	180.98	20.85	61.84	9 21 46	3465.8	-37.48	172.51
123.90	15 30 56	2715.09	-34.01	77.09	20.84	61.82	16 16 11	2115.1	-37.47	68.61
56.10	8 14 0	4065.76	-34.02	180.98	20.85	61.84	9 21 46	3465.8	-37.48	172.51
123.90	15 30 56	2715.09	-34.01	77.09	20.84	61.82	16 16 11	2115.1	-37.47	68.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4978	TRA	-.2356	TC3	-1.2794	BAU	.3063	SGT	1339.6	SGR	1445.5	SG3	3106.0	ST	904.6	SR	689.3	SS	3511.1
RDE	.3756	RRA	.2179	RC3	-1.8134	FAU	.58189	RRT	.6439	RRF	.9925	RTF	.6523	CRT	.9106	CRS	-.9998	CST	-.9068
FDE	7.6162	FRA	4.5766	FC	-48.7907	BSP	5606	SGB	1970.8	R23	.3619	R13	.9243	LSA	3671.9	MSA	371.3	SSA	10.6
BDE	.6236	BRA	.3209	BC3	2.2193	FSP	10793	SG1	1788.2	SG2	828.5	THA	48.37	EL1	1113.5	EL2	231.5	ALF	36.59

LAUNCH DATE NOV 20 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 641.080 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.925	GAL	-.11	AZL	87.20	HCA	195.67	SMA	186.41	ECC	.20719	INC	2.7952
RP	223.05	LAP	-.75	LOP	253.37	VP	21.865	GAP	-3.84	AZP	92.69	TAL	359.33	TAP	195.01	RCA	147.79	APO	225.04
RC	260.326	GL	30.23	GP	-7.64	ZAL	84.89	ZAP	105.72	ETS	180.97	ZAE	140.75	ETE	186.63	ZAC	80.08	ETC	256.18

V1	30.147	V2	24.653	CLP	105.86														

PLANETOCENTRIC CONIC

C3	10.169	VHL	3.189	DLA	42.42	RAL	156.87	RAD	6567.4	VEL	11.470	PTH	1.99	VHP	2.872	DPA	-5.34	RAP	176.69

ECC	1.1674																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.99	8 16 44	4052.84	-33.66	179.61	20.10	62.49	9 24 17	3452.8	-37.04	171.13
123.01	15 26 21	2721.91	-33.65	77.46	20.10	62.48	16 11 43	2121.9	-37.03	68.99
56.99	8 16 44	4052.84	-33.66	179.61	20.10	62.49	9 24 17	3452.8	-37.04	171.13
123.01	15 26 21	2721.91	-33.65	77.46	20.10	62.48	16 11 43	2121.9	-37.03	68.99
56.99	8 16 44	4052.84	-33.66	179.61	20.10	62.49	9 24 17	3452.8	-37.04	171.13
123.01	15 26 21	2721.91	-33.65	77.46	20.10	62.48	16 11 43	2121.9	-37.03	68.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5503	TRA	-.2036	TC3	-1.6847	BAU	.3283	SGT	1542.0	SGR	1374.1	SG3	3176.3	ST	1000.4	SR	660.3	SS	3479.8
RDE	.3570	RRA	.2094	RC3	-1.7298	FAU	.59355	RRT	.7395	RRF	.9906	RTF	.7483	CRT	.9274	CRS	-.9998	CST	-.9225
FDE	7.5513	FRA	4.6639	FC	-50.5290	BSP	5968	SGB	2065.4	R23	.3837	R13	.9135	LSA	3661.4	MSA	373.2	SSA	11.6
BDE	.6560	BRA	.2921	BC3	2.4145	FSP	11058	SG1	1928.5	SG2	739.6	THA	40.56	EL1	1180.2	EL2	209.3	ALF	32.62

LAUNCH DATE NOV 20 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 645.091 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.921	GAL	-.13	AZL	87.27	HCA	196.76	SMA	186.35	ECC	.20694	INC	2.7288
RP	222.66	LAP	-.79	LOP	254.46	VP	21.907	GAP	-4.08	AZP	92.61	TAL	359.25	TAP	196.01	RCA	147.79	APO	224.92
RC	261.869	GL	29.66	GP	-7.22	ZAL	85.00	ZAP	103.75	ETS	180.60	ZAE	138.62	ETE	185.57	ZAC	80.30	ETC	256.26

V1	30.147	V2	24.695	CLP	103.87														

PLANETOCENTRIC CONIC

C3	10.035	VHL	3.168	DLA	41.84	RAL	156.72	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	2.850	DPA	-4.59	RAP	176.05

ECC	1.1651																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.81	8 19 35	4040.74	-33.32	178.33	19.50	63.07	9 26 56	3440.7	-36.63	169.86
122.19	15 22 18	2728.69	-33.31	77.84	19.49	63.06	16 7 46	2128.7	-36.62	69.37
57.81	8 19 35	4040.74	-33.32	178.33	19.50	63.07	9 26 56	3440.7	-36.63	169.86
122.19	15 22 18	2728.69	-33.31	77.84	19.49	63.06	16 7 46	2128.7	-36.62	69.37
57.81	8 19 35	4040.74	-33.32	178.33	19.50	63.07	9 26 56	3440.7	-36.63	169.86
122.19	15 22 18	2728.69	-33.31	77.84	19.49	63.06	16 7 46	2128.7	-36.62	69.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6075	TRA	-.1668	TC3	-2.1464	BAU	.3624	SGT	1794.6	SGR	1299.9	SG3	3219.2	ST	1106.3	SR	629.2	SS	3406.2
RDE	.3380	RRA	.1999	RC3	-1.6408	FAU	.60126	RRT	.8097	RRF	.9881	RTF	.8192	CRT	.9415	CRS	-.9996	CST	-.9355
FDE	7.3908	FRA	4.6868	FC	-51.8737	BSP	6549	SGB	2216.0	R23	.3774	R13	.9137	LSA	3616.9	MSA	374.0	SSA	12.6
BDE	.6952	BRA	.2603	BC3	2.7017	FSP	11184	SG1	2119.8	SG2	645.9	THA	33.97	EL1	1259.0	EL2	186.4	ALF	28.86

LAUNCH DATE NOV 20 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 649.111 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.918 GAL -.15 AZL 87.33 HCA 197.86 SMA 186.30 ECC .20671 INC 2.6702 V1 30.147
RP 222.28 LAP -.82 LOP 255.55 VP 21.949 GAP -4.31 AZP 92.54 TAL 359.15 TAP 197.01 RCA 147.79 APO 224.81 V2 24.737
RC 263.392 GL 29.15 GP -6.84 ZAL 85.15 ZAP 101.78 ETS 180.29 ZAE 136.46 ETE 184.68 ZAC 80.47 ETC 256.33 CLP 101.86

PLANETOCENTRIC CONIC

C3 9.916 VHL 3.149 DLA 41.30 RAL 156.64 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 2.832 DPA -3.87 RAP 175.38 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.58	8 22 35	4029.26	-32.99	177.15	19.01	63.60	9 29 44	3429.3	-36.24	168.67
121.42	15 18 41	2735.44	-32.98	78.24	19.01	63.58	16 4 16	2135.4	-36.23	69.77
58.58	8 22 35	4029.26	-32.99	177.15	19.01	63.60	9 29 44	3429.3	-36.24	168.67
121.42	15 18 41	2735.44	-32.98	78.24	19.01	63.58	16 4 16	2135.4	-36.23	69.77
58.58	8 22 35	4029.26	-32.99	177.15	19.01	63.60	9 29 44	3429.3	-36.24	168.67
121.42	15 18 41	2735.44	-32.98	78.24	19.01	63.58	16 4 16	2135.4	-36.23	69.77

DIFFERENTIAL CORRECTIONS
TDE .6616 TRA -.1297 TC3-2.6175 BAU .4037
RDE .3233 RRA .1928 RC3-1.5566 FAU .60778
FDE 7.2704 FRA 4.7416 FC-53.0607 BSP 7270
BDE .7364 BRA .2324 BC3 3.0454 FSP 11373

MID-COURSE EXECUTION ACCURACY
SGT 2065.3 SGR 1235.1 SG3 3260.0
RRT .8537 RRF .9851 RTF .8650
SGB 2406.4 R23 .3545 R13 .9203
SG1 2338.4 SG2 568.0 THA 28.91

ORBIT DETERMINATION ACCURACY
ST 1208.5 SR 605.5 SS 3353.6
CRT .9518 CRS -.9995 CST -.9448
LSA 3596.2 MSA 374.8 SSA 13.5
EL1 1341.3 EL2 167.3 ALF 25.93

LAUNCH DATE NOV 20 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 653.139 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.915 GAL -.16 AZL 87.38 HCA 198.96 SMA 186.25 ECC .20652 INC 2.6181 V1 30.147
RP 221.89 LAP -.85 LOP 256.65 VP 21.992 GAP -4.54 AZP 92.48 TAL 359.04 TAP 198.00 RCA 147.79 APO 224.72 V2 24.779
RC 264.895 GL 28.69 GP -6.50 ZAL 85.33 ZAP 99.79 ETS 180.00 ZAE 134.28 ETE 183.92 ZAC 80.60 ETC 256.41 CLP 99.85

PLANETOCENTRIC CONIC

C3 9.812 VHL 3.132 DLA 40.80 RAL 156.63 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 2.817 DPA -3.18 RAP 174.70 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.30	8 25 41	4018.39	-32.69	176.03	18.63	64.08	9 32 39	3418.4	-35.87	167.56
120.70	15 15 28	2742.11	-32.68	78.63	18.62	64.07	16 1 10	2142.1	-35.87	70.16
59.30	8 25 41	4018.39	-32.69	176.03	18.63	64.08	9 32 39	3418.4	-35.87	167.56
120.70	15 15 28	2742.11	-32.68	78.63	18.62	64.07	16 1 10	2142.1	-35.87	70.16
59.30	8 25 41	4018.39	-32.69	176.03	18.63	64.08	9 32 39	3418.4	-35.87	167.56
120.70	15 15 28	2742.11	-32.68	78.63	18.62	64.07	16 1 10	2142.1	-35.87	70.16

DIFFERENTIAL CORRECTIONS
TDE .7082 TRA -.0914 TC3-3.0849 BAU .4490
RDE .3139 RRA .1870 RC3-1.4825 FAU .61510
FDE 7.2393 FRA 4.8032 FC-54.2723 BSP 8165
BDE .7747 BRA .2081 BC3 3.4226 FSP 11450

MID-COURSE EXECUTION ACCURACY
SGT 2337.1 SGR 1181.7 SG3 3308.2
RRT .8832 RRF .9818 RTF .8974
SGB 2618.9 R23 .3198 R13 .9305
SG1 2569.9 SG2 504.1 THA 25.10

ORBIT DETERMINATION ACCURACY
ST 1298.4 SR 590.7 SS 3342.1
CRT .9603 CRS -.9993 CST -.9526
LSA 3614.8 MSA 370.2 SSA 14.5
EL1 1418.5 EL2 150.8 ALF 23.89

LAUNCH DATE NOV 20 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 657.178 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.913 GAL -.19 AZL 87.43 HCA 200.06 SMA 186.21 ECC .20635 INC 2.5716 V1 30.147
RP 221.51 LAP -.88 LOP 257.75 VP 22.036 GAP -4.76 AZP 92.42 TAL 358.91 TAP 198.97 RCA 147.79 APO 224.64 V2 24.820
RC 266.379 GL 28.27 GP -6.19 ZAL 85.53 ZAP 97.79 ETS 179.75 ZAE 132.08 ETE 183.26 ZAC 80.71 ETC 256.49 CLP 97.83

PLANETOCENTRIC CONIC

C3 9.719 VHL 3.118 DLA 40.33 RAL 156.67 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 2.807 DPA -2.52 RAP 174.00 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.99	8 28 57	4007.86	-32.39	174.96	18.33	64.53	9 35 45	3407.9	-35.52	166.50
120.01	15 12 32	2748.87	-32.38	79.04	18.33	64.51	15 58 21	2148.9	-35.51	70.58
59.99	8 28 57	4007.86	-32.39	174.96	18.33	64.53	9 35 45	3407.9	-35.52	166.50
120.01	15 12 32	2748.87	-32.38	79.04	18.33	64.51	15 58 21	2148.9	-35.51	70.58
59.99	8 28 57	4007.86	-32.39	174.96	18.33	64.53	9 35 45	3407.9	-35.52	166.50
120.01	15 12 32	2748.87	-32.38	79.04	18.33	64.51	15 58 21	2148.9	-35.51	70.58

DIFFERENTIAL CORRECTIONS
TDE .7646 TRA -.0517 TC3-3.5754 BAU .4993
RDE .3006 RRA .1821 RC3-1.4070 FAU .61967
FDE 7.0334 FRA 4.8694 FC-55.1981 BSP 9156
BDE .8215 BRA .1893 BC3 3.8423 FSP 11512

MID-COURSE EXECUTION ACCURACY
SGT 2638.1 SGR 1125.9 SG3 3334.4
RRT .9014 RRF .9779 RTF .9176
SGB 2868.3 R23 .2892 R13 .9379
SG1 2832.2 SG2 454.1 THA 21.63

ORBIT DETERMINATION ACCURACY
ST 1407.2 SR 568.6 SS 3258.3
CRT .9663 CRS -.9990 CST -.9572
LSA 3574.7 MSA 375.9 SSA 15.5
EL1 1511.6 EL2 136.2 ALF 21.51

LAUNCH DATE NOV 20 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 661.224 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.911 GAL -.21 AZL 87.47 HCA 201.17 SMA 186.18 ECC .20621 INC 2.5291 V1 30.147
RP 221.13 LAP -.91 LOP 258.86 VP 22.080 GAP -4.98 AZP 92.36 TAL 358.77 TAP 199.94 RCA 147.79 APO 224.57 V2 24.862
RC 267.844 GL 27.90 GP -5.90 ZAL 85.77 ZAP 95.79 ETS 179.53 ZAE 129.87 ETE 182.69 ZAC 80.80 ETC 256.57 CLP 95.82

PLANETOCENTRIC CONIC

C3 9.636 VHL 3.104 DLA 39.88 RAL 156.77 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 2.799 DPA -1.89 RAP 173.30 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.65	8 32 22	3997.66	-32.11	173.94	18.12	64.94	9 39 0	3397.7	-35.19	165.48
119.35	15 9 55	2755.69	-32.09	79.46	18.12	64.93	15 55 51	2155.7	-35.18	71.00
60.65	8 32 22	3997.66	-32.11	173.94	18.12	64.94	9 39 0	3397.7	-35.19	165.48
119.35	15 9 55	2755.69	-32.09	79.46	18.12	64.93	15 55 51	2155.7	-35.18	71.00
60.65	8 32 22	3997.66	-32.11	173.94	18.12	64.94	9 39 0	3397.7	-35.19	165.48
119.35	15 9 55	2755.69	-32.09	79.46	18.12	64.93	15 55 51	2155.7	-35.18	71.00

DIFFERENTIAL CORRECTIONS
TDE .8131 TRA -.0101 TC3-4.0862 BAU .5537
RDE .2917 RRA .1776 RC3-1.3328 FAU .62241
FDE 6.9085 FRA 4.9261 FC-55.9193 BSP 10143
BDE .8638 BRA .1779 BC3 4.2981 FSP 11663

MID-COURSE EXECUTION ACCURACY
SGT 2947.7 SGR 1075.7 SG3 3355.5
RRT .9136 RRF .9732 RTF .9340
SGB 3137.8 R23 .2522 R13 .9464
SG1 3110.3 SG2 414.6 THA 18.78

ORBIT DETERMINATION ACCURACY
ST 1502.8 SR 553.9 SS 3211.4
CRT .9717 CRS -.9987 CST -.9617
LSA 3569.0 MSA 375.1 SSA 16.4
EL1 1596.9 EL2 123.1 ALF 19.83

LAUNCH DATE NOV 20 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 665.280 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.909 GAL -.24 AZL 87.51 HCA 202.28 SMA 186.15 ECC .20610 INC 2.4910 V1 30.147
RP 220.75 LAP -.94 LOP 259.97 VP 22.124 GAP -5.20 AZP 92.31 TAL 358.61 TAP 200.89 RCA 147.78 APO 224.52 V2 24.903
RC 269.292 GL 27.55 GP -5.64 ZAL 86.04 ZAP 93.79 ETS 179.32 ZAE 127.66 ETE 182.20 ZAC 80.87 ETC 256.66 CLP 93.81

PLANETOCENTRIC CONIC

C3 9.562 VHL 3.092 DLA 39.45 RAL 156.92 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 2.795 DPA -1.28 RAP 172.60 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.30	8 35 56	3987.71	-31.82	172.94	17.98	65.34	9 42 23	3387.7	-34.86	164.50
118.70	15 7 32	2762.59	-31.82	79.89	17.98	65.32	15 53 35	2162.6	-34.85	71.44
61.30	8 35 56	3987.71	-31.82	172.94	17.98	65.34	9 42 23	3387.7	-34.86	164.50
118.70	15 7 32	2762.59	-31.82	79.89	17.98	65.32	15 53 35	2162.6	-34.85	71.44
61.30	8 35 56	3987.71	-31.82	172.94	17.98	65.34	9 42 23	3387.7	-34.86	164.50
118.70	15 7 32	2762.59	-31.82	79.89	17.98	65.32	15 53 35	2162.6	-34.85	71.44

DIFFERENTIAL CORRECTIONS
TDE .8627 TRA .0348 TC3-4.5937 BAU .6091
RDE .2830 RRA .1729 RC3-1.2645 FAU .62512
FDE 6.7461 FRA 4.9505 FC-56.6006 BSP 11222
BDE .9079 BRA .1764 BC3 4.7645 FSP 11711

MID-COURSE EXECUTION ACCURACY
SGT 3260.8 SGR 1028.9 SG3 3371.4
RRT .9223 RRF .9678 RTF .9464
SGB 3419.3 R23 .2143 R13 .9540
SG1 3397.9 SG2 381.6 THA 16.44

ORBIT DETERMINATION ACCURACY
ST 1601.0 SR 539.5 SS 3149.6
CRT .9765 CRS -.9983 CST -.9656
LSA 3554.5 MSA 373.0 SSA 17.4
EL1 1685.8 EL2 110.5 ALF 18.29

LAUNCH DATE NOV 20 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 669.343 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.908 GAL -.27 AZL 87.54 HCA 203.39 SMA 186.13 ECC .20602 INC 2.4560 V1 30.147
RP 220.37 LAP -.97 LOP 261.09 VP 22.168 GAP -5.41 AZP 92.25 TAL 358.44 TAP 201.83 RCA 147.78 APO 224.47 V2 24.945
RC 270.721 GL 27.24 GP -5.39 ZAL 86.34 ZAP 91.81 ETS 179.14 ZAE 125.44 ETE 181.77 ZAC 80.92 ETC 256.74 CLP 91.81

PLANETOCENTRIC CONIC

C3 9.495 VHL 3.081 DLA 39.04 RAL 157.12 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 2.795 DPA -.69 RAP 171.90 ECC 1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.92	8 39 42	3977.81	-31.55	171.97	17.91	65.71	9 46 0	3377.8	-34.54	163.53
118.08	15 5 20	2769.74	-31.54	80.34	17.90	65.70	15 51 29	2169.7	-34.53	71.90
61.92	8 39 42	3977.81	-31.55	171.97	17.91	65.71	9 46 0	3377.8	-34.54	163.53
118.08	15 5 20	2769.74	-31.54	80.34	17.90	65.70	15 51 29	2169.7	-34.53	71.90
61.92	8 39 42	3977.81	-31.55	171.97	17.91	65.71	9 46 0	3377.8	-34.54	163.53
118.08	15 5 20	2769.74	-31.54	80.34	17.90	65.70	15 51 29	2169.7	-34.53	71.90

DIFFERENTIAL CORRECTIONS
TDE .9092 TRA .0792 TC3-5.1246 BAU .6679
RDE .2755 RRA .1701 RC3-1.1919 FAU .62392
FDE 6.5794 FRA 5.0241 FC-56.8898 BSP .12352
BDE .9501 BRA .1876 BC3 5.2614 FSP 11676

MID-COURSE EXECUTION ACCURACY
SGT 3587.2 SGR 983.8 SG3 3372.4
RRT .9246 RRF .9614 RTF .9548
SGB 3719.7 R23 .1823 R13 .9597
SG1 3701.9 SG2 363.1 THA 14.37

ORBIT DETERMINATION ACCURACY
ST 1694.3 SR 527.1 SS 3090.6
CRT .9799 CRS -.9978 CST -.9679
LSA 3543.9 MSA 375.4 SSA 18.4
EL1 1771.6 EL2 100.5 ALF 17.01

LAUNCH DATE NOV 20 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 673.416 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.907 GAL -.30 AZL 87.58 HCA 204.51 SMA 186.11 ECC .20596 INC 2.4239 V1 30.147
RP 220.00 LAP -1.01 LOP 262.20 VP 22.213 GAP -5.62 AZP 92.21 TAL 358.25 TAP 202.76 RCA 147.78 APO 224.44 V2 24.986
RC 272.134 GL 26.94 GP -5.16 ZAL 86.67 ZAP 89.83 ETS 178.98 ZAE 123.24 ETE 181.39 ZAC 80.96 ETC 256.83 CLP 89.83

PLANETOCENTRIC CONIC

C3 9.435 VHL 3.072 DLA 38.63 RAL 157.36 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 2.798 DPA -.13 RAP 171.20 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.55	8 43 39	3967.98	-31.28	171.01	17.90	66.07	9 49 47	3368.0	-34.22	162.58
117.45	15 3 18	2777.08	-31.27	80.81	17.89	66.05	15 49 35	2177.1	-34.21	72.38
62.55	8 43 39	3967.98	-31.28	171.01	17.90	66.07	9 49 47	3368.0	-34.22	162.58
117.45	15 3 18	2777.08	-31.27	80.81	17.89	66.05	15 49 35	2177.1	-34.21	72.38
62.55	8 43 39	3967.98	-31.28	171.01	17.90	66.07	9 49 47	3368.0	-34.22	162.58
117.45	15 3 18	2777.08	-31.27	80.81	17.89	66.05	15 49 35	2177.1	-34.21	72.38

DIFFERENTIAL CORRECTIONS
TDE .9547 TRA .1265 TC3-5.6509 BAU .7268
RDE .2682 RRA .1671 RC3-1.1256 FAU .62311
FDE 6.3732 FRA 5.0719 FC-57.1780 BSP 13505
BDE .9917 BRA .2096 BC3 5.7619 FSP 11596

MID-COURSE EXECUTION ACCURACY
SGT 3913.3 SGR 942.1 SG3 3370.5
RRT .9254 RRF .9542 RTF .9614
SGB 4025.1 R23 .1514 R13 .9645
SG1 4010.0 SG2 348.5 THA 12.66

ORBIT DETERMINATION ACCURACY
ST 1786.2 SR 514.7 SS 3015.9
CRT .9830 CRS -.9971 CST -.9698
LSA 3522.6 MSA 377.3 SSA 19.3
EL1 1856.7 EL2 91.0 ALF 15.85

LAUNCH DATE NOV 20 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 677.497 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.906 GAL -.33 AZL 87.61 HCA 205.63 SMA 186.10 ECC .20592 INC 2.3943 V1 30.147
RP 219.62 LAP -1.04 LOP 263.33 VP 22.258 GAP -5.82 AZP 92.16 TAL 358.05 TAP 203.69 RCA 147.78 APO 224.42 V2 25.027
RC 273.529 GL 26.67 GP -4.95 ZAL 87.03 ZAP 87.87 ETS 178.84 ZAE 121.05 ETE 181.06 ZAC 80.99 ETC 256.91 CLP 87.86

PLANETOCENTRIC CONIC

C3 9.381 VHL 3.063 DLA 38.23 RAL 157.64 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 2.804 DPA .41 RAP 170.52 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.16	8 47 48	3958.13	-31.00	170.05	17.94	66.41	9 53 46	3358.1	-33.90	161.63
116.84	15 1 24	2784.69	-30.99	81.29	17.94	66.40	15 47 49	2184.7	-33.90	72.87
63.16	8 47 48	3958.13	-31.00	170.05	17.94	66.41	9 53 46	3358.1	-33.90	161.63
116.84	15 1 24	2784.69	-30.99	81.29	17.94	66.40	15 47 49	2184.7	-33.90	72.87
63.16	8 47 48	3958.13	-31.00	170.05	17.94	66.41	9 53 46	3358.1	-33.90	161.63
116.84	15 1 24	2784.69	-30.99	81.29	17.94	66.40	15 47 49	2184.7	-33.90	72.87

DIFFERENTIAL CORRECTIONS
TDE .9973 TRA .1756 TC3-6.1865 BAU .7871
RDE .2620 RRA .1644 RC3-1.0582 FAU .61975
FDE 6.1733 FRA 5.1144 FC-57.1966 BSP 14650
BDE 1.0312 BRA .2406 BC3 6.2764 FSP 11576

MID-COURSE EXECUTION ACCURACY
SGT 4244.6 SGR 902.1 SG3 3356.5
RRT .9231 RRF .9457 RTF .9667
SGB 4339.4 R23 .1235 R13 .9688
SG1 4326.1 SG2 340.3 THA 11.17

ORBIT DETERMINATION ACCURACY
ST 1873.4 SR 504.4 SS 2945.7
CRT .9857 CRS -.9963 CST -.9713
LSA 3506.8 MSA 378.0 SSA 20.2
EL1 1938.4 EL2 82.2 ALF 14.89

LAUNCH DATE NOV 20 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 681.582 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.906	GAL	-.37	AZL	87.63	HCA	206.76	SMA	186.09	ECC	.20591	INC	2.3669
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.303	GAP	-6.02	AZP	92.11	TAL	357.83	TAP	204.59	RCA	147.77	APO	224.41
RC	274.906	GL	26.42	GP	-4.75	ZAL	87.42	ZAP	85.93	ETS	178.70	ZAE	118.87	ETE	180.77	ZAC	81.02	ETC	257.00

V1	30.147	V2	25.067	CLP	85.92														

PLANETOCENTRIC CONIC

C3	9.332	VHL	3.055	DLA	37.83	RAL	157.97	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	2.813	DPA	.93	RAP	169.86
ECC	1.1536																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.78	8 52 11	3948.19	-30.73	169.09	18.04	66.75	9 58 0	3348.2	-33.59	160.68
116.22	14 59 38	2792.61	-30.72	81.81	18.04	66.73	15 46 10	2192.6	-33.58	73.40
63.78	8 52 11	3948.19	-30.73	169.09	18.04	66.75	9 58 0	3348.2	-33.59	160.68
116.22	14 59 38	2792.61	-30.72	81.81	18.04	66.73	15 46 10	2192.6	-33.58	73.40
63.78	8 52 11	3948.19	-30.73	169.09	18.04	66.75	9 58 0	3348.2	-33.59	160.68
116.22	14 59 38	2792.61	-30.72	81.81	18.04	66.73	15 46 10	2192.6	-33.58	73.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0421	TRA	.2315	TC3	-6.7077	BAU	.8458	SGT	4573.6	SGR	866.7	SG3	3329.4	ST	1965.4	SR	500.9
RDE	.2594	RRA	.1650	RC3	-.9831	FAU	.61040	RRT	.9153	RRF	.9359	RTF	.9704	CRT	.9880	CRS	-.9955
FDE	6.0930	FRA	5.2831	FC	-56.6268	BSP	15928	SGB	4655.0	R23	.1060	R13	.9718	LSA	3547.5	MSA	381.8
BDE	1.0740	BRA	.2843	BC3	6.7794	FSP	11673	SG1	4642.3	SG2	343.9	THA	9.89	EL1	2026.9	EL2	75.0

SS	2935.6	CST	-.9726
SSA	20.9	ALF	14.15

LAUNCH DATE NOV 20 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 685.682 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.906	GAL	-.41	AZL	87.66	HCA	207.89	SMA	186.09	ECC	.20593	INC	2.3416
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.349	GAP	-6.21	AZP	92.07	TAL	357.60	TAP	205.49	RCA	147.77	APO	224.41
RC	276.266	GL	26.18	GP	-4.56	ZAL	87.84	ZAP	84.01	ETS	178.59	ZAE	116.71	ETE	180.52	ZAC	81.04	ETC	257.09

V1	30.147	V2	25.108	CLP	83.99														

PLANETOCENTRIC CONIC

C3	9.289	VHL	3.048	DLA	37.44	RAL	158.33	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	2.826	DPA	1.43	RAP	169.22
ECC	1.1529																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.41	8 56 48	3938.04	-30.45	168.13	18.19	67.07	10 2 26	3338.0	-33.27	159.73
115.59	14 57 54	2800.96	-30.44	82.35	18.19	67.06	15 44 35	2201.0	-33.26	73.95
64.41	8 56 48	3938.04	-30.45	168.13	18.19	67.07	10 2 26	3338.0	-33.27	159.73
115.59	14 57 54	2800.96	-30.44	82.35	18.19	67.06	15 44 35	2201.0	-33.26	73.95
64.41	8 56 48	3938.04	-30.45	168.13	18.19	67.07	10 2 26	3338.0	-33.27	159.73
115.59	14 57 54	2800.96	-30.44	82.35	18.19	67.06	15 44 35	2201.0	-33.26	73.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0776	TRA	.2829	TC3	-7.2468	BAU	.9073	SGT	4905.7	SGR	831.8	SG3	3308.9	ST	2040.0	SR	489.7
RDE	.2530	RRA	.1621	RC3	-.9258	FAU	.60748	RRT	.9100	RRF	.9250	RTF	.9738	CRT	.9900	CRS	-.9942
FDE	5.8092	FRA	5.2817	FC	-56.6165	BSP	17042	SGB	4975.7	R23	.0834	R13	.9747	LSA	3502.3	MSA	383.9
BDE	1.1069	BRA	.3261	BC3	7.3057	FSP	11462	SG1	4964.0	SG2	340.8	THA	8.81	EL1	2096.9	EL2	67.3

SS	2830.6	CST	-.9731
SSA	21.9	ALF	13.38

LAUNCH DATE NOV 20 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 689.788 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.906	GAL	-.45	AZL	87.68	HCA	209.02	SMA	186.10	ECC	.20597	INC	2.3181
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.394	GAP	-6.40	AZP	92.03	TAL	357.36	TAP	206.38	RCA	147.77	APO	224.43
RC	277.609	GL	25.95	GP	-4.38	ZAL	88.28	ZAP	82.12	ETS	178.48	ZAE	114.57	ETE	180.29	ZAC	81.06	ETC	257.17

V1	30.147	V2	25.148	CLP	82.10														

PLANETOCENTRIC CONIC

C3	9.251	VHL	3.042	DLA	37.05	RAL	158.73	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	2.841	DPA	1.90	RAP	168.59
ECC	1.1522																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.04	9 1 39	3927.68	-30.17	167.15	18.39	67.39	10 7 7	3327.7	-32.95	158.76
114.96	14 56 13	2809.72	-30.16	82.93	18.38	67.38	15 43 3	2209.7	-32.94	74.54
65.04	9 1 39	3927.68	-30.17	167.15	18.39	67.39	10 7 7	3327.7	-32.95	158.76
114.96	14 56 13	2809.72	-30.16	82.93	18.38	67.38	15 43 3	2209.7	-32.94	74.54
65.04	9 1 39	3927.68	-30.17	167.15	18.39	67.39	10 7 7	3327.7	-32.95	158.76
114.96	14 56 13	2809.72	-30.16	82.93	18.38	67.38	15 43 3	2209.7	-32.94	74.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1120	TRA	.3383	TC3	-7.7785	BAU	.9680	SGT	5235.9	SGR	799.3	SG3	3278.6	ST	2113.1	SR	481.3
RDE	.2482	RRA	.1598	RC3	-.8669	FAU	.60189	RRT	.9022	RRF	.9126	RTF	.9767	CRT	.9918	CRS	-.9926
FDE	5.5622	FRA	5.2937	FC	-56.3268	BSP	18179	SGB	5296.6	R23	.0641	R13	.9773	LSA	3474.9	MSA	384.7
BDE	1.1393	BRA	.3741	BC3	7.8267	FSP	11281	SG1	5285.5	SG2	341.5	THA	7.87	EL1	2166.4	EL2	60.0

SS	2743.4	CST	-.9736
SSA	22.9	ALF	12.74

LAUNCH DATE NOV 20 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 693.902 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.907	GAL	-.50	AZL	87.70	HCA	210.16	SMA	186.10	ECC	.20603	INC	2.2959
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.440	GAP	-6.59	AZP	91.99	TAL	357.10	TAP	207.26	RCA	147.76	APO	224.45
RC	278.933	GL	25.73	GP	-4.20	ZAL	88.76	ZAP	80.26	ETS	178.38	ZAE	112.46	ETE	180.09	ZAC	81.08	ETC	257.26

V1	30.147	V2	25.188
CLP	80.23		

PLANETOCENTRIC CONIC

C3	9.218	VHL	3.036	DLA	36.66	RAL	159.16	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	2.860	DPA	2.35	RAP	168.00
ECC	1.1517																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.68	9 6 47	3917.00	-29.89	166.15	18.63	67.71	10 12 4	3317.0	-32.63	157.77
114.32	14 54 35	2819.00	-29.87	83.54	18.62	67.69	15 41 34	2219.0	-32.62	75.17
65.68	9 6 47	3917.00	-29.89	166.15	18.63	67.71	10 12 4	3317.0	-32.63	157.77
114.32	14 54 35	2819.00	-29.87	83.54	18.62	67.69	15 41 34	2219.0	-32.62	75.17
65.68	9 6 47	3917.00	-29.89	166.15	18.63	67.71	10 12 4	3317.0	-32.63	157.77
114.32	14 54 35	2819.00	-29.87	83.54	18.62	67.69	15 41 34	2219.0	-32.62	75.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1422	TRA	.3953	TC3	-8.3108	BAU	1.0290	SGT	5565.8	SGR	768.3	SG3	3237.3	ST	2178.8	SR	474.2
RDE	.2441	RRA	.1580	RC3	-.8068	FAU	.59386	RRT	.8912	RRF	.8983	RTF	.9790	CRT	.9934	CRS	-.9908
FDE	5.3164	FRA	5.3132	FC	-55.7752	BSP	19291	SGB	5618.6	R23	.0495	R13	.9794	LSA	3447.9	MSA	386.2
BDE	1.1680	BRA	.4257	BC3	8.3499	FSP	11087	SG1	5607.9	SG2	346.0	THA	7.04	EL1	2229.2	EL2	53.3

SS	2658.1	CST	-.9738
SSA	23.8	ALF	12.21

LAUNCH DATE NOV 20 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 698.023 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.907 GAL -.54 AZL 87.72 HCA 211.30 SMA 186.12 ECC .20612 INC 2.2753 V1 30.147
RP 217.80 LAP -1.18 LOP 268.99 VP 22.486 GAP -6.77 AZP 91.94 TAL 356.83 TAP 208.13 RCA 147.75 APO 224.48 V2 25.228
RC 280.240 GL 25.53 GP -4.04 ZAL 89.27 ZAP 78.42 ETS 178.30 ZAE 110.38 ETE 179.92 ZAC 81.10 ETC 257.34 CLP 78.39

PLANETOCENTRIC CONIC

C3 9.189 VHL 3.031 DLA 36.26 RAL 159.63 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.881 DPA 2.78 RAP 167.43 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.34	9 12 11	3905.93	-29.59	165.12	18.91	68.02	10 17 17	3305.9	-32.30	156.76
113.66	14 52 55	2828.86	-29.58	84.20	18.90	68.01	15 40 4	2228.9	-32.29	75.84
66.34	9 12 11	3905.93	-29.59	165.12	18.91	68.02	10 17 17	3305.9	-32.30	156.76
113.66	14 52 55	2828.86	-29.58	84.20	18.90	68.01	15 40 4	2228.9	-32.29	75.84
66.34	9 12 11	3905.93	-29.59	165.12	18.91	68.02	10 17 17	3305.9	-32.30	156.76
113.66	14 52 55	2828.86	-29.58	84.20	18.90	68.01	15 40 4	2228.9	-32.29	75.84

DIFFERENTIAL CORRECTIONS
TDE 1.1708 TRA .4565 TC3-8.8302 BAU 1.0887
RDE .2403 RRA .1565 RC3 -.7490 FAU .58504
FDE 5.0600 FRA 5.3334 FC-55.1186 BSP 20437
BDE 1.1952 BRA .4826 BC3 8.8619 FSP 10902

MID-COURSE EXECUTION ACCURACY
SGT 5890.9 SGR 739.7 SG3 3191.5
RRT .8787 RRF .8822 RTF .9809
SGB 5937.1 R23 .0362 R13 .9811
SG1 5926.7 SG2 351.0 THA 6.32

ORBIT DETERMINATION ACCURACY
ST 2241.9 SR 467.6 SS 2569.0
CRT .9947 CRS -.9885 CST -.9736
LSA 3419.5 MSA 388.5 SSA 24.6
EL1 2289.6 EL2 47.0 ALF 11.73

LAUNCH DATE NOV 20 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 702.152 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.908 GAL -.59 AZL 87.74 HCA 212.45 SMA 186.13 ECC .20623 INC 2.2559 V1 30.147
RP 217.44 LAP -1.21 LOP 270.14 VP 22.532 GAP -6.95 AZP 91.90 TAL 356.54 TAP 208.99 RCA 147.75 APO 224.52 V2 25.268
RC 281.529 GL 25.33 GP -3.89 ZAL 89.81 ZAP 76.63 ETS 178.22 ZAE 108.33 ETE 179.76 ZAC 81.11 ETC 257.42 CLP 76.59

PLANETOCENTRIC CONIC

C3 9.165 VHL 3.027 DLA 35.86 RAL 160.14 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.904 DPA 3.18 RAP 166.89 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.02	9 17 55	3894.36	-29.30	164.06	19.23	68.33	10 22 50	3294.4	-31.96	155.71
112.98	14 51 13	2839.42	-29.28	84.91	19.23	68.31	15 38 32	2239.4	-31.95	76.56
67.02	9 17 55	3894.36	-29.30	164.06	19.23	68.33	10 22 50	3294.4	-31.96	155.71
112.98	14 51 13	2839.42	-29.28	84.91	19.23	68.31	15 38 32	2239.4	-31.95	76.56
67.02	9 17 55	3894.36	-29.30	164.06	19.23	68.33	10 22 50	3294.4	-31.96	155.71
112.98	14 51 13	2839.42	-29.28	84.91	19.23	68.31	15 38 32	2239.4	-31.95	76.56

DIFFERENTIAL CORRECTIONS
TDE 1.1963 TRA .5205 TC3-9.3427 BAU 1.1479
RDE .2375 RRA .1558 RC3 -.6930 FAU .57536
FDE 4.8232 FRA 5.3781 FC-54.3493 BSP 21558
BDE 1.2197 BRA .5433 BC3 9.3683 FSP 10692

MID-COURSE EXECUTION ACCURACY
SGT 6213.1 SGR 714.5 SG3 3143.7
RRT .8636 RRF .8647 RTF .9824
SGB 6254.0 R23 .0269 R13 .9825
SG1 6243.7 SG2 358.5 THA 5.69

ORBIT DETERMINATION ACCURACY
ST 2299.6 SR 462.7 SS 2490.5
CRT .9958 CRS -.9857 CST -.9731
LSA 3398.5 MSA 392.4 SSA 25.4
EL1 2345.3 EL2 41.3 ALF 11.34

LAUNCH DATE NOV 20 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 706.289 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.910 GAL -.64 AZL 87.76 HCA 213.60 SMA 186.15 ECC .20637 INC 2.2376 V1 30.147
RP 217.09 LAP -1.24 LOP 271.29 VP 22.578 GAP -7.13 AZP 91.86 TAL 356.24 TAP 209.83 RCA 147.74 APO 224.57 V2 25.307
RC 282.801 GL 25.14 GP -3.74 ZAL 90.37 ZAP 74.86 ETS 178.15 ZAE 106.31 ETE 179.62 ZAC 81.13 ETC 257.49 CLP 74.83

PLANETOCENTRIC CONIC

C3 9.145 VHL 3.024 DLA 35.45 RAL 160.67 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.931 DPA 3.56 RAP 166.38 ECC 1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.72	9 23 57	3882.29	-28.99	162.96	19.60	68.64	10 28 40	3282.3	-31.62	154.62
112.28	14 49 28	2850.67	-28.98	85.67	19.59	68.62	15 36 59	2250.7	-31.61	77.33
67.72	9 23 57	3882.29	-28.99	162.96	19.60	68.64	10 28 40	3282.3	-31.62	154.62
112.28	14 49 28	2850.67	-28.98	85.67	19.59	68.62	15 36 59	2250.7	-31.61	77.33
67.72	9 23 57	3882.29	-28.99	162.96	19.60	68.64	10 28 40	3282.3	-31.62	154.62
112.28	14 49 28	2850.67	-28.98	85.67	19.59	68.62	15 36 59	2250.7	-31.61	77.33

DIFFERENTIAL CORRECTIONS
TDE 1.2182 TRA .5873 TC3-9.8439 BAU 1.2061
RDE .2349 RRA .1549 RC3 -.6367 FAU .56379
FDE 4.5745 FRA 5.4019 FC-53.3699 BSP 22665
BDE 1.2406 BRA .6074 BC3 9.8644 FSP 10476

MID-COURSE EXECUTION ACCURACY
SGT 6530.0 SGR 690.0 SG3 3085.0
RRT .8460 RRF .8448 RTF .9837
SGB 6566.4 R23 .0186 R13 .9838
SG1 6556.1 SG2 366.4 THA 5.12

ORBIT DETERMINATION ACCURACY
ST 2350.8 SR 458.2 SS 2405.8
CRT .9968 CRS -.9824 CST -.9725
LSA 3371.5 MSA 395.3 SSA 26.2
EL1 2394.8 EL2 36.1 ALF 11.00

LAUNCH DATE NOV 20 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 710.434 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.911 GAL -.70 AZL 87.78 HCA 214.75 SMA 186.18 ECC .20653 INC 2.2204 V1 30.147
RP 216.74 LAP -1.27 LOP 272.44 VP 22.623 GAP -7.30 AZP 91.82 TAL 355.92 TAP 210.67 RCA 147.73 APO 224.63 V2 25.346
RC 284.057 GL 24.96 GP -3.60 ZAL 90.97 ZAP 73.14 ETS 178.09 ZAE 104.33 ETE 179.50 ZAC 81.15 ETC 257.56 CLP 73.10

PLANETOCENTRIC CONIC

C3 9.131 VHL 3.022 DLA 35.04 RAL 161.24 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.960 DPA 3.92 RAP 165.91 ECC 1.1503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.45	9 30 22	3869.52	-28.67	161.81	20.00	68.95	10 34 51	3269.5	-31.27	153.49
111.55	14 47 36	2862.80	-28.66	86.49	19.99	68.93	15 35 18	2262.8	-31.26	78.17
68.45	9 30 22	3869.52	-28.67	161.81	20.00	68.95	10 34 51	3269.5	-31.27	153.49
111.55	14 47 36	2862.80	-28.66	86.49	19.99	68.93	15 35 18	2262.8	-31.26	78.17
68.45	9 30 22	3869.52	-28.67	161.81	20.00	68.95	10 34 51	3269.5	-31.27	153.49
111.55	14 47 36	2862.80	-28.66	86.49	19.99	68.93	15 35 18	2262.8	-31.26	78.17

DIFFERENTIAL CORRECTIONS
TDE 1.2367 TRA .6574 TC-10.3343 BAU 1.2635
RDE .2329 RRA .1543 RC3 -.5835 FAU .55222
FDE 4.3318 FRA 5.4323 FC-52.3605 BSP 23757
BDE 1.2584 BRA .6752 BC310.3507 FSP 10254

MID-COURSE EXECUTION ACCURACY
SGT 6842.6 SGR 668.6 SG3 3026.5
RRT .8266 RRF .8233 RTF .9848
SGB 6875.2 R23 .0120 R13 .9848
SG1 6864.9 SG2 375.0 THA 4.63

ORBIT DETERMINATION ACCURACY
ST 2396.3 SR 454.5 SS 2324.4
CRT .9974 CRS -.9783 CST -.9716
LSA 3345.4 MSA 399.0 SSA 26.9
EL1 2438.8 EL2 31.9 ALF 10.71

LAUNCH DATE NOV 20 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 714.585 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.913	GAL	-.76	AZL	87.80	HCA	215.90	SMA	186.21	ECC	.20671	INC	2.2041	V1	30.147
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.669	GAP	-7.47	AZP	91.79	TAL	355.59	TAP	211.49	RCA	147.72	APO	224.70	V2	25.385
RC	285.296	GL	24.78	GP	-3.47	ZAL	91.59	ZAP	71.45	ETS	178.03	ZAE	102.38	ETE	179.39	ZAC	81.18	ETC	257.63	CLP	71.41

PLANETOCENTRIC CONIC

C3	9.120	VHL	3.020	DLA	34.61	RAL	161.84	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	2.991	DPA	4.25	RAP	165.48	ECC	1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.21	9 37 10	3855.98	-28.35	160.60	20.44	69.25	10 41 26	3256.0	-30.90	152.29
110.79	14 45 34	2875.90	-28.34	87.38	20.43	69.24	15 33 30	2275.9	-30.90	79.07
69.21	9 37 10	3855.98	-28.35	160.60	20.44	69.25	10 41 26	3256.0	-30.90	152.29
110.79	14 45 34	2875.90	-28.34	87.38	20.43	69.24	15 33 30	2275.9	-30.90	79.07
69.21	9 37 10	3855.98	-28.35	160.60	20.44	69.25	10 41 26	3256.0	-30.90	152.29
110.79	14 45 34	2875.90	-28.34	87.38	20.43	69.24	15 33 30	2275.9	-30.90	79.07

DIFFERENTIAL CORRECTIONS

TDE	1.2514	TRA	.7301	TC-10.8104	BAU	1.3197	
RDE	.2310	RRA	.1537	RC3 -.5305	FAU	.53914	
FDE	4.0769	FRA	5.4495	FC-51.1783	BSP	24840	
BDE	1.2726	BRA	.7461	BC310.8234	FSP	10033	

MID-COURSE EXECUTION ACCURACY

SGT	7148.6	SGR	648.3	SG3	2959.3
RRT	.8047	RRF	.7992	RTF	.9857
SGB	7177.9	R23	.0064	R13	.9857
SG1	7167.7	SG2	383.9	THA	4.19

ORBIT DETERMINATION ACCURACY

ST	2435.2	SR	451.0	SS	2236.6
CRT	.9978	CRS	-.9733	CST	-.9703
LSA	3312.5	MSA	403.3	SSA	27.6
EL1	2476.5	EL2	29.1	ALF	10.47

LAUNCH DATE NOV 20 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 718.744 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.915	GAL	-.82	AZL	87.81	HCA	217.06	SMA	186.24	ECC	.20691	INC	2.1885	V1	30.147
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.715	GAP	-7.63	AZP	91.75	TAL	355.24	TAP	212.31	RCA	147.70	APO	224.78	V2	25.423
RC	286.520	GL	24.60	GP	-3.34	ZAL	92.25	ZAP	69.80	ETS	177.98	ZAE	100.47	ETE	179.30	ZAC	81.20	ETC	257.69	CLP	69.76

PLANETOCENTRIC CONIC

C3	9.115	VHL	3.019	DLA	34.18	RAL	162.47	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.025	DPA	4.56	RAP	165.08	ECC	1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.00	9 44 23	3841.53	-28.01	159.33	20.91	69.56	10 48 25	3241.5	-30.53	151.04
110.00	14 43 22	2890.12	-28.00	88.35	20.91	69.55	15 31 32	2290.1	-30.52	80.06
70.00	9 44 23	3841.53	-28.01	159.33	20.91	69.56	10 48 25	3241.5	-30.53	151.04
110.00	14 43 22	2890.12	-28.00	88.35	20.91	69.55	15 31 32	2290.1	-30.52	80.06
110.00	14 46 23	2880.91	-28.22	87.72	21.00	69.86	15 34 24	2280.9	-30.70	79.40
110.00	14 40 32	2898.73	-27.80	88.93	20.82	69.25	15 28 51	2298.7	-30.36	80.67

DIFFERENTIAL CORRECTIONS

TDE	1.2615	TRA	.8051	TC-11.2783	BAU	1.3756	
RDE	.2295	RRA	.1532	RC3 -.4810	FAU	.52656	
FDE	3.8262	FRA	5.4605	FC-50.0142	BSP	25861	
BDE	1.2822	BRA	.8196	BC311.2886	FSP	9760	

MID-COURSE EXECUTION ACCURACY

SGT	7451.0	SGR	630.5	SG3	2893.6
RRT	.7811	RRF	.7736	RTF	.9865
SGB	7477.7	R23	.0014	R13	.9865
SG1	7467.3	SG2	392.9	THA	3.79

ORBIT DETERMINATION ACCURACY

ST	2465.8	SR	448.2	SS	2150.1
CRT	.9979	CRS	-.9674	CST	-.9688
LSA	3276.8	MSA	407.4	SSA	28.3
EL1	2506.0	EL2	28.3	ALF	10.28

LAUNCH DATE NOV 20 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 722.910 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.917	GAL	-.88	AZL	87.83	HCA	218.23	SMA	186.28	ECC	.20714	INC	2.1737	V1	30.147
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.760	GAP	-7.80	AZP	91.71	TAL	354.88	TAP	213.11	RCA	147.69	APO	224.86	V2	25.461
RC	287.729	GL	24.43	GP	-3.22	ZAL	92.93	ZAP	68.19	ETS	177.93	ZAE	98.59	ETE	179.21	ZAC	81.23	ETC	257.75	CLP	68.15

PLANETOCENTRIC CONIC

C3	9.114	VHL	3.019	DLA	33.74	RAL	163.13	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.061	DPA	4.85	RAP	164.71	ECC	1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.84	9 52 5	3825.97	-27.67	157.97	21.42	69.88	10 55 51	3226.0	-30.15	149.70
109.16	14 40 54	2905.64	-27.66	89.41	21.42	69.86	15 29 19	2305.6	-30.14	81.14
70.84	9 52 5	3825.97	-27.67	157.97	21.42	69.88	10 55 51	3226.0	-30.15	149.70
109.16	14 40 54	2905.64	-27.66	89.41	21.42	69.86	15 29 19	2305.6	-30.14	81.14
110.00	15 27 46	2762.35	-30.72	79.39	22.56	74.20	16 13 49	2162.4	-32.57	70.67
110.00	14 4 23	3017.25	-24.69	96.74	20.07	65.57	14 54 40	2417.3	-27.77	88.93

DIFFERENTIAL CORRECTIONS

TDE	1.2681	TRA	.8847	TC-11.7263	BAU	1.4297	
RDE	.2284	RRA	.1530	RC3 -.4321	FAU	.51287	
FDE	3.5775	FRA	5.4796	FC-48.7184	BSP	26890	
BDE	1.2885	BRA	.8978	BC311.7342	FSP	9515	

MID-COURSE EXECUTION ACCURACY

SGT	7745.8	SGR	614.7	SG3	2823.3
RRT	.7551	RRF	.7460	RTF	.9872
SGB	7770.1	R23	-.0022	R13	.9872
SG1	7759.7	SG2	402.2	THA	3.44

ORBIT DETERMINATION ACCURACY

ST	2490.9	SR	445.9	SS	2065.0
CRT	.9977	CRS	-.9600	CST	-.9668
LSA	3239.8	MSA	413.2	SSA	29.0
EL1	2530.3	EL2	30.0	ALF	10.13

LAUNCH DATE NOV 20 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 727.083 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.919	GAL	-.94	AZL	87.84	HCA	219.39	SMA	186.32	ECC	.20740	INC	2.1597	V1	30.147
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.805	GAP	-7.95	AZP	91.67	TAL	354.51	TAP	213.90	RCA	147.68	APO	224.96	V2	25.498
RC	288.924	GL	24.25	GP	-3.11	ZAL	93.64	ZAP	66.62	ETS	177.89	ZAE	96.76	ETE	179.14	ZAC	81.26	ETC	257.81	CLP	66.58

PLANETOCENTRIC CONIC

C3	9.118	VHL	3.020	DLA	33.29	RAL	163.81	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.100	DPA	5.11	RAP	164.39	ECC	1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.73	10 0 19	3809.19	-27.31	156.52	21.97	70.19	11 3 48	3209.2	-29.75	148.27
108.27	14 38 8	2922.60	-27.30	90.58	21.96	70.17	15 26 50	2322.6	-29.74	82.32
71.73	10 0 19	3809.19	-27.31	156.52	21.97	70.19	11 3 48	3209.2	-29.75	148.27
108.27	14 38 8	2922.60	-27.30	90.58	21.96	70.17	15 26 50	2322.6	-29.74	82.32
110.00	15 47 59	2708.36	-31.65	75.46	23.47	76.36	16 33 7	2108.4	-33.20	66.58
110.00	13 49 38	3071.43	-23.12	100.17	20.02	64.09	14 40 49	2471.4	-26.41	92.55

DIFFERENTIAL CORRECTIONS

TDE	1.2714	TRA	.9670	TC-12.1578	BAU	1.4828	
RDE	.2276	RRA	.1528	RC3 -.3853	FAU	.49903	
FDE	3.3333	FRA	5.4872	FC-47.3818	BSP	27892	
BDE	1.2916	BRA	.9790	BC312.1639	FSP	9256	

MID-COURSE EXECUTION ACCURACY

SGT	8034.1	SGR	600.7	SG3	2751.2
RRT	.7275	RRF	.7167	RTF	.9878
SGB	8056.6	R23	-.0057	R13	.9877
SG1	8046.1	SG2	411.5	THA	3.12

ORBIT DETERMINATION ACCURACY

ST	2510.4	SR	444.2	SS	1980.6
CRT	.9969	CRS	-.9514	CST	-.9645
LSA	3201.0	MSA	418.7	SSA	29.6
EL1	2549.2	EL2	34.1	ALF	10.01

LAUNCH DATE NOV 20 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 731.263 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.922	GAL	-1.01	AZL	87.85	HCA	220.56	SMA	186.36	ECC	.20767	INC	2.1463
RP	215.05	LAP	-1.40	LOP	278.26	VP	22.850	GAP	-8.11	AZP	91.63	TAL	354.12	TAP	214.68	RCA	147.66	APO	225.06
RC	290.105	GL	24.08	GP	-3.00	ZAL	94.38	ZAP	65.09	ETS	177.85	ZAE	94.96	ETE	179.08	ZAC	81.30	ETC	257.86

V1	30.147	V2	25.535	CLP	65.05														

PLANETOCENTRIC CONIC

C3	9.127	VHL	3.021	DLA	32.82	RAL	164.52	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	3.140	DPA	5.36	RAP	164.10

ECC	1.1502	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		72.67	10 9 8	3790.91	-26.94	154.97	22.55	70.50	11 12 19	3190.9	-29.35	146.73							
		107.33	14 34 58	2941.28	-26.93	91.87	22.54	70.49	15 24 0	2341.3	-29.34	83.63							
		72.67	10 9 8	3790.91	-26.94	154.97	22.55	70.50	11 12 19	3190.9	-29.35	146.73							
		107.33	14 34 58	2941.28	-26.93	91.87	22.54	70.49	15 24 0	2341.3	-29.34	83.63							
		110.00	16 4 27	2665.93	-32.29	72.32	24.27	78.12	16 48 53	2065.9	-33.59	63.33							
		110.00	13 38 50	3114.26	-21.82	102.81	20.14	63.01	14 30 44	2514.3	-25.26	95.35							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2704	TRA	1.0526	TC-12.5723	BAU 1.5347	SGT	8316.0	SGR	588.4	SG3	2677.0	ST	2522.9	SR	442.9	SS	1895.9
RDE	.2271	RRA	.1525	RC3 -.3402	FAU .48494	RRT	.6983	RRF	.6856	RTF	.9883	CRT	.9957	CRS	-.9411	CST	-.9618
FDE	3.0906	FRA	5.4847	FC-45.9967	BSP 28875	SGB	8336.8	R23	-.0089	R13	.9883	LSA	3158.3	MSA	424.2	SSA	30.1
BDE	1.2906	BRA	1.0636	BC312.5769	FSP 9005	SG1	8326.2	SG2	420.6	THA	2.84	EL1	2561.1	EL2	40.3	ALF	9.92

LAUNCH DATE NOV 20 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 735.450 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.924	GAL	-1.08	AZL	87.87	HCA	221.74	SMA	186.41	ECC	.20797	INC	2.1334
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.895	GAP	-8.26	AZP	91.59	TAL	353.71	TAP	215.45	RCA	147.64	APO	225.17
RC	291.272	GL	23.91	GP	-2.90	ZAL	95.15	ZAP	63.60	ETS	177.82	ZAE	93.20	ETE	179.02	ZAC	81.34	ETC	257.90

V1	30.147	V2	25.572	CLP	63.57														

PLANETOCENTRIC CONIC

C3	9.142	VHL	3.024	DLA	32.35	RAL	165.26	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	3.182	DPA	5.58	RAP	163.85

ECC	1.1505	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		73.67	10 18 38	3770.83	-26.56	153.28	23.16	70.82	11 21 29	3170.8	-28.92	145.06							
		106.33	14 31 20	2961.98	-26.55	93.30	23.15	70.80	15 20 42	2362.0	-28.91	85.09							
		73.67	10 18 38	3770.83	-26.56	153.28	23.16	70.82	11 21 29	3170.8	-28.92	145.06							
		106.33	14 31 20	2961.98	-26.55	93.30	23.15	70.80	15 20 42	2362.0	-28.91	85.09							
		110.00	16 19 4	2629.32	-32.77	69.57	25.04	79.68	17 2 54	2029.3	-33.85	60.50							
		110.00	13 30 4	3151.50	-20.66	105.07	20.36	62.14	14 22 36	2551.5	-24.22	97.74							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2645	TRA	1.1418	TC-12.9711	BAU 1.5858	SGT	8592.3	SGR	578.0	SG3	2602.9	ST	2527.3	SR	442.1	SS	1814.2
RDE	.2269	RRA	.1525	RC3 -.2970	FAU .47081	RRT	.6675	RRF	.6533	RTF	.9888	CRT	.9938	CRS	-.9286	CST	-.9587
FDE	2.8540	FRA	5.4865	FC-44.5838	BSP 29817	SGB	8611.7	R23	-.0112	R13	.9888	LSA	3112.5	MSA	430.6	SSA	30.6
BDE	1.2847	BRA	1.1519	BC312.9745	FSP 8736	SG1	8600.9	SG2	430.0	THA	2.58	EL1	2565.3	EL2	48.3	ALF	9.86

LAUNCH DATE NOV 20 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 739.639 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.927	GAL	-1.15	AZL	87.88	HCA	222.92	SMA	186.46	ECC	.20830	INC	2.1211
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.940	GAP	-8.41	AZP	91.55	TAL	353.29	TAP	216.21	RCA	147.62	APO	225.30
RC	292.426	GL	23.74	GP	-2.80	ZAL	95.95	ZAP	62.16	ETS	177.79	ZAE	91.49	ETE	178.97	ZAC	81.38	ETC	257.94

V1	30.147	V2	25.608	CLP	62.12														

PLANETOCENTRIC CONIC

C3	9.163	VHL	3.027	DLA	31.85	RAL	166.02	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	3.227	DPA	5.77	RAP	163.64

ECC	1.1508	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		74.76	10 28 57	3748.58	-26.16	151.43	23.80	71.14	11 31 25	3148.6	-28.49	143.23							
		105.24	14 27 6	2985.09	-26.15	94.91	23.80	71.13	15 16 51	2385.1	-28.48	86.71							
		74.76	10 28 57	3748.58	-26.16	151.43	23.80	71.14	11 31 25	3148.6	-28.49	143.23							
		105.24	14 27 6	2985.09	-26.15	94.91	23.80	71.13	15 16 51	2385.1	-28.48	86.71							
		110.00	16 32 36	2596.24	-33.14	67.06	25.78	81.12	17 15 52	1996.2	-34.02	57.93							
		110.00	13 22 37	3185.44	-19.56	107.10	20.66	61.39	14 15 43	2585.4	-23.23	99.88							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2738	TRA	1.2536	TC-13.2730	BAU 1.6262	SGT	8842.3	SGR	571.5	SG3	2516.2	ST	2564.0	SR	444.0	SS	1779.2
RDE	.2282	RRA	.1537	RC3 -.2494	FAU .45176	RRT	.6355	RRF	.6228	RTF	.9890	CRT	.9914	CRS	-.9174	CST	-.9572
FDE	2.7070	FRA	5.5705	FC-42.6854	BSP 31198	SGB	8860.7	R23	-.0094	R13	.9890	LSA	3121.8	MSA	436.1	SSA	30.9
BDE	1.2941	BRA	1.2630	BC313.2753	FSP 8655	SG1	8849.7	SG2	440.9	THA	2.36	EL1	2601.6	EL2	57.2	ALF	9.75

LAUNCH DATE NOV 20 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 743.841 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.930	GAL	-1.23	AZL	87.89	HCA	224.10	SMA	186.51	ECC	.20865	INC	2.1094
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.984	GAP	-8.56	AZP	91.52	TAL	352.86	TAP	216.96	RCA	147.59	APO	225.43
RC	293.566	GL	23.56	GP	-2.70	ZAL	96.77	ZAP	60.74	ETS	177.76	ZAE	89.80	ETE	178.93	ZAC	81.43	ETC	257.97

V1	30.147	V2	25.644	CLP	60.71														

PLANETOCENTRIC CONIC

C3	9.189	VHL	3.031	DLA	31.35	RAL	166.80	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	3.273	DPA	5.95	RAP	163.47

ECC	1.1512	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		75.94	10 40 14	3723.54	-25.75	149.38	24.47	71.47	11 42 17	3123.5	-28.04	141.20							
		104.06	14 22 4	3011.25	-25.74	96.74	24.47	71.45	15 12 15	2411.3	-28.03	88.56							
		75.94	10 40 14	3723.54	-25.75	149.38	24.47	71.47	11 42 17	3123.5	-28.04	141.20							
		104.06	14 22 4	3011.25	-25.74	96.74	24.47	71.45	15 12 15	2411.3	-28.03	88.56							
		110.00	16 45 20	2565.75	-33.44	64.73	26.52	82.47	17 28 6	1965.8	-34.12	55.56							
		110.00	13 16 8	3217.04	-18.52	108.96	21.02	60.74	14 9 45	2617.0	-22.28	101.84							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2536	TRA	1.3436	TC-13.6557	BAU 1.6778	SGT	9110.4	SGR	563.3	SG3	2444.3	ST	2543.9	SR	442.8	SS	1681.7
RDE	.2280	RRA	.1533	RC3 -.2119	FAU .43919	RRT	.6028	RRF	.5876	RTF	.9894	CRT	.9879	CRS	-.8986	CST	-.9520
FDE	2.4427	FRA	5.5290	FC-41.3777	BSP 31942	SGB	9127.8	R23	-.0129	R13	.9894	LSA	3049.0	MSA	445.2	SSA	31.4
BDE	1.2741	BRA	1.3523	BC313.6573	FSP 8316	SG1	9116.7	SG2	449.1	THA	2.14	EL1	2581.3	EL2	67.8	ALF	9.76

LAUNCH DATE NOV 20 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 748.048 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.933	GAL	-1.31	AZL	87.90	HCA	225.28	SMA	186.57	ECC	.20903	INC	2.0981
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.028	GAP	-8.71	AZP	91.48	TAL	352.41	TAP	217.70	RCA	147.57	APO	225.56
RC	294.693	GL	23.39	GP	-2.61	ZAL	97.62	ZAP	59.37	ETS	177.73	ZAE	88.16	ETE	178.89	ZAC	81.48	ETC	258.00

V1 30.147 V2 25.679 CLP 59.34

PLANETOCENTRIC CONIC

C3 9.222 VHL 3.037 DLA 30.84 RAL 167.60 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.321 DPA 6.11 RAP 163.34 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.25	10 52 42	3695.00	-25.33	147.07	25.18	71.79	11 54 17	3095.0	-27.58	138.91
102.75	14 16 0	3041.17	-25.32	98.84	25.17	71.78	15 6 41	2441.2	-27.57	90.68
77.25	10 52 42	3695.00	-25.33	147.07	25.18	71.79	11 54 17	3095.0	-27.58	138.91
102.75	14 16 0	3041.17	-25.32	98.84	25.17	71.78	15 6 41	2441.2	-27.57	90.68
110.00	16 57 33	2537.07	-33.68	62.53	27.25	83.75	17 39 50	1937.1	-34.17	53.32
110.00	13 10 20	3247.10	-17.51	110.71	21.44	60.16	14 4 27	2647.1	-21.35	103.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2312	TRA	1.4389	TC-14.0120	BAU	1.7276	SGT	9371.0	SGR	556.9	SG3	2370.8	ST	2522.1	SR	442.6	SS 1595.5
RDE	.2284	RRA	.1530	RC3 -.1751	FAU	.42596	RRT	.5690	RRF	.5519	RTF	.9898	CRT	.9832	CRS	-.8770	CST -.9465
FDE	2.2020	FRA	5.4945	FC-39.9896	BSP	32695	SGB	9387.5	R23	-.0154	R13	.9898	LSA	2982.6	MSA	453.9	SSA 31.8
BDE	1.2522	BRA	1.4470	BC314.0131	FSP	8002	SG1	9376.3	SG2	457.7	THA	1.94	EL1	2559.4	EL2	79.6	ALF 9.80

LAUNCH DATE NOV 20 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 752.260 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.937	GAL	-1.39	AZL	87.91	HCA	226.47	SMA	186.62	ECC	.20943	INC	2.0872
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.072	GAP	-8.85	AZP	91.44	TAL	351.95	TAP	218.42	RCA	147.54	APO	225.71
RC	295.805	GL	23.21	GP	-2.53	ZAL	98.50	ZAP	58.04	ETS	177.70	ZAE	86.55	ETE	178.86	ZAC	81.54	ETC	258.02

V1 30.147 V2 25.714 CLP 58.01

PLANETOCENTRIC CONIC

C3 9.261 VHL 3.043 DLA 30.31 RAL 168.43 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.371 DPA 6.24 RAP 163.24 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.72	11 6 46	3661.66	-24.89	144.42	25.91	72.13	12 7 48	3061.7	-27.10	136.28
101.28	14 8 31	3076.16	-24.88	101.30	25.91	72.11	14 59 47	2476.2	-27.09	93.16
78.72	11 6 46	3661.66	-24.89	144.42	25.91	72.13	12 7 48	3061.7	-27.10	136.28
101.28	14 8 31	3076.16	-24.88	101.30	25.91	72.11	14 59 47	2476.2	-27.09	93.16
110.00	17 9 21	2509.78	-33.86	60.42	27.99	84.99	17 51 11	1909.8	-34.18	51.19
110.00	13 5 7	3276.04	-16.53	112.37	21.91	59.64	13 59 43	2676.0	-20.43	105.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2061	TRA	1.5403	TC-14.3380	BAU	1.7753	SGT	9622.5	SGR	551.9	SG3	2296.4	ST	2498.1	SR	442.8	SS 1515.5
RDE	.2291	RRA	.1530	RC3 -.1394	FAU	.41235	RRT	.5349	RRF	.5161	RTF	.9901	CRT	.9773	CRS	-.8512	CST -.9400
FDE	1.9714	FRA	5.4676	FC-38.5479	BSP	33481	SGB	9638.4	R23	-.0175	R13	.9901	LSA	2918.3	MSA	464.5	SSA 32.1
BDE	1.2277	BRA	1.5479	BC314.3386	FSP	7715	SG1	9627.1	SG2	466.1	THA	1.76	EL1	2535.3	EL2	92.5	ALF 9.84

LAUNCH DATE NOV 20 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 756.478 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.940	GAL	-1.48	AZL	87.92	HCA	227.66	SMA	186.69	ECC	.20986	INC	2.0767
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.115	GAP	-8.99	AZP	91.40	TAL	351.47	TAP	219.14	RCA	147.51	APO	225.86
RC	296.904	GL	23.03	GP	-2.44	ZAL	99.40	ZAP	56.75	ETS	177.68	ZAE	84.98	ETE	178.83	ZAC	81.60	ETC	258.03

V1 30.147 V2 25.748 CLP 56.71

PLANETOCENTRIC CONIC

C3 9.307 VHL 3.051 DLA 29.76 RAL 169.28 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.423 DPA 6.36 RAP 163.18 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.44	11 23 5	3621.37	-24.44	141.26	26.67	72.46	12 23 27	3021.4	-26.61	133.14
99.56	13 58 57	3118.39	-24.43	104.28	26.67	72.45	14 50 56	2518.4	-26.60	96.17
100.00	14 25 52	3032.40	-25.99	98.41	27.18	74.68	15 16 24	2432.4	-27.84	90.09
100.00	13 38 52	3182.58	-22.90	108.49	26.10	70.24	14 31 54	2582.6	-25.38	100.57
110.00	17 20 52	2483.59	-34.00	58.39	28.73	86.18	18 2 16	1883.6	-34.15	49.14
110.00	13 0 21	3304.16	-15.55	113.96	22.43	59.17	13 55 25	2704.2	-19.52	107.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1783	TRA	1.6468	TC-14.6374	BAU	1.8213	SGT	9866.8	SGR	548.4	SG3	2221.2	ST	2472.1	SR	443.6	SS 1442.9
RDE	.2302	RRA	.1531	RC3 -.1047	FAU	.39843	RRT	.5004	RRF	.4802	RTF	.9903	CRT	.9697	CRS	-.8210	CST -.9328
FDE	1.7543	FRA	5.4440	FC-37.0613	BSP	34274	SGB	9882.0	R23	-.0190	R13	.9903	LSA	2857.0	MSA	476.0	SSA 32.4
BDE	1.2006	BRA	1.6540	BC314.6377	FSP	7444	SG1	9870.6	SG2	474.6	THA	1.60	EL1	2509.3	EL2	106.7	ALF 9.89

LAUNCH DATE NOV 20 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 760.701 EARTH TO MARS

RL	147.79	LAL	.00	LOL	57.71	VL	32.944	GAL	-1.56	AZL	87.93	HCA	228.86	SMA	186.75	ECC	.21031	INC	2.0665
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.158	GAP	-9.13	AZP	91.36	TAL	350.98	TAP	219.84	RCA	147.47	APO	226.03
RC	297.989	GL	22.84	GP	-2.36	ZAL	100.33	ZAP	55.49	ETS	177.66	ZAE	83.44	ETE	178.81	ZAC	81.67	ETC	258.04

V1 30.147 V2 25.782 CLP 55.46

PLANETOCENTRIC CONIC

C3 9.361 VHL 3.060 DLA 29.20 RAL 170.14 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.477 DPA 6.45 RAP 163.15 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.55	11 43 4	3569.49	-23.97	137.26	27.46	72.80	12 42 34	2969.5	-26.10	129.16
97.45	13 45 52	3172.50	-23.96	108.13	27.46	72.79	14 38 45	2572.5	-26.09	100.04
100.00	14 59 44	2935.69	-27.55	91.65	28.50	77.91	15 48 40	2335.7	-28.94	83.12
100.00	13 11 54	3281.53	-20.48	114.84	26.11	67.73	14 6 35	2681.5	-23.32	107.20
110.00	17 32 9	2458.31	-34.09	56.42	29.49	87.34	18 13 7	1858.3	-34.08	47.17
110.00	12 55 58	3331.68	-14.58	115.51	23.00	58.74	13 51 30	2731.7	-18.62	108.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1467	TRA	1.7582	TC-14.9088	BAU	1.8658	SGT10102.6	SGR	546.0	SG3	2146.0	ST	2442.6	SR	444.8	SS	1376.0
RDE	.2316	RRA	.1533	RC3 -.0714	FAU	.38447	RRT	.4659	RRF	.4446	RTF	.9906	CRT	.9603	CRS	-.7861	CST -.9247
FDE	1.5474	FRA	5.4185	FC-35.5583	BSP	35057	SGB10117.4	R23	-.0203	R13	.9905	LSA	2796.2	MSA	488.2	SSA	32.6
BDE	1.1698	BRA	1.7648	BC314.9090	FSP	7181	SG110105.8	SG2	482.9	THA	1.45	EL1	2479.8	EL2	122.2	ALF	9.94

LAUNCH DATE NOV 20 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 764.930 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.948 GAL -1.65 AZL 87.94 HCA 230.05 SMA 186.82 ECC .21080 INC 2.0567 V1 30.147
RP 212.57 LAP -1.58 LOP 287.75 VP 23.200 GAP -9.26 AZP 91.32 TAL 350.48 TAP 220.53 RCA 147.44 APO 226.20 V2 25.815
RC 299.061 GL 22.65 GP -2.29 ZAL 101.29 ZAP 54.27 ETS 177.64 ZAE 81.94 ETE 178.79 ZAC 81.74 ETC 258.05 CLP 54.24

PLANETOCENTRIC CONIC

C3 9.422 VHL 3.070 DLA 28.63 RAL 171.02 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.532 DPA 6.53 RAP 163.16 ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.61	12 11 22	3490.90	-23.49	131.32	28.28	73.14	13 9 33	2890.9	-25.57	123.24
94.39	13 24 37	3253.63	-23.48	113.94	28.28	73.13	14 18 51	2653.6	-25.57	105.87
100.00	15 22 15	2875.17	-28.34	87.32	29.57	80.06	16 10 10	2275.2	-29.42	78.68
100.00	12 56 25	3344.59	-18.80	118.78	26.43	66.32	13 52 10	2744.6	-21.84	111.30
110.00	17 43 14	2433.77	-34.15	54.50	30.25	88.48	18 23 48	1833.8	-33.99	45.26
110.00	12 51 55	3358.77	-13.62	117.02	23.60	58.34	13 47 54	2758.8	-17.71	110.29

DIFFERENTIAL CORRECTIONS
TDE 1.1121 TRA 1.8747 TC-15.1551 BAU 1.9090
RDE .2333 RRA .1535 RC3 -.0396 FAU .37070
FDE 1.3554 FRA 5.3949 FC-34.0623 BSP 35839
BDE 1.1364 BRA 1.8810 BC315.1552 FSP 6932

MID-COURSE EXECUTION ACCURACY
SGT10332.6 SGR 544.8 SG3 2072.3
RRT .4320 RRF .4098 RTF .9908
SGB10347.0 R23 -.0212 R13 .9907
SG110335.3 SG2 491.2 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 2412.0 SR 446.4 SS 1317.4
CRT .9486 CRS -.7468 CST -.9164
LSA 2738.9 MSA 500.3 SSA 32.7
EL1 2449.1 EL2 139.1 ALF 9.99

LAUNCH DATE NOV 20 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 769.164 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.952 GAL -1.75 AZL 87.95 HCA 231.26 SMA 186.89 ECC .21131 INC 2.0472 V1 30.147
RP 212.29 LAP -1.60 LOP 288.95 VP 23.242 GAP -9.40 AZP 91.28 TAL 349.96 TAP 221.21 RCA 147.40 APO 226.38 V2 25.847
RC 300.120 GL 22.45 GP -2.22 ZAL 102.27 ZAP 53.09 ETS 177.62 ZAE 80.48 ETE 178.77 ZAC 81.81 ETC 258.05 CLP 53.05

PLANETOCENTRIC CONIC

C3 9.491 VHL 3.081 DLA 28.04 RAL 171.92 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.588 DPA 6.59 RAP 163.20 ECC 1.1562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 25	3260.55	-25.21	114.96	29.78	76.65	14 20 46	2660.6	-26.80	106.65
90.00	12 16 44	3486.86	-20.80	130.06	28.36	70.34	13 14 51	2886.9	-23.29	122.28
100.00	15 41 7	2826.31	-28.86	83.78	30.56	81.85	16 28 14	2226.3	-29.69	75.08
100.00	12 44 43	3396.33	-17.36	121.94	26.88	65.27	13 41 20	2796.3	-20.55	114.60
110.00	17 54 11	2409.87	-34.18	52.64	31.03	89.58	18 34 20	1809.9	-33.86	43.41
110.00	12 48 10	3385.54	-12.66	118.50	24.25	57.98	13 44 35	2785.5	-16.80	111.84

DIFFERENTIAL CORRECTIONS
TDE 1.0728 TRA 1.9956 TC-15.3783 BAU 1.9514
RDE .2353 RRA .1537 RC3 -.0093 FAU .35706
FDE 1.1660 FRA 5.3680 FC-32.5691 BSP 36585
BDE 1.0983 BRA 2.0015 BC315.3783 FSP 6677

MID-COURSE EXECUTION ACCURACY
SGT10556.8 SGR 544.4 SG3 1999.1
RRT .3983 RRF .3752 RTF .9909
SGB10570.8 R23 -.0221 R13 .9909
SG110559.0 SG2 499.2 THA 1.18

ORBIT DETERMINATION ACCURACY
ST 2377.6 SR 448.2 SS 1262.4
CRT .9343 CRS -.7006 CST -.9068
LSA 2679.8 MSA 514.5 SSA 32.8
EL1 2414.3 EL2 157.4 ALF 10.03

LAUNCH DATE NOV 20 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 773.403 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.956 GAL -1.84 AZL 87.96 HCA 232.46 SMA 186.96 ECC .21185 INC 2.0380 V1 30.147
RP 212.01 LAP -1.62 LOP 290.15 VP 23.283 GAP -9.53 AZP 91.24 TAL 349.42 TAP 221.88 RCA 147.35 APO 226.57 V2 25.879
RC 301.167 GL 22.25 GP -2.15 ZAL 103.28 ZAP 51.94 ETS 177.60 ZAE 79.04 ETE 178.76 ZAC 81.89 ETC 258.04 CLP 51.91

PLANETOCENTRIC CONIC

C3 9.569 VHL 3.093 DLA 27.43 RAL 172.84 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.647 DPA 6.63 RAP 163.28 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 14	3173.22	-26.44	108.86	31.04	79.47	14 50 7	2573.2	-27.62	100.39
90.00	11 53 14	3577.41	-18.62	135.81	28.59	68.27	12 52 51	2977.4	-21.41	128.25
100.00	15 58 3	2783.76	-29.23	80.67	31.51	83.45	16 44 26	2183.8	-29.83	71.92
100.00	12 35 6	3442.09	-16.03	124.69	27.41	64.43	13 32 28	2842.1	-19.34	117.46
110.00	18 4 59	2386.52	-34.18	50.81	31.81	90.66	18 44 45	1786.5	-33.71	41.60
110.00	12 44 39	3412.10	-11.70	119.95	24.94	57.65	13 41 31	2812.1	-15.88	113.35

DIFFERENTIAL CORRECTIONS
TDE 1.0313 TRA 2.1221 TC-15.5701 BAU 1.9919
RDE .2376 RRA .1539 RC3 .0195 FAU .34360
FDE .9898 FRA 5.3407 FC-31.0851 BSP 37349
BDE 1.0583 BRA 2.1277 BC315.5701 FSP 6440

MID-COURSE EXECUTION ACCURACY
SGT10772.9 SGR 544.9 SG3 1927.0
RRT .3657 RRF .3418 RTF .9910
SGB10786.7 R23 -.0230 R13 .9910
SG110774.8 SG2 507.1 THA 1.06

ORBIT DETERMINATION ACCURACY
ST 2344.6 SR 450.4 SS 1215.1
CRT .9169 CRS -.6497 CST -.8970
LSA 2625.9 MSA 528.9 SSA 32.8
EL1 2380.9 EL2 177.0 ALF 10.05

LAUNCH DATE NOV 20 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 777.646 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.961 GAL -1.94 AZL 87.97 HCA 233.67 SMA 187.04 ECC .21242 INC 2.0291 V1 30.147
RP 211.73 LAP -1.63 LOP 291.36 VP 23.324 GAP -9.66 AZP 91.20 TAL 348.87 TAP 222.54 RCA 147.31 APO 226.77 V2 25.911
RC 302.203 GL 22.05 GP -2.08 ZAL 104.30 ZAP 50.82 ETS 177.58 ZAE 77.64 ETE 178.74 ZAC 81.97 ETC 258.03 CLP 50.79

PLANETOCENTRIC CONIC

C3 9.657 VHL 3.108 DLA 26.82 RAL 173.77 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.706 DPA 6.65 RAP 163.39 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 45	3112.68	-27.12	104.56	32.13	81.52	15 11 38	2512.7	-28.01	96.01
90.00	11 38 7	3641.52	-16.96	139.78	29.05	66.98	12 38 49	3041.5	-19.93	132.37
100.00	16 13 43	2745.30	-29.50	77.85	32.45	84.91	16 59 28	2145.3	-29.89	69.06
100.00	12 26 51	3484.13	-14.78	127.19	28.01	63.72	13 24 55	2884.1	-18.19	120.06
110.00	18 15 41	2363.67	-34.15	49.03	32.62	91.72	18 55 4	1763.7	-33.53	39.84
110.00	12 41 22	3438.53	-10.73	121.39	25.66	57.35	13 38 41	2838.5	-14.96	114.84

DIFFERENTIAL CORRECTIONS
TDE .9847 TRA 2.2525 TC-15.7390 BAU 2.0319
RDE .2401 RRA .1541 RC3 .0468 FAU .33039
FDE .8207 FRA 5.3080 FC-29.6195 BSP 38084
BDE 1.0135 BRA 2.2578 BC315.7390 FSP 6208

MID-COURSE EXECUTION ACCURACY
SGT10983.5 SGR 546.0 SG3 1855.9
RRT .3335 RRF .3090 RTF .9912
SGB10997.1 R23 -.0236 R13 .9912
SG110985.0 SG2 514.7 THA .95

ORBIT DETERMINATION ACCURACY
ST 2308.9 SR 452.9 SS 1173.0
CRT .8959 CRS -.5929 CST -.8870
LSA 2572.1 MSA 543.7 SSA 32.7
EL1 2344.6 EL2 198.2 ALF 10.04

LAUNCH DATE NOV 20 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 781.892 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.965 GAL -2.05 AZL 87.98 HCA 234.88 SMA 187.11 ECC .21302 INC 2.0204 V1 30.147
RP 211.47 LAP -1.65 LOP 292.57 VP 23.365 GAP -9.79 AZP 91.16 TAL 348.31 TAP 223.19 RCA 147.25 APO 226.97 V2 25.941
RC 303.228 GL 21.83 GP -2.02 ZAL 105.35 ZAP 49.74 ETS 177.56 ZAE 76.28 ETE 178.74 ZAC 82.06 ETC 258.02 CLP 49.71

PLANETOCENTRIC CONIC

C3 9.754 VHL 3.123 DLA 26.18 RAL 174.71 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.767 DPA 6.66 RAP 163.54 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 2	3062.72	-27.57	100.97	33.17	83.27	15 30 4	2462.7	-28.22	92.37
90.00	11 26 23	3695.43	-15.49	143.06	29.61	66.00	12 27 58	3095.4	-18.61	135.77
100.00	16 28 31	2709.71	-29.68	75.22	33.39	86.28	17 13 41	2109.7	-29.88	66.42
100.00	12 19 34	3523.67	-13.58	129.50	28.67	63.11	13 18 18	2923.7	-17.08	122.46
110.00	18 26 17	2341.24	-34.09	47.28	33.43	92.75	19 5 19	1741.2	-33.33	38.12
110.00	12 38 17	3464.91	-9.76	122.81	26.42	57.08	13 36 2	2864.9	-14.03	116.32

DIFFERENTIAL CORRECTIONS
TDE .9477 TRA 2.4019 TC-15.8276 BAU 2.0639
RDE .2432 RRA .1546 RC3 .0741 FAU .31576
FDE .6919 FRA 5.3066 FC-28.0261 BSP 39129
BDE .9784 BRA 2.4069 BC315.8277 FSP 6048

MID-COURSE EXECUTION ACCURACY
SGT11174.6 SGR 548.7 SG3 1782.8
RRT .3050 RRF .2812 RTF .9912
SGB11188.1 R23 -.0228 R13 .9912
SG111175.9 SG2 522.5 THA .86

ORBIT DETERMINATION ACCURACY
ST 2298.0 SR 456.2 SS 1149.9
CRT .8729 CRS -.5425 CST -.8816
LSA 2549.9 MSA 555.1 SSA 32.6
EL1 2332.6 EL2 219.3 ALF 9.92

LAUNCH DATE NOV 20 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 786.147 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.970 GAL -2.15 AZL 87.99 HCA 236.09 SMA 187.19 ECC .21365 INC 2.0119 V1 30.147
RP 211.20 LAP -1.67 LOP 293.79 VP 23.404 GAP -9.92 AZP 91.12 TAL 347.73 TAP 223.82 RCA 147.20 APO 227.19 V2 25.971
RC 304.242 GL 21.61 GP -1.96 ZAL 106.42 ZAP 48.68 ETS 177.55 ZAE 74.94 ETE 178.73 ZAC 82.14 ETC 258.00 CLP 48.65

PLANETOCENTRIC CONIC

C3 9.861 VHL 3.140 DLA 25.54 RAL 175.66 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.830 DPA 6.65 RAP 163.71 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 24	3018.93	-27.88	97.81	34.17	84.82	15 46 43	2418.9	-28.30	89.17
90.00	11 16 37	3743.55	-14.14	145.95	30.25	65.21	12 19 0	3143.6	-17.37	138.76
100.00	16 42 39	2676.39	-29.80	72.75	34.32	87.58	17 27 15	2076.4	-29.82	63.94
100.00	12 13 3	3561.33	-12.41	131.69	29.37	62.58	13 12 24	2961.3	-15.98	124.72
110.00	18 36 47	2319.26	-34.00	45.57	34.26	93.76	19 15 27	1719.3	-33.11	36.44
110.00	12 35 24	3491.22	-8.78	124.23	27.22	56.83	13 33 35	2891.2	-13.09	117.77

DIFFERENTIAL CORRECTIONS
TDE .8785 TRA 2.5271 TC-16.0031 BAU 2.1098
RDE .2459 RRA .1544 RC3 .0969 FAU .30501
FDE .5003 FRA 5.2351 FC-26.7774 BSP 39472
BDE .9123 BRA 2.5318 BC316.0034 FSP 5754

MID-COURSE EXECUTION ACCURACY
SGT11388.6 SGR 550.0 SG3 1718.7
RRT .2718 RRF .2459 RTF .9913
SGB11401.8 R23 -.0251 R13 .9913
SG111389.6 SG2 529.2 THA .75

ORBIT DETERMINATION ACCURACY
ST 2238.4 SR 458.4 SS 1106.2
CRT .8404 CRS -.4608 CST -.8666
LSA 2471.9 MSA 576.7 SSA 32.3
EL1 2271.7 EL2 244.8 ALF 9.88

LAUNCH DATE NOV 20 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 790.403 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.974 GAL -2.26 AZL 88.00 HCA 237.31 SMA 187.27 ECC .21432 INC 2.0037 V1 30.147
RP 210.95 LAP -1.69 LOP 295.01 VP 23.444 GAP -10.05 AZP 91.08 TAL 347.13 TAP 224.44 RCA 147.14 APO 227.41 V2 26.001
RC 305.247 GL 21.39 GP -1.91 ZAL 107.52 ZAP 47.66 ETS 177.53 ZAE 73.63 ETE 178.72 ZAC 82.24 ETC 257.97 CLP 47.63

PLANETOCENTRIC CONIC

C3 9.980 VHL 3.159 DLA 24.87 RAL 176.63 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.894 DPA 6.63 RAP 163.91 ECC 1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 33	2979.17	-28.09	94.92	35.17	86.26	16 2 12	2379.2	-28.31	86.26
90.00	11 8 9	3788.05	-12.85	148.58	30.95	64.55	12 11 18	3188.1	-16.17	141.48
100.00	16 56 16	2644.78	-29.87	70.40	35.26	88.81	17 40 21	2044.8	-29.72	61.60
100.00	12 7 8	3597.68	-11.26	133.78	30.13	62.13	13 7 5	2997.7	-14.90	126.88
110.00	18 47 14	2297.64	-33.89	43.89	35.11	94.75	19 25 31	1697.6	-32.86	34.80
110.00	12 32 40	3517.59	-7.80	125.63	28.05	56.61	13 31 17	2917.6	-12.13	119.22

DIFFERENTIAL CORRECTIONS
TDE .8195 TRA 2.6717 TC-16.0949 BAU 2.1474
RDE .2493 RRA .1544 RC3 .1198 FAU .29269
FDE .3515 FRA 5.1935 FC-25.3914 BSP 40134
BDE .8566 BRA 2.6761 BC316.0953 FSP 5533

MID-COURSE EXECUTION ACCURACY
SGT11582.0 SGR 552.7 SG3 1652.0
RRT .2423 RRF .2157 RTF .9914
SGB11595.2 R23 -.0259 R13 .9914
SG111582.8 SG2 536.1 THA .66

ORBIT DETERMINATION ACCURACY
ST 2206.8 SR 461.5 SS 1081.9
CRT .8049 CRS -.3878 CST -.8575
LSA 2429.0 MSA 593.6 SSA 32.1
EL1 2238.3 EL2 270.0 ALF 9.70

LAUNCH DATE NOV 20 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 794.663 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.979 GAL -2.37 AZL 88.00 HCA 238.53 SMA 187.36 ECC .21502 INC 1.9957 V1 30.147
RP 210.70 LAP -1.70 LOP 296.23 VP 23.482 GAP -10.17 AZP 91.04 TAL 346.52 TAP 225.05 RCA 147.07 APO 227.64 V2 26.029
RC 306.243 GL 21.16 GP -1.85 ZAL 108.63 ZAP 46.67 ETS 177.51 ZAE 72.35 ETE 178.72 ZAC 82.34 ETC 257.95 CLP 46.64

PLANETOCENTRIC CONIC

C3 10.110 VHL 3.180 DLA 24.20 RAL 177.60 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.960 DPA 6.59 RAP 164.14 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 49	2942.37	-28.22	92.23	36.16	87.60	16 16 52	2342.4	-28.26	83.57
90.00	11 0 40	3830.02	-11.61	151.04	31.70	63.99	12 4 30	3230.0	-15.02	144.02
100.00	17 9 29	2614.61	-29.89	68.16	36.20	89.99	17 53 3	2014.6	-29.57	59.37
100.00	12 1 42	3633.01	-10.13	135.79	30.93	61.72	13 2 15	3033.0	-13.83	128.95
110.00	18 57 35	2276.38	-33.76	42.24	35.97	95.71	19 35 32	1676.4	-32.60	33.20
110.00	12 30 5	3544.01	-6.80	127.03	28.92	56.42	13 29 9	2944.0	-11.17	120.66

DIFFERENTIAL CORRECTIONS
TDE .7571 TRA 2.8225 TC-16.1593 BAU 2.1841
RDE .2529 RRA .1544 RC3 .1412 FAU .28070
FDE .2116 FRA 5.1525 FC-24.0376 BSP 40808
BDE .7982 BRA 2.8267 BC316.1599 FSP 5323

MID-COURSE EXECUTION ACCURACY
SGT11770.6 SGR 555.8 SG3 1587.1
RRT .2140 RRF .1867 RTF .9914
SGB11783.7 R23 -.0265 R13 .9914
SG111771.2 SG2 542.8 THA .58

ORBIT DETERMINATION ACCURACY
ST 2180.5 SR 464.9 SS 1064.5
CRT .7636 CRS -.3125 CST -.8505
LSA 2393.8 MSA 610.3 SSA 31.7
EL1 2209.7 EL2 296.2 ALF 9.42

LAUNCH DATE NOV 20 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 798.926 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.984 GAL -2.49 AZL 88.01 HCA 239.75 SMA 187.44 ECC .21575 INC 1.9879 V1 30.147
RP 210.46 LAP -1.72 LOP 297.45 VP 23.520 GAP -10.30 AZP 91.00 TAL 345.90 TAP 225.65 RCA 147.00 APO 227.88 V2 26.057
RC 307.229 GL 20.92 GP -1.80 ZAL 109.75 ZAP 45.70 ETS 177.49 ZAE 71.09 ETE 178.72 ZAC 82.44 ETC 257.91 CLP 45.68

PLANETOCENTRIC CONIC

C3 10.252 VHL 3.202 DLA 23.51 RAL 178.59 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.027 DPA 6.53 RAP 164.40 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 25	2907.86	-28.30	89.71	37.15	88.86	16 30 53	2307.9	-28.15	81.05
90.00	10 53 56	3870.13	-10.40	153.37	32.51	63.51	11 58 26	3270.1	-13.88	146.41
100.00	17 22 20	2585.66	-29.87	66.01	37.15	91.12	18 5 26	1985.7	-29.40	57.23
100.00	11 56 41	3667.56	-9.00	137.74	31.77	61.38	12 57 49	3067.6	-12.76	130.96
110.00	19 7 53	2255.48	-33.61	40.63	36.85	96.66	19 45 28	1655.5	-32.32	31.63
110.00	12 27 38	3570.51	-5.80	128.43	29.81	56.25	13 27 9	2970.5	-10.20	122.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6899 TRA 2.9773 TC-16.2007 BAU 2.2205 SGT11954.5 SGR 559.2 SG3 1523.9 ST 2158.5 SR 468.4 SS 1052.6
RDE .2568 RRA .1544 RC3 .1613 FAU .26906 RRT .1865 RRF .1587 RTF .9914 CRT .7160 CRS -.2353 CST -.8455
FDE .0785 FRA 5.1083 FC-22.7219 BSP 41430 SGB11967.5 R23 -.0270 R13 .9914 LSA 2365.0 MSA 626.2 SSA 31.4
BDE .7362 BRA 2.9813 BC316.2015 FSP 5115 SG111954.9 SG2 549.3 THA .50 EL1 2185.0 EL2 323.0 ALF 9.03

LAUNCH DATE NOV 20 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 803.192 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.989 GAL -2.61 AZL 88.02 HCA 240.98 SMA 187.53 ECC .21652 INC 1.9802 V1 30.147
RP 210.22 LAP -1.73 LOP 298.67 VP 23.557 GAP -10.42 AZP 90.96 TAL 345.26 TAP 226.24 RCA 146.93 APO 228.13 V2 26.085
RC 308.206 GL 20.67 GP -1.75 ZAL 110.90 ZAP 44.77 ETS 177.48 ZAE 69.87 ETE 178.72 ZAC 82.54 ETC 257.88 CLP 44.74

PLANETOCENTRIC CONIC

C3 10.407 VHL 3.226 DLA 22.81 RAL 179.58 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.095 DPA 6.46 RAP 164.69 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 28	2875.18	-28.32	87.32	38.14	90.06	16 44 23	2275.2	-28.01	78.67
90.00	10 47 47	3908.86	-9.22	155.60	33.36	63.11	11 52 56	3308.9	-12.75	148.70
100.00	17 34 54	2557.77	-29.82	63.93	38.11	92.21	18 17 32	1957.8	-29.19	55.18
100.00	11 52 1	3701.51	-7.89	139.65	32.65	61.07	12 53 43	3101.5	-11.69	132.92
110.00	19 18 6	2234.92	-33.43	39.05	37.75	97.58	19 55 21	1634.9	-32.03	30.10
110.00	12 25 19	3597.12	-4.79	129.83	30.75	56.11	13 25 16	2997.1	-9.21	123.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6201 TRA 3.1384 TC-16.2118 BAU 2.2557 SGT12132.0 SGR 562.8 SG3 1462.1 ST 2145.3 SR 472.2 SS 1045.5
RDE .2611 RRA .1542 RC3 .1799 FAU .25772 RRT .1601 RRF .1315 RTF .9914 CRT .6627 CRS -.1581 CST -.8429
FDE -.0470 FRA 5.0595 FC-21.4392 BSP 42072 SGB12145.1 R23 -.0280 R13 .9914 LSA 2346.6 MSA 641.2 SSA 30.9
BDE .6728 BRA 3.1422 BC316.2128 FSP 4915 SG112132.4 SG2 555.5 THA .43 EL1 2168.6 EL2 349.8 ALF 8.52

LAUNCH DATE NOV 20 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 807.461 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.994 GAL -2.73 AZL 88.03 HCA 242.21 SMA 187.62 ECC .21732 INC 1.9726 V1 30.147
RP 209.99 LAP -1.75 LOP 299.90 VP 23.594 GAP -10.54 AZP 90.92 TAL 344.61 TAP 226.82 RCA 146.85 APO 228.39 V2 26.111
RC 309.174 GL 20.42 GP -1.70 ZAL 112.06 ZAP 43.86 ETS 177.46 ZAE 68.67 ETE 178.72 ZAC 82.65 ETC 257.84 CLP 43.83

PLANETOCENTRIC CONIC

C3 10.576 VHL 3.252 DLA 22.10 RAL 180.58 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.165 DPA 6.38 RAP 165.01 ECC 1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 4	2844.05	-28.29	85.04	39.15	91.20	16 57 28	2244.0	-27.83	76.41
90.00	10 42 8	3946.52	-8.05	157.75	34.25	62.76	11 47 54	3346.5	-11.64	150.91
100.00	17 47 13	2530.81	-29.73	61.93	39.08	93.26	18 29 24	1930.8	-28.96	53.21
100.00	11 47 40	3734.99	-6.79	141.52	33.57	60.82	12 49 55	3135.0	-10.62	134.83
110.00	19 28 15	2214.70	-33.24	37.50	38.66	98.47	20 5 10	1614.7	-31.71	28.61
110.00	12 23 7	3623.86	-3.78	131.24	31.71	56.00	13 23 31	3023.9	-8.22	124.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5461 TRA 3.3048 TC-16.2004 BAU 2.2908 SGT12306.3 SGR 566.7 SG3 1402.3 ST 2140.0 SR 476.2 SS 1043.7
RDE .2656 RRA .1540 RC3 .1972 FAU .24668 RRT .1346 RRF .1057 RTF .9914 CRT .6032 CRS -.0833 CST -.8439
FDE -.1632 FRA 5.0122 FC-20.1928 BSP 42682 SGB12319.4 R23 -.0284 R13 .9914 LSA 2338.3 MSA 653.7 SSA 30.4
BDE .6073 BRA 3.3084 BC316.2016 FSP 4722 SG112306.6 SG2 561.5 THA .36 EL1 2159.8 EL2 376.3 ALF 7.88

LAUNCH DATE NOV 20 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 811.732 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 32.999 GAL -2.86 AZL 88.03 HCA 243.44 SMA 187.71 ECC .21816 INC 1.9653 V1 30.147
RP 209.77 LAP -1.76 LOP 301.13 VP 23.629 GAP -10.67 AZP 90.88 TAL 343.94 TAP 227.38 RCA 146.76 APO 228.66 V2 26.137
RC 310.132 GL 20.16 GP -1.66 ZAL 113.24 ZAP 42.98 ETS 177.44 ZAE 67.49 ETE 178.72 ZAC 82.77 ETC 257.80 CLP 42.95

PLANETOCENTRIC CONIC

C3 10.760 VHL 3.280 DLA 21.37 RAL 181.58 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 4.236 DPA 6.28 RAP 165.35 ECC 1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 18	2814.23	-28.23	82.86	40.16	92.29	17 10 12	2214.2	-27.62	74.25
90.00	10 36 54	3983.35	-6.90	159.84	35.18	62.47	11 43 17	3383.3	-10.53	153.04
100.00	17 59 18	2504.70	-29.61	60.00	40.07	94.27	18 41 2	1904.7	-28.71	51.32
100.00	11 43 36	3768.10	-5.68	143.36	34.52	60.60	12 46 24	3168.1	-9.56	136.71
110.00	19 38 20	2194.84	-33.03	35.99	39.59	99.34	20 14 55	1594.8	-31.39	27.15
110.00	12 21 2	3650.73	-2.75	132.64	32.70	55.91	13 21 53	3050.7	-7.21	126.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4687 TRA 3.4772 TC-16.1607 BAU 2.3249 SGT12474.6 SGR 570.8 SG3 1343.7 ST 2144.7 SR 480.3 SS 1045.5
RDE .2705 RRA .1536 RC3 .2131 FAU .23590 RRT .1101 RRF .0806 RTF .9913 CRT .5384 CRS -.0105 CST -.8472
FDE -.2731 FRA 4.9612 FC-18.9803 BSP 43284 SGB12487.7 R23 -.0290 R13 .9913 LSA 2341.2 MSA 664.4 SSA 29.9
BDE .5411 BRA 3.4806 BC316.1621 FSP 4536 SG112474.8 SG2 567.3 THA .29 EL1 2160.8 EL2 401.7 ALF 7.12

LAUNCH DATE NOV 20 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 816.005 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.005 GAL -2.99 AZL 88.04 HCA 244.67 SMA 187.80 ECC .21905 INC 1.9581 V1 30.147
RP 209.55 LAP -1.77 LOP 302.37 VP 23.664 GAP -10.79 AZP 90.84 TAL 343.26 TAP 227.93 RCA 146.67 APO 228.94 V2 26.162
RC 311.080 GL 19.89 GP -1.62 ZAL 114.43 ZAP 42.12 ETS 177.43 ZAE 66.34 ETE 178.72 ZAC 82.88 ETC 257.75 CLP 42.09

PLANETOCENTRIC CONIC

C3 10.959 VHL 3.310 DLA 20.64 RAL 182.59 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 4.308 DPA 6.17 RAP 165.71 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 12	2785.57	-28.14	80.77	41.19	93.34	17 22 38	2185.6	-27.38	72.19
90.00	10 32 1	4019.51	-5.76	161.88	36.16	62.23	11 39 1	3419.5	-9.43	155.13
100.00	18 11 10	2479.38	-29.47	58.13	41.07	95.25	18 52 29	1879.4	-28.43	49.48
100.00	11 39 45	3800.93	-4.58	145.17	35.51	60.43	12 43 6	3200.9	-8.49	138.56
110.00	19 48 21	2175.32	-32.81	34.51	40.54	100.19	20 24 36	1575.3	-31.05	25.73
110.00	12 19 3	3677.75	-1.72	134.05	33.73	55.86	13 20 21	3077.8	-6.19	127.82

DIFFERENTIAL CORRECTIONS
TDE .3877 TRA 3.6557 TC-16.0959 BAU 2.3585
RDE .2756 RRA .1532 RC3 .2277 FAU .22544
FDE -.3764 FRA 4.9072 FC-17.8093 BSP 43886
BDE .4757 BRA 3.6589 BC316.0975 FSP 4354

MID-COURSE EXECUTION ACCURACY
SGT12638.6 SGR 574.9 SG3 1286.8
RRT .0865 RRF .0563 RTF .9912
SGB12651.6 R23 -.0297 R13 .9912
SG112638.7 SG2 572.8 THA .23

ORBIT DETERMINATION ACCURACY
ST 2160.2 SR 484.6 SS 1050.4
CRT .4691 CRS .0592 CST -.8528
LSA 2356.1 MSA 672.6 SSA 29.4
EL1 2172.6 EL2 425.5 ALF 6.25

LAUNCH DATE NOV 20 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 820.280 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.010 GAL -3.12 AZL 88.05 HCA 245.91 SMA 187.90 ECC .21997 INC 1.9510 V1 30.147
RP 209.34 LAP -1.78 LOP 303.60 VP 23.699 GAP -10.91 AZP 90.80 TAL 342.56 TAP 228.47 RCA 146.57 APO 229.23 V2 26.186
RC 312.019 GL 19.61 GP -1.57 ZAL 115.63 ZAP 41.28 ETS 177.41 ZAE 65.21 ETE 178.73 ZAC 83.00 ETC 257.70 CLP 41.26

PLANETOCENTRIC CONIC

C3 11.175 VHL 3.343 DLA 19.90 RAL 183.60 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 4.382 DPA 6.05 RAP 166.10 ECC 1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 50	2757.96	-28.01	78.76	42.22	94.34	17 34 48	2158.0	-27.11	70.21
90.00	10 27 28	4055.14	-4.62	163.89	37.16	62.03	11 35 3	3455.1	-8.33	157.17
100.00	18 22 51	2454.79	-29.30	56.32	42.09	96.19	19 3 45	1854.8	-28.14	47.71
100.00	11 36 8	3833.54	-3.48	146.97	36.54	60.29	12 40 1	3233.5	-7.41	140.39
110.00	19 58 18	2156.17	-32.57	33.07	41.51	101.01	20 34 14	1556.2	-30.71	24.34
110.00	12 17 10	3704.93	-.68	135.47	34.79	55.82	13 18 55	3104.9	-5.16	129.25

DIFFERENTIAL CORRECTIONS
TDE .3038 TRA 3.8396 TC-16.0068 BAU 2.3917
RDE .2811 RRA .1526 RC3 .2410 FAU .21532
FDE -.4702 FRA 4.8513 FC-16.6809 BSP 44477
BDE .4140 BRA 3.8426 BC316.0087 FSP 4179

MID-COURSE EXECUTION ACCURACY
SGT12797.7 SGR 579.2 SG3 1231.7
RRT .0638 RRF .0332 RTF .9911
SGB12810.8 R23 -.0303 R13 .9911
SG112797.8 SG2 578.0 THA .17

ORBIT DETERMINATION ACCURACY
ST 2186.9 SR 489.1 SS 1057.4
CRT .3970 CRS .1235 CST -.8609
LSA 2383.3 MSA 677.4 SSA 28.8
EL1 2195.9 EL2 447.1 ALF 5.29

LAUNCH DATE NOV 20 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 824.556 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.016 GAL -3.26 AZL 88.06 HCA 247.14 SMA 188.00 ECC .22094 INC 1.9440 V1 30.147
RP 209.14 LAP -1.79 LOP 304.84 VP 23.732 GAP -11.03 AZP 90.76 TAL 341.85 TAP 228.99 RCA 146.46 APO 229.53 V2 26.209
RC 312.950 GL 19.33 GP -1.53 ZAL 116.84 ZAP 40.47 ETS 177.39 ZAE 64.10 ETE 178.73 ZAC 83.13 ETC 257.65 CLP 40.45

PLANETOCENTRIC CONIC

C3 11.408 VHL 3.378 DLA 19.14 RAL 184.61 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 4.457 DPA 5.92 RAP 166.51 ECC 1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 11	2731.29	-27.86	76.83	43.28	95.30	17 46 43	2131.3	-26.83	68.31
90.00	10 23 10	4090.35	-3.49	165.86	38.21	61.88	11 31 21	3490.4	-7.23	159.17
100.00	18 34 21	2430.90	-29.12	54.57	43.12	97.09	19 14 52	1830.9	-27.83	46.01
100.00	11 32 42	3865.98	-2.39	148.75	37.60	60.19	12 37 8	3266.0	-6.34	142.19
110.00	20 8 10	2137.39	-32.31	31.66	42.50	101.81	20 43 47	1537.4	-30.35	23.00
110.00	12 15 22	3732.26	.36	136.90	35.88	55.82	13 17 35	3132.3	-4.13	130.69

DIFFERENTIAL CORRECTIONS
TDE .2160 TRA 4.0301 TC-15.8932 BAU 2.4243
RDE .2870 RRA .1518 RC3 .2530 FAU .20545
FDE -.5597 FRA 4.7931 FC-15.5907 BSP 45049
BDE .3592 BRA 4.0330 BC315.8952 FSP 4009

MID-COURSE EXECUTION ACCURACY
SGT12952.6 SGR 583.5 SG3 1178.0
RRT .0418 RRF .0106 RTF .9910
SGB12965.7 R23 -.0310 R13 .9910
SG112952.6 SG2 583.0 THA .11

ORBIT DETERMINATION ACCURACY
ST 2225.2 SR 493.7 SS 1066.5
CRT .3226 CRS .1848 CST -.8698
LSA 2422.6 MSA 680.1 SSA 28.2
EL1 2231.1 EL2 466.0 ALF 4.28

LAUNCH DATE NOV 20 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 828.833 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.021 GAL -3.40 AZL 88.06 HCA 248.39 SMA 188.10 ECC .22195 INC 1.9372 V1 30.147
RP 208.94 LAP -1.80 LOP 306.09 VP 23.765 GAP -11.16 AZP 90.71 TAL 341.12 TAP 229.51 RCA 146.35 APO 229.84 V2 26.232
RC 313.871 GL 19.05 GP -1.50 ZAL 118.07 ZAP 39.68 ETS 177.37 ZAE 63.02 ETE 178.74 ZAC 83.26 ETC 257.60 CLP 39.66

PLANETOCENTRIC CONIC

C3 11.660 VHL 3.415 DLA 18.38 RAL 185.62 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 4.534 DPA 5.77 RAP 166.94 ECC 1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 19	2705.52	-27.68	74.96	44.34	96.22	17 58 25	2105.5	-26.53	66.48
90.00	10 19 7	4125.22	-2.37	167.81	39.29	61.77	11 27 53	3525.2	-6.13	161.14
100.00	18 45 41	2407.67	-28.91	52.88	44.17	97.96	19 25 48	1807.7	-27.51	44.36
100.00	11 29 27	3898.30	-1.29	150.53	38.69	60.13	12 34 25	3298.3	-5.26	143.98
110.00	20 17 57	2118.98	-32.05	30.29	43.51	102.58	20 53 16	1519.0	-29.99	21.69
110.00	12 13 40	3759.75	1.41	138.33	37.00	55.84	13 16 20	3159.8	-3.08	132.13

DIFFERENTIAL CORRECTIONS
TDE .1255 TRA 4.2272 TC-15.7549 BAU 2.4562
RDE .2932 RRA .1509 RC3 .2638 FAU .19583
FDE -.6411 FRA 4.7336 FC-14.5403 BSP 45629
BDE .3189 BRA 4.2299 BC315.7571 FSP 3847

MID-COURSE EXECUTION ACCURACY
SGT13102.6 SGR 587.9 SG3 1125.9
RRT .0207 RRF -.0110 RTF .9908
SGB13115.8 R23 -.0316 R13 .9908
SG113102.6 SG2 587.8 THA .05

ORBIT DETERMINATION ACCURACY
ST 2275.2 SR 498.4 SS 1076.5
CRT .2481 CRS .2407 CST -.8797
LSA 2474.0 MSA 679.8 SSA 27.7
EL1 2278.7 EL2 482.1 ALF 3.26

LAUNCH DATE NOV 20 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 833.110 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.027 GAL -3.54 AZL 88.07 HCA 249.63 SMA 188.20 ECC .22300 INC 1.9305 V1 30.147
RP 208.76 LAP -1.81 LOP 307.33 VP 23.797 GAP -11.28 AZP 90.67 TAL 340.38 TAP 230.01 RCA 146.23 APO 230.16 V2 26.254
RC 314.784 GL 18.75 GP -1.46 ZAL 119.30 ZAP 38.92 ETS 177.35 ZAE 61.96 ETE 178.74 ZAC 83.39 ETC 257.54 CLP 38.90

PLANETOCENTRIC CONIC

C3 11.931 VHL 3.454 DLA 17.62 RAL 186.63 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 4.612 DPA 5.61 RAP 167.39 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 14	2680.57	-27.48	73.16	45.43	97.10	18 9 54	2080.6	-26.22	64.72
90.00	10 15 18	4159.81	-1.26	169.74	40.41	61.71	11 24 38	3559.8	-5.03	163.09
100.00	18 56 51	2385.10	-28.68	51.24	45.24	98.79	19 36 36	1785.1	-27.17	42.76
100.00	11 26 21	3930.52	-.20	152.30	39.82	60.11	12 31 52	3330.5	-4.18	145.76
110.00	20 27 40	2100.98	-31.77	28.96	44.54	103.33	21 2 41	1501.0	-29.62	20.42
110.00	12 12 2	3787.40	2.47	139.77	38.15	55.90	13 15 10	3187.4	-2.02	133.57

DIFFERENTIAL CORRECTIONS
TDE .0316 TRA 4.4305 TC-15.5956 BAU 2.4880
RDE .2997 RRA .1499 RC3 .2734 FAU .18655
FDE -.7164 FRA 4.6712 FC-13.5361 BSP 46188
BDE .3014 BRA 4.4330 BC315.5980 FSP 3686

MID-COURSE EXECUTION ACCURACY
SGT13248.9 SGR 592.3 SG3 1075.5
RRT .0003 RRF -.0321 RTF .9906
SGB13262.2 R23 -.0324 R13 .9906
SG113248.9 SG2 592.3 THA .00

ORBIT DETERMINATION ACCURACY
ST 2336.3 SR 503.3 SS 1086.8
CRT .1745 CRS .2925 CST -.8898
LSA 2536.4 MSA 677.3 SSA 27.1
EL1 2338.0 EL2 495.2 ALF 2.25

LAUNCH DATE NOV 20 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 837.387 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.033 GAL -3.69 AZL 88.08 HCA 250.87 SMA 188.30 ECC .22411 INC 1.9238 V1 30.147
RP 208.58 LAP -1.82 LOP 308.57 VP 23.828 GAP -11.40 AZP 90.63 TAL 339.62 TAP 230.49 RCA 146.10 APO 230.50 V2 26.274
RC 315.690 GL 18.45 GP -1.43 ZAL 120.53 ZAP 38.17 ETS 177.33 ZAE 60.91 ETE 178.75 ZAC 83.52 ETC 257.49 CLP 38.15

PLANETOCENTRIC CONIC

C3 12.223 VHL 3.496 DLA 16.85 RAL 187.65 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 4.692 DPA 5.44 RAP 167.87 ECC 1.2012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 56	2656.42	-27.27	71.43	46.52	97.94	18 21 12	2056.4	-25.89	63.03
90.00	10 11 40	4194.18	-.15	171.66	41.56	61.68	11 21 34	3594.2	-3.93	165.02
100.00	19 7 52	2363.16	-28.45	49.65	46.32	99.60	19 47 15	1763.2	-26.83	41.22
100.00	11 23 25	3962.67	.89	154.06	40.98	60.12	12 29 28	3362.7	-3.09	147.54
110.00	20 37 17	2083.38	-31.49	27.67	45.58	104.04	21 12 1	1483.4	-29.24	19.18
110.00	12 10 29	3815.21	3.53	141.23	39.33	55.98	13 14 4	3215.2	-.96	135.02

DIFFERENTIAL CORRECTIONS
TDE -.0653 TRA 4.6408 TC-15.4127 BAU 2.5191
RDE .3066 RRA .1486 RC3 .2817 FAU .17752
FDE -.7853 FRA 4.6065 FC-12.5728 BSP 46746
BDE .3135 BRA 4.6432 BC315.4153 FSP 3534

MID-COURSE EXECUTION ACCURACY
SGT13390.4 SGR 596.6 SG3 1026.5
RRT -.0194 RRF -.0524 RTF .9904
SGB13403.7 R23 .0332 R13 -.9904
SG113390.4 SG2 596.5 THA 179.95

ORBIT DETERMINATION ACCURACY
ST 2408.1 SR 508.2 SS 1097.1
CRT .1032 CRS .3399 CST -.8997
LSA 2609.1 MSA 672.8 SSA 26.5
EL1 2408.7 EL2 505.4 ALF 1.31

LAUNCH DATE NOV 20 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 841.664 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.038 GAL -3.84 AZL 88.08 HCA 252.12 SMA 188.40 ECC .22526 INC 1.9172 V1 30.147
RP 208.40 LAP -1.82 LOP 309.82 VP 23.858 GAP -11.53 AZP 90.59 TAL 338.85 TAP 230.97 RCA 145.96 APO 230.84 V2 26.294
RC 316.588 GL 18.15 GP -1.39 ZAL 121.77 ZAP 37.45 ETS 177.31 ZAE 59.89 ETE 178.75 ZAC 83.66 ETC 257.43 CLP 37.43

PLANETOCENTRIC CONIC

C3 12.538 VHL 3.541 DLA 16.07 RAL 188.66 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 4.772 DPA 5.26 RAP 168.36 ECC 1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 27	2633.04	-27.04	69.75	47.64	98.75	18 32 20	2033.0	-25.55	61.40
90.00	10 8 13	4228.35	.95	173.56	42.74	61.70	11 18 41	3628.3	-2.84	166.93
100.00	19 18 44	2341.85	-28.19	48.12	47.42	100.37	19 57 46	1741.9	-26.47	39.74
100.00	11 20 37	3994.77	1.98	155.82	42.17	60.17	12 27 11	3394.8	-2.01	149.30
110.00	20 46 50	2066.21	-31.20	26.41	46.65	104.73	21 21 16	1466.2	-28.86	17.99
110.00	12 9 0	3843.17	4.59	142.69	40.54	56.09	13 13 3	3243.2	.11	136.48

DIFFERENTIAL CORRECTIONS
TDE -.1659 TRA 4.8572 TC-15.2156 BAU 2.5508
RDE .3138 RRA .1471 RC3 .2889 FAU .16882
FDE -.8488 FRA 4.5396 FC-11.6573 BSP 47277
BDE .3550 BRA 4.8594 BC315.2183 FSP 3383

MID-COURSE EXECUTION ACCURACY
SGT13530.5 SGR 600.9 SG3 979.3
RRT -.0386 RRF -.0723 RTF .9901
SGB13543.8 R23 .0340 R13 -.9901
SG113530.5 SG2 600.5 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 2489.4 SR 513.3 SS 1106.9
CRT .0345 CRS .3836 CST -.9092
LSA 2690.9 MSA 666.6 SSA 26.0
EL1 2489.5 EL2 513.0 ALF .43

LAUNCH DATE NOV 20 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 845.939 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.044 GAL -4.00 AZL 88.09 HCA 253.37 SMA 188.51 ECC .22646 INC 1.9108 V1 30.147
RP 208.24 LAP -1.83 LOP 311.07 VP 23.887 GAP -11.65 AZP 90.55 TAL 338.06 TAP 231.43 RCA 145.82 APO 231.20 V2 26.314
RC 317.480 GL 17.84 GP -1.36 ZAL 123.02 ZAP 36.75 ETS 177.29 ZAE 58.89 ETE 178.76 ZAC 83.80 ETC 257.37 CLP 36.72

PLANETOCENTRIC CONIC

C3 12.875 VHL 3.588 DLA 15.29 RAL 189.66 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 4.855 DPA 5.07 RAP 168.88 ECC 1.2119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 46	2610.40	-26.79	68.14	48.77	99.52	18 43 17	2010.4	-25.20	59.83
90.00	10 4 56	4262.37	2.05	175.46	43.96	61.75	11 15 58	3662.4	-1.74	168.83
100.00	19 29 28	2321.17	-27.93	46.63	48.54	101.10	20 8 9	1721.2	-26.12	38.30
100.00	11 17 56	4026.83	3.06	157.58	43.40	60.25	12 25 3	3426.8	-.92	151.06
110.00	20 56 17	2049.48	-30.90	25.20	47.74	105.39	21 30 27	1449.5	-28.48	16.84
110.00	12 7 35	3871.28	5.66	144.17	41.79	56.23	13 12 7	3271.3	1.18	137.95

DIFFERENTIAL CORRECTIONS
TDE -.2678 TRA 5.0816 TC-14.9931 BAU 2.5812
RDE .3215 RRA .1455 RC3 .2949 FAU .16033
FDE -.9045 FRA 4.4701 FC-10.7807 BSP 47830
BDE .4184 BRA 5.0837 BC314.9960 FSP 3241

MID-COURSE EXECUTION ACCURACY
SGT13664.3 SGR 605.2 SG3 933.3
RRT -.0570 RRF -.0913 RTF .9898
SGB13677.6 R23 .0349 R13 -.9898
SG113664.3 SG2 604.2 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 2579.8 SR 518.4 SS 1115.1
CRT -.0293 CRS .4226 CST -.9178
LSA 2780.7 MSA 659.3 SSA 25.3
EL1 2579.8 EL2 518.2 ALF 179.65

LAUNCH DATE NOV 20 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 850.213 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.050 GAL -4.16 AZL 88.10 HCA 254.62 SMA 188.61 ECC .22772 INC 1.9044 V1 30.147
RP 208.08 LAP -1.84 LOP 312.32 VP 23.916 GAP -11.77 AZP 90.51 TAL 337.26 TAP 231.88 RCA 145.66 APO 231.56 V2 26.332
RC 318.367 GL 17.52 GP -1.33 ZAL 124.26 ZAP 36.06 ETS 177.27 ZAE 57.90 ETE 178.76 ZAC 83.95 ETC 257.30 CLP 36.04

PLANETOCENTRIC CONIC

C3 13.237 VHL 3.638 DLA 14.50 RAL 190.67 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 4.939 DPA 4.87 RAP 169.41 ECC 1.2179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 56	2588.48	-26.54	66.59	49.92	100.26	18 54 4	1988.5	-24.85	58.33
90.00	10 1 48	4296.26	3.14	177.35	45.21	61.84	11 13 24	3696.3	-.65	170.72
100.00	19 40 2	2301.10	-27.66	45.20	49.68	101.81	20 18 23	1701.1	-25.75	36.92
100.00	11 15 22	4058.87	4.14	159.35	44.65	60.37	12 23 1	3458.9	.17	152.82
110.00	21 5 39	2033.21	-30.60	24.03	48.84	106.03	21 39 33	1433.2	-28.10	15.72
110.00	12 6 15	3899.53	6.73	145.66	43.06	56.41	13 11 14	3299.5	2.26	139.42

DIFFERENTIAL CORRECTIONS
TDE -.3735 TRA 5.3127 TC-14.7552 BAU 2.6118
RDE .3295 RRA .1436 RC3 .2999 FAU .15209
FDE -.9556 FRA 4.3983 FC3-9.9469 BSP 48371
BDE .4981 BRA 5.3146 BC314.7582 FSP 3102

MID-COURSE EXECUTION ACCURACY
SGT13795.1 SGR 609.4 SG3 888.9
RRT -.0750 RRF -.1100 RTF .9895
SGB13808.5 R23 .0358 R13 -.9895
SG113795.2 SG2 607.7 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 2677.8 SR 523.6 SS 1122.4
CRT -.0896 CRS .4588 CST -.9256
LSA 2877.5 MSA 651.2 SSA 24.8
EL1 2678.3 EL2 521.4 ALF 178.96

LAUNCH DATE NOV 20 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 854.485 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.057 GAL -4.33 AZL 88.10 HCA 255.87 SMA 188.72 ECC .22904 INC 1.8980 V1 30.147
RP 207.93 LAP -1.84 LOP 313.58 VP 23.943 GAP -11.90 AZP 90.46 TAL 336.44 TAP 232.31 RCA 145.50 APO 231.94 V2 26.349
RC 319.247 GL 17.20 GP -1.30 ZAL 125.51 ZAP 35.39 ETS 177.25 ZAE 56.94 ETE 178.77 ZAC 84.10 ETC 257.24 CLP 35.37

PLANETOCENTRIC CONIC

C3 13.626 VHL 3.691 DLA 13.72 RAL 191.67 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 5.024 DPA 4.66 RAP 169.96 ECC 1.2242

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 54	2567.28	-26.27	65.09	51.09	100.96	19 4 42	1967.3	-24.49	56.88
90.00	9 58 48	4330.04	4.22	179.25	46.49	61.97	11 10 58	3730.0	.44	172.61
100.00	19 50 28	2281.66	-27.38	43.83	50.84	102.48	20 28 30	1681.7	-25.39	35.59
100.00	11 12 56	4090.89	5.22	161.12	45.94	60.53	12 21 7	3490.9	1.25	154.57
110.00	21 14 56	2017.40	-30.30	22.89	49.97	106.64	21 48 33	1417.4	-27.73	14.65
110.00	12 4 58	3927.92	7.79	147.17	44.36	56.61	13 10 26	3327.9	3.35	140.90

DIFFERENTIAL CORRECTIONS
TDE -.4822 TRA 5.5507 TC-14.5019 BAU 2.6424
RDE .3378 RRA .1414 RC3 .3038 FAU .14416
FDE-1.0016 FRA 4.3232 FC3-9.1596 BSP 48884
BDE .5888 BRA 5.5525 BC314.5051 FSP 2965

MID-COURSE EXECUTION ACCURACY
SGT13922.5 SGR 613.5 SG3 845.9
RRT -.0925 RRF -.1284 RTF .9891
SGB13936.1 R23 .0369 R13 -.9891
SG113922.7 SG2 610.8 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 2782.4 SR 528.8 SS 1127.9
CRT -.1456 CRS .4921 CST -.9325
LSA 2980.0 MSA 642.7 SSA 24.2
EL1 2783.5 EL2 523.0 ALF 178.36

LAUNCH DATE NOV 20 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 858.753 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.063 GAL -4.50 AZL 88.11 HCA 257.13 SMA 188.83 ECC .23041 INC 1.8918 V1 30.147
RP 207.79 LAP -1.84 LOP 314.83 VP 23.970 GAP -12.03 AZP 90.42 TAL 335.61 TAP 232.74 RCA 145.32 APO 232.34 V2 26.366
RC 320.122 GL 16.88 GP -1.27 ZAL 126.76 ZAP 34.74 ETS 177.23 ZAE 55.99 ETE 178.78 ZAC 84.25 ETC 257.18 CLP 34.72

PLANETOCENTRIC CONIC

C3 14.042 VHL 3.747 DLA 12.93 RAL 192.67 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 5.111 DPA 4.44 RAP 170.53 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 43	2546.79	-26.00	63.66	52.28	101.63	19 15 10	1946.8	-24.13	55.48
90.00	9 55 57	4363.73	5.30	181.14	47.81	62.14	11 8 40	3763.7	1.53	174.48
100.00	20 0 46	2262.84	-27.10	42.50	52.01	103.13	20 38 29	1662.8	-25.02	34.32
100.00	11 10 35	4122.91	6.29	162.89	47.26	60.72	12 19 18	3522.9	2.34	156.33
110.00	21 24 6	2002.08	-30.00	21.80	51.12	107.22	21 57 28	1402.1	-27.35	13.61
110.00	12 3 44	3954 43	8.86	148.69	45.69	56.85	13 9 41	3356.4	4.43	142.40

DIFFERENTIAL CORRECTIONS
TDE -.5934 TRA 5.7961 TC-14.2336 BAU 2.6728
RDE .3466 RRA .1390 RC3 .3067 FAU .13645
FDE-1.0416 FRA 4.2463 FC3-8.4122 BSP 49396
BDE .6873 BRA 5.7978 BC314.2369 FSP 2834

MID-COURSE EXECUTION ACCURACY
SGT14046.3 SGR 617.5 SG3 804.3
RRT -.1095 RRF -.1462 RTF .9886
SGB14059.9 R23 .0380 R13 -.9886
SG114046.5 SG2 613.7 THA 179.72

ORBIT DETERMINATION ACCURACY
ST 2892.6 SR 534.1 SS 1131.5
CRT -.1972 CRS .5222 CST -.9386
LSA 3087.1 MSA 633.8 SSA 23.7
EL1 2894.5 EL2 523.2 ALF 177.84

LAUNCH DATE NOV 20 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 863.019 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.069 GAL -4.67 AZL 88.11 HCA 258.39 SMA 188.94 ECC .23184 INC 1.8855 V1 30.147
RP 207.66 LAP -1.85 LOP 316.09 VP 23.995 GAP -12.16 AZP 90.38 TAL 334.76 TAP 233.14 RCA 145.14 APO 232.74 V2 26.381
RC 320.992 GL 16.55 GP -1.25 ZAL 128.01 ZAP 34.11 ETS 177.21 ZAE 55.05 ETE 178.78 ZAC 84.40 ETC 257.11 CLP 34.09

PLANETOCENTRIC CONIC

C3 14.488 VHL 3.806 DLA 12.15 RAL 193.66 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 5.199 DPA 4.21 RAP 171.11 ECC 1.2384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 23	2527.00	-25.72	62.27	53.49	102.27	19 25 30	1927.0	-23.77	54.15
90.00	9 53 12	4397.33	6.36	183.03	49.15	62.35	11 6 29	3797.3	2.61	176.36
100.00	20 10 56	2244.65	-26.81	41.23	53.21	103.74	20 48 20	1644.6	-24.65	33.09
100.00	11 8 20	4154.91	7.35	164.67	48.62	60.94	12 17 35	3554.9	3.42	158.09
110.00	21 33 11	1987.26	-29.69	20.76	52.28	107.77	22 6 18	1387.3	-26.98	12.62
110.00	12 2 34	3985.07	9.92	150.23	47.06	57.12	13 8 59	3385.1	5.52	143.90

DIFFERENTIAL CORRECTIONS
TDE -.7085 TRA 6.0481 TC-13.9563 BAU 2.7039
RDE .3558 RRA .1363 RC3 .3087 FAU .12903
FDE-1.0774 FRA 4.1657 FC3-7.7103 BSP 49890
BDE .7928 BRA 6.0496 BC313.9597 FSP 2705

MID-COURSE EXECUTION ACCURACY
SGT14168.3 SGR 621.4 SG3 764.2
RRT -.1264 RRF -.1640 RTF .9881
SGB14181.9 R23 .0392 R13 -.9881
SG114168.5 SG2 616.4 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3007.3 SR 539.3 SS 1133.2
CRT -.2451 CRS .5503 CST -.9440
LSA 3198.2 MSA 624.7 SSA 23.2
EL1 3010.3 EL2 522.4 ALF 177.41

LAUNCH DATE NOV 20 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 867.281 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.075 GAL -4.85 AZL 88.12 HCA 259.64 SMA 189.05 ECC .23333 INC 1.8794 V1 30.147
RP 207.54 LAP -1.85 LOP 317.35 VP 24.020 GAP -12.29 AZP 90.34 TAL 333.90 TAP 233.54 RCA 144.94 APO 233.16 V2 26.396
RC 321.856 GL 16.22 GP -1.22 ZAL 129.25 ZAP 33.50 ETS 177.19 ZAE 54.14 ETE 178.79 ZAC 84.56 ETC 257.05 CLP 33.48

PLANETOCENTRIC CONIC

C3 14.966 VHL 3.869 DLA 11.36 RAL 194.64 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 5.289 DPA 3.97 RAP 171.71 ECC 1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 52	2507.90	-25.44	60.95	54.71	102.88	19 35 40	1907.9	-23.41	52.86
90.00	9 50 34	4430.86	7.42	184.93	50.53	62.59	11 4 25	3830.9	3.69	178.24
100.00	20 20 57	2227.08	-26.52	40.00	54.42	104.32	20 58 4	1627.1	-24.29	31.91
100.00	11 6 11	4186.91	8.40	166.46	50.00	61.21	12 15 58	3586.9	4.50	159.86
110.00	21 42 10	1972.95	-29.39	19.75	53.47	108.29	22 15 3	1372.9	-26.61	11.67
110.00	12 1 27	4013.81	10.98	151.78	48.45	57.42	13 8 21	3413.8	6.60	145.42

DIFFERENTIAL CORRECTIONS
TDE -.8255 TRA 6.3086 TC-13.6645 BAU 2.7346
RDE .3654 RRA .1334 RC3 .3097 FAU .12181
FDE-1.1076 FRA 4.0831 FC3-7.0467 BSP 50378
BDE .9027 BRA 6.3100 BC313.6680 FSP 2581

MID-COURSE EXECUTION ACCURACY
SGT14286.2 SGR 625.2 SG3 725.3
RRT -.1428 RRF -.1813 RTF .9876
SGB14299.9 R23 .0405 R13 -.9876
SG114286.5 SG2 618.8 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3125.7 SR 544.6 SS 1132.6
CRT -.2885 CRS .5758 CST -.9486
LSA 3312.0 MSA 615.8 SSA 22.7
EL1 3129.7 EL2 520.7 ALF 177.04

LAUNCH DATE NOV 20 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 871.538 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.082 GAL -5.04 AZL 88.13 HCA 260.90 SMA 189.16 ECC .23489 INC 1.8733 V1 30.147
RP 207.42 LAP -1.85 LOP 318.61 VP 24.044 GAP -12.42 AZP 90.30 TAL 333.02 TAP 233.92 RCA 144.73 APO 233.60 V2 26.409
RC 322.714 GL 15.89 GP -1.20 ZAL 130.49 ZAP 32.90 ETS 177.17 ZAE 53.23 ETE 178.79 ZAC 84.72 ETC 256.99 CLP 32.88

PLANETOCENTRIC CONIC

C3 15.476 VHL 3.934 DLA 10.58 RAL 195.62 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 5.381 DPA 3.72 RAP 172.32 ECC 1.2547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 13	2489.50	-25.15	59.67	55.95	103.46	19 45 42	1889.5	-23.05	51.63
90.00	9 48 3	4464.32	8.46	186.84	51.94	62.88	11 2 27	3864.3	4.76	180.11
100.00	20 30 50	2210.15	-26.23	38.83	55.65	104.88	21 7 40	1610.2	-23.93	30.78
100.00	11 4 7	4218.90	9.45	168.27	51.42	61.51	12 14 26	3618.9	5.57	161.62
110.00	21 51 2	1959.16	-29.09	18.79	54.67	108.79	22 23 42	1359.2	-26.25	10.76
110.00	12 0 24	4042.66	12.03	153.35	49.88	57.76	13 7 46	3442.7	7.69	146.95

DIFFERENTIAL CORRECTIONS
TDE -.9453 TRA 6.5762 TC-13.3643 BAU 2.7658
RDE .3754 RRA .1301 RC3 .3100 FAU .11486
FDE-1.1335 FRA 3.9972 FC3-6.4251 BSP 50841
BDE 1.0171 BRA 6.5775 BC313.3679 FSP 2459

MID-COURSE EXECUTION ACCURACY
SGT14401.2 SGR 620.9 SG3 687.7
RRT -.1588 RRF -.1985 RTF .9870
SGB14415.0 R23 .0420 R13 -.9870
SG114401.6 SG2 620.9 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 3246.4 SR 549.8 SS 1129.8
CRT -.3283 CRS .5995 CST -.9525
LSA 3427.7 MSA 607.2 SSA 22.2
EL1 3251.6 EL2 518.5 ALF 176.74

LAUNCH DATE NOV 20 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 875.789 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.088 GAL -5.23 AZL 88.13 HCA 262.16 SMA 189.28 ECC .23651 INC 1.8671 V1 30.147
RP 207.31 LAP -1.85 LOP 319.87 VP 24.066 GAP -12.56 AZP 90.25 TAL 332.12 TAP 234.29 RCA 144.51 APO 234.05 V2 26.422
RC 323.566 GL 15.56 GP -1.17 ZAL 131.72 ZAP 32.32 ETS 177.14 ZAE 52.35 ETE 178.80 ZAC 84.89 ETC 256.92 CLP 32.30

PLANETOCENTRIC CONIC

C3 16.022 VHL 4.003 DLA 9.80 RAL 196.60 RAD 6567.6 VEL 11.722 PTH 2.07 VHP 5.475 DPA 3.46 RAP 172.95 ECC 1.2637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 24	2471.79	-24.86	58.46	57.22	104.00	19 55 36	1871.8	-22.70	50.46
90.00	9 45 37	4497.72	9.49	188.75	53.39	63.20	11 0 35	3897.7	5.82	181.99
100.00	20 40 35	2193.85	-25.94	37.70	56.90	105.40	21 17 9	1593.9	-23.57	29.70
100.00	11 2 8	4250.87	10.48	170.08	52.87	61.84	12 12 59	3650.9	6.64	163.40
110.00	21 59 49	1945.92	-28.80	17.87	55.90	109.26	22 32 15	1345.9	-25.90	9.89
110.00	11 59 23	4071.59	13.08	154.94	51.34	58.13	13 7 15	3471.6	8.77	148.49

DIFFERENTIAL CORRECTIONS
TDE-1.0679 TRA 6.8515 TC-13.0560 BAU 2.7973
RDE .3857 RRA .1265 RC3 .3094 FAU .10811
FDE-1.1552 FRA 3.9086 FC3-5.8417 BSP 51293
BDE 1.1354 BRA 6.8527 BC313.0596 FSP 2340

MID-COURSE EXECUTION ACCURACY
SGT14513.3 SGR 632.5 SG3 651.4
RRT -.1747 RRF -.2155 RTF .9862
SGB14527.1 R23 .0436 R13 -.9863
SG114513.7 SG2 622.7 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 3369.0 SR 555.0 SS 1124.9
CRT -.3646 CRS .6215 CST -.9558
LSA 3544.6 MSA 598.9 SSA 21.8
EL1 3375.2 EL2 515.8 ALF 176.48

LAUNCH DATE NOV 20 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 880.035 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.094 GAL -5.42 AZL 88.14 HCA 263.43 SMA 189.39 ECC .23821 INC 1.8611 V1 30.147
RP 207.21 LAP -1.85 LOP 321.13 VP 24.088 GAP -12.70 AZP 90.21 TAL 331.22 TAP 234.64 RCA 144.28 APO 234.51 V2 26.434
RC 324.413 GL 15.22 GP -1.15 ZAL 132.95 ZAP 31.75 ETS 177.12 ZAE 51.48 ETE 178.80 ZAC 85.06 ETC 256.86 CLP 31.73

PLANETOCENTRIC CONIC

C3 16.605 VHL 4.075 DLA 9.03 RAL 197.56 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 5.570 DPA 3.19 RAP 173.60 ECC 1.2733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 27	2454.76	-24.58	57.29	58.50	104.52	20 5 22	1854.8	-22.34	49.33
90.00	9 43 17	4531.07	10.51	190.67	54.86	63.56	10 58 48	3931.1	6.88	183.88
100.00	20 50 12	2178.19	-25.65	36.63	58.17	105.90	21 26 30	1578.2	-23.22	28.67
100.00	11 0 13	4282.87	11.50	171.90	54.35	62.22	12 11 36	3682.9	7.70	165.18
110.00	22 8 29	1933.21	-28.51	16.99	57.14	109.71	22 40 42	1333.2	-25.56	9.06
110.00	11 58 26	4100.61	14.11	156.55	52.82	58.54	13 6 46	3500.6	9.85	150.05

DIFFERENTIAL CORRECTIONS
TDE-1.1939 TRA 7.1344 TC-12.7403 BAU 2.8290
RDE .3966 RRA .1227 RC3 .3081 FAU .10157
FDE-1.1723 FRA 3.8170 FC3-5.2959 BSP 51717
BDE 1.2580 BRA 7.1355 BC312.7441 FSP 2224

MID-COURSE EXECUTION ACCURACY
SGT14621.9 SGR 636.0 SG3 616.3
RRT -.1903 RRF -.2323 RTF .9855
SGB14635.7 R23 .0453 R13 -.9855
SG114622.4 SG2 624.3 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 3492.9 SR 560.1 SS 1117.4
CRT -.3981 CRS .6418 CST -.9587
LSA 3662.5 MSA 590.6 SSA 21.3
EL1 3500.2 EL2 512.7 ALF 176.27

LAUNCH DATE NOV 20 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 884.274 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.101 GAL -5.62 AZL 88.14 HCA 264.69 SMA 189.51 ECC .23998 INC 1.8551 V1 30.147
RP 207.12 LAP -1.85 LOP 322.40 VP 24.109 GAP -12.84 AZP 90.17 TAL 330.29 TAP 234.98 RCA 144.03 APO 234.99 V2 26.444
RC 325.253 GL 14.89 GP -1.13 ZAL 134.17 ZAP 31.20 ETS 177.10 ZAE 50.62 ETE 178.81 ZAC 85.23 ETC 256.79 CLP 31.18

PLANETOCENTRIC CONIC

C3 17.227 VHL 4.151 DLA 8.26 RAL 198.52 RAD 6567.7 VEL 11.773 PTH 2.08 VHP 5.667 DPA 2.92 RAP 174.26 ECC 1.2835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 20	2438.42	-24.30	56.18	59.80	105.01	20 14 59	1838.4	-22.00	48.26
90.00	9 41 3	4564.35	11.51	192.60	56.37	63.95	10 57 7	3964.3	7.92	185.77
100.00	20 59 41	2163.17	-25.37	35.60	59.46	106.37	21 35 44	1563.2	-22.88	27.69
100.00	10 58 23	4314.83	12.51	173.74	55.86	62.63	12 10 18	3714.8	8.74	166.98
110.00	22 17 3	1921.06	-28.23	16.16	58.41	110.13	22 49 4	1321.1	-25.23	8.27
110.00	11 57 31	4129.70	15.14	158.18	54.35	58.98	13 6 20	3529.7	10.92	151.62

DIFFERENTIAL CORRECTIONS
TDE-1.3215 TRA 7.4265 TC-12.4202 BAU 2.8614
RDE .4078 RRA .1184 RC3 .3061 FAU .09523
FDE-1.1846 FRA 3.7228 FC3-4.7859 BSP 52150
BDE 1.3829 BRA 7.4275 BC312.4240 FSP 2112

MID-COURSE EXECUTION ACCURACY
SGT14729.0 SGR 639.3 SG3 582.3
RRT -.2056 RRF -.2489 RTF .9846
SGB14742.9 R23 .0471 R13 -.9846
SG114729.6 SG2 625.6 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 3616.9 SR 565.1 SS 1107.4
CRT -.4282 CRS .6605 CST -.9610
LSA 3779.9 MSA 582.8 SSA 20.9
EL1 3625.1 EL2 509.5 ALF 176.10

LAUNCH DATE NOV 20 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 888.505 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.108 GAL -5.83 AZL 88.15 HCA 265.95 SMA 189.63 ECC .24182 INC 1.8491 V1 30.147
RP 207.04 LAP -1.84 LOP 323.66 VP 24.129 GAP -12.98 AZP 90.13 TAL 329.35 TAP 235.31 RCA 143.77 APO 235.49 V2 26.454
RC 326.088 GL 14.55 GP -1.11 ZAL 135.38 ZAP 30.67 ETS 177.07 ZAE 49.78 ETE 178.81 ZAC 85.40 ETC 256.73 CLP 30.65

PLANETOCENTRIC CONIC

C3 17.892 VHL 4.230 DLA 7.50 RAL 199.47 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 5.766 DPA 2.64 RAP 174.93 ECC 1.2945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 5	2422.77	-24.02	55.12	61.11	105.47	20 24 28	1822.8	-21.66	47.24
90.00	9 38 53	4597.57	12.50	194.54	57.91	64.38	10 55 30	3997.6	8.95	187.66
100.00	21 9 2	2148.79	-25.09	34.62	60.77	106.81	21 44 51	1548.8	-22.55	26.75
100.00	10 56 37	4346.77	13.50	175.59	57.40	63.08	12 9 4	3746.8	9.78	168.78
110.00	22 25 30	1909.48	-27.96	15.37	59.69	110.52	22 57 20	1309.5	-24.91	7.53
110.00	11 56 38	4158.85	16.16	159.83	55.90	59.46	13 5 57	3558.9	11.98	153.21

DIFFERENTIAL CORRECTIONS
TDE-1.4521 TRA 7.7263 TC-12.0963 BAU 2.8943
RDE .4194 RRA .1138 RC3 .3035 FAU .08915
FDE-1.1940 FRA 3.6248 FC3-4.3135 BSP 52536
BDE 1.5114 BRA 7.7271 BC312.1001 FSP 2002

MID-COURSE EXECUTION ACCURACY
SGT14832.9 SGR 642.5 SG3 549.6
RRT -.2207 RRF -.2657 RTF .9836
SGB14846.8 R23 .0494 R13 -.9836
SG114833.5 SG2 626.6 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 3740.5 SR 570.1 SS 1095.4
CRT -.4559 CRS .6784 CST -.9629
LSA 3896.7 MSA 575.5 SSA 20.5
EL1 3749.7 EL2 506.1 ALF 175.95

LAUNCH DATE NOV 20 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 892.727 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.114 GAL -6.04 AZL 88.16 HCA 267.22 SMA 189.75 ECC .24375 INC 1.8430 V1 30.147
RP 206.96 LAP -1.84 LOP 324.93 VP 24.147 GAP -13.13 AZP 90.09 TAL 328.40 TAP 235.62 RCA 143.50 APO 236.00 V2 26.463
RC 326.917 GL 14.22 GP -1.09 ZAL 136.58 ZAP 30.14 ETS 177.05 ZAE 48.95 ETE 178.82 ZAC 85.58 ETC 256.67 CLP 30.13

PLANETOCENTRIC CONIC

C3 18.601 VHL 4.313 DLA 6.74 RAL 200.42 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 5.866 DPA 2.35 RAP 175.62 ECC 1.3061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 42	2407.79	-23.74	54.10	62.45	105.91	20 33 50	1807.8	-21.33	46.26
90.00	9 36 48	4630.73	13.47	196.50	59.48	64.85	10 53 59	4030.7	9.97	189.57
100.00	21 18 15	2135.06	-24.82	33.70	62.10	107.22	21 53 50	1535.1	-22.22	25.86
100.00	10 54 56	4378.70	14.48	177.46	58.98	63.56	12 7 54	3778.7	10.81	170.59
110.00	22 33 51	1898.46	-27.69	14.62	60.99	110.89	23 5 30	1298.5	-24.60	6.82
110.00	11 55 49	4188.06	17.16	161.50	57.48	59.97	13 5 37	3588.1	13.04	154.81

DIFFERENTIAL CORRECTIONS
TDE-1.5863 TRA 8.0331 TC-11.7714 BAU 2.9283
RDE .4315 RRA .1089 RC3 .3004 FAU .08323
FDE-1.1994 FRA 3.5243 FC3-3.8735 BSP 52894
BDE 1.6439 BRA 8.0338 BC311.7753 FSP 1894

MID-COURSE EXECUTION ACCURACY
SGT14933.8 SGR 645.7 SG3 517.9
RRT -.2358 RRF -.2823 RTF .9825
SGB14947.8 R23 .0516 R13 -.9825
SG114934.6 SG2 627.4 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 3863.5 SR 574.9 SS 1081.1
CRT -.4815 CRS .6951 CST -.9645
LSA 4012.8 MSA 568.2 SSA 20.1
EL1 3873.6 EL2 502.6 ALF 175.83

LAUNCH DATE NOV 20 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 896.940 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.121 GAL -6.25 AZL 88.16 HCA 268.49 SMA 189.87 ECC .24576 INC 1.8370 V1 30.147
RP 206.89 LAP -1.84 LOP 326.20 VP 24.165 GAP -13.28 AZP 90.05 TAL 327.43 TAP 235.92 RCA 143.21 APO 236.53 V2 26.471
RC 327.742 GL 13.88 GP -1.07 ZAL 137.78 ZAP 29.64 ETS 177.02 ZAE 48.14 ETE 178.82 ZAC 85.76 ETC 256.61 CLP 29.62

PLANETOCENTRIC CONIC

C3 19.358 VHL 4.400 DLA 6.00 RAL 201.35 RAD 6567.8 VEL 11.863 PTH 2.10 VHP 5.969 DPA 2.05 RAP 176.32 ECC 1.3186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 10	2393.49	-23.47	53.14	63.80	106.31	20 43 3	1793.5	-21.01	45.33
90.00	9 34 48	4663.83	14.42	198.47	61.08	65.36	10 52 31	4063.8	10.97	191.48
100.00	21 27 21	2121.96	-24.55	32.81	63.44	107.61	22 2 43	1522.0	-21.91	25.01
100.00	10 53 18	4410.59	15.44	179.35	60.59	64.08	12 6 48	3810.6	11.83	172.42
110.00	22 42 6	1888.02	-27.44	13.92	62.31	111.24	23 13 34	1288.0	-24.30	6.15
110.00	11 55 2	4217.30	18.15	163.19	59.10	60.52	13 5 19	3617.3	14.08	156.43

DIFFERENTIAL CORRECTIONS
TDE-1.7240 TRA 8.3487 TC-11.4459 BAU 2.9632
RDE .4440 RRA .1035 RC3 .2967 FAU .07752
FDE-1.2012 FRA 3.4201 FC3-3.4667 BSP 53237
BDE 1.7803 BRA 8.3494 BC311.4497 FSP 1788

MID-COURSE EXECUTION ACCURACY
SGT15032.9 SGR 648.7 SG3 487.3
RRT -.2508 RRF -.2990 RTF .9812
SGB15046.9 R23 .0542 R13 -.9813
SG115033.8 SG2 627.9 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 3985.9 SR 579.6 SS 1064.5
CRT -.5051 CRS .7109 CST -.9658
LSA 4128.1 MSA 561.3 SSA 19.7
EL1 3996.8 EL2 498.9 ALF 175.73

LAUNCH DATE NOV 20 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 901.143 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.128 GAL -6.48 AZL 88.17 HCA 269.75 SMA 189.99 ECC .24785 INC 1.8311 V1 30.147
RP 206.84 LAP -1.83 LOP 327.46 VP 24.182 GAP -13.44 AZP 90.01 TAL 326.45 TAP 236.20 RCA 142.90 APO 237.08 V2 26.477
RC 328.562 GL 13.55 GP -1.05 ZAL 138.96 ZAP 29.14 ETS 177.00 ZAE 47.34 ETE 178.82 ZAC 85.94 ETC 256.55 CLP 29.13

PLANETOCENTRIC CONIC

C3 20.165 VHL 4.491 DLA 5.25 RAL 202.28 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 6.074 DPA 1.75 RAP 177.03 ECC 1.3319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 30	2379.86	-23.21	52.23	65.17	106.70	20 52 9	1779.9	-20.70	44.46
90.00	9 32 52	4696.87	15.34	200.45	62.72	65.91	10 51 8	4096.9	11.96	193.40
100.00	21 36 19	2109.50	-24.29	31.98	64.80	107.98	22 11 28	1509.5	-21.60	24.21
100.00	10 51 43	4442.46	16.38	181.25	62.23	64.64	12 5 46	3842.5	12.83	174.25
110.00	22 50 14	1878.14	-27.19	13.26	63.64	111.56	23 21 32	1278.1	-24.02	5.53
110.00	11 54 17	4246.58	19.12	164.90	60.75	61.11	13 4	3646.6	15.12	158.07

DIFFERENTIAL CORRECTIONS
TDE-1.8631 TRA 8.6740 TC-11.1187 BAU 2.9986
RDE .4569 RRA .0978 RC3 .2926 FAU .07195
FDE-1.1989 FRA 3.3131 FC3-3.0888 BSP 53557
BDE 1.9183 BRA 8.6746 BC311.1226 FSP 1686

MID-COURSE EXECUTION ACCURACY
SGT15129.1 SGR 651.6 SG3 457.6
RRT -.2655 RRF -.3155 RTF .9798
SGB15143.1 R23 .0569 R13 -.9798
SG115130.1 SG2 628.2 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4105.8 SR 584.2 SS 1045.5
CRT -.5265 CRS .7256 CST -.9667
LSA 4240.7 MSA 554.7 SSA 19.4
EL1 4117.5 EL2 495.3 ALF 175.65

LAUNCH DATE NOV 20 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 905.334 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.134 GAL -6.71 AZL 88.17 HCA 271.02 SMA 190.11 ECC .25004 INC 1.8251 V1 30.147
RP 206.79 LAP -1.82 LOP 328.73 VP 24.197 GAP -13.59 AZP 89.97 TAL 325.45 TAP 236.47 RCA 142.58 APO 237.65 V2 26.483
RC 329.378 GL 13.21 GP -1.03 ZAL 140.13 ZAP 28.66 ETS 176.98 ZAE 46.55 ETE 178.83 ZAC 86.13 ETC 256.49 CLP 28.65

PLANETOCENTRIC CONIC

C3 21.026 VHL 4.585 DLA 4.52 RAL 203.20 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 6.181 DPA 1.44 RAP 177.75 ECC 1.3460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 41	2366.90	-22.95	51.37	66.56	107.06	21 1 8	1766.9	-20.40	43.62
90.00	9 31 0	4729.83	16.25	202.44	64.39	66.49	10 49 49	4129.8	12.93	195.34
100.00	21 45 9	2097.68	-24.04	31.19	66.18	108.32	22 20 7	1497.7	-21.31	23.45
100.00	10 50 13	4474.28	17.29	183.16	63.90	65.23	12 4 47	3874.3	13.81	176.10
110.00	22 58 16	1868.85	-26.96	12.64	65.00	111.86	23 29 25	1268.8	-23.75	4.94
110.00	11 53 35	4275.88	20.07	166.64	62.43	61.73	13 4 51	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-2.0050 TRA 9.0078 TC-10.7921 BAU 3.0347
RDE .4702 RRA .0916 RC3 .2880 FAU .06657
FDE-1.1934 FRA 3.2030 FC3-2.7408 BSP 53846
BDE 2.0594 BRA 9.0082 BC310.7960 FSP 1586

MID-COURSE EXECUTION ACCURACY
SGT15222.0 SGR 654.4 SG3 429.1
RRT -.2801 RRF -.3321 RTF .9782
SGB15236.0 R23 .0601 R13 -.9782
SG115223.1 SG2 628.1 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4223.4 SR 588.6 SS 1024.4
CRT -.5461 CRS .7397 CST -.9674
LSA 4351.1 MSA 548.5 SSA 19.0
EL1 4235.8 EL2 491.7 ALF 175.59

LAUNCH DATE NOV 20 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 909.512 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.141 GAL -6.94 AZL 88.18 HCA 272.29 SMA 190.24 ECC .25231 INC 1.8190 V1 30.147
RP 206.75 LAP -1.82 LOP 330.00 VP 24.212 GAP -13.76 AZP 89.93 TAL 324.44 TAP 236.73 RCA 142.24 APO 238.24 V2 26.488
RC 330.190 GL 12.88 GP -1.01 ZAL 141.29 ZAP 28.20 ETS 176.95 ZAE 45.78 ETE 178.83 ZAC 86.32 ETC 256.43 CLP 28.18

PLANETOCENTRIC CONIC

C3 21.944 VHL 4.684 DLA 3.80 RAL 204.11 RAD 6567.9 VEL 11.972 PTH 2.13 VHP 6.290 DPA 1.12 RAP 178.49 ECC 1.3611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 45	2354.59	-22.70	50.55	67.96	107.40	21 10 0	1754.6	-20.11	42.84
90.00	9 29 11	4762.73	17.13	204.45	66.08	67.10	10 48 34	4162.7	13.88	197.28
100.00	21 53 52	2086.49	-23.80	30.45	67.57	108.64	22 28 39	1486.5	-21.03	22.74
100.00	10 48 45	4506.06	18.19	185.10	65.60	65.86	12 3 51	3906.1	14.78	177.97
110.00	23 6 12	1860.13	-26.73	12.05	66.37	112.14	23 37 12	1260.1	-23.49	4.39
110.00	11 52 55	4305.18	21.01	168.40	64.15	62.39	13 4 41	3705.2	17.15	161.40

DIFFERENTIAL CORRECTIONS
TDE-2.1511 TRA 9.3500 TC-10.4703 BAU 3.0728
RDE .4840 RRA .0850 RC3 .2831 FAU .06136
FDE-1.1845 FRA 3.0894 FC3-2.4207 BSP 54100
BDE 2.2048 BRA 9.3504 BC310.4742 FSP 1487

MID-COURSE EXECUTION ACCURACY
SGT15313.7 SGR 657.1 SG3 401.4
RRT -.2947 RRF -.3487 RTF .9764
SGB15327.8 R23 .0634 R13 -.9764
SG115314.9 SG2 627.8 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4339.5 SR 592.9 SS 1001.3
CRT -.5645 CRS .7532 CST -.9679
LSA 4459.9 MSA 542.3 SSA 18.7
EL1 4352.5 EL2 487.9 ALF 175.53

LAUNCH DATE NOV 20 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 913.677 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.148 GAL -7.18 AZL 88.19 HCA 273.56 SMA 190.36 ECC .25469 INC 1.8131 V1 30.147
RP 206.71 LAP -1.81 LOP 331.27 VP 24.226 GAP -13.93 AZP 89.89 TAL 323.41 TAP 236.97 RCA 141.88 APO 238.85 V2 26.492
RC 331.000 GL 12.55 GP -1.00 ZAL 142.44 ZAP 27.74 ETS 176.92 ZAE 45.02 ETE 178.83 ZAC 86.51 ETC 256.37 CLP 27.73

PLANETOCENTRIC CONIC

C3 22.922 VHL 4.788 DLA 3.09 RAL 205.01 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 6.401 DPA .80 RAP 179.24 ECC 1.3772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 41	2342.93	-22.46	49.78	69.38	107.71	21 18 44	1742.9	-19.83	42.10
90.00	9 27 27	4795.54	17.99	206.48	67.81	67.76	10 47 23	4195.5	14.82	199.24
100.00	22 2 28	2075.92	-23.57	29.75	68.98	108.94	22 37 4	1475.9	-20.76	22.07
100.00	10 47 21	4537.79	19.06	187.05	67.34	66.53	12 2 59	3937.8	15.72	179.85
110.00	23 14 1	1851.98	-26.52	11.51	67.75	112.40	23 44 53	1252.0	-23.25	3.88
110.00	11 52 18	4334.50	21.92	170.19	65.90	63.09	13 4 32	3734.5	18.14	163.10

DIFFERENTIAL CORRECTIONS
TDE-2.2982 TRA 9.7027 TC-10.1499 BAU 3.1115
RDE .4983 RRA .0780 RC3 .2779 FAU .05630
FDE-1.1722 FRA 2.9728 FC3-2.1263 BSP 54344
BDE 2.3516 BRA 9.7031 BC310.1537 FSP 1392

MID-COURSE EXECUTION ACCURACY
SGT15402.7 SGR 659.6 SG3 374.7
RRT -.3090 RRF -.3654 RTF .9742
SGB15416.8 R23 .0671 R13 -.9743
SG115404.0 SG2 627.3 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 4451.9 SR 597.0 SS 976.0
CRT -.5811 CRS .7660 CST -.9680
LSA 4565.1 MSA 536.6 SSA 18.3
EL1 4465.6 EL2 484.3 ALF 175.49

LAUNCH DATE NOV 20 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 917.826 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.155 GAL -7.43 AZL 88.19 HCA 274.83 SMA 190.49 ECC .25717 INC 1.8070 V1 30.147
RP 206.69 LAP -1.80 LOP 332.54 VP 24.238 GAP -14.10 AZP 89.85 TAL 322.37 TAP 237.19 RCA 141.50 APO 239.48 V2 26.494
RC 331.806 GL 12.23 GP -.98 ZAL 143.58 ZAP 27.30 ETS 176.90 ZAE 44.27 ETE 178.83 ZAC 86.71 ETC 256.32 CLP 27.29

PLANETOCENTRIC CONIC

C3 23.964 VHL 4.895 DLA 2.38 RAL 205.90 RAD 6568.0 VEL 12.056 PTH 2.15 VHP 6.515 DPA .47 RAP 180.00 ECC 1.3944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 29	2331.92	-22.23	49.05	70.82	108.00	21 27 21	1731.9	-19.56	41.40
90.00	9 25 46	4828.28	18.82	208.52	69.57	68.45	10 46 15	4228.3	15.73	201.21
100.00	22 10 56	2065.97	-23.34	29.09	70.41	109.22	22 45 22	1466.0	-20.51	21.44
100.00	10 46 0	4569.47	19.91	189.02	69.10	67.23	12 2 10	3969.5	16.65	181.74
110.00	23 21 44	1844.40	-26.33	11.01	69.15	112.64	23 52 28	1244.4	-23.03	3.41
110.00	11 51 42	4363.80	22.81	171.99	67.68	63.82	13 4 26	3763.8	19.11	164.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.4497 TRA10.0633 TC3-9.8349 BAU 3.1521 SGT15488.9 SGR 662.1 SG3 348.8 ST 4561.9 SR 600.9 SS 948.9
RDE .5129 RRA .0705 RC3 .2724 FAU .05139 RRT -.3233 RRF -.3822 RTF .9718 CRT -.5968 CRS .7785 CST -.9679
FDE-1.1569 FRA 2.8523 FC3-1.8565 BSP 54536 SGB15503.0 R23 .0713 R13 -.9718 LSA 4668.0 MSA 530.9 SSA 18.0
BDE 2.5029 BRA10.0635 BC3 9.8386 FSP 1298 SG115490.3 SG2 626.5 THA 179.21 EL1 4576.2 EL2 480.6 ALF 175.46

LAUNCH DATE NOV 20 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 921.960 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.162 GAL -7.69 AZL 88.20 HCA 276.09 SMA 190.62 ECC .25975 INC 1.8010 V1 30.147
RP 206.68 LAP -1.79 LOP 333.81 VP 24.250 GAP -14.28 AZP 89.81 TAL 321.31 TAP 237.40 RCA 141.10 APO 240.13 V2 26.496
RC 332.609 GL 11.90 GP -.96 ZAL 144.70 ZAP 26.88 ETS 176.87 ZAE 43.53 ETE 178.83 ZAC 86.90 ETC 256.27 CLP 26.86

PLANETOCENTRIC CONIC

C3 25.075 VHL 5.008 DLA 1.69 RAL 206.79 RAD 6568.0 VEL 12.102 PTH 2.17 VHP 6.631 DPA .13 RAP 180.77 ECC 1.4127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 10	2321.53	-22.01	48.37	72.27	108.28	21 35 52	1721.5	-19.31	40.74
90.00	9 24 9	4860.93	19.63	210.58	71.36	69.17	10 45 10	4260.9	16.62	203.20
100.00	22 19 18	2056.62	-23.13	28.48	71.85	109.48	22 53 34	1456.6	-20.27	20.85
100.00	10 44 43	4601.07	20.73	191.01	70.90	67.97	12 1 24	4001.1	17.56	183.65
110.00	23 29 21	1837.38	-26.14	10.55	70.57	112.85	23 59 58	1237.4	-22.82	2.97
110.00	11 51 9	4393.09	23.68	173.82	69.50	64.60	13 4 22	3793.1	20.06	166.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.6028 TRA10.4346 TC3-9.5222 BAU 3.1934 SGT15571.9 SGR 664.4 SG3 323.9 ST 4668.1 SR 604.6 SS 919.8
RDE .5280 RRA .0626 RC3 .2667 FAU .04659 RRT -.3374 RRF -.3989 RTF .9689 CRT -.6110 CRS .7905 CST -.9676
FDE-1.1385 FRA 2.7290 FC3-1.6086 BSP 54708 SGB15586.1 R23 .0759 R13 -.9690 LSA 4767.2 MSA 525.5 SSA 17.7
BDE 2.6558 BRA10.4348 BC3 9.5259 FSP 1208 SG115573.5 SG2 625.4 THA 179.17 EL1 4682.8 EL2 477.1 ALF 175.43

LAUNCH DATE NOV 20 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 926.076 EARTH TO MARS

RL 147.79 LAL .00 LOL 57.71 VL 33.169 GAL -7.95 AZL 88.21 HCA 277.36 SMA 190.75 ECC .26244 INC 1.7949 V1 30.147
RP 206.67 LAP -1.78 LOP 335.08 VP 24.260 GAP -14.46 AZP 89.77 TAL 320.24 TAP 237.60 RCA 140.69 APO 240.81 V2 26.497
RC 333.409 GL 11.58 GP -.95 ZAL 145.81 ZAP 26.46 ETS 176.85 ZAE 42.80 ETE 178.83 ZAC 87.10 ETC 256.22 CLP 26.44

PLANETOCENTRIC CONIC

C3 26.259 VHL 5.124 DLA 1.01 RAL 207.66 RAD 6568.1 VEL 12.151 PTH 2.18 VHP 6.750 DPA -.21 RAP 181.55 ECC 1.4322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 44	2311.76	-21.80	47.73	73.73	108.53	21 44 15	1711.8	-19.07	40.12
90.00	9 22 35	4893.49	20.40	212.66	73.18	69.92	10 44 9	4293.5	17.48	205.20
100.00	22 27 32	2047.88	-22.93	27.90	73.31	109.72	23 1 40	1447.9	-20.04	20.30
100.00	10 43 28	4632.61	21.52	193.02	72.72	68.74	12 0 40	4032.6	18.44	185.58
110.00	23 36 51	1830.91	-25.97	10.13	72.00	113.05	24 7 22	1230.9	-22.62	2.57
110.00	11 50 38	4422.34	24.52	175.68	71.34	65.40	13 4 20	3822.3	21.00	168.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.7589 TRA10.8164 TC3-9.2153 BAU 3.2364 SGT15653.2 SGR 666.6 SG3 299.7 ST 4771.1 SR 608.0 SS 888.9
RDE .5435 RRA .0541 RC3 .2608 FAU .04193 RRT -.3514 RRF -.4157 RTF .9655 CRT -.6243 CRS .8021 CST -.9669
FDE-1.1168 FRA 2.6020 FC3-1.3823 BSP 54859 SGB15667.3 R23 .0811 R13 -.9656 LSA 4863.4 MSA 520.3 SSA 17.4
BDE 2.8119 BRA10.8165 BC3 9.2190 FSP 1119 SG115654.9 SG2 624.0 THA 179.14 EL1 4786.3 EL2 473.5 ALF 175.41

LAUNCH DATE NOV 21 1964 FLIGHT TIME 160.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 420.630 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 35.211 GAL -4.67 AZL 88.46 HCA 132.93 SMA 238.47 ECC .38776 INC 1.5430 V1 30.153
RP 244.34 LAP 1.13 LOP 191.66 VP 23.017 GAP 22.77 AZP 91.05 TAL 343.20 TAP 116.13 RCA 146.00 APO 330.94 V2 22.451
RC 131.411 GL 9.68 GP .85 ZAL 116.69 ZAP 173.32 ETS 171.38 ZAE 154.28 ETE 359.61 ZAC 89.62 ETC 256.05 CLP 173.38

PLANETOCENTRIC CONIC

C3 31.571 VHL 5.619 DLA 10.53 RAL 180.07 RAD 6568.3 VEL 12.367 PTH 2.23 VHP 10.317 DPA -.04 RAP 185.49 ECC 1.5196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 37	2659.63	-27.30	71.66	53.19	97.83	18 42 57	2059.6	-25.93	63.26
90.00	8 41 39	4637.67	13.67	196.91	47.08	64.96	9 58 57	4037.7	10.18	189.97
100.00	19 25 12	2380.37	-28.64	50.89	52.97	98.97	20 4 53	1780.4	-27.10	42.43
100.00	9 57 45	4392.16	14.88	178.26	46.48	63.77	11 10 57	3792.2	11.24	171.36
110.00	20 45 21	2129.58	-32.20	31.08	52.20	102.14	21 20 51	1529.6	-30.20	22.44
110.00	10 54 6	4215.72	18.09	163.10	44.71	60.49	12 4 21	3615.7	14.03	156.35

DIFFERENTIAL CORRECTIONS
TDE .8165 TRA-2.1196 TC3 .8898 BAU .3763
RDE -.4590 RRA -.1868 RC3 -.0549 FAU .06510
FDE -.3402 FRA 1.3993 FC3-1.7852 BSP 8572
BDE .9367 BRA 2.1278 BC3 .8915 FSP 593

MID-COURSE EXECUTION ACCURACY
SGT 2554.7 SGR 510.3 SG3 216.0
RRT -.0195 RRF .0038 RTF -.8588
SGB 2605.1 R23 .0136 R13 .8588
SG1 2554.7 SG2 510.2 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 1062.6 SR 471.6 SS 499.1
CRT -.7012 CRS -.5193 CST .9711
LSA 1214.9 MSA 351.7 SSA 31.3
EL1 1117.8 EL2 319.6 ALF 161.11

LAUNCH DATE NOV 21 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 422.851 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 35.105 GAL -4.49 AZL 88.47 HCA 133.84 SMA 235.31 ECC .37909 INC 1.5339 V1 30.153
RP 244.11 LAP 1.11 LOP 192.57 VP 22.877 GAP 22.18 AZP 91.06 TAL 343.58 TAP 117.42 RCA 146.11 APO 324.51 V2 22.475
RC 133.550 GL 9.84 GP .88 ZAL 116.04 ZAP 172.82 ETS 171.64 ZAE 154.13 ETE 359.83 ZAC 89.74 ETC 256.04 CLP 172.88

PLANETOCENTRIC CONIC

C3 30.027 VHL 5.480 DLA 10.94 RAL 179.54 RAD 6568.2 VEL 12.304 PTH 2.22 VHP 10.081 DPA -.18 RAP 185.88 ECC 1.4942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 12	2660.44	-27.31	71.71	51.89	97.80	18 37 32	2060.4	-25.95	63.31
90.00	8 42 52	4611.68	12.91	195.37	45.74	64.58	9 59 44	4011.7	9.39	188.47
100.00	19 20 1	2380.43	-28.64	50.90	51.67	98.97	19 59 42	1780.4	-27.10	42.43
100.00	9 58 44	4366.93	14.12	176.77	45.14	63.38	11 11 31	3766.9	10.43	169.92
110.00	20 40 41	2128.01	-32.18	30.96	50.90	102.20	21 16 9	1528.0	-30.17	22.33
110.00	10 54 34	4192.10	17.30	161.73	43.36	60.05	12 4 26	3592.1	13.18	155.04

DIFFERENTIAL CORRECTIONS
TDE .7956 TRA-2.0899 TC3 .9656 BAU .3883
RDE -.4416 RRA -.1798 RC3 -.0558 FAU .06705
FDE -.3349 FRA 1.4207 FC3-1.9331 BSP 8749
BDE .9100 BRA 2.0977 BC3 .9673 FSP 628

MID-COURSE EXECUTION ACCURACY
SGT 2601.1 SGR 503.6 SG3 227.0
RRT -.0172 RRF .0011 RTF -.8636
SGB 2649.4 R23 .0144 R13 .8636
SG1 2601.1 SG2 503.5 THA 179.80

ORBIT DETERMINATION ACCURACY
ST 1067.2 SR 465.3 SS 502.4
CRT -.6964 CRS -.5058 CST .9689
LSA 1217.8 MSA 351.9 SSA 31.7
EL1 1119.9 EL2 318.2 ALF 161.57

LAUNCH DATE NOV 21 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 425.183 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 35.003 GAL -4.32 AZL 88.48 HCA 134.75 SMA 232.37 ECC .37080 INC 1.5245 V1 30.153
RP 243.87 LAP 1.08 LOP 193.48 VP 22.744 GAP 21.59 AZP 91.07 TAL 343.97 TAP 118.72 RCA 146.21 APO 318.53 V2 22.498
RC 135.719 GL 10.00 GP .92 ZAL 115.38 ZAP 172.32 ETS 171.85 ZAE 154.02 ETE .05 ZAC 89.86 ETC 256.02 CLP 172.37

PLANETOCENTRIC CONIC

C3 28.582 VHL 5.346 DLA 11.35 RAL 178.99 RAD 6568.1 VEL 12.246 PTH 2.20 VHP 9.851 DPA -.32 RAP 186.26 ECC 1.4704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 38	2661.75	-27.32	71.81	50.60	97.75	18 31 59	2061.8	-25.96	63.40
90.00	8 44 5	4585.68	12.15	193.85	44.41	64.22	10 0 31	3985.7	8.58	186.98
100.00	19 14 41	2380.96	-28.64	50.94	50.38	98.95	19 54 22	1781.0	-27.11	42.47
100.00	9 59 42	4341.70	13.35	175.30	43.80	63.00	11 12 4	3741.7	9.62	168.49
110.00	20 35 53	2126.89	-32.16	30.88	49.61	102.25	21 11 20	1526.9	-30.14	22.25
110.00	10 55 0	4168.55	16.49	160.38	42.02	59.62	12 4 28	3568.5	12.33	153.74

DIFFERENTIAL CORRECTIONS
TDE .7743 TRA-2.0595 TC3 1.0459 BAU .4002
RDE -.4248 RRA -.1731 RC3 -.0564 FAU .06909
FDE -.3284 FRA 1.4419 FC3-2.0926 BSP 8919
BDE .8832 BRA 2.0668 BC3 1.0475 FSP 665

MID-COURSE EXECUTION ACCURACY
SGT 2647.2 SGR 496.7 SG3 238.4
RRT -.0146 RRF -.0023 RTF -.8683
SGB 2693.4 R23 .0154 R13 .8683
SG1 2647.2 SG2 496.7 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 1070.4 SR 458.8 SS 505.0
CRT -.6913 CRS -.4906 CST .9663
LSA 1219.1 MSA 352.2 SSA 32.1
EL1 1120.8 EL2 316.6 ALF 162.01

LAUNCH DATE NOV 21 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 427.617 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 34.905 GAL -4.15 AZL 88.49 HCA 135.66 SMA 229.63 ECC .36286 INC 1.5148 V1 30.153
RP 243.63 LAP 1.06 LOP 194.39 VP 22.617 GAP 21.00 AZP 91.08 TAL 344.36 TAP 120.02 RCA 146.31 APO 312.95 V2 22.522
RC 137.915 GL 10.16 GP .95 ZAL 114.69 ZAP 171.80 ETS 172.03 ZAE 153.95 ETE .27 ZAC 89.99 ETC 256.00 CLP 171.86

PLANETOCENTRIC CONIC

C3 27.229 VHL 5.218 DLA 11.76 RAL 178.43 RAD 6568.1 VEL 12.190 PTH 2.19 VHP 9.626 DPA -.46 RAP 186.63 ECC 1.4481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 54	2663.57	-27.34	71.94	49.30	97.69	18 26 18	2063.6	-25.99	63.53
90.00	8 45 17	4559.70	11.37	192.33	43.09	63.89	10 1 17	3959.7	7.77	185.50
100.00	19 9 13	2381.98	-28.65	51.01	49.08	98.91	19 48 55	1782.0	-27.12	42.54
100.00	10 0 39	4316.52	12.56	173.84	42.48	62.65	11 12 36	3716.5	8.80	167.07
110.00	20 30 58	2126.19	-32.15	30.83	48.32	102.28	21 6 24	1526.2	-30.13	22.20
110.00	10 55 24	4145.08	15.68	159.05	40.69	59.23	12 4 29	3545.1	11.48	152.46

DIFFERENTIAL CORRECTIONS
TDE .7526 TRA-2.0290 TC3 1.1310 BAU .4122
RDE -.4086 RRA -.1667 RC3 -.0567 FAU .07125
FDE -.3214 FRA 1.4628 FC3-2.2652 BSP 9099
BDE .8563 BRA 2.0358 BC3 1.1324 FSP 704

MID-COURSE EXECUTION ACCURACY
SGT 2693.4 SGR 489.6 SG3 250.5
RRT -.0115 RRF -.0060 RTF -.8728
SGB 2737.5 R23 .0163 R13 .8728
SG1 2693.4 SG2 489.6 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 1072.4 SR 452.1 SS 507.1
CRT -.6857 CRS -.4746 CST .9636
LSA 1219.2 MSA 352.5 SSA 32.5
EL1 1120.4 EL2 315.0 ALF 162.44

LAUNCH DATE NOV 21 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 430.143 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 34.812 GAL -3.98 AZL 88.50 HCA 136.57 SMA 227.07 ECC .35527 INC 1.5047 V1 30.153
RP 243.38 LAP 1.03 LOP 195.30 VP 22.498 GAP 20.42 AZP 91.09 TAL 344.76 TAP 121.34 RCA 146.40 APO 307.74 V2 22.547
RC 140.134 GL 10.31 GP .99 ZAL 113.99 ZAP 171.28 ETS 172.18 ZAE 153.93 ETE .49 ZAC 90.11 ETC 255.99 CLP 171.34

PLANETOCENTRIC CONIC

C3 25.963 VHL 5.095 DLA 12.18 RAL 177.84 RAD 6568.0 VEL 12.138 PTH 2.18 VHP 9.407 DPA -.59 RAP 187.01 ECC 1.4273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 2	2665.89	-27.36	72.11	48.00	97.61	18 20 28	2065.9	-26.02	63.69
90.00	8 46 28	4533.76	10.59	190.83	41.77	63.59	10 2 2	3933.8	6.96	184.03
100.00	19 3 36	2383.46	-28.67	51.12	47.79	98.85	19 43 20	1783.5	-27.15	42.65
100.00	10 1 35	4291.42	11.77	172.39	41.16	62.32	11 13 7	3691.4	7.98	165.66
110.00	20 25 55	2125.92	-32.15	30.81	47.04	102.29	21 1 21	1525.9	-30.12	22.18
110.00	10 55 46	4121.73	14.86	157.73	39.37	58.86	12 4 28	3521.7	10.63	151.19

DIFFERENTIAL CORRECTIONS
TDE .7308 TRA-1.9975 TC3 1.2200 BAU .4239
RDE -.3929 RRA -.1605 RC3 -.0567 FAU .07350
FDE -.3133 FRA 1.4834 FC3-2.4507 BSP 9264
BDE .8297 BRA 2.0039 BC3 1.2213 FSP 744

MID-COURSE EXECUTION ACCURACY
SGT 2738.8 SGR 482.3 SG3 263.1
RRT -.0079 RRF -.0103 RTF -.8772
SGB 2781.0 R23 .0175 R13 .8771
SG1 2738.8 SG2 482.3 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 1073.3 SR 445.2 SS 508.8
CRT -.6799 CRS -.4571 CST .9604
LSA 1217.9 MSA 352.9 SSA 32.9
EL1 1119.0 EL2 313.1 ALF 162.87

LAUNCH DATE NOV 21 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 432.755 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 34.722 GAL -3.81 AZL 88.51 HCA 137.49 SMA 224.68 ECC .34800 INC 1.4943 V1 30.153
RP 243.12 LAP 1.01 LOP 196.22 VP 22.384 GAP 19.84 AZP 91.10 TAL 345.17 TAP 122.66 RCA 146.49 APO 302.87 V2 22.572
RC 142.373 GL 10.46 GP 1.03 ZAL 113.26 ZAP 170.75 ETS 172.31 ZAE 153.96 ETE .72 ZAC 90.23 ETC 255.97 CLP 170.81

PLANETOCENTRIC CONIC

C3 24.777 VHL 4.978 DLA 12.61 RAL 177.23 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 9.193 DPA -.71 RAP 187.37 ECC 1.4078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 1	2668.70	-27.38	72.31	46.71	97.51	18 14 30	2068.7	-26.06	63.89
90.00	8 47 39	4507.88	9.81	189.33	40.47	63.30	10 2 47	3907.9	6.14	182.57
100.00	18 57 51	2385.42	-28.69	51.26	46.50	98.78	19 37 37	1785.4	-27.18	42.78
100.00	10 2 30	4266.40	10.98	170.96	39.85	62.02	11 13 36	3666.4	7.15	164.26
110.00	20 20 44	2126.07	-32.15	30.82	45.75	102.29	20 56 10	1526.1	-30.13	22.19
110.00	10 56 6	4098.51	14.04	156.43	38.06	58.51	12 4 25	3498.5	9.77	149.94

DIFFERENTIAL CORRECTIONS
TDE .7156 TRA-1.9587 TC3 1.3246 BAU .4392
RDE -.3778 RRA -.1548 RC3 -.0566 FAU .07577
FDE -.3024 FRA 1.5056 FC3-2.6476 BSP 9264
BDE .8092 BRA 1.9648 BC3 1.3258 FSP 791

MID-COURSE EXECUTION ACCURACY
SGT 2784.7 SGR 475.0 SG3 276.2
RRT -.0080 RRF -.0161 RTF -.8834
SGB 2824.9 R23 .0234 R13 .8834
SG1 2784.7 SG2 475.0 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 1077.2 SR 438.3 SS 509.3
CRT -.6784 CRS -.4351 CST .9541
LSA 1218.8 MSA 353.9 SSA 32.8
EL1 1121.0 EL2 309.5 ALF 163.26

LAUNCH DATE NOV 21 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 435.445 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 34.637 GAL -3.65 AZL 88.52 HCA 138.41 SMA 222.44 ECC .34105 INC 1.4835 V1 30.153
RP 242.87 LAP .98 LOP 197.14 VP 22.277 GAP 19.26 AZP 91.11 TAL 345.58 TAP 123.98 RCA 146.58 APO 298.30 V2 22.598
RC 144.629 GL 10.60 GP 1.07 ZAL 112.53 ZAP 170.21 ETS 172.41 ZAE 154.02 ETE .95 ZAC 90.36 ETC 255.96 CLP 170.27

PLANETOCENTRIC CONIC

C3 23.669 VHL 4.865 DLA 13.03 RAL 176.61 RAD 6568.0 VEL 12.044 PTH 2.15 VHP 8.984 DPA -.84 RAP 187.74 ECC 1.3895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 53	2671.95	-27.41	72.54	45.42	97.40	18 8 25	2072.0	-26.10	64.12
90.00	8 48 48	4482.17	9.02	187.86	39.17	63.04	10 3 30	3882.2	5.33	181.12
100.00	18 52 0	2387.80	-28.71	51.43	45.21	98.69	19 31 48	1787.8	-27.21	42.95
100.00	10 3 23	4241.55	10.18	169.55	38.55	61.74	11 14 4	3641.6	6.33	162.88
110.00	20 15 28	2126.60	-32.16	30.86	44.47	102.26	20 50 55	1526.6	-30.14	22.23
110.00	10 56 23	4075.51	13.22	155.16	36.76	58.18	12 4 19	3475.5	8.92	148.70

DIFFERENTIAL CORRECTIONS
TDE .6891 TRA-1.9306 TC3 1.4161 BAU .4484
RDE -.3630 RRA -.1491 RC3 -.0556 FAU .07831
FDE -.2933 FRA 1.5243 FC3-2.8644 BSP 9527
BDE .7789 BRA 1.9364 BC3 1.4172 FSP 834

MID-COURSE EXECUTION ACCURACY
SGT 2829.1 SGR 467.2 SG3 290.2
RRT -.0006 RRF -.0214 RTF -.8862
SGB 2867.4 R23 .0220 R13 .8862
SG1 2829.1 SG2 467.2 THA 179.99

ORBIT DETERMINATION ACCURACY
ST 1072.7 SR 431.0 SS 510.2
CRT -.6689 CRS -.4164 CST .9517
LSA 1212.4 MSA 354.3 SSA 33.4
EL1 1114.1 EL2 308.5 ALF 163.67

LAUNCH DATE NOV 21 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 438.208 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 34.555 GAL -3.50 AZL 88.53 HCA 139.33 SMA 220.34 ECC .33440 INC 1.4722 V1 30.153
RP 242.60 LAP .96 LOP 198.06 VP 22.176 GAP 18.69 AZP 91.12 TAL 345.99 TAP 125.32 RCA 146.66 APO 294.03 V2 22.624
RC 146.900 GL 10.74 GP 1.11 ZAL 111.77 ZAP 169.66 ETS 172.50 ZAE 154.13 ETE 1.19 ZAC 90.48 ETC 255.95 CLP 169.72

PLANETOCENTRIC CONIC

C3 22.631 VHL 4.757 DLA 13.46 RAL 175.97 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 8.780 DPA -.95 RAP 188.10 ECC 1.3724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 38	2675.66	-27.44	72.81	44.13	97.27	18 2 14	2075.7	-26.15	64.38
90.00	8 49 56	4456.60	8.22	186.40	37.89	62.81	10 4 12	3856.6	4.51	179.68
100.00	18 46 1	2390.60	-28.74	51.64	43.93	98.59	19 25 52	1790.6	-27.25	43.15
100.00	10 4 13	4216.89	9.38	168.15	37.27	61.49	11 14 30	3616.9	5.50	161.51
110.00	20 10 6	2127.52	-32.17	30.93	43.20	102.23	20 45 33	1527.5	-30.16	22.29
110.00	10 56 38	4052.73	12.40	153.91	35.47	57.89	12 4 11	3452.7	8.07	147.49

DIFFERENTIAL CORRECTIONS
TDE .6637 TRA-1.9003 TC3 1.5140 BAU .4584
RDE -.3488 RRA -.1438 RC3 -.0543 FAU .08095
FDE -.2824 FRA 1.5434 FC3-3.0966 BSP 9742
BDE .7497 BRA 1.9057 BC3 1.5150 FSP 880

MID-COURSE EXECUTION ACCURACY
SGT 2872.6 SGR 459.2 SG3 304.8
RRT .0067 RRF -.0280 RTF -.8893
SGB 2909.1 R23 -.0219 R13 -.8893
SG1 2872.6 SG2 459.2 THA .06

ORBIT DETERMINATION ACCURACY
ST 1067.3 SR 423.5 SS 510.2
CRT -.6596 CRS -.3947 CST .9480
LSA 1204.8 MSA 355.1 SSA 33.9
EL1 1106.5 EL2 307.0 ALF 164.08

LAUNCH DATE NOV 21 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 441.039 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.476	GAL	-3.35	AZL	88.54	HCA	140.25	SMA	218.37	ECC	.32803	INC	1.4605
RP	242.34	LAP	.93	LOP	198.98	VP	22.081	GAP	18.12	AZP	91.12	TAL	346.41	TAP	126.66	RCA	146.74	APO	290.01
RC	149.184	GL	10.86	GP	1.16	ZAL	111.01	ZAP	169.11	ETS	172.57	ZAE	154.27	ETE	1.44	ZAC	90.61	ETC	255.94

V1 30.153 V2 22.651 CLP 169.17

PLANETOCENTRIC CONIC

C3	21.659	VHL	4.654	DLA	13.88	RAL	175.30	RAD	6567.9	VEL	11.960	PTH	2.13	VHP	8.581	DPA	-1.06	RAP	188.45

ECC 1.3565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 15	2679.78	-27.48	73.10	42.85	97.12	17 55 55	2079.8	-26.21	64.67
90.00	8 51 1	4431.22	7.43	184.95	36.61	62.60	10 4 53	3831.2	3.70	178.26
100.00	18 39 56	2393.81	-28.77	51.87	42.65	98.47	19 19 50	1793.8	-27.30	43.37
100.00	10 5 2	4192.43	8.58	166.77	35.99	61.26	11 14 54	3592.4	4.68	160.16
110.00	20 4 37	2128.80	-32.19	31.02	41.93	102.17	20 40 6	1528.8	-30.18	22.39
110.00	10 56 50	4030.20	11.58	152.67	34.20	57.61	12 4 0	3430.2	7.22	146.29

DIFFERENTIAL CORRECTIONS

TDE	.6400	TRA	-1.8679	TC3	1.6186	BAU	.4689	SGT	2915.8	SGR	451.1	SG3	320.2	ST	1062.0	SR	415.9	SS	509.7
RDE	-.3351	RRA	-.1387	RC3	-.0524	FAU	.08369	RRT	.0138	RRF	-.0356	RTF	-.8928	CRT	-.6512	CRS	-.3707	CST	.9432
FDE	-.2702	FRA	1.5622	FC3	-3.3452	BSP	9921	SGB	2950.5	R23	-.0230	R13	-.8928	LSA	1197.0	MSA	356.0	SSA	34.3
BDE	.7224	BRA	1.8730	BC3	1.6195	FSP	930	SG1	2915.8	SG2	451.0	THA	.13	EL1	1099.0	EL2	305.0	ALF	164.47

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 21 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 443.932 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.401	GAL	-3.20	AZL	88.55	HCA	141.17	SMA	216.52	ECC	.32194	INC	1.4483
RP	242.06	LAP	.91	LOP	199.90	VP	21.991	GAP	17.56	AZP	91.13	TAL	346.83	TAP	128.00	RCA	146.82	APO	286.23
RC	151.478	GL	10.99	GP	1.21	ZAL	110.23	ZAP	168.54	ETS	172.63	ZAE	154.45	ETE	1.69	ZAC	90.73	ETC	255.92

V1 30.153 V2 22.678 CLP 168.60

PLANETOCENTRIC CONIC

C3	20.750	VHL	4.555	DLA	14.31	RAL	174.63	RAD	6567.8	VEL	11.922	PTH	2.12	VHP	8.386	DPA	-1.16	RAP	188.79

ECC 1.3415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 47	2684.30	-27.52	73.43	41.57	96.97	17 49 31	2084.3	-26.27	64.99
90.00	8 52 5	4406.07	6.64	183.53	35.35	62.41	10 5 31	3806.1	2.89	176.85
100.00	18 33 45	2397.38	-28.81	52.13	41.37	98.34	19 13 42	1797.4	-27.36	43.63
100.00	10 5 48	4168.23	7.79	165.42	34.73	61.05	11 15 16	3568.2	3.87	158.82
110.00	19 59 4	2130.41	-32.21	31.14	40.66	102.10	20 34 34	1530.4	-30.21	22.50
110.00	10 56 58	4007.96	10.76	151.46	32.93	57.36	12 3 46	3408.0	6.38	145.11

DIFFERENTIAL CORRECTIONS

TDE	.6164	TRA	-1.8354	TC3	1.7273	BAU	.4793	SGT	2958.6	SGR	442.8	SG3	336.2	ST	1055.6	SR	408.1	SS	508.8
RDE	-.3218	RRA	-.1339	RC3	-.0499	FAU	.08656	RRT	.0219	RRF	-.0444	RTF	-.8962	CRT	-.6421	CRS	-.3445	CST	.9377
FDE	-.2567	FRA	1.5812	FC3	-3.6115	BSP	10093	SGB	2991.6	R23	-.0243	R13	-.8962	LSA	1187.8	MSA	357.2	SSA	34.7
BDE	.6954	BRA	1.8403	BC3	1.7280	FSP	983	SG1	2958.7	SG2	442.7	THA	.19	EL1	1090.5	EL2	302.9	ALF	164.86

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 21 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 446.882 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.328	GAL	-3.05	AZL	88.56	HCA	142.10	SMA	214.79	ECC	.31612	INC	1.4356
RP	241.79	LAP	.88	LOP	200.83	VP	21.906	GAP	17.00	AZP	91.13	TAL	347.25	TAP	129.35	RCA	146.89	APO	282.68
RC	153.781	GL	11.10	GP	1.26	ZAL	109.43	ZAP	167.96	ETS	172.67	ZAE	154.68	ETE	1.96	ZAC	90.86	ETC	255.91

V1 30.153 V2 22.706 CLP 168.03

PLANETOCENTRIC CONIC

C3	19.898	VHL	4.461	DLA	14.73	RAL	173.93	RAD	6567.8	VEL	11.886	PTH	2.11	VHP	8.196	DPA	-1.26	RAP	189.13

ECC 1.3275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 12	2689.18	-27.56	73.78	40.29	96.79	17 43 1	2089.2	-26.33	65.33
90.00	8 53 6	4381.19	5.85	182.12	34.09	62.25	10 6 7	3781.2	2.09	175.46
100.00	18 27 28	2401.29	-28.85	52.41	40.10	98.20	19 7 30	1801.3	-27.41	43.90
100.00	10 6 31	4144.32	7.00	164.08	33.47	60.86	11 15 35	3544.3	3.06	157.51
110.00	19 53 26	2132.33	-32.24	31.29	39.40	102.02	20 28 58	1532.3	-30.25	22.64
110.00	10 57 3	3986.04	9.96	150.28	31.67	57.13	12 3 29	3386.0	5.55	143.95

DIFFERENTIAL CORRECTIONS

TDE	.5931	TRA	-1.8012	TC3	1.8415	BAU	.4900	SGT	3000.3	SGR	434.5	SG3	353.1	ST	1047.7	SR	400.2	SS	507.4
RDE	-.3090	RRA	-.1293	RC3	-.0467	FAU	.08960	RRT	.0308	RRF	-.0543	RTF	-.8996	CRT	-.6330	CRS	-.3164	CST	.9314
FDE	-.2421	FRA	1.5990	FC3	-3.8982	BSP	10243	SGB	3031.5	R23	-.0261	R13	-.8996	LSA	1177.1	MSA	358.5	SSA	35.0
BDE	.6687	BRA	1.8058	BC3	1.8421	FSP	1038	SG1	3000.3	SG2	434.3	THA	.26	EL1	1080.6	EL2	300.4	ALF	165.24

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 21 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 449.887 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.259	GAL	-2.91	AZL	88.58	HCA	143.03	SMA	213.15	ECC	.31055	INC	1.4223
RP	241.51	LAP	.86	LOP	201.76	VP	21.827	GAP	16.45	AZP	91.14	TAL	347.68	TAP	130.71	RCA	146.96	APO	279.34
RC	156.092	GL	11.20	GP	1.32	ZAL	108.63	ZAP	167.37	ETS	172.70	ZAE	154.93	ETE	2.24	ZAC	90.99	ETC	255.90

V1 30.153 V2 22.734 CLP 167.44

PLANETOCENTRIC CONIC

C3	19.102	VHL	4.371	DLA	15.14	RAL	173.22	RAD	6567.8	VEL	11.853	PTH	2.10	VHP	8.010	DPA	-1.35	RAP	189.47

ECC 1.3144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 33	2694.38	-27.60	74.16	39.02	96.61	17 36 27	2094.4	-26.39	65.70
90.00	8 54 4	4356.64	5.07	180.74	32.85	62.10	10 6 41	3756.6	1.30	174.09
100.00	18 21 8	2405.50	-28.89	52.72	38.83	98.04	19 1 13	1805.5	-27.47	44.20
100.00	10 7 10	4120.75	6.22	162.77	32.23	60.70	11 15 51	3520.8	2.27	156.21
110.00	19 47 44	2134.52	-32.27	31.45	38.14	101.93	20 23 18	1534.5	-30.29	22.79
110.00	10 57 4	3964.50	9.16	149.12	30.43	56.92	12 3 8	3364.5	4.74	142.82

DIFFERENTIAL CORRECTIONS

TDE	.5690	TRA	-1.7676	TC3	1.9561	BAU	.4996	SGT	3040.2	SGR	426.0	SG3	370.7	ST	1038.2	SR	392.2	SS	505.7
RDE	-.2967	RRA	-.1251	RC3	-.0427	FAU	.09273	RRT	.0416	RRF	-.0661	RTF	-.9027	CRT	-.6225	CRS	-.2851	CST	.9241
FDE	-.2259	FRA	1.6170	FC3	-4.2027	BSP	10406	SGB	3069.9	R23	-.0278	R13	-.9027	LSA	1164.6	MSA	360.3	SSA	35.4
BDE	.6417	BRA	1.7720	BC3	1.9565	FSP	1096	SG1	3040.2	SG2	425.6	THA	.34	EL1	1069.0	EL2	298.1	ALF	165.62

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 21 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 452.943 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.193	GAL	-2.77	AZL	88.59	HCA	143.96	SMA	211.61	ECC	.30522	INC	1.4084	V1	30.153
RP	241.22	LAP	.83	LOP	202.69	VP	21.753	GAP	15.90	AZP	91.14	TAL	348.11	TAP	132.07	RCA	147.02	APO	276.19	V2	22.762
RC	158.408	GL	11.30	GP	1.38	ZAL	107.81	ZAP	166.77	ETS	172.71	ZAE	155.23	ETE	2.54	ZAC	91.12	ETC	255.90	CLP	166.84

PLANETOCENTRIC CONIC

C3	18.356	VHL	4.284	DLA	15.56	RAL	172.49	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	7.828	DPA	-1.44	RAP	189.79	ECC	1.3021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 49	2699.86	-27.64	74.55	37.75	96.42	17 29 49	2099.9	-26.46	66.08
90.00	8 54 58	4332.43	4.30	179.38	31.62	61.98	10 7 11	3732.4	.52	172.74
100.00	18 14 43	2409.97	-28.93	53.04	37.57	97.87	18 54 53	1810.0	-27.54	44.52
100.00	10 7 46	4097.56	5.44	161.48	30.99	60.56	11 16 4	3497.6	1.48	154.94
110.00	19 41 58	2136.94	-32.31	31.63	36.89	101.83	20 17 35	1536.9	-30.34	22.97
110.00	10 57 0	3943.35	8.37	147.99	29.19	56.74	12 2 43	3343.3	3.93	141.71

DIFFERENTIAL CORRECTIONS

TDE	.5509	TRA	-1.7283	TC3	2.0882	BAU	.5125
RDE	-.2848	RRA	-.1211	RC3	-.0380	FAU	.09606
FDE	-.2086	FRA	1.6344	FC3	-4.5305	BSP	10426
BDE	.6202	BRA	1.7325	BC3	2.0886	FSP	1158

MID-COURSE EXECUTION ACCURACY

SGT	3082.3	SGR	417.6	SG3	389.2		
RRT	.0501	RRF	-.0791	RTF	-.9070		
SGB	3110.5	R23	-.0328	R13	-.9071		
SG1	3082.4	SG2	417.1	THA	.40		

ORBIT DETERMINATION ACCURACY

ST	1031.4	SR	384.2	SS	503.7
CRT	-.6167	CRS	-.2518	CST	.9135
LSA	1154.3	MSA	362.7	SSA	35.3
EL1	1060.6	EL2	294.1	ALF	165.96

LAUNCH DATE NOV 21 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 456.045 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.129	GAL	-2.64	AZL	88.61	HCA	144.89	SMA	210.15	ECC	.30012	INC	1.3937	V1	30.153
RP	240.93	LAP	.80	LOP	203.62	VP	21.683	GAP	15.36	AZP	91.14	TAL	348.53	TAP	133.43	RCA	147.08	APO	273.23	V2	22.791
RC	160.729	GL	11.38	GP	1.44	ZAL	106.99	ZAP	166.16	ETS	172.72	ZAE	155.56	ETE	2.85	ZAC	91.25	ETC	255.89	CLP	166.23

PLANETOCENTRIC CONIC

C3	17.659	VHL	4.202	DLA	15.96	RAL	171.74	RAD	6567.7	VEL	11.792	PTH	2.08	VHP	7.651	DPA	-1.51	RAP	190.12	ECC	1.2906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 4	2705.54	-27.68	74.96	36.49	96.21	17 23 9	2105.5	-26.53	66.48
90.00	8 55 48	4308.69	3.54	178.05	30.40	61.89	10 7 37	3708.7	-.25	171.42
100.00	18 8 16	2414.63	-28.97	53.38	36.31	97.70	18 48 31	1814.6	-27.60	44.85
100.00	10 8 17	4074.83	4.68	160.23	29.77	60.44	11 16 12	3474.8	.71	153.69
110.00	19 36 11	2139.54	-32.34	31.82	35.64	101.72	20 11 51	1539.5	-30.39	23.15
110.00	10 56 51	3922.68	7.60	146.89	27.97	56.57	12 2 14	3322.7	3.15	140.63

DIFFERENTIAL CORRECTIONS

TDE	.5227	TRA	-1.6991	TC3	2.2001	BAU	.5195
RDE	-.2732	RRA	-.1172	RC3	-.0319	FAU	.09957
FDE	-.1909	FRA	1.6506	FC3	-4.8815	BSP	10696
BDE	.5898	BRA	1.7031	BC3	2.2004	FSP	1221

MID-COURSE EXECUTION ACCURACY

SGT	3119.7	SGR	408.8	SG3	408.7		
RRT	.0670	RRF	-.0941	RTF	-.9088		
SGB	3146.4	R23	-.0323	R13	-.9088		
SG1	3119.9	SG2	407.9	THA	.51		

ORBIT DETERMINATION ACCURACY

ST	1016.6	SR	375.9	SS	501.7
CRT	-.6006	CRS	-.2176	CST	.9072
LSA	1136.9	MSA	364.2	SSA	36.0
EL1	1043.6	EL2	292.7	ALF	166.39

LAUNCH DATE NOV 21 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 459.191 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.069	GAL	-2.51	AZL	88.62	HCA	145.83	SMA	208.78	ECC	.29525	INC	1.3785	V1	30.153
RP	240.64	LAP	.77	LOP	204.56	VP	21.619	GAP	14.82	AZP	91.14	TAL	348.96	TAP	134.79	RCA	147.14	APO	270.43	V2	22.821
RC	163.052	GL	11.45	GP	1.51	ZAL	106.16	ZAP	165.53	ETS	172.71	ZAE	155.92	ETE	3.19	ZAC	91.39	ETC	255.88	CLP	165.61

PLANETOCENTRIC CONIC

C3	17.006	VHL	4.124	DLA	16.36	RAL	170.98	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	7.478	DPA	-1.58	RAP	190.43	ECC	1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 15	2711.39	-27.72	75.38	35.23	96.01	17 16 27	2111.4	-26.60	66.90
90.00	8 56 33	4285.41	2.79	176.75	29.18	61.81	10 7 58	3685.4	-1.00	170.12
100.00	18 1 47	2419.44	-29.02	53.74	35.06	97.52	18 42 7	1819.4	-27.67	45.19
100.00	10 8 42	4052.58	3.93	159.00	28.55	60.34	11 16 15	3452.6	-.05	152.47
110.00	19 30 22	2142.29	-32.38	32.03	34.40	101.60	20 6 4	1542.3	-30.44	23.35
110.00	10 56 37	3902.50	6.84	145.82	26.76	56.43	12 1 39	3302.5	2.38	139.57

DIFFERENTIAL CORRECTIONS

TDE	.4992	TRA	-1.6645	TC3	2.3242	BAU	.5284
RDE	-.2621	RRA	-.1137	RC3	-.0249	FAU	.10321
FDE	-.1711	FRA	1.6666	FC3	-5.2545	BSP	10851
BDE	.5638	BRA	1.6684	BC3	2.3243	FSP	1290

MID-COURSE EXECUTION ACCURACY

SGT	3156.7	SGR	400.2	SG3	429.1		
RRT	.0829	RRF	-.1114	RTF	-.9115		
SGB	3181.9	R23	-.0348	R13	-.9115		
SG1	3156.8	SG2	398.8	THA	.61		

ORBIT DETERMINATION ACCURACY

ST	1003.6	SR	367.5	SS	499.4
CRT	-.5881	CRS	-.1793	CST	.8970
LSA	1120.7	MSA	366.7	SSA	36.2
EL1	1028.7	EL2	290.0	ALF	166.77

LAUNCH DATE NOV 21 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 462.379 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	34.010	GAL	-2.38	AZL	88.64	HCA	146.77	SMA	207.49	ECC	.29059	INC	1.3623	V1	30.153
RP	240.34	LAP	.75	LOP	205.49	VP	21.559	GAP	14.29	AZP	91.14	TAL	349.39	TAP	136.16	RCA	147.19	APO	267.78	V2	22.851
RC	165.375	GL	11.51	GP	1.58	ZAL	105.33	ZAP	164.89	ETS	172.69	ZAE	156.32	ETE	3.55	ZAC	91.53	ETC	255.87	CLP	164.97

PLANETOCENTRIC CONIC

C3	16.394	VHL	4.049	DLA	16.74	RAL	170.21	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	7.308	DPA	-1.64	RAP	190.73	ECC	1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 26	2717.34	-27.77	75.82	33.98	95.79	17 9 44	2117.3	-26.67	67.32
90.00	8 57 12	4262.66	2.06	175.48	27.98	61.75	10 8 15	3662.7	-1.73	168.85
100.00	17 55 17	2424.36	-29.06	54.09	33.81	97.33	18 35 42	1824.4	-27.74	45.54
100.00	10 9 2	4030.87	3.20	157.80	27.35	60.26	11 16 13	3430.9	-.78	151.28
110.00	19 24 32	2145.13	-32.42	32.24	33.16	101.48	20 0 17	1545.1	-30.50	23.55
110.00	10 56 17	3882.86	6.10	144.78	25.55	56.30	12 1 0	3282.9	1.63	138.55

DIFFERENTIAL CORRECTIONS

TDE	.4772	TRA	-1.6274	TC3	2.4558	BAU	.5383
RDE	-.2515	RRA	-.1104	RC3	-.0168	FAU	.10706
FDE	-.1500	FRA	1.6814	FC3	-5.6537	BSP	10920
BDE	.5394	BRA	1.6312	BC3	2.4558	FSP	1360

MID-COURSE EXECUTION ACCURACY

SGT	3192.8	SGR	391.7	SG3	450.4		
RRT	.1000	RRF	-.1310	RTF	-.9146		
SGB	3216.8	R23	-.0384	R13	-.9146		
SG1	3193.1	SG2	389.7	THA	.71		

ORBIT DETERMINATION ACCURACY

ST	990.0	SR	359.2	SS	497.0
CRT	-.5765	CRS	-.1383	CST	.8846
LSA	1103.7	MSA	369.7	SSA	36.4
EL1	1013.4	EL2	286.7	ALF	167.14

LAUNCH DATE NOV 21 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 465.605 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.955 GAL -2.26 AZL 88.65 HCA 147.71 SMA 206.27 ECC .28614 INC 1.3454 V1 30.153
RP 240.04 LAP .72 LOP 206.43 VP 21.503 GAP 13.76 AZP 91.14 TAL 349.82 TAP 137.53 RCA 147.24 APO 265.29 V2 22.881
RC 167.697 GL 11.55 GP 1.66 ZAL 104.49 ZAP 164.24 ETS 172.66 ZAE 156.75 ETE 3.94 ZAC 91.67 ETC 255.87 CLP 164.32

PLANETOCENTRIC CONIC

C3 15.822 VHL 3.978 DLA 17.12 RAL 169.43 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 7.142 DPA -1.69 RAP 191.03 ECC 1.2604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 38	2723.31	-27.81	76.25	32.73	95.58	17 3 1	2123.3	-26.74	67.74
90.00	8 57 44	4240.53	1.35	174.24	26.79	61.71	10 8 25	3640.5	-2.44	167.61
100.00	17 48 49	2429.28	-29.10	54.45	32.57	97.15	18 29 18	1829.3	-27.81	45.89
100.00	10 9 15	4009.79	2.49	156.65	26.15	60.20	11 16 5	3409.8	-1.50	150.12
110.00	19 18 43	2148.00	-32.46	32.46	31.93	101.36	19 54 31	1548.0	-30.55	23.76
110.00	10 55 50	3863.83	5.38	143.78	24.36	56.19	12 0 14	3263.8	.90	137.56

DIFFERENTIAL CORRECTIONS
TDE .4527 TRA-1.5939 TC3 2.5800 BAU .5457
RDE -.2411 RRA -.1073 RC3 -.0071 FAU .11108
FDE -.1281 FRA 1.6960 FC3-6.0776 BSP 11110
BDE .5129 BRA 1.5975 BC3 2.5800 FSP 1437

MID-COURSE EXECUTION ACCURACY
SGT 3226.3 SGR 383.2 SG3 472.8
RRT .1217 RRF -.1535 RTF -.9167
SGB 3249.0 R23 -.0407 R13 -.9168
SG1 3226.7 SG2 380.3 THA .84

ORBIT DETERMINATION ACCURACY
ST 973.9 SR 350.7 SS 494.9
CRT -.5607 CRS -.0957 CST .8732
LSA 1084.5 MSA 372.5 SSA 36.7
EL1 995.3 EL2 284.1 ALF 167.56

LAUNCH DATE NOV 21 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 468.868 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.901 GAL -2.14 AZL 88.67 HCA 148.65 SMA 205.11 ECC .28188 INC 1.3273 V1 30.153
RP 239.73 LAP .69 LOP 207.37 VP 21.451 GAP 13.24 AZP 91.13 TAL 350.25 TAP 138.89 RCA 147.29 APO 262.93 V2 22.912
RC 170.016 GL 11.58 GP 1.74 ZAL 103.65 ZAP 163.57 ETS 172.62 ZAE 157.22 ETE 4.37 ZAC 91.81 ETC 255.86 CLP 163.66

PLANETOCENTRIC CONIC

C3 15.287 VHL 3.910 DLA 17.48 RAL 168.63 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 6.980 DPA -1.73 RAP 191.32 ECC 1.2516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 52	2729.22	-27.84	76.68	31.49	95.37	16 56 21	2129.2	-26.81	68.16
90.00	8 58 9	4219.07	.65	173.04	25.60	61.69	10 8 28	3619.1	-3.13	166.41
100.00	17 42 22	2434.16	-29.14	54.81	31.33	96.97	18 22 56	1834.2	-27.87	46.24
100.00	10 9 20	3989.37	1.80	155.52	24.97	60.16	11 15 49	3389.4	-2.19	149.00
110.00	19 12 55	2150.84	-32.50	32.67	30.70	101.24	19 48 46	1550.8	-30.61	23.96
110.00	10 55 16	3845.45	4.68	142.81	23.17	56.10	11 59 21	3245.5	.20	136.60

DIFFERENTIAL CORRECTIONS
TDE .4300 TRA-1.5597 TC3 2.7103 BAU .5539
RDE -.2311 RRA -.1045 RC3 .0040 FAU .11534
FDE -.1057 FRA 1.7100 FC3-6.5317 BSP 11235
BDE .4882 BRA 1.5632 BC3 2.7103 FSP 1514

MID-COURSE EXECUTION ACCURACY
SGT 3260.5 SGR 374.8 SG3 496.4
RRT .1456 RRF -.1789 RTF -.9191
SGB 3282.0 R23 -.0438 R13 -.9192
SG1 3261.0 SG2 370.8 THA .97

ORBIT DETERMINATION ACCURACY
ST 958.1 SR 342.1 SS 493.1
CRT -.5456 CRS -.0517 CST .8602
LSA 1065.7 MSA 375.5 SSA 36.9
EL1 977.8 EL2 280.9 ALF 167.97

LAUNCH DATE NOV 21 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 472.166 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.850 GAL -2.02 AZL 88.69 HCA 149.59 SMA 204.02 ECC .27782 INC 1.3084 V1 30.153
RP 239.42 LAP .66 LOP 208.32 VP 21.404 GAP 12.73 AZP 91.13 TAL 350.67 TAP 140.26 RCA 147.34 APO 260.70 V2 22.943
RC 172.331 GL 11.59 GP 1.83 ZAL 102.80 ZAP 162.89 ETS 172.58 ZAE 157.72 ETE 4.83 ZAC 91.96 ETC 255.85 CLP 162.98

PLANETOCENTRIC CONIC

C3 14.786 VHL 3.845 DLA 17.82 RAL 167.82 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 6.822 DPA -1.76 RAP 191.60 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 9	2734.99	-27.88	77.09	30.25	95.16	16 49 44	2135.0	-26.87	68.57
90.00	8 58 24	4198.37	-.01	171.89	24.43	61.68	10 8 22	3598.4	-3.80	165.25
100.00	17 35 58	2438.90	-29.18	55.16	30.09	96.79	18 16 37	1838.9	-27.94	46.58
100.00	10 9 16	3969.70	1.13	154.44	23.79	60.13	11 15 26	3369.7	-2.85	147.92
110.00	19 7 10	2153.58	-32.53	32.87	29.48	101.12	19 43 3	1553.6	-30.66	24.16
110.00	10 54 34	3827.78	4.01	141.89	22.00	56.02	11 58 21	3227.8	-.48	135.68

DIFFERENTIAL CORRECTIONS
TDE .4081 TRA-1.5240 TC3 2.8414 BAU .5617
RDE -.2215 RRA -.1019 RC3 .0168 FAU .11978
FDE -.0816 FRA 1.7227 FC3-7.0132 BSP 11339
BDE .4644 BRA 1.5274 BC3 2.8415 FSP 1596

MID-COURSE EXECUTION ACCURACY
SGT 3291.7 SGR 366.9 SG3 521.1
RRT .1723 RRF -.2078 RTF -.9214
SGB 3312.0 R23 -.0478 R13 -.9215
SG1 3292.3 SG2 361.3 THA 1.11

ORBIT DETERMINATION ACCURACY
ST 941.4 SR 333.5 SS 491.5
CRT -.5301 CRS -.0049 CST .8452
LSA 1045.9 MSA 379.1 SSA 37.0
EL1 959.4 EL2 277.5 ALF 168.38

LAUNCH DATE NOV 21 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 475.496 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.801 GAL -1.91 AZL 88.71 HCA 150.54 SMA 202.98 ECC .27394 INC 1.2883 V1 30.153
RP 239.11 LAP .63 LOP 209.27 VP 21.360 GAP 12.22 AZP 91.12 TAL 351.09 TAP 141.63 RCA 147.38 APO 258.59 V2 22.975
RC 174.639 GL 11.58 GP 1.93 ZAL 101.96 ZAP 162.19 ETS 172.52 ZAE 158.25 ETE 5.34 ZAC 92.11 ETC 255.85 CLP 162.29

PLANETOCENTRIC CONIC

C3 14.316 VHL 3.784 DLA 18.15 RAL 167.00 RAD 6567.6 VEL 11.649 PTH 2.05 VHP 6.667 DPA -1.77 RAP 191.87 ECC 1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 32	2740.52	-27.91	77.50	29.01	94.96	16 43 12	2140.5	-26.93	68.97
90.00	8 58 29	4178.52	-.66	170.78	23.26	61.69	10 8 8	3578.5	-4.43	164.14
100.00	17 29 40	2443.42	-29.22	55.49	28.86	96.62	18 10 23	1843.4	-27.99	46.90
100.00	10 9 2	3950.85	.49	153.41	22.62	60.11	11 14 53	3350.9	-3.49	146.89
110.00	19 1 29	2156.15	-32.57	33.07	28.25	101.01	19 37 25	1556.2	-30.71	24.34
110.00	10 53 43	3810.88	3.36	141.00	20.83	55.96	11 57 13	3210.9	-1.13	134.80

DIFFERENTIAL CORRECTIONS
TDE .3877 TRA-1.4874 TC3 2.9754 BAU .5695
RDE -.2123 RRA -.0996 RC3 .0315 FAU .12445
FDE -.0571 FRA 1.7342 FC3-7.5257 BSP 11428
BDE .4420 BRA 1.4908 BC3 2.9755 FSP 1684

MID-COURSE EXECUTION ACCURACY
SGT 3321.6 SGR 359.3 SG3 547.0
RRT .2021 RRF -.2403 RTF -.9237
SGB 3340.9 R23 -.0526 R13 -.9239
SG1 3322.4 SG2 351.8 THA 1.27

ORBIT DETERMINATION ACCURACY
ST 924.6 SR 325.0 SS 490.2
CRT -.5152 CRS .0426 CST .8286
LSA 1026.0 MSA 382.9 SSA 37.0
EL1 941.0 EL2 273.6 ALF 168.77

LAUNCH DATE NOV 21 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 478.857 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.754 GAL -1.80 AZL 88.73 HCA 151.49 SMA 202.04 ECC .27023 INC 1.2669 V1 30.153
RP 238.79 LAP .60 LOP 210.21 VP 21.321 GAP 11.72 AZP 91.11 TAL 351.51 TAP 143.00 RCA 147.42 APO 256.59 V2 23.007
RC 176.939 GL 11.55 GP 2.03 ZAL 101.11 ZAP 161.47 ETS 172.45 ZAE 158.81 ETE 5.91 ZAC 92.26 ETC 255.84 CLP 161.58

PLANETOCENTRIC CONIC

C3 13.877 VHL 3.725 DLA 18.46 RAL 166.17 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 6.516 DPA -1.78 RAP 192.13 ECC 1.2284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 1	2745.71	-27.94	77.87	27.78	94.78	16 36 47	2145.7	-26.99	69.34
90.00	8 58 22	4159.59	-1.27	169.73	22.10	61.71	10 7 42	3559.6	-5.04	163.08
100.00	17 23 27	2447.63	-29.25	55.80	27.63	96.46	18 4 15	1847.6	-28.05	47.20
100.00	10 8 37	3932.90	-.12	152.43	21.46	60.11	11 14 10	3332.9	-4.10	145.90
110.00	18 55 52	2158.48	-32.60	33.24	27.03	100.92	19 31 51	1558.5	-30.75	24.51
110.00	10 52 42	3794.81	2.75	140.16	19.66	55.91	11 55 56	3194.8	-1.74	133.96

DIFFERENTIAL CORRECTIONS
TDE .3712 TRA-1.4466 TC3 3.1205 BAU .5790
RDE -.2034 RRA -.0976 RC3 .0481 FAU .12937
FDE -.0320 FRA 1.7439 FC3-8.0710 BSP 11423
BDE .4232 BRA 1.4499 BC3 3.1209 FSP 1775

MID-COURSE EXECUTION ACCURACY
SGT 3351.6 SGR 352.4 SG3 574.1
RRT .2335 RRF -.2765 RTF -.9268
SGB 3370.1 R23 -.0594 R13 -.9269
SG1 3352.6 SG2 342.6 THA 1.42

ORBIT DETERMINATION ACCURACY
ST 903.8 SR 316.5 SS 489.0
CRT -.5[illegible]6 CRS .0912 CST .8077
LSA 1006.7 MSA 387.9 SSA 36.7
EL1 924.1 EL2 268.7 ALF 169.10

LAUNCH DATE NOV 21 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 482.246 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.709 GAL -1.70 AZL 88.76 HCA 152.44 SMA 201.08 ECC .26669 INC 1.2443 V1 30.153
RP 238.47 LAP .58 LOP 211.17 VP 21.285 GAP 11.22 AZP 91.10 TAL 351.93 TAP 144.37 RCA 147.45 APO 254.70 V2 23.040
RC 179.231 GL 11.50 GP 2.15 ZAL 100.28 ZAP 160.74 ETS 172.36 ZAE 159.40 ETE 6.54 ZAC 92.42 ETC 255.84 CLP 160.86

PLANETOCENTRIC CONIC

C3 13.465 VHL 3.669 DLA 18.74 RAL 165.33 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 6.368 DPA -1.77 RAP 192.39 ECC 1.2216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 41	2750.38	-27.97	78.21	26.55	94.61	16 30 32	2150.4	-27.04	69.67
90.00	8 58 2	4141.76	-1.84	168.73	20.94	61.74	10 7 3	3541.8	-5.61	162.07
100.00	17 17 25	2451.37	-29.28	56.07	26.41	96.32	17 58 16	1851.4	-28.10	47.47
100.00	10 7 59	3916.01	-.69	151.50	20.30	60.11	11 13 15	3316.0	-4.66	144.96
110.00	18 50 24	2160.45	-32.62	33.39	25.82	100.83	19 26 24	1560.4	-30.78	24.65
110.00	10 51 29	3779.69	2.17	139.37	18.51	55.88	11 54 29	3179.7	-2.32	133.17

DIFFERENTIAL CORRECTIONS
TDE .3442 TRA-1.4186 TC3 3.2302 BAU .5816
RDE -.1947 RRA -.0957 RC3 .0675 FAU .13441
FDE -.0042 FRA 1.7563 FC3-8.6421 BSP 11686
BDE .3955 BRA 1.4218 BC3 3.2309 FSP 1875

MID-COURSE EXECUTION ACCURACY
SGT 3373.4 SGR 346.1 SG3 602.4
RRT .2766 RRF -.3186 RTF -.9274
SGB 3391.1 R23 -.0620 R13 -.9276
SG1 3374.8 SG2 332.5 THA 1.64

ORBIT DETERMINATION ACCURACY
ST 886.7 SR 307.7 SS 489.3
CRT -.4768 CRS .1439 CST .7947
LSA 983.0 MSA 390.8 SSA 37.2
EL1 900.0 EL2 266.5 ALF 169.69

LAUNCH DATE NOV 21 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 485.663 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.666 GAL -1.59 AZL 88.78 HCA 153.39 SMA 200.20 ECC .26330 INC 1.2197 V1 30.153
RP 238.14 LAP .55 LOP 212.12 VP 21.253 GAP 10.73 AZP 91.09 TAL 352.34 TAP 145.73 RCA 147.49 APO 252.92 V2 23.073
RC 181.513 GL 11.43 GP 2.27 ZAL 99.44 ZAP 159.99 ETS 172.27 ZAE 160.02 ETE 7.24 ZAC 92.59 ETC 255.83 CLP 160.11

PLANETOCENTRIC CONIC

C3 13.079 VHL 3.617 DLA 19.00 RAL 164.49 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 6.223 DPA -1.74 RAP 192.63 ECC 1.2152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 32	2754.47	-27.99	78.51	25.32	94.46	16 24 27	2154.5	-27.08	69.96
90.00	8 57 26	4125.07	-2.38	167.80	19.79	61.77	10 6 11	3525.1	-6.13	161.13
100.00	17 11 32	2454.57	-29.30	56.31	25.18	96.19	17 52 27	1854.6	-28.14	47.70
100.00	10 7 7	3900.20	-1.23	150.63	19.15	60.13	11 12 7	3300.2	-5.19	144.09
110.00	18 45 3	2161.99	-32.64	33.51	24.60	100.77	19 21 5	1562.0	-30.81	24.76
110.00	10 50 5	3765.54	1.63	138.63	17.36	55.85	11 52 51	3165.5	-2.86	132.43

DIFFERENTIAL CORRECTIONS
TDE .3255 TRA-1.3830 TC3 3.3623 BAU .5881
RDE -.1864 RRA -.0940 RC3 .0894 FAU .13988
FDE .0208 FRA 1.7641 FC3-9.2587 BSP 11761
BDE .3751 BRA 1.3862 BC3 3.3635 FSP 1974

MID-COURSE EXECUTION ACCURACY
SGT 3398.6 SGR 340.9 SG3 632.5
RRT .3194 RRF -.3640 RTF -.9293
SGB 3415.7 R23 -.0680 R13 -.9295
SG1 3400.4 SG2 322.9 THA 1.85

ORBIT DETERMINATION ACCURACY
ST 868.6 SR 299.1 SS 489.2
CRT -.4591 CRS .1912 CST .7771
LSA 962.6 MSA 394.1 SSA 37.2
EL1 880.5 EL2 262.1 ALF 170.13

LAUNCH DATE NOV 21 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 489.107 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.625 GAL -1.50 AZL 88.81 HCA 154.35 SMA 199.37 ECC .26008 INC 1.1936 V1 30.153
RP 237.81 LAP .52 LOP 213.08 VP 21.224 GAP 10.25 AZP 91.08 TAL 352.74 TAP 147.10 RCA 147.52 APO 251.22 V2 23.106
RC 183.786 GL 11.32 GP 2.40 ZAL 98.61 ZAP 159.22 ETS 172.16 ZAE 160.67 ETE 8.03 ZAC 92.76 ETC 255.83 CLP 159.35

PLANETOCENTRIC CONIC

C3 12.717 VHL 3.566 DLA 19.23 RAL 163.63 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 6.082 DPA -1.70 RAP 192.86 ECC 1.2093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 38	2757.80	-28.01	78.75	24.10	94.34	16 18 36	2157.8	-27.11	70.20
90.00	8 56 32	4109.67	-2.87	166.94	18.64	61.82	10 5 2	3509.7	-6.62	160.26
100.00	17 5 53	2457.09	-29.32	56.49	23.96	96.10	17 46 50	1857.1	-28.17	47.88
100.00	10 5 58	3885.61	-1.72	149.83	18.00	60.15	11 10 44	3285.6	-5.68	143.28
110.00	18 39 53	2162.99	-32.65	33.58	23.38	100.72	19 15 56	1563.0	-30.83	24.84
110.00	10 48 27	3752.47	1.13	137.95	16.21	55.83	11 51 0	3152.5	-3.36	131.74

DIFFERENTIAL CORRECTIONS
TDE .3078 TRA-1.3470 TC3 3.4862 BAU .5930
RDE -.1784 RRA -.0927 RC3 .1141 FAU .14548
FDE .0463 FRA 1.7709 FC3-9.9037 BSP 11838
BDE .3558 BRA 1.3502 BC3 3.4881 FSP 2081

MID-COURSE EXECUTION ACCURACY
SGT 3417.7 SGR 337.1 SG3 663.5
RRT .3663 RRF -.4138 RTF -.9309
SGB 3434.3 R23 -.0752 R13 -.9311
SG1 3420.0 SG2 313.5 THA 2.09

ORBIT DETERMINATION ACCURACY
ST 850.3 SR 290.5 SS 489.5
CRT -.4415 CRS .2387 CST .7583
LSA 942.1 MSA 397.7 SSA 37.1
EL1 860.9 EL2 257.5 ALF 170.57

LAUNCH DATE NOV 21 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 492.576 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.586 GAL -1.40 AZL 88.83 HCA 155.31 SMA 198.58 ECC .25700 INC 1.1656 V1 30.153
RP 237.48 LAP .49 LOP 214.04 VP 21.199 GAP 9.77 AZP 91.06 TAL 353.15 TAP 148.46 RCA 147.55 APO 249.62 V2 23.140
RC 186.049 GL 11.19 GP 2.55 ZAL 97.79 ZAP 158.43 ETS 172.04 ZAE 161.34 ETE 8.93 ZAC 92.94 ETC 255.82 CLP 158.57

PLANETOCENTRIC CONIC

C3 12.378 VHL 3.518 DLA 19.43 RAL 162.77 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 5.944 DPA -1.64 RAP 193.09 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 0	2760.21	-28.02	78.93	22.87	94.25	16 13 0	2160.2	-27.14	70.37
90.00	8 55 18	4095.71	-3.32	166.16	17.49	61.86	10 3 34	3495.7	-7.06	159.47
100.00	17 0 29	2458.78	-29.33	56.62	22.74	96.03	17 41 27	1858.8	-28.19	48.00
100.00	10 4 31	3872.37	-2.17	149.10	16.85	60.18	11 9 3	3272.4	-6.12	142.55
110.00	18 34 54	2163.35	-32.66	33.61	22.17	100.71	19 10 58	1563.3	-30.84	24.86
110.00	10 46 34	3740.57	.68	137.33	15.07	55.82	11 48 55	3140.6	-3.81	131.12

DIFFERENTIAL CORRECTIONS
TDE .2913 TRA-1.3093 TC3 3.6144 BAU .5986
RDE -.1707 RRA -.0916 RC3 .1421 FAU .15137
FDE .0731 FRA 1.7759 FC-10.5874 BSP 11878
BDE .3376 BRA 1.3125 BC3 3.6172 FSP 2193

MID-COURSE EXECUTION ACCURACY
SGT 3436.0 SGR 335.1 SG3 696.1
RRT .4169 RRF -.4678 RTF -.9328
SGB 3452.3 R23 -.0834 R13 -.9331
SG1 3438.8 SG2 304.3 THA 2.35

ORBIT DETERMINATION ACCURACY
ST 831.2 SR 282.0 SS 490.1
CRT -.4242 CRS .2876 CST .7371
LSA 920.7 MSA 402.0 SSA 36.8
EL1 840.7 EL2 252.5 ALF 170.99

LAUNCH DATE NOV 21 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 496.068 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.548 GAL -1.31 AZL 88.86 HCA 156.27 SMA 197.84 ECC .25406 INC 1.1351 V1 30.153
RP 237.15 LAP .46 LOP 215.00 VP 21.176 GAP 9.30 AZP 91.04 TAL 353.54 TAP 149.81 RCA 147.57 APO 248.10 V2 23.174
RC 188.300 GL 11.03 GP 2.71 ZAL 96.98 ZAP 157.62 ETS 171.91 ZAE 162.04 ETE 9.96 ZAC 93.13 ETC 255.82 CLP 157.77

PLANETOCENTRIC CONIC

C3 12.059 VHL 3.473 DLA 19.60 RAL 161.91 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 5.810 DPA -1.57 RAP 193.30 ECC 1.1985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 43	2761.51	-28.03	79.02	21.65	94.21	16 7 44	2161.5	-27.15	70.46
90.00	8 53 41	4083.36	-3.72	165.47	16.34	61.91	10 1 45	3483.4	-7.45	158.77
100.00	16 55 23	2459.47	-29.34	56.67	21.51	96.01	17 36 22	1859.5	-28.20	48.05
100.00	10 2 43	3860.64	-2.57	148.46	15.71	60.21	11 7 3	3260.6	-6.51	141.90
110.00	18 30 10	2162.91	-32.65	33.58	20.94	100.73	19 6 13	1562.9	-30.83	24.83
110.00	10 44 25	3729.96	.27	136.78	13.93	55.82	11 46 34	3130.0	-4.21	130.57

DIFFERENTIAL CORRECTIONS
TDE .2726 TRA-1.2777 TC3 3.7289 BAU .6018
RDE -.1632 RRA -.0907 RC3 .1740 FAU .15758
FDE .0988 FRA 1.7819 FC-11.3130 BSP 11982
BDE .3177 BRA 1.2809 BC3 3.7330 FSP 2310

MID-COURSE EXECUTION ACCURACY
SGT 3452.1 SGR 335.1 SG3 730.6
RRT .4732 RRF -.5255 RTF -.9338
SGB 3468.3 R23 -.0913 R13 -.9342
SG1 3455.8 SG2 294.9 THA 2.65

ORBIT DETERMINATION ACCURACY
ST 811.8 SR 273.4 SS 491.5
CRT -.4001 CRS .3339 CST .7215
LSA 900.4 MSA 404.2 SSA 36.9
EL1 819.9 EL2 248.1 ALF 171.55

LAUNCH DATE NOV 21 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 499.583 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.512 GAL -1.22 AZL 88.90 HCA 157.24 SMA 197.13 ECC .25127 INC 1.1025 V1 30.153
RP 236.81 LAP .43 LOP 215.96 VP 21.157 GAP 8.83 AZP 91.02 TAL 353.93 TAP 151.17 RCA 147.60 APO 246.66 V2 23.209
RC 190.540 GL 10.84 GP 2.89 ZAL 96.18 ZAP 156.78 ETS 171.76 ZAE 162.77 ETE 11.13 ZAC 93.34 ETC 255.82 CLP 156.95

PLANETOCENTRIC CONIC

C3 11.760 VHL 3.429 DLA 19.73 RAL 161.04 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 5.678 DPA -1.47 RAP 193.51 ECC 1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 49	2761.53	-28.03	79.02	20.42	94.21	16 2 50	2161.5	-27.15	70.47
90.00	8 51 39	4072.77	-4.06	164.87	15.19	61.95	9 59 31	3472.8	-7.78	158.17
100.00	16 50 38	2459.01	-29.33	56.63	20.28	96.02	17 31 37	1859.0	-28.19	48.02
100.00	10 0 31	3850.53	-2.91	147.90	14.56	60.24	11 4 41	3250.5	-6.85	141.33
110.00	18 25 42	2161.56	-32.64	33.47	19.72	100.78	19 1 44	1561.6	-30.81	24.73
110.00	10 41 56	3720.74	-.08	136.30	12.79	55.82	11 43 57	3120.7	-4.56	130.08

DIFFERENTIAL CORRECTIONS
TDE .2588 TRA-1.2412 TC3 3.8446 BAU .6053
RDE -.1559 RRA -.0901 RC3 .2099 FAU .16399
FDE .1227 FRA 1.7842 FC-12.0728 BSP 12014
BDE .3021 BRA 1.2445 BC3 3.8504 FSP 2435

MID-COURSE EXECUTION ACCURACY
SGT 3463.2 SGR 337.9 SG3 766.1
RRT .5294 RRF -.5848 RTF -.9353
SGB 3479.6 R23 -.1017 R13 -.9357
SG1 3467.8 SG2 286.3 THA 2.98

ORBIT DETERMINATION ACCURACY
ST 793.7 SR 264.9 SS 492.2
CRT -.3832 CRS .3765 CST .7020
LSA 880.6 MSA 407.0 SSA 36.6
EL1 800.9 EL2 242.5 ALF 171.97

LAUNCH DATE NOV 21 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 503.120 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.478 GAL -1.13 AZL 88.93 HCA 158.21 SMA 190.46 ECC .24860 INC 1.0668 V1 30.153
RP 236.46 LAP .40 LOP 216.93 VP 21.141 GAP 8.37 AZP 90.99 TAL 354.31 TAP 152.52 RCA 147.62 APO 245.29 V2 23.244
RC 192.768 GL 10.60 GP 3.08 ZAL 95.39 ZAP 155.92 ETS 171.59 ZAE 163.52 ETE 12.50 ZAC 93.55 ETC 255.81 CLP 156.11

PLANETOCENTRIC CONIC

C3 11.478 VHL 3.388 DLA 19.81 RAL 160.16 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 5.550 DPA -1.34 RAP 193.70 ECC 1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 22	2760.02	-28.02	78.91	19.19	94.26	15 58 22	2160.0	-27.13	70.36
90.00	8 49 7	4064.17	-4.33	164.39	14.04	61.99	9 56 51	3464.2	-8.05	157.68
100.00	16 46 17	2457.18	-29.32	56.50	19.05	96.09	17 27 14	1857.2	-28.17	47.89
100.00	9 57 53	3842.25	-3.19	147.45	13.41	60.26	11 1 55	3242.2	-7.13	140.87
110.00	18 21 32	2159.14	-32.60	33.29	18.48	100.89	18 57 31	1559.1	-30.76	24.56
110.00	10 39 6	3713.05	-.37	135.89	11.65	55.82	11 40 59	3113.0	-4.86	129.68

DIFFERENTIAL CORRECTIONS
TDE .2441 TRA-1.2060 TC3 3.9533 BAU .6079
RDE -.1489 RRA -.0898 RC3 .2508 FAU .17076
FDE .1451 FRA 1.7838 FC-12.8797 BSP 12053
BDE .2859 BRA 1.2094 BC3 3.9613 FSP 2562

MID-COURSE EXECUTION ACCURACY
SGT 3470.7 SGR 344.0 SG3 803.6
RRT .5874 RRF -.6447 RTF -.9364
SGB 3487.7 R23 -.1126 R13 -.9369
SG1 3476.7 SG2 277.9 THA 3.35

ORBIT DETERMINATION ACCURACY
ST 774.5 SR 256.4 SS 492.3
CRT -.3626 CRS .4167 CST .6859
LSA 860.3 MSA 408.0 SSA 36.6
EL1 780.6 EL2 237.1 ALF 172.45

LAUNCH DATE NOV 21 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 506.677 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.445 GAL -1.05 AZL 88.97 HCA 159.18 SMA 195.82 ECC .24605 INC 1.0279 V1 30.153
RP 236.12 LAP .37 LOP 217.90 VP 21.128 GAP 7.92 AZP 90.96 TAL 354.68 TAP 153.86 RCA 147.64 APO 244.00 V2 23.279
RC 194.983 GL 10.32 GP 3.29 ZAL 94.61 ZAP 155.04 ETS 171.41 ZAE 164.28 ETE 14.10 ZAC 93.78 ETC 255.81 CLP 155.24

PLANETOCENTRIC CONIC

C3 11.213 VHL 3.349 DLA 19.85 RAL 159.28 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 5.425 DPA -1.19 RAP 193.88 ECC 1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 25	2756.76	-28.00	78.67	17.95	94.38	15 54 22	2156.8	-27.10	70.12
90.00	8 46 1	4057.75	-4.54	164.03	12.88	62.02	9 53 39	3457.7	-8.25	157.32
100.00	16 42 23	2453.77	-29.30	56.25	17.81	96.22	17 23 16	1853.8	-28.13	47.64
100.00	9 54 45	3835.97	-3.40	147.10	12.25	60.28	10 58 41	3236.0	-7.33	140.52
110.00	18 17 43	2155.47	-32.56	33.02	17.23	101.04	18 53 39	1555.5	-30.69	24.29
110.00	10 35 53	3707.04	-.60	135.58	10.50	55.82	11 37 40	3107.0	-5.08	129.36

DIFFERENTIAL CORRECTIONS
TDE .2315 TRA-1.1722 TC3 4.0567 BAU .6098
RDE -.1420 RRA -.0898 RC3 .2972 FAU .17780
FDE .1650 FRA 1.7830 FC-13.7272 BSP 12127
BDE .2716 BRA 1.1756 BC3 4.0675 FSP 2703

MID-COURSE EXECUTION ACCURACY
SGT 3476.4 SGR 354.0 SG3 842.6
RRT .6442 RRF -.7033 RTF -.9374
SGB 3494.3 R23 -.1252 R13 -.9380
SG1 3483.9 SG2 270.2 THA 3.78

ORBIT DETERMINATION ACCURACY
ST 756.8 SR 247.9 SS 492.2
CRT -.3432 CRS .4529 CST .6709
LSA 841.8 MSA 408.1 SSA 36.4
EL1 762.0 EL2 231.3 ALF 172.93

LAUNCH DATE NOV 21 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 510.255 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.414 GAL -.97 AZL 89.01 HCA 160.15 SMA 195.21 ECC .24363 INC .9848 V1 30.153
RP 235.77 LAP .33 LOP 218.88 VP 21.118 GAP 7.48 AZP 90.93 TAL 355.04 TAP 155.20 RCA 147.65 APO 242.78 V2 23.315
RC 197.185 GL 9.99 GP 3.53 ZAL 93.85 ZAP 154.13 ETS 171.20 ZAE 165.06 ETE 15.98 ZAC 94.03 ETC 255.80 CLP 154.36

PLANETOCENTRIC CONIC

C3 10.964 VHL 3.311 DLA 19.84 RAL 158.39 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 5.303 DPA -1.01 RAP 194.06 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 3	2751.48	-27.98	78.29	16.70	94.57	15 50 55	2151.5	-27.05	69.75
90.00	8 42 18	4053.77	-4.67	163.81	11.71	62.04	9 49 52	3453.8	-8.37	157.09
100.00	16 39 0	2448.55	-29.26	55.87	16.56	96.42	17 19 48	1848.5	-28.06	47.27
100.00	9 51 3	3831.93	-3.54	146.88	11.08	60.30	10 54 55	3231.9	-7.47	140.30
110.00	18 14 18	2150.35	-32.49	32.63	15.97	101.26	18 50 9	1550.4	-30.60	23.93
110.00	10 32 13	3702.89	-.76	135.37	9.35	55.82	11 33 56	3102.9	-5.24	129.14

DIFFERENTIAL CORRECTIONS
TDE .2205 TRA-1.1386 TC3 4.1625 BAU .6123
RDE -.1352 RRA -.0900 RC3 .3503 FAU .18538
FDE .1800 FRA 1.7782 FC-14.6387 BSP 12067
BDE .2587 BRA 1.1421 BC3 4.1772 FSP 2832

MID-COURSE EXECUTION ACCURACY
SGT 3482.9 SGR 368.8 SG3 884.4
RRT .6984 RRF -.7586 RTF -.9384
SGB 3502.4 R23 -.1390 R13 -.9392
SG1 3492.5 SG2 263.2 THA 4.25

ORBIT DETERMINATION ACCURACY
ST 739.7 SR 239.3 SS 490.2
CRT -.3248 CRS .4830 CST .6593
LSA 823.9 MSA 405.9 SSA 36.4
EL1 744.2 EL2 225.0 ALF 173.40

LAUNCH DATE NOV 21 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 513.851 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.384 GAL -.89 AZL 89.06 HCA 161.13 SMA 194.64 ECC .24133 INC .9382 V1 30.153
RP 235.42 LAP .30 LOP 219.85 VP 21.110 GAP 7.04 AZP 90.89 TAL 355.40 TAP 156.53 RCA 147.67 APO 241.61 V2 23.351
RC 199.372 GL 9.61 GP 3.79 ZAL 93.10 ZAP 153.19 ETS 170.97 ZAE 165.85 ETE 18.21 ZAC 94.30 ETC 255.80 CLP 153.44

PLANETOCENTRIC CONIC

C3 10.728 VHL 3.275 DLA 19.76 RAL 157.50 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 5.184 DPA -.80 RAP 194.23 ECC 1.1766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 21	2743.87	-27.93	77.74	15.43	94.84	15 48 4	2143.9	-26.97	69.20
90.00	8 37 53	4052.49	-4.71	163.74	10.52	62.04	9 45 25	3452.5	-8.41	157.02
100.00	16 36 12	2441.23	-29.20	55.33	15.29	96.70	17 16 53	1841.2	-27.97	46.74
100.00	9 46 43	3830.37	-3.59	146.79	9.91	60.30	10 50 33	3230.4	-7.52	140.21
110.00	18 11 20	2143.57	-32.40	32.12	14.69	101.55	18 47 4	1543.6	-30.47	23.44
110.00	10 28 4	3700.79	-.84	135.26	8.19	55.83	11 29 45	3100.8	-5.32	129.03

DIFFERENTIAL CORRECTIONS
TDE .2124 TRA-1.1049 TC3 4.2430 BAU .6114
RDE -.1286 RRA -.0906 RC3 .4100 FAU .19285
FDE .1909 FRA 1.7732 FC-15.5626 BSP 12136
BDE .2483 BRA 1.1087 BC3 4.2628 FSP 2991

MID-COURSE EXECUTION ACCURACY
SGT 3475.9 SGR 388.7 SG3 926.2
RRT .7467 RRF -.8084 RTF -.9389
SGB 3497.5 R23 -.1555 R13 -.9398
SG1 3488.0 SG2 257.6 THA 4.80

ORBIT DETERMINATION ACCURACY
ST 724.3 SR 230.7 SS 487.2
CRT -.3098 CRS .5085 CST .6482
LSA 807.2 MSA 402.8 SSA 36.3
EL1 728.2 EL2 218.1 ALF 173.81

LAUNCH DATE NOV 21 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 517.466 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.355 GAL -.82 AZL 89.11 HCA 162.11 SMA 194.10 ECC .23913 INC .8857 V1 30.153
RP 235.06 LAP .27 LOP 220.83 VP 21.105 GAP 6.60 AZP 90.84 TAL 355.75 TAP 157.86 RCA 147.68 APO 240.51 V2 23.387
RC 201.544 GL 9.16 GP 4.08 ZAL 92.37 ZAP 152.23 ETS 170.71 ZAE 166.63 ETE 20.89 ZAC 94.60 ETC 255.79 CLP 152.51

PLANETOCENTRIC CONIC

C3 10.505 VHL 3.241 DLA 19.61 RAL 156.60 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.069 DPA -.55 RAP 194.39 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 22	2733.60	-27.87	76.99	14.15	95.21	15 45 55	2133.6	-26.86	68.47
90.00	8 32 40	4054.24	-4.65	163.84	9.32	62.04	9 40 14	3454.2	-8.36	157.12
100.00	16 34 3	2431.51	-29.12	54.62	14.00	97.07	17 14 34	1831.5	-27.84	46.05
100.00	9 41 40	3831.57	-3.55	146.86	8.71	60.30	10 45 32	3231.6	-7.48	140.28
110.00	18 8 52	2134.85	-32.28	31.47	13.38	101.92	18 44 27	1534.8	-30.30	22.82
110.00	10 23 20	3701.00	-.83	135.27	7.02	55.83	11 25 1	3101.0	-5.31	129.04

DIFFERENTIAL CORRECTIONS
TDE .2067 TRA-1.0706 TC3 4.3257 BAU .6112
RDE -.1218 RRA -.0915 RC3 .4788 FAU .20091
FDE .1932 FRA 1.7610 FC-16.5562 BSP 12135
BDE .2399 BRA 1.0745 BC3 4.3521 FSP 3144

MID-COURSE EXECUTION ACCURACY
SGT 3468.8 SGR 415.0 SG3 970.7
RRT .7896 RRF -.8520 RTF -.9394
SGB 3493.5 R23 -.1732 R13 -.9406
SG1 3484.3 SG2 253.5 THA 5.43

ORBIT DETERMINATION ACCURACY
ST 709.8 SR 221.6 SS 480.4
CRT -.2979 CRS .5248 CST .6420
LSA 791.0 MSA 395.9 SSA 36.5
EL1 713.2 EL2 210.6 ALF 174.18

LAUNCH DATE NOV 21 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 521.099 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.328 GAL -.75 AZL 89.17 HCA 163.09 SMA 193.58 ECC .23704 INC .8274 V1 30.153
RP 234.71 LAP .24 LOP 221.81 VP 21.103 GAP 6.18 AZP 90.79 TAL 356.08 TAP 159.18 RCA 147.70 APO 239.47 V2 23.424
RC 203.699 GL 8.63 GP 4.41 ZAL 91.66 ZAP 151.23 ETS 170.41 ZAE 167.40 ETE 24.11 ZAC 94.93 ETC 255.78 CLP 151.54

PLANETOCENTRIC CONIC

C3 10.295 VHL 3.209 DLA 19.39 RAL 155.68 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.956 DPA -.25 RAP 194.54 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 12	2720.31	-27.79	76.03	12.84	95.69	15 44 33	2120.3	-26.71	67.53
90.00	8 26 33	4059.38	-4.49	164.12	8.09	62.01	9 34 12	3459.4	-8.20	157.41
100.00	16 32 38	2419.03	-29.01	53.71	12.68	97.53	17 12 57	1819.0	-27.67	45.16
100.00	9 35 48	3835.88	-3.41	147.10	7.50	60.28	10 39 44	3235.9	-7.34	140.52
110.00	18 6 58	2123.89	-32.12	30.66	12.04	102.38	18 42 22	1523.9	-30.08	22.04
110.00	10 17 57	3703.79	-.73	135.41	5.83	55.82	11 19 41	3103.8	-5.21	129.19

DIFFERENTIAL CORRECTIONS
TDE .2025 TRA-1.0344 TC3 4.4061 BAU .6113
RDE -.1150 RRA -.0926 RC3 .5579 FAU .20932
FDE .1889 FRA 1.7427 FC-17.6019 BSP 12117
BDE .2329 BRA 1.0385 BC3 4.4413 FSP 3306

MID-COURSE EXECUTION ACCURACY
SGT 3458.3 SGR 448.4 SG3 1017.1
RRT .8261 RRF -.8887 RTF -.9402
SGB 3487.3 R23 -.1914 R13 -.9417
SG1 3478.2 SG2 251.2 THA 6.15

ORBIT DETERMINATION ACCURACY
ST 695.0 SR 212.3 SS 470.7
CRT -.2878 CRS .5355 CST .6391
LSA 774.0 MSA 386.3 SSA 36.7
EL1 697.9 EL2 202.5 ALF 174.51

AUNCH DATE NOV 21 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 524.748 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.302 GAL -.68 AZL 89.24 HCA 164.08 SMA 193.09 ECC .23505 INC .7620 V1 30.153
RP 234.35 LAP .21 LOP 222.80 VP 21.103 GAP 5.76 AZP 90.73 TAL 356.41 TAP 160.49 RCA 147.71 APO 238.48 V2 23.461
RC 205.837 GL 8.02 GP 4.79 ZAL 90.96 ZAP 150.20 ETS 170.08 ZAE 168.14 ETE 28.01 ZAC 95.29 ETC 255.77 CLP 150.55

PLANETOCENTRIC CONIC

C3 10.096 VHL 3.177 DLA 19.07 RAL 154.76 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.847 DPA .09 RAP 194.69 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 58	2703.53	-27.67	74.82	11.50	96.29	15 44 1	2103.5	-26.51	66.34
90.00	8 19 25	4068.32	-4.20	164.63	6.84	61.97	9 27 13	3468.3	-7.92	157.92
100.00	16 32 3	2403.38	-28.87	52.56	11.32	98.12	17 12 6	1803.4	-27.44	44.05
100.00	9 29 1	3843.70	-3.14	147.53	6.26	60.26	10 33 5	3243.7	-7.08	140.95
110.00	18 5 43	2110.33	-31.92	29.65	10.67	102.94	18 40 53	1510.3	-29.81	21.08
110.00	10 11 50	3709.52	-.51	135.71	4.62	55.82	11 13 40	3109.5	-4.99	129.49

DIFFERENTIAL CORRECTIONS
TDE .2001 TRA-1.0029 TC3 4.4702 BAU .6097
RDE -.1080 RRA -.0942 RC3 .6488 FAU .21797
FDE .1750 FRA 1.7257 FC-18.6911 BSP 12084
BDE .2274 BRA 1.0073 BC3 4.5171 FSP 3474

MID-COURSE EXECUTION ACCURACY
SGT 3444.0 SGR 490.2 SG3 1065.3
RRT .8560 RRF -.9184 RTF -.9403
SGB 3478.7 R23 -.2113 R13 -.9422
SG1 3469.6 SG2 251.6 THA 6.98

ORBIT DETERMINATION ACCURACY
ST 683.3 SR 202.5 SS 459.2
CRT -.2765 CRS .5366 CST .6454
LSA 760.7 MSA 372.5 SSA 37.2
EL1 685.8 EL2 193.9 ALF 174.91

LAUNCH DATE NOV 21 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 528.414 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.277 GAL -.62 AZL 89.31 HCA 165.07 SMA 192.63 ECC .23316 INC .6886 V1 30.153
RP 233.98 LAP .18 LOP 223.79 VP 21.105 GAP 5.35 AZP 90.67 TAL 356.73 TAP 161.79 RCA 147.72 APO 237.55 V2 23.498
RC 207.958 GL 7.30 GP 5.22 ZAL 90.28 ZAP 149.13 ETS 169.71 ZAE 168.82 ETE 32.73 ZAC 95.70 ETC 255.76 CLP 149.53

PLANETOCENTRIC CONIC

C3 9.907 VHL 3.148 DLA 18.65 RAL 153.82 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.742 DPA .50 RAP 194.83 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 45	2682.75	-27.50	73.32	10.11	97.02	15 44 28	2082.8	-26.25	64.88
90.00	8 11 6	4081.58	-3.78	165.37	5.56	61.92	9 19 8	3481.6	-7.50	158.67
100.00	16 32 23	2384.04	-28.67	51.16	9.92	98.83	17 12 7	1784.0	-27.16	42.69
100.00	9 21 10	3855.52	-2.74	148.18	4.99	60.22	10 25 25	3255.5	-6.68	141.61
110.00	18 5 11	2093.72	-31.66	28.43	9.24	103.62	18 40 4	1493.7	-29.46	19.91
110.00	10 4 51	3718.61	-.16	136.19	3.38	55.82	11 6 50	3118.6	-4.64	129.97

DIFFERENTIAL CORRECTIONS
TDE .2027 TRA -.9686 TC3 4.5260 BAU .6077
RDE -.1005 RRA -.0962 RC3 .7539 FAU .22685
FDE .1454 FRA 1.7006 FC-19.8229 BSP 12074
BDE .2262 BRA .9734 BC3 4.5883 FSP 3657

MID-COURSE EXECUTION ACCURACY
SGT 3423.0 SGR 541.1 SG3 1114.7
RRT .8792 RRF -.9416 RTF -.9405
SGB 3465.5 R23 -.2311 R13 -.9429
SG1 3456.1 SG2 255.3 THA 7.96

ORBIT DETERMINATION ACCURACY
ST 674.6 SR 191.6 SS 443.3
CRT -.2732 CRS .5211 CST .6597
LSA 749.6 MSA 353.6 SSA 38.0
EL1 676.8 EL2 183.7 ALF 175.21

LAUNCH DATE NOV 21 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 532.096 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.254 GAL -.56 AZL 89.40 HCA 166.06 SMA 192.19 ECC .23137 INC .6034 V1 30.153
RP 233.62 LAP .15 LOP 224.78 VP 21.110 GAP 4.94 AZP 90.59 TAL 357.03 TAP 163.09 RCA 147.73 APO 236.66 V2 23.536
RC 210.060 GL 6.45 GP 5.71 ZAL 89.63 ZAP 148.02 ETS 169.28 ZAE 169.40 ETE 38.42 ZAC 96.17 ETC 255.75 CLP 148.48

PLANETOCENTRIC CONIC

C3 9.729 VHL 3.119 DLA 18.09 RAL 152.85 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.639 DPA .97 RAP 194.98 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 41	2657.35	-27.28	71.49	8.66	97.91	15 45 59	2057.3	-25.90	63.10
90.00	8 1 28	4099.79	-3.19	166.39	4.24	61.85	9 9 48	3499.8	-6.93	159.70
100.00	16 33 46	2360.43	-28.41	49.45	8.46	99.70	17 13 6	1760.4	-26.78	41.03
100.00	9 12 5	3871.94	-2.19	149.08	3.68	60.18	10 16 37	3271.9	-6.14	142.52
110.00	18 5 28	2073.50	-31.32	26.94	7.75	104.44	18 40 2	1473.5	-29.02	18.50
110.00	9 56 52	3731.63	.34	136.86	2.11	55.82	10 59 3	3131.6	-4.15	130.65

DIFFERENTIAL CORRECTIONS
TDE .2076 TRA -.9350 TC3 4.5710 BAU .6054
RDE -.0920 RRA -.0983 RC3 .8768 FAU .23615
FDE .0963 FRA 1.6658 FC-21.0136 BSP 11972
BDE .2271 BRA .9401 BC3 4.6544 FSP 3828

MID-COURSE EXECUTION ACCURACY
SGT 3397.2 SGR 603.2 SG3 1166.4
RRT .8972 RRF -.9593 RTF -.9404
SGB 3450.4 R23 -.2501 R13 -.9436
SG1 3440.3 SG2 263.1 THA 9.11

ORBIT DETERMINATION ACCURACY
ST 668.3 SR 179.2 SS 424.0
CRT -.2687 CRS .4825 CST .6927
LSA 742.1 MSA 325.8 SSA 39.6
EL1 670.1 EL2 172.1 ALF 175.59

LAUNCH DATE NOV 21 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 535.794 EARTH TO MARS

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RL  147.76 LAL    .00 LOL  58.72 VL  33.231 GAL   -.50 AZL  89.49 HCA 167.05 SMA 191.78 ECC .22966 INC  .5063 V1  30.153
RP  233.25 LAP    .11 LOP 225.77 VP  21.117 GAP   4.54 AZP  90.49 TAL 357.33 TAP 164.38 RCA 147.73 APO 235.82 V2  23.574
RC 212.144 GL    5.45 GP    6.28 ZAL  88.99 ZAP 146.86 ETS 168.79 ZAE 169.84 ETE  45.18 ZAC  96.71 ETC 255.74 CLP 147.39
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PLANETOCENTRIC CONIC

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C3   9.561 VHL  3.092 DLA  17.38 RAL 151.86 RAD 6567.3 VEL 11.443 PTH   1.98 VHP  4.541 DPA   1.53 RAP 195.14 ECC 1.1573
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 56	2626.54	-26.97	69.29	7.15	98.97	15 48 43	2026.5	-25.45	60.95
90.00	7 50 17	4123.74	-2.42	167.73	2.88	61.78	8 59 1	3523.7	-6.18	161.06
100.00	16 36 21	2331.76	-28.07	47.39	6.93	100.73	17 15 13	1731.8	-26.30	39.04
100.00	9 1 34	3893.75	-1.45	150.28	2.34	60.14	10 6 27	3293.8	-5.41	143.73
110.00	18 6 44	2048.99	-30.89	25.16	6.18	105.41	18 40 53	1449.0	-28.47	16.80
110.00	9 47 40	3749.29	1.01	137.78	.80	55.83	10 50 10	3149.3	-3.48	131.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .2166 TRA -.9023 TC3 4.5980 BAU  .6020    SGT 3363.9 SGR  678.1 SG3 1218.5    ST   666.8 SR   164.7 SS   405.9
RDE -.0824 RRA -.1011 RC3 1.0202 FAU .24545    RRT  .9103 RRF -.9723 RTF -.9401    CRT -.2615 CRS  .4170 CST  .7444
FDE  .0264 FRA 1.6267 FC-22.2248 BSP  11948    SGB 3431.5 R23 -.2676 R13 -.9441    LSA  741.8 MSA  290.6 SSA   41.9
BDE  .2317 BRA  .9079 BC3 4.7098 FSP   4024    SG1 3420.4 SG2  276.1 THA  10.47    EL1  668.2 EL2  158.6 ALF 176.08
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LAUNCH DATE NOV 21 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 539.506 EARTH TO MARS

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RL  147.76 LAL    .00 LOL  58.72 VL  33.210 GAL   -.44 AZL  89.61 HCA 168.05 SMA 191.38 ECC .22804 INC  .3911 V1  30.153
RP  232.88 LAP    .08 LOP 226.77 VP  21.126 GAP   4.15 AZP  90.38 TAL 357.61 TAP 165.66 RCA 147.74 APO 235.03 V2  23.612
RC 214.210 GL    4.26 GP    6.95 ZAL  88.38 ZAP 145.65 ETS 168.22 ZAE 170.07 ETE  52.96 ZAC  97.33 ETC 255.72 CLP 146.28
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PLANETOCENTRIC CONIC

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C3   9.404 VHL  3.067 DLA  16.48 RAL 150.82 RAD 6567.3 VEL 11.437 PTH   1.98 VHP  4.447 DPA   2.19 RAP 195.30 ECC 1.1548
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 41	2589.33	-26.55	66.65	5.54	100.23	15 52 50	1989.3	-24.87	58.38
90.00	7 37 17	4154.47	-1.43	169.44	1.46	61.72	8 46 31	3554.5	-5.20	162.79
100.00	16 40 19	2297.07	-27.60	44.92	5.31	101.95	17 18 36	1697.1	-25.68	36.65
100.00	8 49 20	3921.97	-.49	151.83	.94	60.11	9 54 42	3322.0	-4.46	145.29
110.00	18 9 6	2019.28	-30.34	23.03	4.51	106.56	18 42 45	1419.3	-27.77	14.78
110.00	9 37 3	3772.52	1.90	139.00	359.44	55.86	10 39 55	3172.5	-2.59	132.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .2278 TRA -.8688 TC3 4.6317 BAU  .6013    SGT 3334.1 SGR  770.2 SG3 1274.3    ST   668.1 SR   147.1 SS   393.5
RDE -.0707 RRA -.1038 RC3 1.1924 FAU .25551    RRT  .9204 RRF -.9817 RTF -.9400    CRT -.2400 CRS  .3138 CST  .8199
FDE -.0726 FRA 1.5711 FC-23.5217 BSP  11876    SGB 3421.9 R23 -.2807 R13 -.9453    LSA  749.0 MSA  244.1 SSA   46.5
BDE  .2385 BRA  .8750 BC3 4.7828 FSP   4209    SG1 3409.2 SG2  294.4 THA  12.09    EL1  669.0 EL2  142.6 ALF 176.83
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LAUNCH DATE NOV 21 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 543.233 EARTH TO MARS

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RL  147.76 LAL    .00 LOL  58.72 VL  33.189 GAL   -.39 AZL  89.74 HCA 169.05 SMA 191.01 ECC .22651 INC  .2581 V1  30.153
RP  232.51 LAP    .05 LOP 227.77 VP  21.137 GAP   3.76 AZP  90.25 TAL 357.88 TAP 166.94 RCA 147.74 APO 234.27 V2  23.650
RC 216.258 GL    2.82 GP    7.75 ZAL  87.79 ZAP 144.38 ETS 167.55 ZAE 170.02 ETE  61.51 ZAC  98.08 ETC 255.69 CLP 145.12
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PLANETOCENTRIC CONIC

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C3   9.261 VHL  3.043 DLA  15.33 RAL 149.73 RAD 6567.3 VEL 11.430 PTH   1.98 VHP  4.357 DPA   2.97 RAP 195.50 ECC 1.1524
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 10	2544.41	-25.97	63.49	3.82	101.71	15 58 34	1944.4	-24.09	55.32
90.00	7 22 5	4193.40	-.17	171.61	359.99	61.68	8 31 59	3593.4	-3.96	164.98
100.00	16 45 53	2255.08	-26.98	41.96	3.56	103.39	17 23 28	1655.1	-24.87	33.79
100.00	8 35 4	3957.96	.73	153.80	359.48	60.12	9 41 2	3358.0	-3.25	147.28
110.00	18 12 47	1983.19	-29.61	20.47	2.73	107.92	18 45 50	1383.2	-26.88	12.35
110.00	9 24 39	3802.62	3.05	140.57	358.03	55.94	10 28 2	3202.6	-1.44	134.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .2450 TRA -.8356 TC3 4.6218 BAU  .5977    SGT 3284.3 SGR  880.0 SG3 1327.2    ST   677.8 SR   125.5 SS   401.2
RDE -.0561 RRA -.1070 RC3 1.3938 FAU .26488    RRT  .9267 RRF -.9882 RTF -.9391    CRT -.1873 CRS  .1918 CST  .8999
FDE -.2070 FRA 1.5074 FC-24.7623 BSP  11800    SGB 3400.2 R23 -.2916 R13 -.9463    LSA  772.6 MSA  190.5 SSA   53.8
BDE  .2513 BRA  .8424 BC3 4.8274 FSP   4408    SG1 3385.0 SG2  320.9 THA  14.07    EL1  678.2 EL2  123.2 ALF 177.95
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LAUNCH DATE NOV 21 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 546.974 EARTH TO MARS

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RL  147.76 LAL    .00 LOL  58.72 VL  33.170 GAL   -.34 AZL  89.90 HCA 170.06 SMA 190.66 ECC .22505 INC  .0782 V1  30.153
RP  232.14 LAP    .02 LOP 228.78 VP  21.150 GAP   3.38 AZP  90.09 TAL 358.14 TAP 168.20 RCA 147.75 APO 233.56 V2  23.689
RC 218.287 GL    1.06 GP    8.70 ZAL  87.22 ZAP 143.04 ETS 166.75 ZAE 169.62 ETE  70.32 ZAC  98.97 ETC 255.66 CLP 143.93
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PLANETOCENTRIC CONIC

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C3   9.134 VHL  3.022 DLA  13.87 RAL 148.56 RAD 6567.3 VEL 11.425 PTH   1.98 VHP  4.273 DPA   3.92 RAP 195.72 ECC 1.1503
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 43	2489.99	-25.16	59.71	1.95	103.44	16 6 13	1890.0	-23.06	51.67
90.00	7 4 13	4242.49	1.41	174.35	358.45	61.72	8 14 56	3642.5	-2.38	167.72
100.00	16 53 23	2204.05	-26.12	38.40	1.68	105.07	17 30 7	1604.0	-23.80	30.38
100.00	8 18 14	4003.67	2.28	156.31	357.97	60.19	9 24 58	3403.7	-1.70	149.79
110.00	18 18 3	1939.11	-28.65	17.40	.80	109.50	18 50 22	1339.1	-25.72	9.45
110.00	9 10 3	3841.37	4.52	142.60	356.57	56.08	10 14 5	3241.4	.04	136.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .2727 TRA -.8003 TC3 4.5920 BAU  .5954    SGT 3227.0 SGR 1015.5 SG3 1381.6    ST   702.8 SR    97.3 SS   454.6
RDE -.0353 RRA -.1093 RC3 1.6388 FAU .27462    RRT  .9302 RRF -.9926 RTF -.9375    CRT -.0313 CRS  .1212 CST  .9599
FDE -.4125 FRA 1.4100 FC-26.0277 BSP  11658    SGB 3383.0 R23 -.2989 R13 -.9473    LSA  830.0 MSA  127.8 SSA   69.2
BDE  .2750 BRA  .8077 BC3 4.8756 FSP   4569    SG1 3364.1 SG2  357.5 THA  16.51    EL1  702.8 EL2   97.3 ALF 179.75
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LAUNCH DATE NOV 21 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 550.730 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.151 GAL -.29 AZL 90.10 HCA 171.06 SMA 190.32 ECC .22367 INC .0750 V1 30.153
RP 231.76 LAP -.02 LOP 229.78 VP 21.165 GAP 3.00 AZP 89.90 TAL 358.39 TAP 169.46 RCA 147.75 APO 232.89 V2 23.728
RC 220.299 GL -1.13 GP 9.88 ZAL 86.68 ZAP 141.60 ETS 165.80 ZAE 168.79 ETE 78.76 ZAC 100.06 ETC 255.62 CLP 142.70

PLANETOCENTRIC CONIC

C3 9.034 VHL 3.006 DLA 11.99 RAL 147.29 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 4.195 DPA 5.08 RAP 196.01 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 47	2423.62	-24.03	55.17	359.91	105.45	16 16 11	1823.6	-21.68	47.29
90.00	6 42 57	4304.58	3.41	177.82	356.85	61.87	7 54 42	3704.6	-.38	171.19
100.00	17 3 14	2141.58	-24.95	34.14	359.62	107.03	17 38 56	1541.6	-22.38	26.28
100.00	7 58 11	4061.85	4.24	159.51	356.38	60.38	9 5 53	3461.8	.27	152.98
110.00	18 25 17	1884.85	-27.36	13.71	358.69	111.34	18 56 42	1284.9	-24.21	5.95
110.00	8 52 38	3891.34	6.42	145.23	355.04	56.35	9 57 29	3291.3	1.95	138.99

DIFFERENTIAL CORRECTIONS
TDE .3268 TRA -.7468 TC3 4.6395 BAU .6078
RDE -.0038 RRA -.1086 RC3 1.9491 FAU .28592
FDE -.7199 FRA 1.2559 FC-27.4015 BSP 11273
BDE .3268 BRA .7547 BC3 5.0323 FSP 4689

MID-COURSE EXECUTION ACCURACY
SGT 3206.9 SGR 1190.6 SG3 1443.6
RRT .9353 RRF -.9956 RTF -.9397
SGB 3420.8 R23 -.2907 R13 -.9525
SG1 3397.6 SG2 397.8 THA 19.42

ORBIT DETERMINATION ACCURACY
ST 765.4 SR 72.9 SS 591.9
CRT .4682 CRS .4536 CST .9737
LSA 962.2 MSA 107.5 SSA 64.3
EL1 766.1 EL2 64.4 ALF 2.57

LAUNCH DATE NOV 21 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 554.497 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.134 GAL -.25 AZL 90.35 HCA 172.07 SMA 190.00 ECC .22236 INC .3501 V1 30.153
RP 231.38 LAP -.05 LOP 230.79 VP 21.181 GAP 2.64 AZP 89.65 TAL 358.63 TAP 170.70 RCA 147.75 APO 232.25 V2 23.768
RC 222.292 GL -3.90 GP 11.34 ZAL 86.18 ZAP 140.04 ETS 164.64 ZAE 167.47 ETE 86.21 ZAC 101.43 ETC 255.55 CLP 141.42

PLANETOCENTRIC CONIC

C3 8.973 VHL 2.996 DLA 9.55 RAL 145.86 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 4.127 DPA 6.52 RAP 196.38 ECC 1.1477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 7	2341.54	-22.43	49.69	357.68	107.75	16 29 9	1741.5	-19.80	42.01
90.00	6 17 15	4384.09	5.95	182.28	355.20	62.26	7 30 19	3784.1	2.19	175.62
100.00	17 16 9	2064.05	-23.30	28.96	357.36	109.27	17 50 33	1464.1	-20.46	21.32
100.00	7 33 54	4136.81	6.75	163.66	354.76	60.81	8 42 51	3536.8	2.81	157.09
110.00	18 35 4	1817.10	-25.60	9.23	356.38	113.47	19 5 21	1217.1	-22.20	1.72
110.00	8 31 28	3956.53	8.86	148.70	353.47	56.85	9 37 25	3356.5	4.44	142.40

DIFFERENTIAL CORRECTIONS
TDE .3652 TRA -.7234 TC3 4.5235 BAU .6091
RDE .0374 RRA -.1115 RC3 2.3050 FAU .29340
FDE-1.0603 FRA 1.1426 FC-28.3063 BSP 11489
BDE .3671 BRA .7320 BC3 5.0769 FSP 4909

MID-COURSE EXECUTION ACCURACY
SGT 3130.7 SGR 1399.6 SG3 1488.0
RRT .9348 RRF -.9974 RTF -.9363
SGB 3429.3 R23 -.2896 R13 -.9545
SG1 3398.6 SG2 458.0 THA 23.12

ORBIT DETERMINATION ACCURACY
ST 819.6 SR 105.1 SS 782.3
CRT .9366 CRS .9080 CST .9664
LSA 1127.7 MSA 147.1 SSA 36.6
EL1 825.5 EL2 36.6 ALF 6.87

LAUNCH DATE NOV 21 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 558.277 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.117 GAL -.21 AZL 90.68 HCA 173.09 SMA 189.71 ECC .22112 INC .6729 V1 30.153
RP 231.01 LAP -.08 LOP 231.81 VP 21.200 GAP 2.27 AZP 89.33 TAL 358.85 TAP 171.94 RCA 147.76 APO 231.65 V2 23.807
RC 224.266 GL -7.48 GP 13.22 ZAL 85.72 ZAP 138.31 ETS 163.19 ZAE 165.57 ETE 92.32 ZAC 103.19 ETC 255.46 CLP 140.09

PLANETOCENTRIC CONIC

C3 8.986 VHL 2.998 DLA 6.32 RAL 144.21 RAD 6567.3 VEL 11.418 PTH 1.98 VHP 4.071 DPA 8.35 RAP 196.88 ECC 1.1479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 48	2238.28	-20.14	42.99	355.23	110.34	16 46 6	1638.3	-17.19	35.55
90.00	5 45 26	4487.90	9.19	188.18	353.56	63.10	7 0 14	3887.9	5.51	181.44
100.00	17 33 8	1966.23	-20.96	22.64	354.89	111.81	18 5 55	1366.2	-17.82	15.26
100.00	7 3 46	4235.18	9.98	169.19	353.14	61.67	8 14 22	3635.2	6.11	162.53
110.00	18 48 16	1731.13	-23.15	3.75	353.84	115.88	19 17 7	1131.1	-19.48	356.53
110.00	8 5 8	4043.05	12.04	153.38	351.91	57.76	9 12 31	3443.0	7.70	146.97

DIFFERENTIAL CORRECTIONS
TDE .4238 TRA -.6938 TC3 4.3910 BAU .6225
RDE .1044 RRA -.1094 RC3 2.7514 FAU .30078
FDE-1.5536 FRA .9584 FC-28.9771 BSP 11865
BDE .4357 BRA .7024 BC3 5.1818 FSP 5091

MID-COURSE EXECUTION ACCURACY
SGT 3060.2 SGR 1674.9 SG3 1531.1
RRT .9335 RRF -.9986 RTF -.9330
SGB 3488.5 R23 -.2790 R13 -.9588
SG1 3447.6 SG2 532.9 THA 27.79

ORBIT DETERMINATION ACCURACY
ST 905.7 SR 215.1 SS 1078.1
CRT .9782 CRS .9910 CST .9595
LSA 1410.5 MSA 197.4 SSA 19.7
EL1 929.8 EL2 43.6 ALF 13.11

LAUNCH DATE NOV 21 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 562.069 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.101 GAL -.17 AZL 91.11 HCA 174.10 SMA 189.42 ECC .21995 INC 1.1067 V1 30.153
RP 230.62 LAP -.11 LOP 232.82 VP 21.220 GAP 1.92 AZP 88.90 TAL 359.06 TAP 173.16 RCA 147.76 APO 231.09 V2 23.847
RC 226.222 GL -12.25 GP 15.70 ZAL 85.33 ZAP 136.32 ETS 161.36 ZAE 162.94 ETE 96.95 ZAC 105.52 ETC 255.31 CLP 138.70

PLANETOCENTRIC CONIC

C3 9.140 VHL 3.023 DLA 1.96 RAL 142.23 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 4.036 DPA 10.76 RAP 197.59 ECC 1.1504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 44	2105.00	-16.77	34.66	352.60	113.16	17 8 49	1505.0	-13.49	27.52
90.00	5 4 42	4627.74	13.38	196.32	352.07	64.81	6 21 50	4027.7	9.88	189.39
100.00	17 55 59	1839.69	-17.56	14.78	352.23	114.59	18 26 39	1239.7	-14.10	7.70
100.00	6 25 8	4368.29	14.16	176.85	351.68	63.40	7 37 56	3768.3	10.48	170.00
110.00	19 6 19	1619.54	-19.67	356.96	351.11	118.53	19 33 19	1019.5	-15.71	350.08
110.00	7 31 17	4161.20	16.24	159.96	350.51	59.50	8 40 39	3561.2	12.07	153.34

DIFFERENTIAL CORRECTIONS
TDE .5092 TRA -.6524 TC3 4.1930 BAU .6517
RDE .2187 RRA -.0958 RC3 3.2962 FAU .30621
FDE-2.2565 FRA .6713 FC-29.0030 BSP 12259
BDE .5542 BRA .6594 BC3 5.3335 FSP 5166

MID-COURSE EXECUTION ACCURACY
SGT 2981.5 SGR 2043.8 SG3 1563.5
RRT .9318 RRF -.9992 RTF -.9298
SGB 3614.8 R23 -.2561 R13 -.9659
SG1 3561.0 SG2 621.3 THA 33.73

ORBIT DETERMINATION ACCURACY
ST 1036.7 SR 422.2 SS 1508.3
CRT .9702 CRS .9989 CST .9608
LSA 1862.9 MSA 239.9 SSA 10.9
EL1 1115.4 EL2 95.1 ALF 21.73

LAUNCH DATE NOV 21 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 565.872 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.087 GAL -.13 AZL 91.73 HCA 175.12 SMA 189.16 ECC .21884 INC 1.7259 V1 30.153
RP 230.24 LAP -.15 LOP 233.85 VP 21.242 GAP 1.57 AZP 88.28 TAL 359.26 TAP 174.38 RCA 147.76 APO 230.55 V2 23.887
RC 228.159 GL -18.60 GP 19.10 ZAL 85.06 ZAP 133.89 ETS 158.99 ZAE 159.31 ETE 100.15 ZAC 108.73 ETC 255.05 CLP 137.20

PLANETOCENTRIC CONIC

C3 9.597 VHL 3.098 DLA -4.10 RAL 139.72 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 4.036 DPA 14.04 RAP 198.65 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 45	1926.41	-11.70	24.00	349.97	115.97	17 40 51	1326.4	-8.11	17.16
90.00	4 9 40	4825.34	18.75	208.34	351.12	68.38	5 30 5	4225.3	15.65	201.04
100.00	18 28 10	1670.21	-12.49	4.75	349.56	117.38	18 56 0	1070.2	-8.73	357.99
100.00	5 32 56	4556.77	19.57	188.23	350.76	66.94	6 48 53	3956.8	16.28	180.98
110.00	19 32 0	1470.37	-14.60	348.37	348.34	121.26	19 56 31	870.4	-10.36	341.84
110.00	6 45 35	4329.38	21.76	169.87	349.66	62.97	7 57 45	3729.4	17.96	162.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6237 TRA -.6087 TC3 3.7872 BAU .6956 SGT 2847.8 SGR 2527.2 SG3 1553.9 ST 1204.2 SR 775.9 SS 2061.4
RDE .4173 RRA -.0651 RC3 3.8792 FAU .30390 RRT .9262 RRF -.9996 RTF -.9230 CRT .9712 CRS .9998 CST .9669
FDE-3.1829 FRA .3001 FC-27.4147 BSP 12867 SGB 3807.5 R23 -.2231 R13 -.9744 LSA 2495.8 MSA 269.2 SSA 6.3
BDE .7504 BRA .6121 BC3 5.4214 FSP 5130 SG1 3737.6 SG2 725.9 THA 41.32 EL1 1424.0 EL2 156.2 ALF 32.48

LAUNCH DATE NOV 21 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 569.687 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.072 GAL -.10 AZL 92.68 HCA 176.14 SMA 188.90 ECC .21780 INC 2.6754 V1 30.153
RP 229.86 LAP -.18 LOP 234.87 VP 21.265 GAP 1.23 AZP 87.33 TAL 359.45 TAP 175.59 RCA 147.76 APO 230.05 V2 23.927
RC 230.076 GL -28.04 GP 24.01 ZAL 85.00 ZAP 130.69 ETS 155.89 ZAE 154.16 ETE 102.06 ZAC 113.37 ETC 254.57 CLP 135.54

PLANETOCENTRIC CONIC

C3 10.792 VHL 3.285 DLA -12.72 RAL 136.31 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 4.110 DPA 18.72 RAP 200.31 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 25	1671.09	-3.75	9.46	348.06	118.09	18 31 16	1071.1	.04	2.82
90.00	2 47 47	5127.72	25.06	228.23	351.74	76.36	4 13 14	4527.7	22.94	220.20
100.00	19 18 12	1429.83	-4.65	351.22	347.57	119.56	19 42 2	829.8	-.68	344.69
100.00	4 15 41	4844.21	26.05	207.09	351.45	74.80	5 36 25	4244.2	23.71	199.07
110.00	20 11 39	1262.44	-6.99	337.08	346.12	123.55	20 32 41	662.4	-2.53	330.83
110.00	5 38 44	4584.36	28.67	186.44	350.53	70.54	6 55 8	3984.4	25.75	178.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8074 TRA -.5571 TC3 3.1983 BAU .7844 SGT 2718.6 SGR 3211.5 SG3 1485.8 ST 1440.9 SR 1406.2 SS 2751.2
RDE .8047 RRA .0081 RC3 4.3963 FAU .29134 RRT .9199 RRF -.9998 RTF -.9155 CRT .9775 CRS .9999 CST .9752
FDE-4.4342 FRA -.2011 FC-23.3704 BSP 14350 SGB 4207.7 R23 -.1762 R13 -.9842 LSA 3397.0 MSA 287.7 SSA 3.6
BDE 1.1399 BRA .5571 BC3 5.4366 FSP 4972 SG1 4125.1 SG2 829.8 THA 50.16 EL1 2002.0 EL2 213.6 ALF 44.28

LAUNCH DATE NOV 21 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 573.511 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.059 GAL -.07 AZL 94.31 HCA 177.17 SMA 188.67 ECC .21681 INC 4.3089 V1 30.153
RP 229.47 LAP -.21 LOP 235.90 VP 21.290 GAP .89 AZP 85.69 TAL 359.62 TAP 176.79 RCA 147.76 APO 229.57 V2 23.968
RC 231.973 GL -41.29 GP 31.49 ZAL 85.36 ZAP 125.95 ETS 151.94 ZAE 146.44 ETE 103.05 ZAC 120.39 ETC 253.57 CLP 133.51

PLANETOCENTRIC CONIC

C3 14.196 VHL 3.768 DLA -25.06 RAL 131.18 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 4.363 DPA 25.80 RAP 203.07 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 18	1206.62	10.99	343.28	350.25	116.26	20 24 25	606.6	14.43	336.30
90.00	0 5 57	5708.70	27.55	270.07	355.44	96.80	1 41 6	5108.7	28.21	261.46
100.00	21 2 37	1018.34	9.17	328.49	349.30	118.57	21 19 35	418.3	12.92	321.71
100.00	1 50 20	5372.21	29.59	245.54	355.67	94.43	3 19 52	4772.2	29.89	236.75
110.00	21 27 18	940.92	5.26	320.24	346.91	123.83	21 42 59	340.9	9.66	313.92
110.00	3 42 8	5022.39	34.17	219.13	355.83	88.96	5 5 51	4422.4	33.65	209.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1412 TRA -.4851 TC3 2.3632 BAU .9755 SGT 2616.5 SGR 4316.5 SG3 1327.8 ST 1753.4 SR 2583.6 SS 3499.7
RDE 1.6959 RRA .2313 RC3 4.5644 FAU .26441 RRT .9106 RRF -.9998 RTF -.9043 CRT .9829 CRS 1.0000 CST .9813
FDE-6.0913 FRA -.9865 FC-16.1243 BSP 16022 SGB 5047.6 R23 -.1240 R13 -.9922 LSA 4679.9 MSA 309.2 SSA 2.2
BDE 2.0441 BRA .5374 BC3 5.1399 FSP 4120 SG1 4959.1 SG2 941.3 THA 59.91 EL1 3110.9 EL2 268.0 ALF 56.01

LAUNCH DATE NOV 21 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 577.340 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.046 GAL -.04 AZL 97.81 HCA 178.19 SMA 188.44 ECC .21588 INC 7.8102 V1 30.153
RP 229.09 LAP -.25 LOP 236.93 VP 21.316 GAP .56 AZP 82.19 TAL 359.79 TAP 177.98 RCA 147.76 APO 229.13 V2 24.009
RC 233.848 GL -59.85 GP 43.32 ZAL 86.44 ZAP 118.03 ETS 147.95 ZAE 134.31 ETE 104.27 ZAC 131.30 ETC 251.12 CLP 130.23

PLANETOCENTRIC CONIC

C3 26.974 VHL 5.194 DLA -42.01 RAL 122.00 RAD 6568.1 VEL 12.180 PTH 2.19 VHP 5.203 DPA 36.99 RAP 208.06 ECC 1.4439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.57	17 54 4	1624.41	25.55	23.87	359.93	124.55	18 21 8	1024.4	29.89	16.69
122.43	1 2 58	5594.19	25.56	260.76	359.94	124.55	2 36 12	4994.2	29.90	253.58
57.57	17 54 4	1624.41	25.55	23.87	359.93	124.55	18 21 8	1024.4	29.89	16.69
122.43	1 2 58	5594.19	25.56	260.76	359.94	124.55	2 36 12	4994.2	29.90	253.58
57.57	17 54 4	1624.41	25.55	23.87	359.93	124.55	18 21 8	1024.4	29.89	16.69
122.43	1 2 58	5594.19	25.56	260.76	359.94	124.55	2 36 12	4994.2	29.90	253.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7308 TRA -.3631 TC3 1.0953 BAU 1.2773 SGT 2287.1 SGR 5685.8 SG3 867.9 ST 1916.5 SR 4319.7 SS 3424.6
RDE 3.8996 RRA .8469 RC3 3.3682 FAU .18330 RRT .8856 RRF -.9997 RTF -.8747 CRT .9852 CRS 1.0000 CST .9835
FDE-6.8713 FRA-1.6627 FC3-5.8831 BSP 20999 SGB 6128.5 R23 -.0834 R13 -.9964 LSA 5827.5 MSA 318.3 SSA 1.7
BDE 4.2664 BRA .9214 BC3 3.5418 FSP 2902 SG1 6046.6 SG2 998.7 THA 69.82 EL1 4716.2 EL2 300.5 ALF 66.29

LAUNCH DATE NOV 21 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 592.893 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.003 GAL .03 AZL 80.91 HCA 182.40 SMA 187.68 ECC .21269 INC 9.0871 V1 30.153
RP 227.53 LAP -.38 LOP 241.09 VP 21.434 GAP -.70 AZP 99.08 TAL .19 TAP 182.58 RCA 147.76 APO 227.60 V2 24.173
RC 241.142 GL 64.70 GP -38.22 ZAL 86.39 ZAP 117.08 ETS 202.04 ZAE 139.79 ETE 241.39 ZAC 51.99 ETC 252.17 CLP 125.41

PLANETOCENTRIC CONIC

C3 33.256 VHL 5.767 DLA 69.74 RAL 198.35 RAD 6568.3 VEL 12.435 PTH 2.25 VHP 4.384 DPA -35.58 RAP 167.98 ECC 1.5473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
20.02	11 17 9	4394.29	-44.09	233.46	121.60	24.81	12 30 23	3794.3	-51.23	228.53
20.02	7 9 10	4696.79	-24.96	241.57	68.81	19.42	8 27 27	4096.8	-32.47	238.84
23.16	9 19 51	4537.55	-33.98	234.63	93.96	24.68	10 35 28	3937.6	-41.17	230.62
156.84	19 46 17	2785.94	-33.97	84.89	93.94	24.68	20 32 43	2185.9	-41.17	80.88
23.16	9 19 51	4537.55	-33.98	234.63	93.96	24.68	10 35 28	3937.6	-41.17	230.62
156.84	19 46 17	2785.94	-33.97	84.89	93.94	24.68	20 32 43	2185.9	-41.17	80.88

DIFFERENTIAL CORRECTIONS
TDE .6169 TRA -.4010 TC3 .5871 BAU 1.2609
RDE 1.6305 RRA 1.4473 RC3-2.7745 FAU .28491
FDE 4.5579 FRA 3.7345 FC3-7.4169 BSP 17632
BDE 1.7433 BRA 1.5018 BC3 2.8359 FSP 3873

MID-COURSE EXECUTION ACCURACY
SGT 1469.2 SGR 5487.4 SG3 1247.7
RRT -.7384 RRF .9997 RTF -.7235
SGB 5680.7 R23 -.0572 R13 .9983
SG1 5597.1 SG2 971.3 THA 101.54

ORBIT DETERMINATION ACCURACY
ST 703.7 SR 2045.9 SS 2105.8
CRT .3895 CRS -.9993 CST -.4244
LSA 2950.1 MSA 641.9 SSA 1.8
EL1 2066.2 EL2 641.8 ALF 81.55

LAUNCH DATE NOV 21 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 596.781 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.994 GAL .05 AZL 83.12 HCA 183.44 SMA 187.52 ECC .21201 INC 6.8745 V1 30.153
RP 227.14 LAP -.41 LOP 242.13 VP 21.467 GAP -1.00 AZP 96.86 TAL .28 TAP 183.72 RCA 147.76 APO 227.27 V2 24.214
RC 242.914 GL 56.32 GP -29.72 ZAL 85.50 ZAP 119.57 ETS 197.35 ZAE 146.72 ETE 234.28 ZAC 60.26 ETC 253.84 CLP 124.63

PLANETOCENTRIC CONIC

C3 22.527 VHL 4.746 DLA 64.62 RAL 181.08 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 3.819 DPA -28.28 RAP 173.15 ECC 1.3707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.13	8 24 17	4421.77	-38.17	224.29	69.21	33.03	9 37 59	3821.8	-44.72	218.58
150.87	18 24 5	2708.26	-38.16	81.07	69.19	33.03	19 9 13	2108.3	-44.71	75.36
29.13	8 24 17	4421.77	-38.17	224.29	69.21	33.03	9 37 59	3821.8	-44.72	218.58
150.87	18 24 5	2708.26	-38.16	81.07	69.19	33.03	19 9 13	2108.3	-44.71	75.36
29.13	8 24 17	4421.77	-38.17	224.29	69.21	33.03	9 37 59	3821.8	-44.72	218.58
150.87	18 24 5	2708.26	-38.16	81.07	69.19	33.03	19 9 13	2108.3	-44.71	75.36

DIFFERENTIAL CORRECTIONS
TDE .2414 TRA -.4819 TC3 .7877 BAU .9535
RDE 1.7428 RRA 1.0155 RC3-3.0666 FAU .35633
FDE 7.7825 FRA 4.3313 FC-13.6943 BSP 16059
BDE 1.7594 BRA 1.1240 BC3 3.1662 FSP 5782

MID-COURSE EXECUTION ACCURACY
SGT 1577.0 SGR 4591.6 SG3 1741.1
RRT -.7522 RRF .9998 RTF -.7409
SGB 4854.9 R23 -.0742 R13 .9971
SG1 4749.8 SG2 1004.5 THA 105.18

ORBIT DETERMINATION ACCURACY
ST 501.3 SR 2273.8 SS 3329.0
CRT .2295 CRS -.9999 CST -.2448
LSA 4033.1 MSA 487.3 SSA 2.1
EL1 2276.9 EL2 487.3 ALF 86.96

LAUNCH DATE NOV 21 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 600.684 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.985 GAL .06 AZL 84.31 HCA 184.49 SMA 187.37 ECC .21137 INC 5.6884 V1 30.153
RP 226.75 LAP -.44 LOP 243.19 VP 21.500 GAP -1.30 AZP 95.67 TAL .36 TAP 184.85 RCA 147.76 APO 226.97 V2 24.256
RC 244.666 GL 50.47 GP -24.19 ZAL 84.86 ZAP 120.03 ETS 193.58 ZAE 150.23 ETE 226.34 ZAC 65.55 ETC 254.61 CLP 123.28

PLANETOCENTRIC CONIC

C3 17.973 VHL 4.239 DLA 60.25 RAL 172.64 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 3.546 DPA -23.26 RAP 175.73 ECC 1.2958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.31	8 3 5	4346.69	-39.28	215.50	54.79	39.87	9 15 32	3746.7	-45.20	208.64
145.69	17 37 56	2675.75	-39.27	78.36	54.77	39.86	18 22 32	2075.8	-45.19	71.50
34.31	8 3 5	4346.69	-39.28	215.50	54.79	39.87	9 15 32	3746.7	-45.20	208.64
145.69	17 37 56	2675.75	-39.27	78.36	54.77	39.86	18 22 32	2075.8	-45.19	71.50
34.31	8 3 5	4346.69	-39.28	215.50	54.79	39.87	9 15 32	3746.7	-45.20	208.64
145.69	17 37 56	2675.75	-39.27	78.36	54.77	39.86	18 22 32	2075.8	-45.19	71.50

DIFFERENTIAL CORRECTIONS
TDE .1660 TRA -.4466 TC3 .8927 BAU .7839
RDE 1.4153 RRA .7268 RC3-3.1378 FAU .40742
FDE 8.7238 FRA 4.3025 FC-19.6252 BSP 13645
BDE 1.4250 BRA .8531 BC3 3.2623 FSP 6840

MID-COURSE EXECUTION ACCURACY
SGT 1450.2 SGR 3828.3 SG3 2032.2
RRT -.7192 RRF .9997 RTF -.7096
SGB 4093.7 R23 -.0842 R13 .9963
SG1 3977.2 SG2 969.9 THA 106.23

ORBIT DETERMINATION ACCURACY
ST 429.0 SR 2004.4 SS 3772.8
CRT .2450 CRS -.9999 CST -.2558
LSA 4273.6 MSA 415.3 SSA 2.6
EL1 2007.3 EL2 415.3 ALF 86.86

LAUNCH DATE NOV 21 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 604.601 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.977 GAL .07 AZL 85.05 HCA 185.54 SMA 187.22 ECC .21078 INC 4.9486 V1 30.153
RP 226.36 LAP -.48 LOP 244.24 VP 21.535 GAP -1.59 AZP 94.93 TAL .42 TAP 185.96 RCA 147.76 APO 226.69 V2 24.297
RC 246.398 GL 46.18 GP -20.39 ZAL 84.39 ZAP 119.51 ETS 190.72 ZAE 151.69 ETE 218.78 ZAC 69.12 ETC 255.03 CLP 121.71

PLANETOCENTRIC CONIC

C3 15.551 VHL 3.943 DLA 56.80 RAL 167.76 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.383 DPA -19.66 RAP 177.10 ECC 1.2559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.46	7 54 27	4292.63	-39.22	208.60	45.50	44.97	9 5 59	3692.6	-44.62	201.07
141.54	17 7 39	2663.37	-39.21	76.71	45.48	44.96	17 52 2	2063.4	-44.61	69.19
38.46	7 54 27	4292.63	-39.22	208.60	45.50	44.97	9 5 59	3692.6	-44.62	201.07
141.54	17 7 39	2663.37	-39.21	76.71	45.48	44.96	17 52 2	2063.4	-44.61	69.19
38.46	7 54 27	4292.63	-39.22	208.60	45.50	44.97	9 5 59	3692.6	-44.62	201.07
141.54	17 7 39	2663.37	-39.21	76.71	45.48	44.96	17 52 2	2063.4	-44.61	69.19

DIFFERENTIAL CORRECTIONS
TDE .1829 TRA -.4438 TC3 .8429 BAU .6609
RDE 1.1314 RRA .5761 RC3-3.0650 FAU .44285
FDE 8.8393 FRA 4.3227 FC-24.6539 BSP 11785
BDE 1.1461 BRA .7272 BC3 3.1788 FSP 7555

MID-COURSE EXECUTION ACCURACY
SGT 1378.1 SGR 3298.9 SG3 2244.1
RRT -.6533 RRF .9996 RTF -.6431
SGB 3575.2 R23 -.1006 R13 .9946
SG1 3431.6 SG2 1003.0 THA 106.74

ORBIT DETERMINATION ACCURACY
ST 442.5 SR 1708.2 SS 3889.9
CRT .3618 CRS -.9999 CST -.3712
LSA 4251.6 MSA 411.2 SSA 3.2
EL1 1716.1 EL2 410.7 ALF 84.32

LAUNCH DATE NOV 21 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 608.528 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.969 GAL .08 AZL 85.56 HCA 186.60 SMA 187.09 ECC .21023 INC 4.4441 V1 30.153
RP 225.97 LAP -.51 LOP 245.30 VP 21.570 GAP -1.87 AZP 94.42 TAL .46 TAP 187.06 RCA 147.76 APO 226.43 V2 24.339
RC 248.110 GL 42.92 GP -17.66 ZAL 84.04 ZAP 118.48 ETS 188.56 ZAE 151.91 ETE 212.17 ZAC 71.65 ETC 255.30 CLP 120.02

PLANETOCENTRIC CONIC

C3 14.075 VHL 3.752 DLA 54.08 RAL 164.61 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.270 DPA -16.94 RAP 177.81 ECC 1.2316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.79	7 51 9	4250.96	-38.74	203.19	39.09	48.77	9 2 0	3651.0	-43.72	195.28
138.21	16 45 46	2660.55	-38.72	75.80	39.08	48.76	17 30 7	2060.5	-43.71	67.90
41.79	7 51 9	4250.96	-38.74	203.19	39.09	48.77	9 2 0	3651.0	-43.72	195.28
138.21	16 45 46	2660.55	-38.72	75.80	39.08	48.76	17 30 7	2060.5	-43.71	67.90
41.79	7 51 9	4250.96	-38.74	203.19	39.09	48.77	9 2 0	3651.0	-43.72	195.28
138.21	16 45 46	2660.55	-38.72	75.80	39.08	48.76	17 30 7	2060.5	-43.71	67.90

DIFFERENTIAL CORRECTIONS
TDE .2057 TRA -.4178 TC3 .7327 BAU .5702
RDE .9476 RRA .4756 RC3-2.9403 FAU .47001
FDE 8.8980 FRA 4.3003 FC-28.9096 BSP 10219
BDE .9696 BRA .6331 BC3 3.0302 FSP 8100

MID-COURSE EXECUTION ACCURACY
SGT 1258.6 SGR 2914.5 SG3 2413.8
RRT -.5738 RRF .9995 RTF -.5640
SGB 3174.7 R23 -.1039 R13 .9941
SG1 3014.2 SG2 996.7 THA 105.68

ORBIT DETERMINATION ACCURACY
ST 453.3 SR 1495.5 SS 3958.9
CRT .4903 CRS-1.0000 CST -.4980
LSA 4238.0 MSA 393.0 SSA 3.9
EL1 1513.1 EL2 390.5 ALF 80.94

LAUNCH DATE NOV 21 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 612.465 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.962 GAL .08 AZL 85.92 HCA 187.66 SMA 186.97 ECC .20972 INC 4.0773 V1 30.153
RP 225.58 LAP -.54 LOP 246.36 VP 21.607 GAP -2.15 AZP 94.04 TAL .49 TAP 188.15 RCA 147.76 APO 226.18 V2 24.381
RC 249.803 GL 40.38 GP -15.60 ZAL 83.78 ZAP 117.14 ETS 186.87 ZAE 151.35 ETE 206.61 ZAC 73.50 ETC 255.48 CLP 118.27

PLANETOCENTRIC CONIC

C3 13.090 VHL 3.618 DLA 51.90 RAL 162.41 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.184 DPA -14.80 RAP 178.12 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.50	7 50 27	4217.34	-38.12	198.88	34.46	51.65	9 0 44	3617.3	-42.79	190.74
135.50	16 28 59	2662.57	-38.11	75.37	34.45	51.64	17 13 22	2062.6	-42.78	67.24
44.50	7 50 27	4217.34	-38.12	198.88	34.46	51.65	9 0 44	3617.3	-42.79	190.74
135.50	16 28 59	2662.57	-38.11	75.37	34.45	51.64	17 13 22	2062.6	-42.78	67.24
44.50	7 50 27	4217.34	-38.12	198.88	34.46	51.65	9 0 44	3617.3	-42.79	190.74
135.50	16 28 59	2662.57	-38.11	75.37	34.45	51.64	17 13 22	2062.6	-42.78	67.24

DIFFERENTIAL CORRECTIONS
TDE .2495 TRA -.3940 TC3 .5591 BAU .5005
RDE .8088 RRA .4073 RC3-2.8044 FAU .49323
FDE 8.8174 FRA 4.2884 FC-32.6197 BSP 9325
BDE .8465 BRA .5667 BC3 2.8596 FSP 8765

MID-COURSE EXECUTION ACCURACY
SGT 1158.7 SGR 2617.6 SG3 2553.2
RRT -.4524 RRF .9992 RTF -.4428
SGB 2862.6 R23 -.0986 R13 .9944
SG1 2678.6 SG2 1009.8 THA 103.24

ORBIT DETERMINATION ACCURACY
ST 498.3 SR 1320.1 SS 3952.2
CRT .6236 CRS-1.0000 CST -.6295
LSA 4178.8 MSA 386.4 SSA 4.7
EL1 1359.4 EL2 378.3 ALF 75.62

LAUNCH DATE NOV 21 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 616.414 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.956 GAL .09 AZL 86.20 HCA 188.73 SMA 186.86 ECC .20924 INC 3.7985 V1 30.153
RP 225.19 LAP -.58 LOP 247.43 VP 21.644 GAP -2.42 AZP 93.75 TAL .50 TAP 189.23 RCA 147.76 APO 225.96 V2 24.423
RC 251.477 GL 38.34 GP -14.00 ZAL 83.59 ZAP 115.62 ETS 185.53 ZAE 150.29 ETE 202.06 ZAC 74.90 ETC 255.62 CLP 116.46

PLANETOCENTRIC CONIC

C3 12.390 VHL 3.520 DLA 50.13 RAL 160.82 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.115 DPA -13.04 RAP 178.17 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.74	7 51 6	4189.28	-37.49	195.35	30.98	53.90	9 0 56	3589.3	-41.90	187.08
133.26	16 15 37	2667.05	-37.48	75.23	30.97	53.89	17 0 4	2067.0	-41.89	66.96
46.74	7 51 6	4189.28	-37.49	195.35	30.98	53.90	9 0 56	3589.3	-41.90	187.08
133.26	16 15 37	2667.05	-37.48	75.23	30.97	53.89	17 0 4	2067.0	-41.89	66.96
46.74	7 51 6	4189.28	-37.49	195.35	30.98	53.90	9 0 56	3589.3	-41.90	187.08
133.26	16 15 37	2667.05	-37.48	75.23	30.97	53.89	17 0 4	2067.0	-41.89	66.96

DIFFERENTIAL CORRECTIONS
TDE .3026 TRA -.3601 TC3 .3182 BAU .4443
RDE .7038 RRA .3529 RC3-2.6635 FAU .51276
FDE 8.6835 FRA 4.2220 FC-35.8291 BSP 8138
BDE .7660 BRA .5042 BC3 2.6825 FSP 9030

MID-COURSE EXECUTION ACCURACY
SGT 1062.4 SGR 2373.0 SG3 2664.3
RRT -.2678 RRF .9989 RTF -.2591
SGB 2600.0 R23 -.0707 R13 .9964
SG1 2393.8 SG2 1014.7 THA 98.35

ORBIT DETERMINATION ACCURACY
ST 563.8 SR 1178.0 SS 3907.1
CRT .7379 CRS-1.0000 CST -.7423
LSA 4102.4 MSA 376.1 SSA 5.5
EL1 1256.3 EL2 356.8 ALF 68.75

LAUNCH DATE NOV 21 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 620.372 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.950 GAL .09 AZL 86.42 HCA 189.80 SMA 186.76 ECC .20881 INC 3.5793 V1 30.153
RP 224.80 LAP -.61 LOP 248.50 VP 21.682 GAP -2.69 AZP 93.53 TAL .50 TAP 190.30 RCA 147.76 APO 225.75 V2 24.465
RC 253.132 GL 36.67 GP -12.71 ZAL 83.45 ZAP 113.97 ETS 184.45 ZAE 148.90 ETE 198.35 ZAC 75.98 ETC 255.73 CLP 114.61

PLANETOCENTRIC CONIC

C3 11.866 VHL 3.445 DLA 48.65 RAL 159.62 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 3.058 DPA -11.56 RAP 178.03 ECC 1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.63	7 52 32	4165.28	-36.89	192.41	28.30	55.69	9 1 58	3565.3	-41.08	184.05
131.37	16 4 38	2672.79	-36.88	75.28	28.29	55.68	16 49 11	2072.8	-41.08	66.92
48.63	7 52 32	4165.28	-36.89	192.41	28.30	55.69	9 1 58	3565.3	-41.08	184.05
131.37	16 4 38	2672.79	-36.88	75.28	28.29	55.68	16 49 11	2072.8	-41.08	66.92
48.63	7 52 32	4165.28	-36.89	192.41	28.30	55.69	9 1 58	3565.3	-41.08	184.05
131.37	16 4 38	2672.79	-36.88	75.28	28.29	55.68	16 49 11	2072.8	-41.08	66.92

DIFFERENTIAL CORRECTIONS
TDE .3561 TRA -.3343 TC3 .0464 BAU .4019
RDE .6246 RRA .3160 RC3-2.5330 FAU .53092
FDE 8.5543 FRA 4.2181 FC-38.7353 BSP 7433
BDE .7190 BRA .4600 BC3 2.5334 FSP 9446

MID-COURSE EXECUTION ACCURACY
SGT 1029.7 SGR 2181.2 SG3 2769.4
RRT -.0490 RRF .9984 RTF -.0413
SGB 2412.0 R23 -.0216 R13 .9982
SG1 2181.9 SG2 1028.1 THA 91.70

ORBIT DETERMINATION ACCURACY
ST 643.9 SR 1067.2 SS 3858.2
CRT .8077 CRS-1.0000 CST -.8107
LSA 4037.2 MSA 374.0 SSA 6.4
EL1 1199.8 EL2 337.7 ALF 61.56

LAUNCH DATE NOV 21 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 624.340 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.945 GAL .08 AZL 86.60 HCA 190.88 SMA 186.66 ECC .20841 INC 3.4025 V1 30.153
RP 224.41 LAP -.64 LOP 249.58 VP 21.721 GAP -2.95 AZP 93.34 TAL .48 TAP 191.35 RCA 147.76 APO 225.56 V2 24.506
RC 254.766 GL 35.28 GP -11.66 ZAL 83.37 ZAP 112.23 ETS 183.55 ZAE 147.27 ETE 195.33 ZAC 76.83 ETC 255.82 CLP 112.72

PLANETOCENTRIC CONIC

C3 11.460 VHL 3.385 DLA 47.40 RAL 158.71 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 3.009 DPA -10.27 RAP 177.75 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.25	7 54 28	4144.31	-36.33	189.90	26.18	57.16	9 3 32	3544.3	-40.35	181.49
129.75	15 55 27	2679.20	-36.32	75.44	26.18	57.14	16 40 6	2079.2	-40.34	67.03
50.25	7 54 28	4144.31	-36.33	189.90	26.18	57.16	9 3 32	3544.3	-40.35	181.49
129.75	15 55 27	2679.20	-36.32	75.44	26.18	57.14	16 40 6	2079.2	-40.34	67.03
50.25	7 54 28	4144.31	-36.33	189.90	26.18	57.16	9 3 32	3544.3	-40.35	181.49
129.75	15 55 27	2679.20	-36.32	75.44	26.18	57.14	16 40 6	2079.2	-40.34	67.03

DIFFERENTIAL CORRECTIONS
TDE .4087 TRA -.3038 TC3 -.2450 BAU .3722
RDE .5649 RRA .2867 RC3-2.4170 FAU .54882
FDE 8.4576 FRA 4.2111 FC-41.4617 BSP 6830
BDE .6972 BRA .4177 BC3 2.4294 FSP 9714

MID-COURSE EXECUTION ACCURACY
SGT 1040.8 SGR 2026.3 SG3 2870.5
RRT .1841 RRF .9978 RTF .1897
SGB 2278.0 R23 .0567 R13 .9962
SG1 2038.4 SG2 1016.9 THA 82.80

ORBIT DETERMINATION ACCURACY
ST 728.3 SR 981.2 SS 3817.6
CRT .8572 CRS-1.0000 CST -.8590
LSA 3991.5 MSA 368.4 SSA 7.3
EL1 1181.6 EL2 311.5 ALF 54.72

LAUNCH DATE NOV 21 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 628.318 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.940 GAL .08 AZL 86.74 HCA 191.95 SMA 186.58 ECC .20804 INC 3.2563 V1 30.153
RP 224.02 LAP -.67 LOP 250.65 VP 21.761 GAP -3.21 AZP 93.19 TAL .45 TAP 192.40 RCA 147.76 APO 225.39 V2 24.548
RC 256.380 GL 34.11 GP -10.78 ZAL 83.33 ZAP 110.42 ETS 182.81 ZAE 145.49 ETE 192.85 ZAC 77.50 ETC 255.91 CLP 110.81

PLANETOCENTRIC CONIC

C3 11.135 VHL 3.337 DLA 46.33 RAL 158.01 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 2.967 DPA -9.12 RAP 177.37 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.66	7 56 41	4125.72	-35.81	187.72	24.49	58.38	9 5 27	3525.7	-39.69	179.28
128.34	15 47 38	2685.89	-35.80	75.67	24.48	58.36	16 32 24	2085.9	-39.68	67.23
51.66	7 56 41	4125.72	-35.81	187.72	24.49	58.38	9 5 27	3525.7	-39.69	179.28
128.34	15 47 38	2685.89	-35.80	75.67	24.48	58.36	16 32 24	2085.9	-39.68	67.23
51.66	7 56 41	4125.72	-35.81	187.72	24.49	58.38	9 5 27	3525.7	-39.69	179.28
128.34	15 47 38	2685.89	-35.80	75.67	24.48	58.36	16 32 24	2085.9	-39.68	67.23

DIFFERENTIAL CORRECTIONS
TDE .4604 TRA -.2784 TC3 -.6042 BAU .3534
RDE .5173 RRA .2649 RC3-2.2961 FAU .56285
FDE 8.3586 FRA 4.2329 FC-43.7624 BSP 6576
BDE .6925 BRA .3843 BC3 2.3743 FSP 10185

MID-COURSE EXECUTION ACCURACY
SGT 1125.6 SGR 1889.7 SG3 2955.0
RRT .4062 RRF .9970 RTF .4114
SGB 2199.5 R23 .1582 R13 .9844
SG1 1964.4 SG2 989.4 THA 71.56

ORBIT DETERMINATION ACCURACY
ST 817.5 SR 911.0 SS 3774.3
CRT .8884 CRS-1.0000 CST -.8892
LSA 3950.7 MSA 367.7 SSA 8.2
EL1 1189.8 EL2 287.3 ALF 48.48

LAUNCH DATE NOV 21 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 632.305 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.935 GAL .07 AZL 86.87 HCA 193.04 SMA 186.50 ECC .20770 INC 3.1337 V1 30.153
RP 223.63 LAP -.71 LOP 251.74 VP 21.801 GAP -3.46 AZP 93.05 TAL .40 TAP 193.43 RCA 147.76 APO 225.23 V2 24.590
RC 257.974 GL 33.11 GP -10.03 ZAL 83.33 ZAP 108.56 ETS 182.17 ZAE 143.59 ETE 190.82 ZAC 78.05 ETC 256.00 CLP 108.86

PLANETOCENTRIC CONIC

C3 10.869 VHL 3.297 DLA 45.40 RAL 157.48 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.931 DPA -8.08 RAP 176.92 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.91	7 59 8	4109.01	-35.34	185.81	23.12	59.41	9 7 37	3509.0	-39.09	177.35
127.09	15 40 55	2692.67	-35.33	75.96	23.11	59.40	16 25 48	2092.7	-39.08	67.50
52.91	7 59 8	4109.01	-35.34	185.81	23.12	59.41	9 7 37	3509.0	-39.09	177.35
127.09	15 40 55	2692.67	-35.33	75.96	23.11	59.40	16 25 48	2092.7	-39.08	67.50
52.91	7 59 8	4109.01	-35.34	185.81	23.12	59.41	9 7 37	3509.0	-39.09	177.35
127.09	15 40 55	2692.67	-35.33	75.96	23.11	59.40	16 25 48	2092.7	-39.08	67.50

DIFFERENTIAL CORRECTIONS
TDE .5178 TRA -.2442 TC3 -.9554 BAU .3482
RDE .4766 RRA .2443 RC3-2.1974 FAU .57883
FDE 8.2233 FRA 4.2035 FC-46.1063 BSP 6431
BDE .7037 BRA .3454 BC3 2.3962 FSP 10405

MID-COURSE EXECUTION ACCURACY
SGT 1253.8 SGR 1775.0 SG3 3038.4
RRT .5809 RRF .9960 RTF .5834
SGB 2173.2 R23 .2468 R13 .9650
SG1 1968.8 SG2 920.1 THA 60.71

ORBIT DETERMINATION ACCURACY
ST 918.1 SR 849.0 SS 3712.1
CRT .9150 CRS -.9999 CST -.9149
LSA 3900.3 MSA 361.9 SSA 9.2
EL1 1223.8 EL2 257.0 ALF 42.55

LAUNCH DATE NOV 21 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 636.302 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.931 GAL .06 AZL 86.97 HCA 194.12 SMA 186.43 ECC .20740 INC 3.0293 V1 30.153
RP 223.24 LAP -.74 LOP 252.82 VP 21.842 GAP -3.71 AZP 92.94 TAL .34 TAP 194.46 RCA 147.76 APO 225.09 V2 24.632
RC 259.547 GL 32.24 GP -9.38 ZAL 83.37 ZAP 106.66 ETS 181.62 ZAE 141.60 ETE 189.12 ZAC 78.49 ETC 256.08 CLP 106.90

PLANETOCENTRIC CONIC

C3 10.646 VHL 3.263 DLA 44.57 RAL 157.08 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 2.900 DPA -7.12 RAP 176.40 ECC 1.1752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.02	8 1 45	4093.77	-34.90	184.10	22.00	60.30	9 9 59	3493.8	-38.55	175.62
125.98	15 35 5	2699.47	-34.89	76.27	21.99	60.29	16 20 5	2099.5	-38.54	67.80
54.02	8 1 45	4093.77	-34.90	184.10	22.00	60.30	9 9 59	3493.8	-38.55	175.62
125.98	15 35 5	2699.47	-34.89	76.27	21.99	60.29	16 20 5	2099.5	-38.54	67.80
54.02	8 1 45	4093.77	-34.90	184.10	22.00	60.30	9 9 59	3493.8	-38.55	175.62
125.98	15 35 5	2699.47	-34.89	76.27	21.99	60.29	16 20 5	2099.5	-38.54	67.80

DIFFERENTIAL CORRECTIONS
TDE .5706 TRA -.2133 TC3-1.3882 BAU .3559
RDE .4452 RRA .2292 RC3-2.0795 FAU .58751
FDE 8.1281 FRA 4.2177 FC-47.7755 BSP 6542
BDE .7237 BRA .3131 BC3 2.5003 FSP 10507

MID-COURSE EXECUTION ACCURACY
SGT 1449.5 SGR 1664.9 SG3 3095.7
RRT .7109 RRF .9947 RTF .7139
SGB 2207.4 R23 .3059 R13 .9466
SG1 2045.6 SG2 829.7 THA 50.53

ORBIT DETERMINATION ACCURACY
ST 1014.6 SR 800.9 SS 3668.7
CRT .9323 CRS -.9999 CST -.9313
LSA 3873.2 MSA 358.1 SSA 10.1
EL1 1271.8 EL2 231.2 ALF 37.82

LAUNCH DATE NOV 21 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 640.308 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.927	GAL	.04	AZL	87.06	HCA	195.21	SMA	186.36	ECC	.20713	INC	2.9394	V1	30.153
RP	222.85	LAP	-.77	LOP	253.91	VP	21.884	GAP	-3.95	AZP	92.84	TAL	.26	TAP	195.47	RCA	147.76	APO	224.96	V2	24.674
RC	261.100	GL	31.48	GP	-8.81	ZAL	83.44	ZAP	104.73	ETS	181.15	ZAE	139.55	ETE	187.70	ZAC	78.85	ETC	256.16	CLP	104.91

PLANETOCENTRIC CONIC

C3	10.457	VHL	3.234	DLA	43.83	RAL	156.78	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	2.874	DPA	-6.24	RAP	175.83	ECC	1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.03	8 4 31	4079.78	-34.50	182.55	21.08	61.08	9 12 31	3479.8	-38.05	174.07
124.97	15 30 0	2706.20	-34.49	76.60	21.08	61.07	16 15 6	2106.2	-38.04	68.13
55.03	8 4 31	4079.78	-34.50	182.55	21.08	61.08	9 12 31	3479.8	-38.05	174.07
124.97	15 30 0	2706.20	-34.49	76.60	21.08	61.07	16 15 6	2106.2	-38.04	68.13
55.03	8 4 31	4079.78	-34.50	182.55	21.08	61.08	9 12 31	3479.8	-38.05	174.07
124.97	15 30 0	2706.20	-34.49	76.60	21.08	61.07	16 15 6	2106.2	-38.04	68.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6324	TRA	-.1823	TC3	-1.8122	BAU	.3751	SGT	1682.1	SGR	1570.0	SG3	3152.0	ST	1129.1	SR	754.0	SS	3592.3
RDE	.4152	RRA	.2180	RC3	-1.9784	FAU	.59730	RRT	.7892	RRF	.9932	RTF	.7917	CRT	.9446	CRS	-.9999	CST	-.9427
FDE	7.9513	FRA	4.2627	FC	-49.4496	BSP	6920	SGB	2301.0	R23	.3356	R13	.9349	LSA	3823.3	MSA	361.3	SSA	11.1
BDE	.7565	BRA	.2842	BC3	2.6829	FSP	10800	SG1	2177.0	SG2	745.0	THA	42.50	EL1	1341.6	EL2	208.3	ALF	33.14

LAUNCH DATE NOV 21 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 644.323 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.924	GAL	.03	AZL	87.14	HCA	196.30	SMA	186.31	ECC	.20689	INC	2.8611	V1	30.153
RP	222.47	LAP	-.80	LOP	255.01	VP	21.926	GAP	-4.19	AZP	92.75	TAL	.17	TAP	196.47	RCA	147.76	APO	224.85	V2	24.716
RC	262.633	GL	30.81	GP	-8.30	ZAL	83.55	ZAP	102.78	ETS	180.73	ZAE	137.44	ETE	186.51	ZAC	79.15	ETC	256.24	CLP	102.92

PLANETOCENTRIC CONIC

C3	10.294	VHL	3.208	DLA	43.16	RAL	156.59	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	2.852	DPA	-5.41	RAP	175.23	ECC	1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.96	8 7 26	4066.70	-34.12	181.13	20.34	61.78	9 15 13	3466.7	-37.58	172.64
124.04	15 25 30	2712.96	-34.11	76.96	20.33	61.76	16 10 43	2113.0	-37.57	68.48
55.96	8 7 26	4066.70	-34.12	181.13	20.34	61.78	9 15 13	3466.7	-37.58	172.64
124.04	15 25 30	2712.96	-34.11	76.96	20.33	61.76	16 10 43	2113.0	-37.57	68.48
55.96	8 7 26	4066.70	-34.12	181.13	20.34	61.78	9 15 13	3466.7	-37.58	172.64
124.04	15 25 30	2712.96	-34.11	76.96	20.33	61.76	16 10 43	2113.0	-37.57	68.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6863	TRA	-.1383	TC3	-2.2127	BAU	.4017	SGT	1906.0	SGR	1492.8	SG3	3219.4	ST	1230.5	SR	718.7	SS	3543.5
RDE	.3933	RRA	.2018	RC3	-1.9030	FAU	.61144	RRT	.8532	RRF	.9916	RTF	.8532	CRT	.9580	CRS	-.9998	CST	-.9558
FDE	7.8493	FRA	4.1500	FC	-51.4205	BSP	7611	SGB	2421.0	R23	.3244	R13	.9371	LSA	3803.8	MSA	343.5	SSA	12.1
BDE	.7910	BRA	.2446	BC3	2.9185	FSP	10661	SG1	2336.1	SG2	635.3	THA	36.93	EL1	1413.7	EL2	179.3	ALF	29.75

LAUNCH DATE NOV 21 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 648.349 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.921	GAL	.01	AZL	87.21	HCA	197.40	SMA	186.26	ECC	.20667	INC	2.7917	V1	30.153
RP	222.08	LAP	-.83	LOP	256.10	VP	21.969	GAP	-4.42	AZP	92.66	TAL	.06	TAP	197.46	RCA	147.76	APO	224.75	V2	24.758
RC	264.145	GL	30.22	GP	-7.85	ZAL	83.70	ZAP	100.81	ETS	180.37	ZAE	135.30	ETE	185.49	ZAC	79.39	ETC	256.32	CLP	100.91

PLANETOCENTRIC CONIC

C3	10.153	VHL	3.186	DLA	42.54	RAL	156.47	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	2.835	DPA	-4.62	RAP	174.60	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.82	8 10 29	4054.45	-33.76	179.81	19.73	62.40	9 18 3	3454.5	-37.15	171.33
123.18	15 21 31	2719.65	-33.75	77.32	19.73	62.39	16 6 51	2119.6	-37.14	68.84
56.82	8 10 29	4054.45	-33.76	179.81	19.73	62.40	9 18 3	3454.5	-37.15	171.33
123.18	15 21 31	2719.65	-33.75	77.32	19.73	62.39	16 6 51	2119.6	-37.14	68.84
56.82	8 10 29	4054.45	-33.76	179.81	19.73	62.40	9 18 3	3454.5	-37.15	171.33
123.18	15 21 31	2719.65	-33.75	77.32	19.73	62.39	16 6 51	2119.6	-37.14	68.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7404	TRA	-.1866	TC3	-2.6584	BAU	.4377	SGT	2202.2	SGR	1465.3	SG3	3356.0	ST	1339.3	SR	690.9	SS	3513.1
RDE	.3709	RRA	.2423	RC3	-1.8251	FAU	.62291	RRT	.8023	RRF	.9898	RTF	.8142	CRT	.9352	CRS	-.9996	CST	-.9275
FDE	7.6470	FRA	5.4032	FC	-53.1162	BSP	8504	SGB	2645.2	R23	.4091	R13	.9020	LSA	3793.4	MSA	471.9	SSA	12.7
BDE	.8281	BRA	.3058	BC3	3.2246	FSP	10168	SG1	2533.6	SG2	760.2	THA	31.22	EL1	1490.9	EL2	219.8	ALF	26.37

LAUNCH DATE NOV 21 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 652.379 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.919	GAL	-.01	AZL	87.27	HCA	198.50	SMA	186.21	ECC	.20649	INC	2.7306	V1	30.153
RP	221.70	LAP	-.87	LOP	257.20	VP	22.012	GAP	-4.64	AZP	92.59	TAL	359.94	TAP	198.45	RCA	147.76	APO	224.66	V2	24.799
RC	265.639	GL	29.68	GP	-7.45	ZAL	83.87	ZAP	98.82	ETS	180.05	ZAE	133.14	ETE	184.62	ZAC	79.59	ETC	256.40	CLP	98.90

PLANETOCENTRIC CONIC

C3	10.028	VHL	3.167	DLA	41.97	RAL	156.42	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	2.821	DPA	-3.88	RAP	173.94	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.62	8 13 40	4042.79	-33.42	178.58	19.25	62.97	9 21 3	3442.8	-36.74	170.09
122.38	15 17 59	2726.36	-33.41	77.70	19.24	62.96	16 3 25	2126.4	-36.73	69.22
57.62	8 13 40	4042.79	-33.42	178.58	19.25	62.97	9 21 3	3442.8	-36.74	170.09
122.38	15 17 59	2726.36	-33.41	77.70	19.24	62.96	16 3 25	2126.4	-36.73	69.22
57.62	8 13 40	4042.79	-33.42	178.58	19.25	62.97	9 21 3	3442.8	-36.74	170.09
122.38	15 17 59	2726.36	-33.41	77.70	19.24	62.96	16 3 25	2126.4	-36.73	69.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7426	TRA	-.1152	TC3	-3.4443	BAU	.5082	SGT	2577.3	SGR	1335.2	SG3	3228.7	ST	1347.9	SR	729.0	SS	3877.9
RDE	.3932	RRA	.2140	RC3	-1.5833	FAU	.58194	RRT	.8710	RRF	.9856	RTF	.9014	CRT	.9615	CRS	-.9997	CST	-.9578
FDE	8.5486	FRA	4.9449	FC	-50.2403	BSP	8385	SGB	2902.7	R23	.3164	R13	.9375	LSA	4153.4	MSA	367.7	SSA	13.1
BDE	.8403	BRA	.2431	BC3	3.7908	FSP	13399	SG1	2841.0	SG2	595.2	THA	25.48	EL1	1522.1	EL2	177.5	ALF	27.89

LAUNCH DATE NOV 21 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 656.425 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.916	GAL	-.03	AZL	87.32	HCA	199.61	SMA	186.18	ECC	.20633	INC	2.6756
RP	221.32	LAP	-.90	LOP	258.31	VP	22.056	GAP	-4.87	AZP	92.52	TAL	359.81	TAP	199.41	RCA	147.76	APO	224.59
RC	267.114	GL	29.21	GP	-7.08	ZAL	84.08	ZAP	96.83	ETS	179.76	ZAE	130.95	ETE	183.87	ZAC	79.76	ETC	256.49

V1 30.153 V2 24.841 CLP 96.89

PLANETOCENTRIC CONIC

C3	9.917	VHL	3.149	DLA	41.44	RAL	156.44	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	2.811	DPA	-3.17	RAP	173.28

ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.39	8 17 1	4031.62	-33.09	177.41	18.87	63.49	9 24 12	3431.6	-36.35	168.93
121.61	15 14 48	2733.12	-33.08	78.09	18.87	63.48	16 0 21	2133.1	-36.34	69.62
58.39	8 17 1	4031.62	-33.09	177.41	18.87	63.49	9 24 12	3431.6	-36.35	168.93
121.61	15 14 48	2733.12	-33.08	78.09	18.87	63.48	16 0 21	2133.1	-36.34	69.62
58.39	8 17 1	4031.62	-33.09	177.41	18.87	63.49	9 24 12	3431.6	-36.35	168.93
121.61	15 14 48	2733.12	-33.08	78.09	18.87	63.48	16 0 21	2133.1	-36.34	69.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8406	TRA	-.0599	TC3	-3.7743	BAU	.5428	SGT	2830.4	SGR	1270.5	SG3	3287.6	ST	1531.7	SR	642.3	SS	3417.7
RDE	.3439	RRA	.1954	RC3	-1.5861	FAU	.61256	RRT	.9073	RRF	.9832	RTF	.9215	CRT	.9685	CRS	-.9995	CST	-.9628
FDE	7.4863	FRA	4.6834	FC	-53.4730	BSP	9858	SGB	3102.5	R23	.2868	R13	.9430	LSA	3780.9	MSA	379.7	SSA	14.8
BDE	.9082	BRA	.2044	BC3	4.0940	FSP	11619	SG1	3063.0	SG2	493.8	THA	22.78	EL1	1654.3	EL2	148.2	ALF	22.29

LAUNCH DATE NOV 21 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 660.475 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.915	GAL	-.06	AZL	87.37	HCA	200.72	SMA	186.15	ECC	.20620	INC	2.6262
RP	220.94	LAP	-.93	LOP	259.42	VP	22.100	GAP	-5.09	AZP	92.46	TAL	359.66	TAP	200.37	RCA	147.76	APO	224.53
RC	268.570	GL	28.77	GP	-6.74	ZAL	84.32	ZAP	94.84	ETS	179.51	ZAE	128.46	ETE	183.22	ZAC	79.90	ETC	256.57

V1 30.153 V2 24.883 CLP 94.88

PLANETOCENTRIC CONIC

C3	9.819	VHL	3.133	DLA	40.93	RAL	156.52	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	2.804	DPA	-2.49	RAP	172.60

ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.12	8 20 31	4020.82	-32.78	176.29	18.59	63.97	9 27 32	3420.8	-35.98	167.82
120.88	15 11 56	2739.96	-32.77	78.50	18.58	63.96	15 57 36	2140.0	-35.97	70.03
59.12	8 20 31	4020.82	-32.78	176.29	18.59	63.97	9 27 32	3420.8	-35.98	167.82
120.88	15 11 56	2739.96	-32.77	78.50	18.58	63.96	15 57 36	2140.0	-35.97	70.03
59.12	8 20 31	4020.82	-32.78	176.29	18.59	63.97	9 27 32	3420.8	-35.98	167.82
120.88	15 11 56	2739.96	-32.77	78.50	18.58	63.96	15 57 36	2140.0	-35.97	70.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8875	TRA	-.0183	TC3	-4.2330	BAU	.5906	SGT	3110.1	SGR	1222.8	SG3	3337.5	ST	1624.7	SR	627.7	SS	3408.3
RDE	.3346	RRA	.1891	RC3	-1.5235	FAU	.62125	RRT	.9217	RRF	.9800	RTF	.9377	CRT	.9740	CRS	-.9993	CST	-.9680
FDE	7.4436	FRA	4.6834	FC	-54.7763	BSP	10907	SGB	3341.9	R23	.2513	R13	.9514	LSA	3809.6	MSA	370.0	SSA	15.7
BDE	.9485	BRA	.1899	BC3	4.4988	FSP	11582	SG1	3312.1	SG2	445.3	THA	20.30	EL1	1736.7	EL2	133.1	ALF	20.75

LAUNCH DATE NOV 21 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 664.536 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.913	GAL	-.09	AZL	87.42	HCA	201.83	SMA	186.12	ECC	.20610	INC	2.5814
RP	220.56	LAP	-.96	LOP	260.53	VP	22.144	GAP	-5.30	AZP	92.40	TAL	359.49	TAP	201.32	RCA	147.76	APO	224.48
RC	270.009	GL	28.38	GP	-6.43	ZAL	84.59	ZAP	92.86	ETS	179.28	ZAE	126.56	ETE	182.66	ZAC	80.01	ETC	256.66

V1 30.153 V2 24.924 CLP 92.88

PLANETOCENTRIC CONIC

C3	9.730	VHL	3.119	DLA	40.45	RAL	156.66	RAD	6567.4	VEL	11.451	PTH	1.99	VHP	2.802	DPA	-1.84	RAP	171.93

ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.82	8 24 11	4010.29	-32.47	175.21	18.39	64.43	9 31 1	3410.3	-35.62	166.75
120.18	15 9 21	2746.91	-32.46	78.92	18.38	64.41	15 55 7	2146.9	-35.61	70.46
59.82	8 24 11	4010.29	-32.47	175.21	18.39	64.43	9 31 1	3410.3	-35.62	166.75
120.18	15 9 21	2746.91	-32.46	78.92	18.38	64.41	15 55 7	2146.9	-35.61	70.46
59.82	8 24 11	4010.29	-32.47	175.21	18.39	64.43	9 31 1	3410.3	-35.62	166.75
120.18	15 9 21	2746.91	-32.46	78.92	18.38	64.41	15 55 7	2146.9	-35.61	70.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9384	TRA	.0238	TC3	-4.7612	BAU	.6472	SGT	3434.7	SGR	1162.5	SG3	3339.4	ST	1726.0	SR	605.3	SS	3324.7
RDE	.3213	RRA	.1822	RC3	-1.4424	FAU	.62179	RRT	.9305	RRF	.9756	RTF	.9495	CRT	.9781	CRS	-.9991	CST	-.9715
FDE	7.2272	FRA	4.6584	FC	-55.3216	BSP	11901	SGB	3626.1	R23	.2172	R13	.9579	LSA	3777.0	MSA	365.3	SSA	16.7
BDE	.9919	BRA	.1837	BC3	4.9749	FSP	11667	SG1	3603.3	SG2	405.8	THA	17.71	EL1	1825.2	EL2	119.2	ALF	19.02

LAUNCH DATE NOV 21 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 668.605 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	32.912	GAL	-.12	AZL	87.46	HCA	202.94	SMA	186.10	ECC	.20602	INC	2.5408
RP	220.18	LAP	-.99	LOP	261.64	VP	22.189	GAP	-5.51	AZP	92.34	TAL	359.31	TAP	202.26	RCA	147.76	APO	224.44
RC	271.430	GL	28.01	GP	-6.14	ZAL	84.90	ZAP	90.88	ETS	179.08	ZAE	124.36	ETE	182.17	ZAC	80.11	ETC	256.75

V1 30.153 V2 24.965 CLP 90.89

PLANETOCENTRIC CONIC

C3	9.651	VHL	3.107	DLA	39.98	RAL	156.84	RAD	6567.3	VEL	11.447	PTH	1.99	VHP	2.802	DPA	-1.22	RAP	171.25

ECC 1.1588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.50	8 28 2	3999.91	-32.17	174.16	18.26	64.85	9 34 42	3399.9	-35.26	165.71
119.50	15 6 58	2754.05	-32.16	79.36	18.25	64.84	15 52 52	2154.0	-35.26	70.90
60.50	8 28 2	3999.91	-32.17	174.16	18.26	64.85	9 34 42	3399.9	-35.26	165.71
119.50	15 6 58	2754.05	-32.16	79.36	18.25	64.84	15 52 52	2154.0	-35.26	70.90
60.50	8 28 2	3999.91	-32.17	174.16	18.26	64.85	9 34 42	3399.9	-35.26	165.71
119.50	15 6 58	2754.05	-32.16	79.36	18.25	64.84	15 52 52	2154.0	-35.26	70.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9898	TRA	.0669	TC3	-5.2848	BAU	.7041	SGT	3760.3	SGR	1106.2	SG3	3331.3	ST	1828.9	SR	585.0	SS	3237.6
RDE	.3090	RRA	.1788	RC3	-1.3595	FAU	.61924	RRT	.9336	RRF	.9705	RTF	.9566	CRT	.9808	CRS	-.9988	CST	-.9730
FDE	6.9885	FRA	4.7233	FC	-55.5494	BSP	13026	SGB	3919.7	R23	.1902	R13	.9621	LSA	3746.0	MSA	369.5	SSA	17.7
BDE	1.0369	BRA	.1909	BC3	5.4569	FSP	11584	SG1	3901.0	SG2	382.0	THA	15.51	EL1	1917.0	EL2	108.9	ALF	17.48

LAUNCH DATE NOV 21 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 672.683 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.911 GAL -.15 AZL 87.50 HCA 204.06 SMA 186.09 ECC .20597 INC 2.5035 V1 30.153
RP 219.81 LAP -1.02 LOP 262.76 VP 22.234 GAP -5.71 AZP 92.29 TAL 359.12 TAP 203.18 RCA 147.76 APO 224.42 V2 25.006
RC 272.833 GL 27.68 GP -5.87 ZAL 85.23 ZAP 88.92 ETS 178.89 ZAE 122.17 ETE 181.74 ZAC 80.20 ETC 256.83 CLP 88.91

PLANETOCENTRIC CONIC

C3 9.579 VHL 3.095 DLA 39.53 RAL 157.08 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 2.806 DPA -.63 RAP 170.59 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.17	8 32 4	3989.66	-31.88	173.14	18.20	65.26	9 38 34	3389.7	-34.92	164.69
118.83	15 4 48	2761.36	-31.87	79.81	18.20	65.25	15 50 49	2161.4	-34.91	71.36
61.17	8 32 4	3989.66	-31.88	173.14	18.20	65.26	9 38 34	3389.7	-34.92	164.69
118.83	15 4 48	2761.36	-31.87	79.81	18.20	65.25	15 50 49	2161.4	-34.91	71.36
61.17	8 32 4	3989.66	-31.88	173.14	18.20	65.26	9 38 34	3389.7	-34.92	164.69
118.83	15 4 48	2761.36	-31.87	79.81	18.20	65.25	15 50 49	2161.4	-34.91	71.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0359 TRA .1113 TC3-5.8013 BAU .7611 SGT 4079.8 SGR 1059.4 SG3 3335.7 ST 1922.5 SR 568.3 SS 3161.5
RDE .2990 RRA .1755 RC3-1.2909 FAU .61976 RRT .9355 RRF .9650 RTF .9625 CRT .9833 CRS -.9984 CST -.9744
FDE 6.7717 FRA 4.7727 FC-56.0123 BSP 14170 SGB 4215.1 R23 .1622 R13 .9662 LSA 3725.0 MSA 370.9 SSA 18.7
BDE 1.0782 BRA .2078 BC3 5.9432 FSP 11526 SG1 4199.4 SG2 363.6 THA 13.76 EL1 2002.2 EL2 99.3 ALF 16.25

LAUNCH DATE NOV 21 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 676.768 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.911 GAL -.19 AZL 87.53 HCA 205.19 SMA 186.08 ECC .20594 INC 2.4692 V1 30.153
RP 219.44 LAP -1.05 LOP 263.89 VP 22.279 GAP -5.91 AZP 92.23 TAL 358.91 TAP 204.10 RCA 147.76 APO 224.40 V2 25.047
RC 274.220 GL 27.37 GP -5.62 ZAL 85.60 ZAP 86.97 ETS 178.73 ZAE 120.00 ETE 181.36 ZAC 80.27 ETC 256.92 CLP 86.96

PLANETOCENTRIC CONIC

C3 9.514 VHL 3.085 DLA 39.10 RAL 157.36 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 2.813 DPA -.06 RAP 169.94 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.84	8 36 18	3979.44	-31.58	172.12	18.21	65.65	9 42 38	3379.4	-34.58	163.68
118.16	15 2 47	2768.93	-31.57	80.29	18.20	65.63	15 48 56	2168.9	-34.57	71.85
61.84	8 36 18	3979.44	-31.58	172.12	18.21	65.65	9 42 38	3379.4	-34.58	163.68
118.16	15 2 47	2768.93	-31.57	80.29	18.20	65.63	15 48 56	2168.9	-34.57	71.85
61.84	8 36 18	3979.44	-31.58	172.12	18.21	65.65	9 42 38	3379.4	-34.58	163.68
118.16	15 2 47	2768.93	-31.57	80.29	18.20	65.63	15 48 56	2168.9	-34.57	71.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0795 TRA .1574 TC3-6.3412 BAU .8213 SGT 4412.0 SGR 1010.2 SG3 3314.6 ST 2011.8 SR 553.3 SS 3082.0
RDE .2901 RRA .1717 RC3-1.2144 FAU .61522 RRT .9347 RRF .9581 RTF .9677 CRT .9857 CRS -.9979 CST -.9759
FDE 6.5469 FRA 4.7861 FC-55.9801 BSP 15280 SGB 4526.2 R23 .1346 R13 .9701 LSA 3703.4 MSA 369.2 SSA 19.6
BDE 1.1178 BRA .2329 BC3 6.4564 FSP 11448 SG1 4512.6 SG2 351.1 THA 12.15 EL1 2084.5 EL2 90.0 ALF 15.20

LAUNCH DATE NOV 21 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 680.859 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.910 GAL -.22 AZL 87.56 HCA 206.32 SMA 186.07 ECC .20593 INC 2.4377 V1 30.153
RP 219.07 LAP -1.08 LOP 265.02 VP 22.325 GAP -6.11 AZP 92.19 TAL 358.69 TAP 205.00 RCA 147.76 APO 224.39 V2 25.088
RC 275.589 GL 27.08 GP -5.38 ZAL 85.99 ZAP 85.05 ETS 178.58 ZAE 117.84 ETE 181.03 ZAC 80.33 ETC 257.01 CLP 85.03

PLANETOCENTRIC CONIC

C3 9.456 VHL 3.075 DLA 38.66 RAL 157.68 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.824 DPA .48 RAP 169.30 ECC 1.1556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.49	8 40 46	3969.14	-31.29	171.11	18.27	66.03	9 46 55	3369.1	-34.24	162.68
117.51	15 0 55	2776.80	-31.28	80.79	18.26	66.01	15 47 12	2176.8	-34.23	72.36
62.49	8 40 46	3969.14	-31.29	171.11	18.27	66.03	9 46 55	3369.1	-34.24	162.68
117.51	15 0 55	2776.80	-31.28	80.79	18.26	66.01	15 47 12	2176.8	-34.23	72.36
62.49	8 40 46	3969.14	-31.29	171.11	18.27	66.03	9 46 55	3369.1	-34.24	162.68
117.51	15 0 55	2776.80	-31.28	80.79	18.26	66.01	15 47 12	2176.8	-34.23	72.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1275 TRA .2125 TC3-6.8498 BAU .8777 SGT 4734.7 SGR 967.2 SG3 3287.8 ST 2110.2 SR 544.6 SS 3047.6
RDE .2845 RRA .1715 RC3-1.1346 FAU .60684 RRT .9304 RRF .9504 RTF .9712 CRT .9878 CRS -.9973 CST -.9769
FDE 6.4087 FRA 4.9212 FC-55.5589 BSP 16582 SGB 4832.5 R23 .1141 R13 .9729 LSA 3728.0 MSA 372.4 SSA 20.3
BDE 1.1629 BRA .2731 BC3 6.9432 FSP 11603 SG1 4819.9 SG2 348.2 THA 10.82 EL1 2177.7 EL2 82.3 ALF 14.32

LAUNCH DATE NOV 21 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 684.963 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.911 GAL -.26 AZL 87.59 HCA 207.45 SMA 186.08 ECC .20596 INC 2.4082 V1 30.153
RP 218.70 LAP -1.11 LOP 266.15 VP 22.370 GAP -6.30 AZP 92.14 TAL 358.45 TAP 205.90 RCA 147.75 APO 224.40 V2 25.128
RC 276.940 GL 26.81 GP -5.16 ZAL 86.42 ZAP 83.14 ETS 178.45 ZAE 115.69 ETE 180.74 ZAC 80.39 ETC 257.10 CLP 83.12

PLANETOCENTRIC CONIC

C3 9.404 VHL 3.067 DLA 38.24 RAL 158.04 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.837 DPA 1.00 RAP 168.69 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.15	8 45 25	3958.80	-30.99	170.10	18.38	66.39	9 51 24	3358.8	-33.90	161.68
116.85	14 59 9	2784.98	-30.99	81.31	18.38	66.38	15 45 34	2185.0	-33.89	72.90
63.15	8 45 25	3958.80	-30.99	170.10	18.38	66.39	9 51 24	3358.8	-33.90	161.68
116.85	14 59 9	2784.98	-30.99	81.31	18.38	66.38	15 45 34	2185.0	-33.89	72.90
63.15	8 45 25	3958.80	-30.99	170.10	18.38	66.39	9 51 24	3358.8	-33.90	161.68
116.85	14 59 9	2784.98	-30.99	81.31	18.38	66.38	15 45 34	2185.0	-33.89	72.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1619 TRA .2598 TC3-7.3935 BAU .9392 SGT 5065.2 SGR 926.4 SG3 3266.4 ST 2183.0 SR 530.5 SS 2947.1
RDE .2764 RRA .1680 RC3-1.0714 FAU .60360 RRT .9265 RRF .9417 RTF .9746 CRT .9895 CRS -.9965 CST -.9775
FDE 6.1310 FRA 4.9111 FC-55.5698 BSP 17635 SGB 5149.2 R23 .0916 R13 .9757 LSA 3687.0 MSA 371.6 SSA 21.4
BDE 1.1943 BRA .3094 BC3 7.4708 FSP 11306 SG1 5137.7 SG2 343.6 THA 9.66 EL1 2245.3 EL2 74.5 ALF 13.54

LAUNCH DATE NOV 21 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 689.074 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.911 GAL -.31 AZL 87.62 HCA 208.58 SMA 186.08 ECC .20600 INC 2.3811 V1 30.153
RP 218.34 LAP -1.14 LOP 267.28 VP 22.416 GAP -6.49 AZP 92.09 TAL 358.20 TAP 206.78 RCA 147.75 APO 224.42 V2 25.168
RC 278.273 GL 26.55 GP -4.95 ZAL 86.87 ZAP 81.27 ETS 178.33 ZAE 113.58 ETE 180.48 ZAC 80.44 ETC 257.18 CLP 81.23

PLANETOCENTRIC CONIC

C3 9.357 VHL 3.059 DLA 37.81 RAL 158.44 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 2.853 DPA 1.49 RAP 168.09 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.82	8 50 20	3948.18	-30.70	169.08	18.55	66.74	9 56 8	3348.2	-33.56	160.67
116.18	14 57 25	2793.64	-30.69	81.88	18.55	66.73	15 43 59	2193.6	-33.55	73.47
63.82	8 50 20	3948.18	-30.70	169.08	18.55	66.74	9 56 8	3348.2	-33.56	160.67
116.18	14 57 25	2793.64	-30.69	81.88	18.55	66.73	15 43 59	2193.6	-33.55	73.47
63.82	8 50 20	3948.18	-30.70	169.08	18.55	66.74	9 56 8	3348.2	-33.56	160.67
116.18	14 57 25	2793.64	-30.69	81.88	18.55	66.73	15 43 59	2193.6	-33.55	73.47

DIFFERENTIAL CORRECTIONS
TDE 1.1969 TRA .3119 TC3-7.9256 BAU .9993
RDE .2694 RRA .1659 RC3-1.0042 FAU .59666
FDE 5.8650 FRA 4.9391 FC-55.2070 BSP 18758
BDE 1.2269 BRA .3533 BC3 7.9890 FSP 11135

MID-COURSE EXECUTION ACCURACY
SGT 5392.9 SGR 887.0 SG3 3231.1
RRT .9200 RRF .9315 RTF .9771
SGB 5465.3 R23 .0737 R13 .9778
SG1 5454.5 SG2 343.7 THA 8.64

ORBIT DETERMINATION ACCURACY
ST 2257.6 SR 518.6 SS 2854.4
CRT .9910 CRS -.9955 CST -.9777
LSA 3657.0 MSA 373.7 SSA 22.3
EL1 2315.4 EL2 67.6 ALF 12.84

LAUNCH DATE NOV 21 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 693.193 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.912 GAL -.35 AZL 87.64 HCA 209.72 SMA 186.09 ECC .20607 INC 2.3556 V1 30.153
RP 217.98 LAP -1.17 LOP 268.42 VP 22.462 GAP -6.67 AZP 92.05 TAL 357.93 TAP 207.65 RCA 147.75 APO 224.44 V2 25.208
RC 279.589 GL 26.31 GP -4.75 ZAL 87.36 ZAP 79.42 ETS 178.23 ZAE 111.48 ETE 180.25 ZAC 80.49 ETC 257.27 CLP 79.39

PLANETOCENTRIC CONIC

C3 9.315 VHL 3.052 DLA 37.39 RAL 158.88 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 2.873 DPA 1.96 RAP 167.52 ECC 1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.49	8 55 30	3937.34	-30.40	168.04	18.77	67.09	10 1 8	3337.3	-33.22	159.65
115.51	14 55 45	2802.74	-30.39	82.47	18.76	67.08	15 42 28	2202.7	-33.21	74.08
64.49	8 55 30	3937.34	-30.40	168.04	18.77	67.09	10 1 8	3337.3	-33.22	159.65
115.51	14 55 45	2802.74	-30.39	82.47	18.76	67.08	15 42 28	2202.7	-33.21	74.08
64.49	8 55 30	3937.34	-30.40	168.04	18.77	67.09	10 1 8	3337.3	-33.22	159.65
115.51	14 55 45	2802.74	-30.39	82.47	18.76	67.08	15 42 28	2202.7	-33.21	74.08

DIFFERENTIAL CORRECTIONS
TDE 1.2282 TRA .3666 TC3-8.4526 BAU 1.0591
RDE .2633 RRA .1640 RC3 -.9394 FAU .58891
FDE 5.5945 FRA 4.9632 FC-54.7340 BSP 19857
BDE 1.2561 BRA .4016 BC3 8.5047 FSP 10916

MID-COURSE EXECUTION ACCURACY
SGT 5717.2 SGR 850.4 SG3 3191.0
RRT .9119 RRF .9199 RTF .9791
SGB 5780.1 R23 .0579 R13 .9797
SG1 5769.8 SG2 345.9 THA 7.75

ORBIT DETERMINATION ACCURACY
ST 2325.4 SR 508.0 SS 2760.3
CRT .9924 CRS -.9942 CST -.9777
LSA 3625.4 MSA 375.7 SSA 23.2
EL1 2379.4 EL2 61.0 ALF 12.24

LAUNCH DATE NOV 21 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 697.319 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.912 GAL -.40 AZL 87.67 HCA 210.87 SMA 186.11 ECC .20616 INC 2.3319 V1 30.153
RP 217.62 LAP -1.20 LOP 269.56 VP 22.508 GAP -6.85 AZP 92.00 TAL 357.65 TAP 208.52 RCA 147.74 APO 224.48 V2 25.248
RC 280.887 GL 26.08 GP -4.56 ZAL 87.87 ZAP 77.61 ETS 178.13 ZAE 109.42 ETE 180.05 ZAC 80.53 ETC 257.35 CLP 77.57

PLANETOCENTRIC CONIC

C3 9.278 VHL 3.046 DLA 36.97 RAL 159.36 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.895 DPA 2.40 RAP 166.99 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.17	9 0 57	3926.15	-30.09	166.99	19.03	67.43	10 6 23	3326.2	-32.87	158.60
114.83	14 54 6	2812.39	-30.08	83.11	19.02	67.42	15 40 58	2212.4	-32.86	74.73
65.17	9 0 57	3926.15	-30.09	166.99	19.03	67.43	10 6 23	3326.2	-32.87	158.60
114.83	14 54 6	2812.39	-30.08	83.11	19.02	67.42	15 40 58	2212.4	-32.86	74.73
65.17	9 0 57	3926.15	-30.09	166.99	19.03	67.43	10 6 23	3326.2	-32.87	158.60
114.83	14 54 6	2812.39	-30.08	83.11	19.02	67.42	15 40 58	2212.4	-32.86	74.73

DIFFERENTIAL CORRECTIONS
TDE 1.2569 TRA .4249 TC3-8.9732 BAU 1.1183
RDE .2581 RRA .1627 RC3 -.8761 FAU .57999
FDE 5.3376 FRA 4.9997 FC-54.1189 BSP 20973
BDE 1.2831 BRA .4550 BC3 9.0159 FSP 10731

MID-COURSE EXECUTION ACCURACY
SGT 6039.2 SGR 816.9 SG3 3146.6
RRT .9017 RRF .9069 RTF .9809
SGB 6094.2 R23 .0449 R13 .9812
SG1 6084.1 SG2 350.6 THA 6.98

ORBIT DETERMINATION ACCURACY
ST 2388.8 SR 499.2 SS 2673.3
CRT .9937 CRS -.9926 CST -.9775
LSA 3599.8 MSA 378.1 SSA 24.1
EL1 2439.8 EL2 54.7 ALF 11.74

LAUNCH DATE NOV 21 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 701.453 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.914 GAL -.45 AZL 87.69 HCA 212.01 SMA 186.13 ECC .20627 INC 2.3097 V1 30.153
RP 217.27 LAP -1.22 LOP 270.71 VP 22.553 GAP -7.03 AZP 91.96 TAL 357.36 TAP 209.37 RCA 147.74 APO 224.52 V2 25.287
RC 282.167 GL 25.86 GP -4.39 ZAL 88.42 ZAP 75.83 ETS 178.04 ZAE 107.39 ETE 179.87 ZAC 80.58 ETC 257.43 CLP 75.79

PLANETOCENTRIC CONIC

C3 9.246 VHL 3.041 DLA 36.54 RAL 159.87 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 2.919 DPA 2.82 RAP 166.48 ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.88	9 6 42	3914.55	-29.78	165.90	19.33	67.77	10 11 56	3314.6	-32.52	157.53
114.12	14 52 26	2822.65	-29.77	83.79	19.33	67.76	15 39 28	2222.6	-32.51	75.42
65.88	9 6 42	3914.55	-29.78	165.90	19.33	67.77	10 11 56	3314.6	-32.52	157.53
114.12	14 52 26	2822.65	-29.77	83.79	19.33	67.76	15 39 28	2222.6	-32.51	75.42
65.88	9 6 42	3914.55	-29.78	165.90	19.33	67.77	10 11 56	3314.6	-32.52	157.53
114.12	14 52 26	2822.65	-29.77	83.79	19.33	67.76	15 39 28	2222.6	-32.51	75.42

DIFFERENTIAL CORRECTIONS
TDE 1.2830 TRA .4863 TC3-9.4822 BAU 1.1764
RDE .2535 RRA .1617 RC3 -.8132 FAU .56950
FDE 5.0774 FRA 5.0353 FC-53.3232 BSP 22089
BDE 1.3078 BRA .5125 BC3 9.5170 FSP 10532

MID-COURSE EXECUTION ACCURACY
SGT 6356.0 SGR 785.2 SG3 3094.3
RRT .8895 RRF .8921 RTF .9823
SGB 6404.3 R23 .0340 R13 .9825
SG1 6394.4 SG2 356.7 THA 6.29

ORBIT DETERMINATION ACCURACY
ST 2447.7 SR 491.3 SS 2585.0
CRT .9949 CRS -.9906 CST -.9770
LSA 3573.4 MSA 381.0 SSA 24.9
EL1 2496.0 EL2 48.8 ALF 11.30

LAUNCH DATE NOV 21 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 705.595 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.915 GAL -.51 AZL 87.71 HCA 213.16 SMA 186.15 ECC .20641 INC 2.2886 V1 30.153
RP 216.91 LAP -1.25 LOP 271.86 VP 22.599 GAP -7.20 AZP 91.92 TAL 357.05 TAP 210.21 RCA 147.73 APO 224.57 V2 25.327
RC 283.431 GL 25.65 GP -4.22 ZAL 88.99 ZAP 74.09 ETS 177.97 ZAE 105.39 ETE 179.71 ZAC 80.62 ETC 257.50 CLP 74.04

PLANETOCENTRIC CONIC

C3 9.219 VHL 3.036 DLA 36.11 RAL 160.41 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.947 DPA 3.21 RAP 166.00 ECC 1.1517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.60	9 12 45	3902.44	-29.46	164.78	19.68	68.11	10 17 47	3302.4	-32.16	156.42
113.40	14 50 43	2833.61	-29.45	84.52	19.67	68.09	15 37 56	2233.6	-32.15	76.17
66.60	9 12 45	3902.44	-29.46	164.78	19.68	68.11	10 17 47	3302.4	-32.16	156.42
113.40	14 50 43	2833.61	-29.45	84.52	19.67	68.09	15 37 56	2233.6	-32.15	76.17
66.60	9 12 45	3902.44	-29.46	164.78	19.68	68.11	10 17 47	3302.4	-32.16	156.42
113.40	14 50 43	2833.61	-29.45	84.52	19.67	68.09	15 37 56	2233.6	-32.15	76.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3039 TRA .5492 TC3-9.9873 BAU 1.2344 SGT 6669.5 SGR 755.5 SG3 3036.7 ST 2497.0 SR 483.9 SS 2490.6
RDE .2493 RRA .1606 RC3 -.7523 FAU .55823 RRT .8751 RRF .8753 RTF .9835 CRT .9958 CRS -.9881 CST -.9763
FDE 4.8050 FRA 5.0600 FC-52.4224 BSP 23160 SGB 6712.1 R23 .0250 R13 .9836 LSA 3538.9 MSA 384.4 SSA 25.8
BDE 1.3275 BRA .5722 BC310.0156 FSP 10314 SG1 6702.3 SG2 363.8 THA 5.68 EL1 2543.1 EL2 43.3 ALF 10.93

LAUNCH DATE NOV 21 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 709.744 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.917 GAL -.56 AZL 87.73 HCA 214.32 SMA 186.18 ECC .20657 INC 2.2688 V1 30.153
RP 216.57 LAP -1.28 LOP 273.02 VP 22.645 GAP -7.37 AZP 91.87 TAL 356.72 TAP 211.04 RCA 147.72 APO 224.64 V2 25.365
RC 284.679 GL 25.45 GP -4.06 ZAL 89.60 ZAP 72.38 ETS 177.90 ZAE 103.43 ETE 179.57 ZAC 80.67 ETC 257.57 CLP 72.34

PLANETOCENTRIC CONIC

C3 9.197 VHL 3.033 DLA 35.67 RAL 160.99 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.977 DPA 3.58 RAP 165.56 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.34	9 19 9	3889.74	-29.13	163.62	20.07	68.44	10 23 59	3289.7	-31.79	155.27
112.66	14 48 55	2845.38	-29.12	85.31	20.06	68.43	15 36 20	2245.4	-31.78	76.97
67.34	9 19 9	3889.74	-29.13	163.62	20.07	68.44	10 23 59	3289.7	-31.79	155.27
112.66	14 48 55	2845.38	-29.12	85.31	20.06	68.43	15 36 20	2245.4	-31.78	76.97
67.34	9 19 9	3889.74	-29.13	163.62	20.07	68.44	10 23 59	3289.7	-31.79	155.27
112.66	14 48 55	2845.38	-29.12	85.31	20.06	68.43	15 36 20	2245.4	-31.78	76.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3221 TRA .6165 TC-10.4777 BAU 1.2911 SGT 6977.1 SGR 728.7 SG3 2976.6 ST 2541.8 SR 477.9 SS 2403.0
RDE .2459 RRA .1599 RC3 -.6935 FAU .54635 RRT .8589 RRF .8569 RTF .9846 CRT .9967 CRS -.9852 CST -.9755
FDE 4.5480 FRA 5.0870 FC-51.4312 BSP 24217 SGB 7015.1 R23 .0174 R13 .9847 LSA 3509.0 MSA 387.0 SSA 26.5
BDE 1.3448 BRA .6369 BC310.5006 FSP 10069 SG1 7005.2 SG2 371.7 THA 5.14 EL1 2586.0 EL2 38.1 ALF 10.62

LAUNCH DATE NOV 21 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 713.901 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.918 GAL -.62 AZL 87.75 HCA 215.47 SMA 186.21 ECC .20675 INC 2.2501 V1 30.153
RP 216.22 LAP -1.31 LOP 274.17 VP 22.691 GAP -7.54 AZP 91.83 TAL 356.38 TAP 211.86 RCA 147.71 APO 224.71 V2 25.404
RC 285.910 GL 25.25 GP -3.91 ZAL 90.23 ZAP 70.72 ETS 177.83 ZAE 101.50 ETE 179.45 ZAC 80.72 ETC 257.64 CLP 70.67

PLANETOCENTRIC CONIC

C3 9.179 VHL 3.030 DLA 35.23 RAL 161.60 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.009 DPA 3.92 RAP 165.15 ECC 1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.11	9 25 55	3876.33	-28.80	162.40	20.49	68.77	10 30 32	3276.3	-31.41	154.08
111.89	14 46 59	2858.04	-28.79	86.16	20.49	68.76	15 34 37	2258.0	-31.40	77.84
68.11	9 25 55	3876.33	-28.80	162.40	20.49	68.77	10 30 32	3276.3	-31.41	154.08
111.89	14 46 59	2858.04	-28.79	86.16	20.49	68.76	15 34 37	2258.0	-31.40	77.84
68.11	9 25 55	3876.33	-28.80	162.40	20.49	68.77	10 30 32	3276.3	-31.41	154.08
111.89	14 46 59	2858.04	-28.79	86.16	20.49	68.76	15 34 37	2258.0	-31.40	77.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3372 TRA .6874 TC-10.9532 BAU 1.3464 SGT 7278.5 SGR 703.7 SG3 2910.4 ST 2581.1 SR 472.4 SS 2312.5
RDE .2428 RRA .1593 RC3 -.6355 FAU .53328 RRT .8403 RRF .8363 RTF .9854 CRT .9974 CRS -.9815 CST -.9744
FDE 4.2855 FRA 5.1136 FC-50.2967 BSP 25281 SGB 7312.4 R23 .0111 R13 .9855 LSA 3475.5 MSA 391.0 SSA 27.3
BDE 1.3590 BRA .7056 BC310.9716 FSP 9833 SG1 7302.5 SG2 380.2 THA 4.66 EL1 2623.8 EL2 33.7 ALF 10.35

LAUNCH DATE NOV 21 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 718.064 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.920 GAL -.68 AZL 87.77 HCA 216.64 SMA 186.25 ECC .20695 INC 2.2323 V1 30.153
RP 215.88 LAP -1.33 LOP 275.34 VP 22.736 GAP -7.70 AZP 91.79 TAL 356.03 TAP 212.66 RCA 147.70 APO 224.79 V2 25.442
RC 287.127 GL 25.06 GP -3.76 ZAL 90.90 ZAP 69.09 ETS 177.78 ZAE 99.61 ETE 179.34 ZAC 80.76 ETC 257.70 CLP 69.04

PLANETOCENTRIC CONIC

C3 9.166 VHL 3.028 DLA 34.77 RAL 162.23 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.043 DPA 4.24 RAP 164.78 ECC 1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.92	9 33 6	3862.06	-28.45	161.12	20.96	69.11	10 37 28	3262.1	-31.03	152.81
111.08	14 44 53	2871.78	-28.44	87.10	20.95	69.09	15 32 45	2271.8	-31.02	78.79
68.92	9 33 6	3862.06	-28.45	161.12	20.96	69.11	10 37 28	3262.1	-31.03	152.81
111.08	14 44 53	2871.78	-28.44	87.10	20.95	69.09	15 32 45	2271.8	-31.02	78.79
68.92	9 33 6	3862.06	-28.45	161.12	20.96	69.11	10 37 28	3262.1	-31.03	152.81
111.08	14 44 53	2871.78	-28.44	87.10	20.95	69.09	15 32 45	2271.8	-31.02	78.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3476 TRA .7606 TC-11.4207 BAU 1.4014 SGT 7576.1 SGR 681.1 SG3 2843.7 ST 2612.1 SR 467.4 SS 2218.7
RDE .2400 RRA .1589 RC3 -.5806 FAU .52034 RRT .8199 RRF .8139 RTF .9862 CRT .9978 CRS -.9768 CST -.9728
FDE 4.0175 FRA 5.1347 FC-49.1445 BSP 26310 SGB 7606.7 R23 .0055 R13 .9862 LSA 3436.1 MSA 396.0 SSA 28.0
BDE 1.3688 BRA .7770 BC311.4354 FSP 9592 SG1 7596.7 SG2 388.8 THA 4.23 EL1 2653.4 EL2 30.5 ALF 10.12

LAUNCH DATE NOV 21 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 722.235 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.923 GAL -.74 AZL 87.78 HCA 217.80 SMA 186.28 ECC .20718 INC 2.2156 V1 30.153
RP 215.54 LAP -1.36 LOP 276.50 VP 22.782 GAP -7.86 AZP 91.75 TAL 355.66 TAP 213.46 RCA 147.69 APO 224.88 V2 25.480
RC 288.329 GL 24.87 GP -3.62 ZAL 91.59 ZAP 67.50 ETS 177.72 ZAE 97.76 ETE 179.24 ZAC 80.81 ETC 257.75 CLP 67.45

PLANETOCENTRIC CONIC

C3 9.159 VHL 3.026 DLA 34.31 RAL 162.90 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.080 DPA 4.53 RAP 164.45 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.76	9 40 43	3846.88	-28.09	159.78	21.46	69.44	10 44 50	3246.9	-30.63	151.49
110.24	14 42 36	2886.63	-28.08	88.11	21.45	69.42	15 30 43	2286.6	-30.62	79.82
69.76	9 40 43	3846.88	-28.09	159.78	21.46	69.44	10 44 50	3246.9	-30.63	151.49
110.24	14 42 36	2886.63	-28.08	88.11	21.45	69.42	15 30 43	2286.6	-30.62	79.82
69.76	9 40 43	3846.88	-28.09	159.78	21.46	69.44	10 44 50	3246.9	-30.63	151.49
110.24	14 42 36	2886.63	-28.08	88.11	21.45	69.42	15 30 43	2286.6	-30.62	79.82

DIFFERENTIAL CORRECTIONS
TDE 1.3551 TRA .8384 TC-11.8675 BAU 1.4545
RDE .2380 RRA .1587 RC3 -.5270 FAU .50666
FDE 3.7679 FRA 5.1586 FC-47.8936 BSP 27333
BDE 1.3758 BRA .8532 BC311.8792 FSP 9352

MID-COURSE EXECUTION ACCURACY
SGT 7865.7 SGR 661.0 SG3 2774.2
RRT .7974 RRF .7897 RTF .9869
SGB 7893.4 R23 .0012 R13 .9869
SG1 7883.4 SG2 398.0 THA 3.84

ORBIT DETERMINATION ACCURACY
ST 2638.3 SR 463.6 SS 2132.8
CRT .9980 CRS -.9713 CST -.9711
LSA 3400.5 MSA 400.3 SSA 28.6
EL1 2678.6 EL2 28.9 ALF 9.95

LAUNCH DATE NOV 21 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 726.413 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.925 GAL -.81 AZL 87.80 HCA 218.97 SMA 186.33 ECC .20744 INC 2.1995 V1 30.153
RP 215.21 LAP -1.38 LOP 277.67 VP 22.827 GAP -8.02 AZP 91.71 TAL 355.28 TAP 214.25 RCA 147.68 APO 224.98 V2 25.517
RC 289.516 GL 24.68 GP -3.49 ZAL 92.32 ZAP 65.95 ETS 177.68 ZAE 95.95 ETE 179.15 ZAC 80.87 ETC 257.81 CLP 65.90

PLANETOCENTRIC CONIC

C3 9.156 VHL 3.026 DLA 33.84 RAL 163.60 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.119 DPA 4.80 RAP 164.15 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.65	9 48 50	3830.52	-27.73	158.35	21.99	69.77	10 52 41	3230.5	-30.22	150.07
109.35	14 40 2	2902.88	-27.72	89.22	21.99	69.76	15 28 25	2302.9	-30.21	80.95
70.65	9 48 50	3830.52	-27.73	158.35	21.99	69.77	10 52 41	3230.5	-30.22	150.07
109.35	14 40 2	2902.88	-27.72	89.22	21.99	69.76	15 28 25	2302.9	-30.21	80.95
110.00	15 20 41	2778.73	-30.41	80.57	23.01	73.57	16 6 59	2178.7	-32.35	71.90
110.00	14 7 22	3002.66	-25.10	95.81	20.80	65.99	14 57 24	2402.7	-28.12	87.94

DIFFERENTIAL CORRECTIONS
TDE 1.3575 TRA .9180 TC-12.3016 BAU 1.5069
RDE .2362 RRA .1584 RC3 -.4752 FAU .49260
FDE 3.5147 FRA 5.1736 FC-46.5784 BSP 28304
BDE 1.3779 BRA .9316 BC312.3108 FSP 9097

MID-COURSE EXECUTION ACCURACY
SGT 8149.2 SGR 642.8 SG3 2701.9
RRT .7725 RRF .7633 RTF .9874
SGB 8174.5 R23 -.0022 R13 .9874
SG1 8164.4 SG2 407.4 THA 3.50

ORBIT DETERMINATION ACCURACY
ST 2655.5 SR 460.2 SS 2044.0
CRT .9979 CRS -.9646 CST -.9691
LSA 3358.0 MSA 405.4 SSA 29.3
EL1 2695.0 EL2 29.7 ALF 9.81

LAUNCH DATE NOV 21 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 730.598 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.928 GAL -.88 AZL 87.82 HCA 220.14 SMA 186.37 ECC .20771 INC 2.1842 V1 30.153
RP 214.88 LAP -1.41 LOP 278.84 VP 22.872 GAP -8.17 AZP 91.67 TAL 354.88 TAP 215.02 RCA 147.66 APO 225.08 V2 25.554
RC 290.691 GL 24.50 GP -3.37 ZAL 93.07 ZAP 64.44 ETS 177.64 ZAE 94.17 ETE 179.08 ZAC 80.92 ETC 257.85 CLP 64.39

PLANETOCENTRIC CONIC

C3 9.158 VHL 3.026 DLA 33.36 RAL 164.32 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.160 DPA 5.05 RAP 163.89 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.58	9 57 30	3812.84	-27.35	156.82	22.56	70.11	11 1 3	3212.8	-29.80	148.56
108.42	14 37 8	2920.66	-27.34	90.44	22.56	70.10	15 25 48	2320.7	-29.79	82.19
71.58	9 57 30	3812.84	-27.35	156.82	22.56	70.11	11 1 3	3212.8	-29.80	148.56
108.42	14 37 8	2920.66	-27.34	90.44	22.56	70.10	15 25 48	2320.7	-29.79	82.19
110.00	15 43 41	2716.64	-31.52	76.07	24.02	76.02	16 28 58	2116.6	-33.11	67.21
110.00	13 50 7	3064.86	-23.32	99.76	20.69	64.27	14 41 11	2464.9	-26.58	92.12

DIFFERENTIAL CORRECTIONS
TDE 1.3563 TRA 1.0022 TC-12.7190 BAU 1.5582
RDE .2347 RRA .1583 RC3 -.4261 FAU .47875
FDE 3.2646 FRA 5.1856 FC-45.2561 BSP 29268
BDE 1.3765 BRA 1.0147 BC312.7261 FSP 8833

MID-COURSE EXECUTION ACCURACY
SGT 8427.2 SGR 626.7 SG3 2630.1
RRT .7463 RRF .7354 RTF .9879
SGB 8450.5 R23 -.0057 R13 .9879
SG1 8440.2 SG2 416.5 THA 3.18

ORBIT DETERMINATION ACCURACY
ST 2666.8 SR 457.3 SS 1955.8
CRT .9973 CRS -.9563 CST -.9666
LSA 3313.1 MSA 411.0 SSA 29.9
EL1 2705.6 EL2 32.9 ALF 9.71

LAUNCH DATE NOV 21 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 734.789 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.931 GAL -.95 AZL 87.83 HCA 221.32 SMA 186.42 ECC .20801 INC 2.1696 V1 30.153
RP 214.56 LAP -1.43 LOP 280.02 VP 22.917 GAP -8.33 AZP 91.63 TAL 354.47 TAP 215.79 RCA 147.64 APO 225.20 V2 25.590
RC 291.851 GL 24.31 GP -3.25 ZAL 93.85 ZAP 62.97 ETS 177.60 ZAE 92.43 ETE 179.01 ZAC 80.98 ETC 257.89 CLP 62.93

PLANETOCENTRIC CONIC

C3 9.166 VHL 3.028 DLA 32.86 RAL 165.07 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.203 DPA 5.27 RAP 163.67 ECC 1.1509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.58	10 6 50	3793.43	-26.95	155.17	23.17	70.45	11 10 3	3193.4	-29.37	146.93
107.42	14 33 46	2940.41	-26.94	91.81	23.16	70.43	15 22 46	2340.4	-29.36	83.57
72.58	10 6 50	3793.43	-26.95	155.17	23.17	70.45	11 10 3	3193.4	-29.37	146.93
107.42	14 33 46	2940.41	-26.94	91.81	23.16	70.43	15 22 46	2340.4	-29.36	83.57
110.00	16 1 35	2670.24	-32.23	72.64	24.88	77.94	16 46 6	2070.2	-33.55	63.66
110.00	13 38 11	3111.60	-21.91	102.65	20.79	63.08	14 30 2	2511.6	-25.34	95.18

DIFFERENTIAL CORRECTIONS
TDE 1.3511 TRA 1.0898 TC-13.1154 BAU 1.6079
RDE .2336 RRA .1582 RC3 -.3780 FAU .46423
FDE 3.0179 FRA 5.1906 FC-43.8450 BSP 30223
BDE 1.3712 BRA 1.1012 BC313.1209 FSP 8587

MID-COURSE EXECUTION ACCURACY
SGT 8696.9 SGR 612.3 SG3 2554.6
RRT .7180 RRF .7054 RTF .9884
SGB 8718.5 R23 -.0086 R13 .9884
SG1 8708.1 SG2 425.6 THA 2.90

ORBIT DETERMINATION ACCURACY
ST 2671.6 SR 454.9 SS 1868.1
CRT .9963 CRS -.9463 CST -.9637
LSA 3264.8 MSA 417.1 SSA 30.4
EL1 2709.7 EL2 38.5 ALF 9.63

LAUNCH DATE NOV 21 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 738.983 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.934 GAL -1.03 AZL 87.84 HCA 222.50 SMA 186.47 ECC .20833 INC 2.1556 V1 30.153
RP 214.24 LAP -1.46 LOP 281.20 VP 22.961 GAP -8.47 AZP 91.59 TAL 354.04 TAP 216.54 RCA 147.62 APO 225.32 V2 25.626
RC 292.998 GL 24.13 GP -3.14 ZAL 94.66 ZAP 61.55 ETS 177.56 ZAE 90.74 ETE 178.95 ZAC 81.05 ETC 257.93 CLP 61.50

PLANETOCENTRIC CONIC

C3 9.180 VHL 3.030 DLA 32.36 RAL 165.84 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.248 DPA 5.47 RAP 163.49 ECC 1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.65	10 16 54	3772.09	-26.55	153.37	23.80	70.79	11 19 46	3172.1	-28.92	145.15
106.35	14 29 53	2962.32	-26.54	93.33	23.80	70.77	15 19 16	2362.3	-28.91	85.11
73.65	10 16 54	3772.09	-26.55	153.37	23.80	70.79	11 19 46	3172.1	-28.92	145.15
106.35	14 29 53	2962.32	-26.54	93.33	23.80	70.77	15 19 16	2362.3	-28.91	85.11
110.00	16 17 15	2630.87	-32.75	69.69	25.69	79.61	17 1 5	2030.9	-33.84	60.62
110.00	13 28 43	3151.55	-20.65	105.08	21.00	62.14	14 21 15	2551.5	-24.22	97.74

DIFFERENTIAL CORRECTIONS
TDE 1.3609 TRA 1.2008 TC-13.4174 BAU 1.6472
RDE .2343 RRA .1596 RC3 -.3257 FAU .44537
FDE 2.8646 FRA 5.2816 FC-42.0013 BSP 31594
BDE 1.3809 BRA 1.2113 BC313.4214 FSP 8500

MID-COURSE EXECUTION ACCURACY
SGT 8941.8 SGR 602.3 SG3 2469.5
RRT .6879 RRF .6765 RTF .9886
SGB 8962.0 R23 -.0072 R13 .9886
SG1 8951.4 SG2 436.7 THA 2.66

ORBIT DETERMINATION ACCURACY
ST 2707.9 SR 455.9 SS 1829.7
CRT .9948 CRS -.9369 CST -.9622
LSA 3272.4 MSA 422.6 SSA 30.7
EL1 2745.6 EL2 45.7 ALF 9.51

LAUNCH DATE NOV 21 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 743.189 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.937 GAL -1.10 AZL 87.86 HCA 223.68 SMA 186.53 ECC .20868 INC 2.1422 V1 30.153
RP 213.93 LAP -1.48 LOP 282.38 VP 23.006 GAP -8.62 AZP 91.55 TAL 353.60 TAP 217.28 RCA 147.60 APO 225.45 V2 25.662
RC 294.131 GL 23.94 GP -3.03 ZAL 95.50 ZAP 60.16 ETS 177.53 ZAE 89.07 ETE 178.90 ZAC 81.11 ETC 257.96 CLP 60.11

PLANETOCENTRIC CONIC

C3 9.200 VHL 3.033 DLA 31.84 RAL 166.64 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.295 DPA 5.65 RAP 163.34 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.80	10 27 48	3748.41	-26.13	151.40	24.47	71.13	11 30 16	3148.4	-28.46	143.21
105.20	14 25 20	2986.85	-26.12	95.03	24.47	71.11	15 15 7	2386.8	-28.45	86.84
74.80	10 27 48	3748.41	-26.13	151.40	24.47	71.13	11 30 16	3148.4	-28.46	143.21
105.20	14 25 20	2986.85	-26.12	95.03	24.47	71.11	15 15 7	2386.8	-28.45	86.84
110.00	16 31 31	2595.85	-33.15	67.03	26.46	81.13	17 14 46	1995.8	-34.02	57.90
110.00	13 20 48	3187.40	-19.50	107.22	21.31	61.35	14 13 55	2587.4	-23.17	100.00

DIFFERENTIAL CORRECTIONS
TDE 1.3396 TRA 1.2879 TC-13.8078 BAU 1.6986
RDE .2333 RRA .1590 RC3 -.2846 FAU .43291
FDE 2.5940 FRA 5.2461 FC-40.7385 BSP 32294
BDE 1.3598 BRA 1.2977 BC313.8108 FSP 8151

MID-COURSE EXECUTION ACCURACY
SGT 9206.8 SGR 590.8 SG3 2398.8
RRT .6570 RRF .6432 RTF .9890
SGB 9225.7 R23 -.0108 R13 .9890
SG1 9215.0 SG2 445.0 THA 2.42

ORBIT DETERMINATION ACCURACY
ST 2684.2 SR 453.3 SS 1727.2
CRT .9925 CRS -.9216 CST -.9575
LSA 3194.8 MSA 430.5 SSA 31.3
EL1 2721.6 EL2 54.7 ALF 9.52

LAUNCH DATE NOV 21 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 747.401 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.940 GAL -1.18 AZL 87.87 HCA 224.87 SMA 186.59 ECC .20906 INC 2.1293 V1 30.153
RP 213.62 LAP -1.50 LOP 283.57 VP 23.049 GAP -8.76 AZP 91.51 TAL 353.15 TAP 218.01 RCA 147.58 APO 225.60 V2 25.697
RC 295.251 GL 23.76 GP -2.93 ZAL 96.37 ZAP 58.81 ETS 177.50 ZAE 87.45 ETE 178.86 ZAC 81.18 ETC 257.98 CLP 58.76

PLANETOCENTRIC CONIC

C3 9.226 VHL 3.037 DLA 31.30 RAL 167.46 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.344 DPA 5.81 RAP 163.23 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.06	10 39 45	3721.67	-25.70	149.22	25.17	71.48	11 41 47	3121.7	-27.98	141.04
103.94	14 19 54	3014.68	-25.68	96.98	25.17	71.46	15 10 9	2414.7	-27.97	88.80
76.06	10 39 45	3721.67	-25.70	149.22	25.17	71.48	11 41 47	3121.7	-27.98	141.04
103.94	14 19 54	3014.68	-25.68	96.98	25.17	71.46	15 10 9	2414.7	-27.97	88.80
110.00	16 44 54	2563.67	-33.46	64.57	27.23	82.56	17 27 38	1963.7	-34.13	55.40
110.00	13 13 56	3220.68	-18.40	109.17	21.68	60.67	14 7 37	2620.7	-22.17	102.06

DIFFERENTIAL CORRECTIONS
TDE 1.3158 TRA 1.3802 TC-14.1706 BAU 1.7481
RDE .2328 RRA .1587 RC3 -.2445 FAU .41997
FDE 2.3399 FRA 5.2116 FC-39.4091 BSP 33032
BDE 1.3363 BRA 1.3893 BC314.1727 FSP 7850

MID-COURSE EXECUTION ACCURACY
SGT 9463.1 SGR 581.0 SG3 2326.4
RRT .6249 RRF .6088 RTF .9894
SGB 9480.9 R23 -.0140 R13 .9894
SG1 9470.1 SG2 453.3 THA 2.20

ORBIT DETERMINATION ACCURACY
ST 2657.6 SR 451.5 SS 1632.0
CRT .9893 CRS -.9033 CST -.9522
LSA 3120.4 MSA 438.8 SSA 31.8
EL1 2694.9 EL2 65.1 ALF 9.55

LAUNCH DATE NOV 21 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 751.618 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.944 GAL -1.27 AZL 87.88 HCA 226.06 SMA 186.65 ECC .20946 INC 2.1170 V1 30.153
RP 213.31 LAP -1.52 LOP 284.76 VP 23.093 GAP -8.90 AZP 91.47 TAL 352.68 TAP 218.73 RCA 147.55 APO 225.74 V2 25.731
RC 296.356 GL 23.57 GP -2.83 ZAL 97.26 ZAP 57.50 ETS 177.47 ZAE 85.86 ETE 178.82 ZAC 81.25 ETC 258.00 CLP 57.45

PLANETOCENTRIC CONIC

C3 9.259 VHL 3.043 DLA 30.76 RAL 168.30 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.394 DPA 5.95 RAP 163.15 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.46	10 53 2	3691.02	-25.25	146.75	25.90	71.82	11 54 33	3091.0	-27.49	138.59
102.54	14 13 20	3046.70	-25.24	99.22	25.90	71.81	15 4 7	2446.7	-27.49	91.07
77.46	10 53 2	3691.02	-25.25	146.75	25.90	71.82	11 54 33	3091.0	-27.49	138.59
102.54	14 13 20	3046.70	-25.24	99.22	25.90	71.81	15 4 7	2446.7	-27.49	91.07
110.00	16 57 41	2533.54	-33.70	62.26	27.99	83.91	17 39 55	1933.5	-34.18	53.04
110.00	13 7 51	3252.18	-17.34	111.00	22.12	60.07	14 2 4	2652.2	-21.19	103.98

DIFFERENTIAL CORRECTIONS
TDE 1.2911 TRA 1.4808 TC-14.4985 BAU 1.7948
RDE .2329 RRA .1586 RC3 -.2048 FAU .40619
FDE 2.1091 FRA 5.1951 FC-37.9819 BSP 33806
BDE 1.3120 BRA 1.4893 BC314.4999 FSP 7565

MID-COURSE EXECUTION ACCURACY
SGT 9710.2 SGR 573.3 SG3 2252.4
RRT .5916 RRF .5740 RTF .9897
SGB 9727.1 R23 -.0159 R13 .9897
SG1 9716.1 SG2 461.9 THA 2.01

ORBIT DETERMINATION ACCURACY
ST 2632.2 SR 450.8 SS 1549.4
CRT .9850 CRS -.8819 CST -.9465
LSA 3054.6 MSA 448.0 SSA 32.1
EL1 2669.4 EL2 76.8 ALF 9.58

LAUNCH DATE NOV 21 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 755.841 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.947 GAL -1.35 AZL 87.89 HCA 227.25 SMA 186.71 ECC .20988 INC 2.1050 V1 30.153
RP 213.01 LAP -1.55 LOP 285.95 VP 23.136 GAP -9.04 AZP 91.43 TAL 352.19 TAP 219.44 RCA 147.52 APO 225.90 V2 25.765
RC 297.448 GL 23.38 GP -2.74 ZAL 98.18 ZAP 56.22 ETS 177.45 ZAE 84.30 ETE 178.78 ZAC 81.33 ETC 258.02 CLP 56.18

PLANETOCENTRIC CONIC

C3 9.298 VHL 3.049 DLA 30.20 RAL 169.16 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.446 DPA 6.06 RAP 163.11 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.05	11 8 11	3654.69	-24.79	143.86	26.66	72.18	12 9 6	3054.7	-26.99	135.73
100.95	14 5 4	3084.68	-24.78	101.90	26.66	72.16	14 56 28	2484.7	-26.98	93.77
79.05	11 8 11	3654.69	-24.79	143.86	26.66	72.18	12 9 6	3054.7	-26.99	135.73
100.95	14 5 4	3084.68	-24.78	101.90	26.66	72.16	14 56 28	2484.7	-26.98	93.77
110.00	17 10 1	2504.97	-33.89	60.05	28.75	85.21	17 51 46	1905.0	-34.18	50.81
110.00	13 2 24	3282.40	-16.31	112.73	22.61	59.53	13 57 7	2682.4	-20.23	105.80

DIFFERENTIAL CORRECTIONS
TDE 1.2622 TRA 1.5855 TC-14.8050 BAU 1.8405
RDE .2333 RRA .1588 RC3 -.1667 FAU .39251
FDE 1.8854 FRA 5.1804 FC-36.5463 BSP 34565
BDE 1.2836 BRA 1.5935 BC314.8059 FSP 7292

MID-COURSE EXECUTION ACCURACY
SGT 9951.3 SGR 567.1 SG3 2179.2
RRT .5577 RRF .5387 RTF .9899
SGB 9967.4 R23 -.0175 R13 .9899
SG1 9956.3 SG2 470.5 THA 1.82

ORBIT DETERMINATION ACCURACY
ST 2601.4 SR 450.4 SS 1471.2
CRT .9793 CRS -.8559 CST -.9396
LSA 2987.1 MSA 459.1 SSA 32.5
EL1 2638.6 EL2 89.8 ALF 9.63

LAUNCH DATE NOV 21 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 760.069 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.951 GAL -1.44 AZL 87.91 HCA 228.45 SMA 186.78 ECC .21033 INC 2.0934 V1 30.153
RP 212.72 LAP -1.57 LOP 287.15 VP 23.179 GAP -9.18 AZP 91.39 TAL 351.69 TAP 220.14 RCA 147.49 APO 226.07 V2 25.798
RC 298.526 GL 23.18 GP -2.65 ZAL 99.13 ZAP 54.98 ETS 177.43 ZAE 82.79 ETE 178.76 ZAC 81.41 ETC 258.02 CLP 54.94

PLANETOCENTRIC CONIC

C3 9.345 VHL 3.057 DLA 29.62 RAL 170.04 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.500 DPA 6.16 RAP 163.11 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.92	11 25 58	3610.15	-24.31	140.38	27.45	72.53	12 26 8	3010.2	-26.47	132.27
99.08	13 54 19	3131.18	-24.30	105.19	27.45	72.52	14 46 30	2531.2	-26.46	97.08
100.00	14 35 17	3000.17	-26.55	96.18	28.16	75.73	15 25 17	2400.2	-28.25	87.79
100.00	13 27 41	3216.40	-22.10	110.69	26.62	69.34	14 21 17	2616.4	-24.71	102.86
110.00	17 22 0	2477.64	-34.02	57.92	29.51	86.46	18 3 17	1877.6	-34.14	48.68
110.00	12 57 27	3311.69	-15.29	114.39	23.15	59.05	13 52 39	2711.7	-19.28	107.54

DIFFERENTIAL CORRECTIONS
TDE 1.2307 TRA 1.6961 TC-15.0807 BAU 1.8842
RDE .2341 RRA .1589 RC3 -.1301 FAU .37875
FDE 1.6765 FRA 5.1644 FC-35.0884 BSP 35351
BDE 1.2528 BRA 1.7035 BC315.0812 FSP 7041

MID-COURSE EXECUTION ACCURACY
SGT10183.6 SGR 562.3 SG3 2105.9
RRT .5236 RRF .5034 RTF .9901
SGB10199.1 R23 -.0190 R13 .9901
SG110187.9 SG2 478.9 THA 1.66

ORBIT DETERMINATION ACCURACY
ST 2569.2 SR 450.6 SS 1400.4
CRT .9721 CRS -.8259 CST -.9321
LSA 2922.8 MSA 470.1 SSA 32.7
EL1 2606.4 EL2 104.2 ALF 9.69

LAUNCH DATE NOV 21 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 764.302 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.955 GAL -1.53 AZL 87.92 HCA 229.65 SMA 186.85 ECC .21081 INC 2.0824 V1 30.153
RP 212.43 LAP -1.59 LOP 288.35 VP 23.221 GAP -9.31 AZP 91.35 TAL 351.18 TAP 220.83 RCA 147.46 APO 226.24 V2 25.831
RC 299.592 GL 22.98 GP -2.56 ZAL 100.10 ZAP 53.78 ETS 177.40 ZAE 81.30 ETE 178.73 ZAC 81.49 ETC 258.03 CLP 53.74

PLANETOCENTRIC CONIC

C3 9.400 VHL 3.066 DLA 29.03 RAL 170.94 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.555 DPA 6.24 RAP 163.14 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.32	11 48 27	3550.58	-23.82	135.81	28.27	72.89	12 47 38	2950.6	-25.93	127.73
96.68	13 39 0	3193.03	-23.81	109.59	28.27	72.88	14 32 13	2593.0	-25.93	101.51
100.00	15 5 16	2916.14	-27.82	90.26	29.40	78.60	15 53 52	2316.1	-29.11	81.69
100.00	13 4 52	3302.70	-19.93	116.17	26.75	67.24	13 59 55	2702.7	-22.84	108.59
110.00	17 33 42	2451.32	-34.11	55.87	30.29	87.67	18 14 33	1851.3	-34.06	46.63
110.00	12 52 55	3340.29	-14.28	115.99	23.74	58.61	13 48 36	2740.3	-18.33	109.22

DIFFERENTIAL CORRECTIONS
TDE 1.1954 TRA 1.8110 TC-15.3319 BAU 1.9267
RDE .2352 RRA .1591 RC3 -.0950 FAU .36506
FDE 1.4754 FRA 5.1447 FC-33.6237 BSP 36114
BDE 1.2183 BRA 1.8180 BC315.3322 FSP 6789

MID-COURSE EXECUTION ACCURACY
SGT10409.4 SGR 558.7 SG3 2032.9
RRT .4892 RRF .4679 RTF .9903
SGB10424.4 R23 -.0203 R13 .9903
SG110413.0 SG2 487.1 THA 1.51

ORBIT DETERMINATION ACCURACY
ST 2533.5 SR 451.2 SS 1334.3
CRT .9630 CRS -.7906 CST -.9237
LSA 2858.1 MSA 482.2 SSA 32.9
EL1 2570.5 EL2 119.9 ALF 9.75

LAUNCH DATE NOV 21 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 768.541 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.959 GAL -1.63 AZL 87.93 HCA 230.85 SMA 186.92 ECC .21132 INC 2.0716 V1 30.153
RP 212.15 LAP -1.61 LOP 289.55 VP 23.263 GAP -9.45 AZP 91.31 TAL 350.65 TAP 221.50 RCA 147.42 APO 226.42 V2 25.863
RC 300.645 GL 22.78 GP -2.48 ZAL 101.10 ZAP 52.61 ETS 177.38 ZAE 79.85 ETE 178.71 ZAC 81.57 ETC 258.02 CLP 52.57

PLANETOCENTRIC CONIC

C3 9.462 VHL 3.076 DLA 28.43 RAL 171.86 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.612 DPA 6.30 RAP 163.21 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.40	12 25 38	3443.60	-23.31	127.79	29.12	73.25	13 23 1	2843.6	-25.38	119.73
92.60	13 9 8	3302.62	-23.30	117.47	29.12	73.24	14 4 11	2702.6	-25.38	109.41
100.00	15 27 12	2857.76	-28.53	86.06	30.47	80.69	16 14 50	2257.8	-29.53	77.40
100.00	12 50 15	3363.69	-18.27	119.95	27.12	65.92	13 46 18	2763.7	-21.37	112.53
110.00	17 45 11	2425.83	-34.17	53.88	31.07	88.84	18 25 37	1825.8	-33.95	44.64
110.00	12 48 45	3368.39	-13.28	117.55	24.37	58.21	13 44 53	2768.4	-17.39	110.85

DIFFERENTIAL CORRECTIONS
TDE 1.1562 TRA 1.9303 TC-15.5590 BAU 1.9683
RDE .2367 RRA .1592 RC3 -.0615 FAU .35160
FDE 1.2858 FRA 5.1242 FC-32.1682 BSP 36858
BDE 1.1802 BRA 1.9369 BC315.5591 FSP 6548

MID-COURSE EXECUTION ACCURACY
SGT10629.2 SGR 556.4 SG3 1961.1
RRT .4550 RRF .4328 RTF .9905
SGB10643.8 R23 -.0212 R13 .9905
SG110632.2 SG2 495.3 THA 1.37

ORBIT DETERMINATION ACCURACY
ST 2494.9 SR 452.3 SS 1275.0
CRT .9516 CRS -.7500 CST -.9146
LSA 2794.4 MSA 494.9 SSA 33.0
EL1 2531.9 EL2 137.0 ALF 9.82

LAUNCH DATE NOV 21 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 772.784 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.964 GAL -1.72 AZL 87.94 HCA 232.06 SMA 186.99 ECC .21186 INC 2.0611 V1 30.153
RP 211.87 LAP -1.63 LOP 290.76 VP 23.304 GAP -9.58 AZP 91.27 TAL 350.11 TAP 222.17 RCA 147.38 APO 226.61 V2 25.895
RC 301.687 GL 22.57 GP -2.41 ZAL 102.12 ZAP 51.48 ETS 177.36 ZAE 78.44 ETE 178.69 ZAC 81.66 ETC 258.02 CLP 51.44

PLANETOCENTRIC CONIC

C3 9.534 VHL 3.088 DLA 27.81 RAL 172.79 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.671 DPA 6.34 RAP 163.31 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 16	3221.17	-25.80	112.22	30.84	77.90	14 31 58	2621.2	-27.21	103.84
90.00	12 3 56	3527.99	-19.83	132.69	28.94	69.37	13 2 44	2928.0	-22.47	125.01
100.00	15 45 58	2809.53	-29.02	82.56	31.47	82.48	16 32 48	2209.5	-29.75	73.83
100.00	12 38 55	3414.87	-16.83	123.06	27.60	64.92	13 35 50	2814.9	-20.07	115.77
110.00	17 56 29	2401.05	-34.18	51.95	31.86	89.99	18 36 30	1801.0	-33.81	42.72
110.00	12 44 53	3396.12	-12.28	119.08	25.04	57.84	13 41 29	2796.1	-16.44	112.44

DIFFERENTIAL CORRECTIONS
TDE 1.1131 TRA 2.0552 TC-15.7599 BAU 2.0087
RDE .2384 RRA .1595 RC3 -.0298 FAU .33843
FDE 1.1018 FRA 5.1042 FC-30.7314 BSP 37605
BDE 1.1383 BRA 2.0614 BC315.7599 FSP 6316

MID-COURSE EXECUTION ACCURACY
SGT10843.2 SGR 554.9 SG3 1891.0
RRT .4213 RRF .3981 RTF .9906
SGB10857.4 R23 -.0222 R13 .9906
SG110845.7 SG2 503.2 THA 1.24

ORBIT DETERMINATION ACCURACY
ST 2454.5 SR 453.6 SS 1221.1
CRT .9374 CRS -.7026 CST -.9041
LSA 2731.4 MSA 509.5 SSA 33.1
EL1 2491.2 EL2 155.7 ALF 9.87

LAUNCH DATE NOV 21 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 777.033 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.968 GAL -1.82 AZL 87.95 HCA 233.26 SMA 187.07 ECC .21242 INC 2.0510 V1 30.153
RP 211.60 LAP -1.64 LOP 291.97 VP 23.344 GAP -9.71 AZP 91.23 TAL 349.55 TAP 222.82 RCA 147.33 APO 226.81 V2 25.926
RC 302.717 GL 22.35 GP -2.33 ZAL 103.16 ZAP 50.38 ETS 177.34 ZAE 77.05 ETE 178.68 ZAC 81.76 ETC 258.00 CLP 50.34

PLANETOCENTRIC CONIC

C3 9.615 VHL 3.101 DLA 27.17 RAL 173.73 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.731 DPA 6.37 RAP 163.44 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 29	3145.71	-26.77	106.91	32.03	80.39	14 57 55	2545.7	-27.82	98.40
90.00	11 44 16	3606.77	-17.87	137.64	29.28	67.66	12 44 23	3006.8	-20.74	130.14
100.00	16 2 56	2767.09	-29.35	79.45	32.43	84.08	16 49 3	2167.1	-29.86	70.68
100.00	12 29 30	3460.62	-15.48	125.80	28.17	64.11	13 27 11	2860.6	-18.84	118.61
110.00	18 7 38	2376.88	-34.17	50.06	32.67	91.11	18 47 15	1776.9	-33.64	40.86
110.00	12 41 18	3423.59	-11.28	120.58	25.76	57.52	13 38 21	2823.6	-15.48	114.00

DIFFERENTIAL CORRECTIONS
TDE 1.0658 TRA 2.1855 TC-15.9309 BAU 2.0477
RDE .2404 RRA .1597 RC3 .0007 FAU .32526
FDE .9266 FRA 5.0801 FC-29.2875 BSP 38333
BDE 1.0926 BRA 2.1913 BC315.9309 FSP 6088

MID-COURSE EXECUTION ACCURACY
SGT11049.4 SGR 554.4 SG3 1820.9
RRT .3879 RRF .3639 RTF .9907
SGB11063.3 R23 -.0230 R13 .9907
SG111051.5 SG2 510.9 THA 1.12

ORBIT DETERMINATION ACCURACY
ST 2412.7 SR 455.3 SS 1173.2
CRT .9199 CRS -.6491 CST -.8932
LSA 2669.9 MSA 524.7 SSA 33.0
EL1 2449.0 EL2 175.9 ALF 9.90

LAUNCH DATE NOV 21 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 781.283 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.973 GAL -1.93 AZL 87.96 HCA 234.48 SMA 187.15 ECC .21301 INC 2.0412 V1 30.153
RP 211.33 LAP -1.66 LOP 293.18 VP 23.384 GAP -9.83 AZP 91.19 TAL 348.98 TAP 223.46 RCA 147.28 APO 227.02 V2 25.956
RC 303.736 GL 22.13 GP -2.26 ZAL 104.23 ZAP 49.31 ETS 177.33 ZAE 75.70 ETE 178.66 ZAC 81.85 ETC 257.99 CLP 49.27

PLANETOCENTRIC CONIC

C3 9.705 VHL 3.115 DLA 26.52 RAL 174.70 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.792 DPA 6.37 RAP 163.60 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 3	3088.52	-27.35	102.83	33.12	82.36	15 18 32	2488.5	-28.12	94.25
90.00	11 30 22	3667.64	-16.25	141.38	29.79	66.49	12 31 30	3067.6	-19.30	134.02
100.00	16 18 44	2728.48	-29.59	76.61	33.39	85.56	17 4 13	2128.5	-29.89	67.81
100.00	12 21 22	3502.91	-14.21	128.29	28.80	63.42	13 19 45	2902.9	-17.67	121.20
110.00	18 18 40	2353.25	-34.12	48.21	33.49	92.20	18 57 53	1753.2	-33.44	39.04
110.00	12 37 56	3450.92	-10.27	122.06	26.51	57.22	13 35 27	2850.9	-14.52	115.54

DIFFERENTIAL CORRECTIONS
TDE 1.0249 TRA 2.3301 TC-16.0399 BAU 2.0811
RDE .2431 RRA .1601 RC3 .0305 FAU .31133
FDE .7847 FRA 5.0767 FC-27.7720 BSP 39281
BDE 1.0533 BRA 2.3356 BC316.0399 FSP 5910

MID-COURSE EXECUTION ACCURACY
SGT11241.4 SGR 555.4 SG3 1750.3
RRT .3569 RRF .3333 RTF .9908
SGB11255.1 R23 -.0226 R13 .9908
SG111243.1 SG2 518.7 THA 1.01

ORBIT DETERMINATION ACCURACY
ST 2389.0 SR 457.8 SS 1142.1
CRT .9000 CRS -.5977 CST -.8854
LSA 2632.7 MSA 537.6 SSA 32.9
EL1 2424.5 EL2 196.7 ALF 9.85

LAUNCH DATE NOV 21 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 785.542 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.977 GAL -2.04 AZL 87.97 HCA 235.69 SMA 187.23 ECC .21364 INC 2.0317 V1 30.153
RP 211.08 LAP -1.68 LOP 294.40 VP 23.424 GAP -9.96 AZP 91.15 TAL 348.40 TAP 224.09 RCA 147.23 APO 227.23 V2 25.986
RC 304.746 GL 21.91 GP -2.20 ZAL 105.32 ZAP 48.27 ETS 177.31 ZAE 74.38 ETE 178.65 ZAC 81.95 ETC 257.97 CLP 48.23

PLANETOCENTRIC CONIC

C3 9.806 VHL 3.131 DLA 25.86 RAL 175.67 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.855 DPA 6.36 RAP 163.79 ECC 1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 55	3040.12	-27.74	99.34	34.15	84.07	15 36 35	2440.1	-28.27	90.71
90.00	11 19 16	3720.13	-14.80	144.55	30.40	65.58	12 21 16	3120.1	-17.98	137.31
100.00	16 33 40	2692.72	-29.75	73.96	34.33	86.94	17 18 33	2092.7	-29.86	65.16
100.00	12 14 12	3542.75	-12.99	130.61	29.49	62.84	13 13 14	2942.8	-16.52	123.61
110.00	18 29 33	2330.14	-34.05	46.41	34.33	93.26	19 8 23	1730.1	-33.22	37.27
110.00	12 34 48	3478.10	-9.27	123.52	27.30	56.95	13 32 46	2878.1	-13.56	117.05

DIFFERENTIAL CORRECTIONS
TDE .9587 TRA 2.4584 TC-16.2057 BAU 2.1245
RDE .2454 RRA .1599 RC3 .0563 FAU .30024
FDE .5997 FRA 5.0225 FC-26.5081 BSP 39716
BDE .9896 BRA 2.4636 BC316.2058 FSP 5642

MID-COURSE EXECUTION ACCURACY
SGT11448.7 SGR 555.5 SG3 1686.7
RRT .3232 RRF .2977 RTF .9909
SGB11462.2 R23 -.0246 R13 .9909
SG111450.1 SG2 525.6 THA .90

ORBIT DETERMINATION ACCURACY
ST 2327.8 SR 459.5 SS 1096.5
CRT .8729 CRS -.5229 CST -.8705
LSA 2553.4 MSA 557.7 SSA 32.8
EL1 2362.4 EL2 220.9 ALF 9.86

LAUNCH DATE NOV 21 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 789.803 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.982 GAL -2.15 AZL 87.98 HCA 236.91 SMA 187.31 ECC .21430 INC 2.0223 V1 30.153
RP 210.82 LAP -1.69 LOP 295.61 VP 23.463 GAP -10.08 AZP 91.10 TAL 347.79 TAP 224.71 RCA 147.17 APO 227.46 V2 26.015
RC 305.746 GL 21.67 GP -2.13 ZAL 106.44 ZAP 47.26 ETS 177.29 ZAE 73.08 ETE 178.65 ZAC 82.06 ETC 257.94 CLP 47.23

PLANETOCENTRIC CONIC

C3 9.917 VHL 3.149 DLA 25.18 RAL 176.65 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.919 DPA 6.34 RAP 164.01 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 9	2997.02	-28.00	96.21	35.17	85.61	15 53 6	2397.0	-28.32	87.56
90.00	11 9 53	3767.72	-13.44	147.38	31.08	64.84	12 12 40	3167.7	-16.72	140.24
100.00	16 47 58	2659.08	-29.85	71.46	35.28	88.25	17 32 17	2059.1	-29.77	62.66
100.00	12 7 45	3580.88	-11.79	132.81	30.24	62.33	13 7 26	2980.9	-15.40	125.89
110.00	18 40 21	2307.47	-33.94	44.65	35.18	94.30	19 18 49	1707.5	-32.98	35.55
110.00	12 31 51	3505.26	-8.26	124.98	28.13	56.71	13 30 16	2905.3	-12.58	118.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8990 TRA 2.6022 TC-16.3045 BAU 2.1617 SGT11640.4 SGR 557.0 SG3 1621.4 ST 2287.7 SR 462.0 SS 1067.6
RDE .2484 RRA .1600 RC3 .0818 FAU .28810 RRT .2919 RRF .2657 RTF .9909 CRT .8420 CRS -.4514 CST -.8596
FDE .4477 FRA 4.9885 FC-25.1500 BSP 40361 SGB11653.7 R23 -.0252 R13 .9909 LSA 2501.0 MSA 575.1 SSA 32.5
BDE .9327 BRA 2.6071 BC316.3047 FSP 5423 SG111641.5 SG2 532.7 THA .80 EL1 2320.9 EL2 245.7 ALF 9.76

LAUNCH DATE NOV 21 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 794.067 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.987 GAL -2.26 AZL 87.99 HCA 238.13 SMA 187.40 ECC .21499 INC 2.0133 V1 30.153
RP 210.58 LAP -1.71 LOP 296.84 VP 23.501 GAP -10.21 AZP 91.06 TAL 347.18 TAP 225.31 RCA 147.11 APO 227.69 V2 26.043
RC 306.737 GL 21.44 GP -2.07 ZAL 107.57 ZAP 46.29 ETS 177.27 ZAE 71.81 ETE 178.64 ZAC 82.17 ETC 257.91 CLP 46.25

PLANETOCENTRIC CONIC

C3 10.040 VHL 3.169 DLA 24.49 RAL 177.65 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.985 DPA 6.30 RAP 164.26 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 16	2957.62	-28.17	93.34	36.18	87.04	16 8 34	2357.6	-28.29	84.68
90.00	11 1 41	3812.04	-12.15	149.99	31.82	64.22	12 5 13	3212.0	-15.52	142.93
100.00	17 1 46	2627.16	-29.89	69.09	36.23	89.50	17 45 33	2027.2	-29.64	60.29
100.00	12 1 53	3617.72	-10.62	134.92	31.03	61.89	13 2 11	3017.7	-14.29	128.06
110.00	18 51 3	2285.22	-33.82	42.93	36.04	95.31	19 29 9	1685.2	-32.71	33.86
110.00	12 29 4	3532.42	-7.24	126.42	28.99	56.50	13 27 57	2932.4	-11.59	120.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8360 TRA 2.7520 TC-16.3743 BAU 2.1980 SGT11826.5 SGR 559.0 SG3 1558.0 ST 2252.3 SR 464.8 SS 1045.9
RDE .2516 RRA .1600 RC3 .1057 FAU .27631 RRT .2617 RRF .2348 RTF .9910 CRT .8057 CRS -.3762 CST -.8503
FDE .3046 FRA 4.9541 FC-23.8250 BSP 41024 SGB11839.7 R23 -.0260 R13 .9910 LSA 2455.7 MSA 592.7 SSA 32.2
BDE .8730 BRA 2.7566 BC316.3746 FSP 5219 SG111827.4 SG2 539.5 THA .71 EL1 2283.7 EL2 271.6 ALF 9.58

LAUNCH DATE NOV 21 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 798.335 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.992 GAL -2.38 AZL 88.00 HCA 239.36 SMA 187.49 ECC .21572 INC 2.0044 V1 30.153
RP 210.34 LAP -1.72 LOP 298.06 VP 23.539 GAP -10.33 AZP 91.02 TAL 346.55 TAP 225.90 RCA 147.04 APO 227.93 V2 26.071
RC 307.719 GL 21.19 GP -2.01 ZAL 108.72 ZAP 45.34 ETS 177.26 ZAE 70.57 ETE 178.64 ZAC 82.28 ETC 257.88 CLP 45.30

PLANETOCENTRIC CONIC

C3 10.176 VHL 3.190 DLA 23.79 RAL 178.65 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.052 DPA 6.24 RAP 164.54 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 34	2920.97	-28.27	90.67	37.18	88.38	16 23 14	2321.0	-28.20	82.00
90.00	10 54 24	3854.04	-10.89	152.44	32.61	63.70	11 58 38	3254.0	-14.34	145.45
100.00	17 15 8	2596.67	-29.89	66.82	37.19	90.69	17 58 25	1996.7	-29.47	58.04
100.00	11 56 30	3653.57	-9.46	136.95	31.86	61.51	12 57 24	3053.6	-13.19	130.15
110.00	19 1 40	2263.38	-33.67	41.24	36.92	96.30	19 39 24	1663.4	-32.43	32.22
110.00	12 26 28	3559.62	-6.21	127.86	29.89	56.32	13 25 47	2959.6	-10.60	121.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7678 TRA 2.9057 TC-16.4210 BAU 2.2340 SGT12007.9 SGR 561.4 SG3 1496.0 ST 2220.0 SR 467.9 SS 1029.6
RDE .2552 RRA .1599 RC3 .1282 FAU .26486 RRT .2321 RRF .2046 RTF .9910 CRT .7628 CRS -.2975 CST -.8427
FDE .1678 FRA 4.9142 FC-22.5334 BSP 41637 SGB12021.0 R23 -.0266 R13 .9910 LSA 2415.5 MSA 609.9 SSA 31.9
BDE .8091 BRA 2.9101 BC316.4215 FSP 5016 SG112008.6 SG2 546.1 THA .62 EL1 2249.1 EL2 298.6 ALF 9.30

LAUNCH DATE NOV 21 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 802.606 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 32.997 GAL -2.50 AZL 88.00 HCA 240.58 SMA 187.58 ECC .21648 INC 1.9957 V1 30.153
RP 210.10 LAP -1.74 LOP 299.29 VP 23.576 GAP -10.45 AZP 90.98 TAL 345.90 TAP 226.49 RCA 146.97 APO 228.18 V2 26.098
RC 308.691 GL 20.93 GP -1.96 ZAL 109.89 ZAP 44.41 ETS 177.24 ZAE 69.36 ETE 178.63 ZAC 82.39 ETC 257.84 CLP 44.38

PLANETOCENTRIC CONIC

C3 10.324 VHL 3.213 DLA 23.07 RAL 179.66 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 4.120 DPA 6.17 RAP 164.84 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 12	2886.49	-28.31	88.15	38.19	89.64	16 37 19	2286.5	-28.06	79.49
90.00	10 47 48	3894.34	-9.66	154.76	33.46	63.25	11 52 43	3294.3	-13.18	147.85
100.00	17 28 10	2567.40	-29.84	64.65	38.16	91.84	18 10 58	1967.4	-29.27	55.89
100.00	11 51 32	3688.66	-8.31	138.93	32.74	61.18	12 53 0	3088.7	-12.10	132.18
110.00	19 12 12	2241.94	-33.49	39.59	37.82	97.26	19 49 34	1641.9	-32.13	30.62
110.00	12 23 59	3586.89	-5.18	129.30	30.82	56.16	13 23 46	2986.9	-9.59	122.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6967 TRA 3.0655 TC-16.4399 BAU 2.2692 SGT12184.3 SGR 564.2 SG3 1435.6 ST 2195.6 SR 471.2 SS 1019.4
RDE .2591 RRA .1597 RC3 .1491 FAU .25369 RRT .2037 RRF .1755 RTF .9910 CRT .7138 CRS -.2184 CST -.8379
FDE .0398 FRA 4.8731 FC-21.2732 BSP 42262 SGB12197.3 R23 -.0273 R13 .9910 LSA 2385.1 MSA 626.3 SSA 31.5
BDE .7433 BRA 3.0696 BC316.4406 FSP 4818 SG112184.8 SG2 552.4 THA .54 EL1 2221.8 EL2 326.1 ALF 8.90

LAUNCH DATE NOV 21 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 806.879 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.002 GAL -2.62 AZL 88.01 HCA 241.81 SMA 187.67 ECC .21728 INC 1.9873 V1 30.153
RP 209.88 LAP -1.75 LOP 300.52 VP 23.612 GAP -10.57 AZP 90.94 TAL 345.24 TAP 227.06 RCA 146.89 APO 228.44 V2 26.124
RC 309.654 GL 20.67 GP -1.90 ZAL 111.07 ZAP 43.52 ETS 177.22 ZAE 68.17 ETE 178.63 ZAC 82.51 ETC 257.80 CLP 43.48

PLANETOCENTRIC CONIC

C3 10.486 VHL 3.238 DLA 22.34 RAL 180.67 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.190 DPA 6.09 RAP 165.17 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 20	2853.78	-28.31	85.75	39.20	90.84	16 50 54	2253.8	-27.89	77.11
90.00	10 41 47	3933.34	-8.46	157.00	34.34	62.88	11 47 21	3333.3	-12.03	150.14
100.00	17 40 54	2539.19	-29.76	62.56	39.14	92.94	18 23 13	1939.2	-29.04	53.83
100.00	11 46 55	3723.16	-7.18	140.86	33.65	60.90	12 48 58	3123.2	-11.00	134.16
110.00	19 22 39	2220.87	-33.30	37.97	38.74	98.20	19 59 40	1620.9	-31.81	29.06
110.00	12 21 39	3614.24	-4.14	130.73	31.78	56.04	13 21 53	3014.2	-8.58	124.45

DIFFERENTIAL CORRECTIONS
TDE .6220 TRA 3.2318 TC-16.4308 BAU 2.3036
RDE .2633 RRA .1594 RC3 .1686 FAU .24281
FDE -.0813 FRA 4.8307 FC-20.0459 BSP 42870
BDE .6754 BRA 3.2357 BC316.4317 FSP 4630

MID-COURSE EXECUTION ACCURACY
SGT12356.0 SGR 567.4 SG3 1376.9
RRT .1763 RRF .1475 RTF .9909
SGB12369.0 R23 -.0280 R13 .9909
SG112356.4 SG2 558.5 THA .46

ORBIT DETERMINATION ACCURACY
ST 2180.0 SR 474.7 SS 1014.7
CRT .6583 CRS -.1393 CST -.8358
LSA 2365.3 MSA 641.7 SSA 31.0
EL1 2202.9 EL2 353.6 ALF 8.37

LAUNCH DATE NOV 21 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 811.155 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.008 GAL -2.75 AZL 88.02 HCA 243.04 SMA 187.76 ECC .21811 INC 1.9790 V1 30.153
RP 209.66 LAP -1.76 LOP 301.75 VP 23.647 GAP -10.70 AZP 90.90 TAL 344.57 TAP 227.61 RCA 146.81 APO 228.71 V2 26.149
RC 310.607 GL 20.41 GP -1.85 ZAL 112.27 ZAP 42.65 ETS 177.20 ZAE 67.01 ETE 178.63 ZAC 82.63 ETC 257.76 CLP 42.61

PLANETOCENTRIC CONIC

C3 10.663 VHL 3.265 DLA 21.60 RAL 181.70 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 4.261 DPA 5.99 RAP 165.53 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 2	2822.56	-28.25	83.47	40.22	91.99	17 4 4	2222.6	-27.68	74.85
90.00	10 36 15	3971.34	-7.28	159.16	35.27	62.56	11 42 26	3371.3	-10.90	152.35
100.00	17 53 22	2511.94	-29.65	60.54	40.14	93.99	18 35 14	1911.9	-28.78	51.84
100.00	11 42 36	3757.19	-6.05	142.75	34.61	60.67	12 45 13	3157.2	-9.91	136.09
110.00	19 33 0	2200.19	-33.09	36.40	39.67	99.11	20 9 41	1600.2	-31.48	27.54
110.00	12 19 26	3641.70	-3.10	132.17	32.78	55.94	13 20 8	3041.7	-7.55	125.91

DIFFERENTIAL CORRECTIONS
TDE .5439 TRA 3.4033 TC-16.3950 BAU 2.3374
RDE .2678 RRA .1591 RC3 .1867 FAU .23223
FDE -.1931 FRA 4.7860 FC-18.8544 BSP 43468
BDE .6063 BRA 3.4070 BC316.3961 FSP 4448

MID-COURSE EXECUTION ACCURACY
SGT12522.3 SGR 570.8 SG3 1319.7
RRT .1498 RRF .1205 RTF .9909
SGB12535.3 R23 -.0286 R13 .9909
SG112522.6 SG2 564.3 THA .39

ORBIT DETERMINATION ACCURACY
ST 2174.0 SR 478.5 SS 1014.4
CRT .5968 CRS -.0633 CST -.8373
LSA 2356.9 MSA 654.5 SSA 30.5
EL1 2193.2 EL2 380.6 ALF 7.72

LAUNCH DATE NOV 21 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 815.432 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.013 GAL -2.88 AZL 88.03 HCA 244.28 SMA 187.86 ECC .21899 INC 1.9708 V1 30.153
RP 209.44 LAP -1.78 LOP 302.99 VP 23.682 GAP -10.82 AZP 90.86 TAL 343.88 TAP 228.16 RCA 146.72 APO 228.99 V2 26.174
RC 311.551 GL 20.13 GP -1.80 ZAL 113.48 ZAP 41.80 ETS 177.18 ZAE 65.87 ETE 178.63 ZAC 82.76 ETC 257.71 CLP 41.77

PLANETOCENTRIC CONIC

C3 10.855 VHL 3.295 DLA 20.85 RAL 182.72 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.333 DPA 5.88 RAP 165.90 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 21	2792.65	-28.16	81.29	41.25	93.08	17 16 54	2192.6	-27.44	72.70
90.00	10 31 6	4008.54	-6.10	161.26	36.25	62.30	11 37 55	3408.5	-9.77	154.50
100.00	18 5 36	2485.55	-29.51	58.59	41.14	95.01	18 47 1	1885.6	-28.50	49.93
100.00	11 38 33	3790.87	-4.92	144.62	35.60	60.48	12 41 44	3190.9	-8.82	137.99
110.00	19 43 17	2179.90	-32.86	34.86	40.63	99.99	20 19 37	1579.9	-31.13	26.06
110.00	12 17 21	3669.28	-2.05	133.61	33.81	55.87	13 18 30	3069.3	-6.51	127.37

DIFFERENTIAL CORRECTIONS
TDE .4623 TRA 3.5812 TC-16.3337 BAU 2.3707
RDE .2727 RRA .1586 RC3 .2033 FAU .22196
FDE -.2985 FRA 4.7381 FC-17.7015 BSP 44060
BDE .5368 BRA 3.5847 BC316.3350 FSP 4269

MID-COURSE EXECUTION ACCURACY
SGT12684.6 SGR 574.4 SG3 1264.1
RRT .1243 RRF .0944 RTF .9908
SGB12697.6 R23 -.0293 R13 .9908
SG112684.8 SG2 569.9 THA .32

ORBIT DETERMINATION ACCURACY
ST 2178.8 SR 482.5 SS 1017.6
CRT .5298 CRS .0102 CST -.8415
LSA 2360.6 MSA 665.2 SSA 30.0
EL1 2194.3 EL2 406.3 ALF 6.93

LAUNCH DATE NOV 21 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 819.712 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.019 GAL -3.01 AZL 88.04 HCA 245.52 SMA 187.95 ECC .21990 INC 1.9628 V1 30.153
RP 209.24 LAP -1.79 LOP 304.22 VP 23.716 GAP -10.94 AZP 90.81 TAL 343.17 TAP 228.69 RCA 146.62 APO 229.28 V2 26.198
RC 312.486 GL 19.85 GP -1.76 ZAL 114.71 ZAP 40.98 ETS 177.17 ZAE 64.75 ETE 178.63 ZAC 82.88 ETC 257.66 CLP 40.94

PLANETOCENTRIC CONIC

C3 11.064 VHL 3.326 DLA 20.09 RAL 183.75 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 4.407 DPA 5.76 RAP 166.30 ECC 1.1821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 22	2763.88	-28.04	79.19	42.29	94.12	17 29 25	2163.9	-27.17	70.63
90.00	10 26 19	4045.11	-4.94	163.32	37.26	62.08	11 33 44	3445.1	-8.64	156.59
100.00	18 17 36	2459.97	-29.34	56.70	42.16	95.99	18 58 36	1860.0	-28.20	48.09
100.00	11 34 45	3824.26	-3.80	146.46	36.63	60.33	12 38 29	3224.3	-7.72	139.87
110.00	19 53 29	2160.00	-32.62	33.36	41.60	100.85	20 29 29	1560.0	-30.78	24.62
110.00	12 15 21	3696.99	-.99	135.06	34.87	55.83	13 16 58	3097.0	-5.46	128.83

DIFFERENTIAL CORRECTIONS
TDE .3769 TRA 3.7650 TC-16.2451 BAU 2.4032
RDE .2780 RRA .1580 RC3 .2185 FAU .21192
FDE -.3967 FRA 4.6892 FC-16.5821 BSP 44637
BDE .4683 BRA 3.7684 BC316.2466 FSP 4097

MID-COURSE EXECUTION ACCURACY
SGT12841.4 SGR 578.2 SG3 1210.0
RRT .0997 RRF .0693 RTF .9907
SGB12854.4 R23 -.0299 R13 .9907
SG112841.5 SG2 575.3 THA .26

ORBIT DETERMINATION ACCURACY
ST 2195.0 SR 486.6 SS 1024.0
CRT .4583 CRS .0797 CST -.8484
LSA 2377.0 MSA 672.9 SSA 29.4
EL1 2206.8 EL2 430.2 ALF 6.03

LAUNCH DATE NOV 21 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 823.992 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.024 GAL -3.15 AZL 88.04 HCA 246.76 SMA 188.05 ECC .22086 INC 1.9550 V1 30.153
RP 209.04 LAP -1.80 LOP 305.46 VP 23.749 GAP -11.06 AZP 90.77 TAL 342.45 TAP 229.21 RCA 146.52 APO 229.58 V2 26.221
RC 313.411 GL 19.56 GP -1.71 ZAL 115.94 ZAP 40.18 ETS 177.15 ZAE 63.65 ETE 178.64 ZAC 83.02 ETC 257.61 CLP 40.15

PLANETOCENTRIC CONIC

C3 11.290 VHL 3.360 DLA 19.32 RAL 184.78 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.482 DPA 5.62 RAP 166.73 ECC 1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 5	2736.16	-27.89	77.18	43.35	95.12	17 41 41	2136.2	-26.89	68.66
90.00	10 21 49	4081.18	-3.79	165.35	38.31	61.92	11 29 50	3481.2	-7.52	158.65
100.00	18 29 25	2435.14	-29.15	54.88	43.20	96.93	19 10 1	1835.1	-27.89	46.31
100.00	11 31 9	3857.43	-2.68	148.28	37.69	60.22	12 35 27	3257.4	-6.62	141.72
110.00	20 3 36	2140.49	-32.36	31.89	42.59	101.68	20 39 17	1540.5	-30.41	23.22
110.00	12 13 28	3724.84	.08	136.51	35.97	55.82	13 15 33	3124.8	-4.41	130.30

DIFFERENTIAL CORRECTIONS
TDE .2887 TRA 3.9553 TC-16.1328 BAU 2.4353
RDE .2835 RRA .1572 RC3 .2324 FAU .20215
FDE -.4879 FRA 4.6363 FC-15.5011 BSP 45221
BDE .4047 BRA 3.9584 BC316.1345 FSP 3933

MID-COURSE EXECUTION ACCURACY
SGT12994.6 SGR 582.1 SG3 1157.2
RRT .0760 RRF .0449 RTF .9906
SGB13007.6 R23 -.0306 R13 .9905
SG112994.6 SG2 580.4 THA .20

ORBIT DETERMINATION ACCURACY
ST 2223.8 SR 491.0 SS 1032.3
CRT .3840 CRS .1448 CST -.8571
LSA 2406.5 MSA 677.9 SSA 28.9
EL1 2232.1 EL2 451.6 ALF 5.05

LAUNCH DATE NOV 21 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 828.273 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.030 GAL -3.29 AZL 88.05 HCA 248.00 SMA 188.15 ECC .22186 INC 1.9473 V1 30.153
RP 208.85 LAP -1.81 LOP 306.71 VP 23.781 GAP -11.18 AZP 90.73 TAL 341.72 TAP 229.72 RCA 146.41 APO 229.90 V2 26.243
RC 314.329 GL 19.26 GP -1.67 ZAL 117.19 ZAP 39.40 ETS 177.13 ZAE 62.58 ETE 178.64 ZAC 83.15 ETC 257.55 CLP 39.37

PLANETOCENTRIC CONIC

C3 11.535 VHL 3.396 DLA 18.54 RAL 185.81 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 4.559 DPA 5.48 RAP 167.17 ECC 1.1898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 32	2709.39	-27.71	75.24	44.43	96.08	17 53 41	2109.4	-26.58	66.76
90.00	10 17 36	4116.84	-2.64	167.34	39.39	61.80	11 26 13	3516.8	-6.39	160.67
100.00	18 41 3	2411.04	-28.94	53.12	44.25	97.83	19 21 14	1811.0	-27.55	44.59
100.00	11 27 46	3890.42	-1.56	150.10	38.79	60.14	12 32 36	3290.4	-5.52	143.55
110.00	20 13 38	2121.40	-32.08	30.47	43.60	102.48	20 48 59	1521.4	-30.03	21.86
110.00	12 11 40	3752.84	1.15	137.97	37.10	55.83	13 14 13	3152.8	-3.34	131.76

DIFFERENTIAL CORRECTIONS
TDE .1975 TRA 4.1520 TC-15.9958 BAU 2.4670
RDE .2895 RRA .1563 RC3 .2449 FAU .19274
FDE -.5719 FRA 4.5824 FC-14.4658 BSP 45785
BDE .3505 BRA 4.1549 BC315.9977 FSP 3773

MID-COURSE EXECUTION ACCURACY
SGT13143.2 SGR 586.1 SG3 1106.3
RRT .0532 RRF .0215 RTF .9904
SGB13156.3 R23 -.0313 R13 .9904
SG113143.3 SG2 585.3 THA .14

ORBIT DETERMINATION ACCURACY
ST 2264.9 SR 495.5 SS 1042.2
CRT .3083 CRS .2049 CST -.8671
LSA 2449.1 MSA 679.9 SSA 28.3
EL1 2270.2 EL2 470.2 ALF 4.03

LAUNCH DATE NOV 21 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 832.555 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.036 GAL -3.44 AZL 88.06 HCA 249.24 SMA 188.25 ECC .22291 INC 1.9397 V1 30.153
RP 208.67 LAP -1.81 LOP 307.95 VP 23.813 GAP -11.30 AZP 90.69 TAL 340.97 TAP 230.21 RCA 146.29 APO 230.22 V2 26.264
RC 315.238 GL 18.96 GP -1.63 ZAL 118.44 ZAP 38.64 ETS 177.11 ZAE 61.53 ETE 178.64 ZAC 83.29 ETC 257.50 CLP 38.61

PLANETOCENTRIC CONIC

C3 11.799 VHL 3.435 DLA 17.76 RAL 186.85 RAD 6567.4 VEL 11.541 PTH 2.01 VHP 4.636 DPA 5.32 RAP 167.64 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 45	2683.53	-27.51	73.37	45.51	96.99	18 5 29	2083.5	-26.26	64.93
90.00	10 13 37	4152.17	-1.51	169.31	40.51	61.72	11 22 49	3552.2	-5.27	162.66
100.00	18 52 30	2387.64	-28.71	51.42	45.33	98.70	19 32 18	1787.6	-27.21	42.94
100.00	11 24 33	3923.28	-.45	151.90	39.92	60.11	12 29 56	3323.3	-4.42	145.37
110.00	20 23 34	2102.72	-31.80	29.09	44.63	103.25	20 58 37	1502.7	-29.65	20.54
110.00	12 9 58	3780.97	2.22	139.44	38.25	55.88	13 12 59	3181.0	-2.27	133.23

DIFFERENTIAL CORRECTIONS
TDE .1024 TRA 4.3547 TC-15.8385 BAU 2.4987
RDE .2958 RRA .1552 RC3 .2560 FAU .18363
FDE -.6498 FRA 4.5244 FC-13.4743 BSP 46336
BDE .3130 BRA 4.3575 BC315.8406 FSP 3618

MID-COURSE EXECUTION ACCURACY
SGT13288.9 SGR 590.1 SG3 1057.0
RRT .0310 RRF -.0013 RTF .9902
SGB13302.0 R23 -.0321 R13 .9902
SG113288.9 SG2 589.9 THA .08

ORBIT DETERMINATION ACCURACY
ST 2317.6 SR 500.1 SS 1052.5
CRT .2322 CRS .2606 CST -.8778
LSA 2503.5 MSA 679.1 SSA 27.6
EL1 2320.7 EL2 485.8 ALF 3.00

LAUNCH DATE NOV 21 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 836.836 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.041 GAL -3.58 AZL 88.07 HCA 250.49 SMA 188.36 ECC .22400 INC 1.9322 V1 30.153
RP 208.49 LAP -1.82 LOP 309.20 VP 23.844 GAP -11.42 AZP 90.65 TAL 340.21 TAP 230.69 RCA 146.16 APO 230.55 V2 26.285
RC 316.140 GL 18.66 GP -1.59 ZAL 119.70 ZAP 37.91 ETS 177.09 ZAE 60.49 ETE 178.65 ZAC 83.43 ETC 257.44 CLP 37.88

PLANETOCENTRIC CONIC

C3 12.083 VHL 3.476 DLA 16.97 RAL 187.88 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 4.716 DPA 5.15 RAP 168.12 ECC 1.1989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 45	2658.51	-27.29	71.58	46.62	97.87	18 17 3	2058.5	-25.92	63.18
90.00	10 9 51	4187.22	-.37	171.27	41.67	61.69	11 19 38	3587.2	-4.16	164.63
100.00	19 3 47	2364.91	-28.47	49.78	46.42	99.53	19 43 12	1764.9	-26.85	41.34
100.00	11 21 29	3956.04	.67	153.70	41.09	60.11	12 27 25	3356.0	-3.32	147.17
110.00	20 33 25	2084.47	-31.51	27.75	45.68	104.00	21 8 10	1484.5	-29.26	19.26
110.00	12 8 21	3809.25	3.30	140.92	39.44	55.96	13 11 50	3209.2	-1.19	134.71

DIFFERENTIAL CORRECTIONS
TDE .0050 TRA 4.5649 TC-15.6558 BAU 2.5295
RDE .3025 RRA .1539 RC3 .2659 FAU .17471
FDE -.7202 FRA 4.4660 FC-12.5175 BSP 46896
BDE .3025 BRA 4.5675 BC315.6581 FSP 3467

MID-COURSE EXECUTION ACCURACY
SGT13429.5 SGR 594.2 SG3 1009.0
RRT .0098 RRF -.0230 RTF .9900
SGB13442.6 R23 -.0327 R13 .9900
SG113429.5 SG2 594.2 THA .02

ORBIT DETERMINATION ACCURACY
ST 2382.5 SR 504.9 SS 1063.1
CRT .1580 CRS .3109 CST -.8887
LSA 2569.8 MSA 675.7 SSA 27.1
EL1 2383.8 EL2 498.3 ALF 2.01

LAUNCH DATE NOV 21 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 841.117 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	33.047	GAL	-3.74	AZL	88.08	HCA	251.74	SMA	188.46	ECC	.22515	INC	1.9248
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.873	GAP	-11.54	AZP	90.60	TAL	339.43	TAP	231.16	RCA	146.03	APO	230.89
RC	317.035	GL	18.34	GP	-1.56	ZAL	120.97	ZAP	37.19	ETS	177.07	ZAE	59.48	ETE	178.65	ZAC	83.57	ETC	257.38

V1	30.153	V2	26.304	CLP	37.16														

PLANETOCENTRIC CONIC

C3	12.390	VHL	3.520	DLA	16.17	RAL	188.91	RAD	6567.5	VEL	11.566	PTH	2.02	VHP	4.796	DPA	4.97	RAP	168.63

ECC	1.2039	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 44 32	2634.31	-27.05	69.84	47.74	98.70	18 28 26	2034.3	-25.57	61.49							
		90.00	10 6 16	4222.04	.75	173.21	42.86	61.69	11 16 38	3622.0	-3.04	166.58							
		100.00	19 14 55	2342.85	-28.21	48.19	47.52	100.33	19 53 57	1742.9	-26.49	39.81							
		100.00	11 18 35	3988.72	1.77	155.49	42.29	60.16	12 25 3	3388.7	-2.21	148.97							
		110.00	20 43 11	2066.68	-31.21	26.45	46.75	104.71	21 17 37	1466.7	-28.87	18.02							
		110.00	12 6 48	3837.67	4.38	142.41	40.66	56.07	13 10 46	3237.7	-.10	136.19							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0959	TRA	4.7813	TC-15.4548	BAU	2.5604	SGT13567.0	SGR	598.3	SG3	962.6	ST	2457.8	SR	509.9	SS	1073.3		
RDE	.3096	RRA	.1524	RC3 .2745	FAU	.16614	RRT -.0109	RRF	-.0444	RTF	.9897	CRT	.0860	CRS	.3576	CST	-.8990		
FDE	-.7855	FRA	4.4035	FC-11.6085	BSP	47443	SGB13580.2	R23	.0336	R13	-.9897	LSA	2646.1	MSA	670.6	SSA	26.5		
BDE	.3241	BRA	4.7837	BC315.4572	FSP	3322	SG113567.0	SG2	598.3	THA	179.97	EL1	2458.2	EL2	507.9	ALF	1.07		

LAUNCH DATE NOV 21 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 845.396 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	33.053	GAL	-3.90	AZL	88.08	HCA	252.99	SMA	188.57	ECC	.22634	INC	1.9176
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.902	GAP	-11.66	AZP	90.56	TAL	338.63	TAP	231.62	RCA	145.89	APO	231.25
RC	317.924	GL	18.02	GP	-1.52	ZAL	122.24	ZAP	36.50	ETS	177.05	ZAE	58.48	ETE	178.65	ZAC	83.72	ETC	257.32

V1	30.153	V2	26.323	CLP	36.47														

PLANETOCENTRIC CONIC

C3	12.720	VHL	3.567	DLA	15.37	RAL	189.93	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	4.879	DPA	4.77	RAP	169.15

ECC	1.2093	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 56 7	2610.89	-26.80	68.18	48.88	99.50	18 39 38	2010.9	-25.21	59.87							
		90.00	10 2 52	4256.67	1.87	175.14	44.08	61.74	11 13 49	3656.7	-1.92	168.51							
		100.00	19 25 52	2321.45	-27.94	46.65	48.65	101.09	20 4 34	1721.5	-26.12	38.32							
		100.00	11 15 48	4021.34	2.88	157.28	43.52	60.23	12 22 50	3421.3	-1.11	150.76							
		110.00	20 52 50	2049.34	-30.90	25.19	47.85	105.40	21 27 0	1449.3	-28.48	16.83							
		110.00	12 5 20	3866.22	5.47	143.91	41.92	56.20	13 9 46	3266.2	.99	137.68							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1995	TRA	5.0045	TC-15.2335	BAU	2.5910	SGT13700.3	SGR	602.4	SG3	917.5	ST	2542.8	SR	514.9	SS	1082.5		
RDE	.3170	RRA	.1507	RC3 .2820	FAU	.15777	RRT -.0309	RRF	-.0651	RTF	.9894	CRT	.0178	CRS	.4001	CST	-.9086		
FDE	-.8445	FRA	4.3384	FC-10.7383	BSP	47969	SGB13713.5	R23	.0345	R13	-.9894	LSA	2731.5	MSA	664.1	SSA	25.9		
BDE	.3746	BRA	5.0067	BC315.2361	FSP	3180	SG113700.3	SG2	602.1	THA	179.92	EL1	2542.9	EL2	514.8	ALF	.21		

LAUNCH DATE NOV 21 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 849.674 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	33.060	GAL	-4.06	AZL	88.09	HCA	254.24	SMA	188.68	ECC	.22759	INC	1.9104
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.930	GAP	-11.79	AZP	90.52	TAL	337.82	TAP	232.06	RCA	145.74	APO	231.62
RC	318.808	GL	17.70	GP	-1.49	ZAL	123.51	ZAP	35.82	ETS	177.03	ZAE	57.51	ETE	178.66	ZAC	83.87	ETC	257.26

V1	30.153	V2	26.341	CLP	35.79														

PLANETOCENTRIC CONIC

C3	13.074	VHL	3.616	DLA	14.57	RAL	190.96	RAD	6567.5	VEL	11.596	PTH	2.03	VHP	4.962	DPA	4.57	RAP	169.69

ECC	1.2152	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 7 31	2588.24	-26.53	66.57	50.04	100.27	18 50 40	1988.2	-24.85	58.31							
		90.00	9 59 38	4291.14	2.98	177.07	45.34	61.83	11 11 9	3691.1	-.81	170.44							
		100.00	19 36 41	2300.70	-27.66	45.18	49.79	101.82	20 15 2	1700.7	-25.75	36.90							
		100.00	11 13 10	4053.91	3.98	159.07	44.79	60.35	12 20 44	3453.9	-.00	152.54							
		110.00	21 2 24	2032.48	-30.59	23.97	48.96	106.06	21 36 17	1432.5	-28.09	15.67							
		110.00	12 3 56	3894.90	6.55	145.42	43.20	56.38	13 8 51	3294.9	2.09	139.18							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3058	TRA	5.2356	TC-14.9923	BAU	2.6211	SGT13829.8	SGR	606.4	SG3	873.9	ST	2637.0	SR	520.0	SS	1090.4		
RDE	.3249	RRA	.1488	RC3 .2882	FAU	.14968	RRT -.0502	RRF	-.0851	RTF	.9890	CRT	-.0463	CRS	.4383	CST	-.9176		
FDE	-.8969	FRA	4.2717	FC3-9.9109	BSP	48509	SGB13843.1	R23	.0354	R13	-.9890	LSA	2825.2	MSA	656.2	SSA	25.3		
BDE	.4461	BRA	5.2377	BC314.9951	FSP	3045	SG113829.8	SG2	605.7	THA	179.87	EL1	2637.1	EL2	519.4	ALF	179.46		

LAUNCH DATE NOV 21 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 853.950 EARTH TO MARS

RL	147.76	LAL	.00	LOL	58.72	VL	33.066	GAL	-4.22	AZL	88.10	HCA	255.49	SMA	188.79	ECC	.22889	INC	1.9032
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.957	GAP	-11.91	AZP	90.48	TAL	337.00	TAP	232.49	RCA	145.57	APO	232.00
RC	319.685	GL	17.37	GP	-1.45	ZAL	124.78	ZAP	35.16	ETS	177.01	ZAE	56.55	ETE	178.66	ZAC	84.03	ETC	257.20

V1	30.153	V2	26.357	CLP	35.13														

PLANETOCENTRIC CONIC

C3	13.455	VHL	3.668	DLA	13.77	RAL	191.98	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	5.047	DPA	4.36	RAP	170.25

ECC	1.2214	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 18 44	2566.34	-26.26	65.03	51.21	100.99	19 1 31	1966.3	-24.48	56.81							
		90.00	9 56 33	4325.48	4.08	178.99	46.64	61.95	11 8 39	3725.5	.30	172.35							
		100.00	19 47 20	2280.61	-27.37	43.75	50.96	102.52	20 25 21	1680.6	-25.37	35.52							
		100.00	11 10 38	4086.45	5.07	160.87	46.09	60.50	12 18 45	3486.4	1.10	154.33							
		110.00	21 11 52	2016.11	-30.28	22.80	50.09	106.69	21 45 28	1416.1	-27.69	14.56							
		110.00	12 2 36	3923.71	7.63	146.95	44.51	56.58	13 8 0	3323.7	3.19	140.68							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4152	TRA	5.4732	TC-14.7385	BAU	2.6517	SGT13957.4	SGR	610.4	SG3	831.8	ST	2738.4	SR	525.1	SS	1097.0		
RDE	.3331	RRA	.1466	RC3 .2933	FAU	.14186	RRT -.0691	RRF	-.1047	RTF	.9886	CRT	-.1062	CRS	.4738	CST	-.9255		
FDE	-.9449	FRA	4.2018	FC3-9.1273	BSP	49016	SGB13970.7	R23	.0364	R13	-.9886	LSA	2925.4	MSA	647.8	SSA	24.7		
BDE	.5323	BRA	5.4752	BC314.7414	FSP	2911	SG113957.5	SG2	608.9	THA	179.83	EL1	2739.0	EL2	522.1	ALF	178.79		

LAUNCH DATE NOV 21 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 858.223 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.072 GAL -4.40 AZL 88.10 HCA 256.75 SMA 188.90 ECC .23025 INC 1.8962 V1 30.153
RP 207.73 LAP -1.85 LOP 315.46 VP 23.983 GAP -12.04 AZP 90.43 TAL 336.16 TAP 232.91 RCA 145.40 APO 232.39 V2 26.373
RC 320.558 GL 17.04 GP -1.42 ZAL 126.05 ZAP 34.52 ETS 176.99 ZAE 55.61 ETE 178.67 ZAC 84.19 ETC 257.13 CLP 34.49

PLANETOCENTRIC CONIC

C3 13.863 VHL 3.723 DLA 12.97 RAL 192.99 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 5.134 DPA 4.14 RAP 170.83 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 47	2545.19	-25.98	63.54	52.41	101.69	19 12 12	1945.2	-24.10	55.37
90.00	9 53 36	4359.70	5.17	180.91	47.96	62.12	11 6 16	3759.7	1.40	174.26
100.00	19 57 51	2261.16	-27.07	42.38	52.14	103.18	20 35 32	1661.2	-24.99	34.20
100.00	11 8 13	4118.95	6.16	162.67	47.42	60.69	12 16 52	3519.0	2.20	156.11
110.00	21 21 14	2000.24	-29.96	21.67	51.24	107.28	21 54 34	1400.2	-27.30	13.49
110.00	12 1 20	3952.64	8.72	148.49	45.86	56.82	13 7 12	3352.6	4.29	142.20

DIFFERENTIAL CORRECTIONS
TDE -.5273 TRA 5.7182 TC-14.4665 BAU 2.6818
RDE .3417 RRA .1442 RC3 .2973 FAU .13426
FDE -.9877 FRA 4.1286 FC3-8.3842 BSP 49526
BDE .6284 BRA 5.7200 BC314.4696 FSP 2782

MID-COURSE EXECUTION ACCURACY
SGT14079.9 SGR 614.3 SG3 790.9
RRT -.0874 RRF -.1240 RTF .9882
SGB14093.3 R23 .0376 R13 -.9882
SG114080.0 SG2 612.0 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 2846.2 SR 530.3 SS 1101.8
CRT -.1616 CRS .5063 CST -.9324
LSA 3031.0 MSA 639.1 SSA 24.2
EL1 2847.5 EL2 523.1 ALF 178.22

LAUNCH DATE NOV 21 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 862.493 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.078 GAL -4.57 AZL 88.11 HCA 258.01 SMA 189.01 ECC .23167 INC 1.8892 V1 30.153
RP 207.60 LAP -1.85 LOP 316.72 VP 24.009 GAP -12.17 AZP 90.39 TAL 335.31 TAP 233.31 RCA 145.22 APO 232.80 V2 26.388
RC 321.425 GL 16.71 GP -1.39 ZAL 127.32 ZAP 33.90 ETS 176.97 ZAE 54.68 ETE 178.67 ZAC 84.35 ETC 257.07 CLP 33.87

PLANETOCENTRIC CONIC

C3 14.301 VHL 3.782 DLA 12.17 RAL 194.00 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 5.222 DPA 3.91 RAP 171.42 ECC 1.2354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 39	2524.76	-25.69	62.12	53.62	102.35	19 22 44	1924.8	-23.73	53.99
90.00	9 50 47	4393.81	6.25	182.83	49.32	62.33	11 4 1	3793.8	2.50	176.16
100.00	20 8 12	2242.37	-26.77	41.07	53.34	103.82	20 45 35	1642.4	-24.61	32.94
100.00	11 5 55	4151.43	7.24	164.48	48.79	60.92	12 15 6	3551.4	3.30	157.90
110.00	21 30 29	1984.90	-29.65	20.59	52.42	107.86	22 3 34	1384.9	-26.92	12.46
110.00	12 0 7	3981.67	9.79	150.05	47.23	57.09	13 6 29	3381.7	5.39	143.72

DIFFERENTIAL CORRECTIONS
TDE -.6420 TRA 5.9710 TC-14.1817 BAU 2.7121
RDE .3508 RRA .1415 RC3 .3002 FAU .12691
FDE-1.0247 FRA 4.0530 FC3-7.6823 BSP 50019
BDE .7316 BRA 5.9727 BC314.1849 FSP 2656

MID-COURSE EXECUTION ACCURACY
SGT14200.1 SGR 618.1 SG3 751.4
RRT -.1052 RRF -.1427 RTF .9877
SGB14213.5 R23 .0388 R13 -.9877
SG114200.2 SG2 614.7 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 2959.3 SR 535.6 SS 1104.4
CRT -.2123 CRS .5357 CST -.9385
LSA 3141.1 MSA 630.1 SSA 23.6
EL1 2961.6 EL2 523.0 ALF 177.73

LAUNCH DATE NOV 21 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 866.759 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.085 GAL -4.75 AZL 88.12 HCA 259.26 SMA 189.12 ECC .23315 INC 1.8823 V1 30.153
RP 207.48 LAP -1.85 LOP 317.98 VP 24.033 GAP -12.30 AZP 90.35 TAL 334.44 TAP 233.70 RCA 145.03 APO 233.21 V2 26.402
RC 322.286 GL 16.37 GP -1.36 ZAL 128.58 ZAP 33.29 ETS 176.95 ZAE 53.77 ETE 178.68 ZAC 84.51 ETC 257.01 CLP 33.26

PLANETOCENTRIC CONIC

C3 14.770 VHL 3.843 DLA 11.37 RAL 195.00 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 5.312 DPA 3.67 RAP 172.03 ECC 1.2431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 21	2505.06	-25.39	60.75	54.86	102.97	19 33 6	1905.1	-23.36	52.67
90.00	9 48 5	4427.83	7.32	184.76	50.71	62.57	11 1 53	3827.8	3.59	178.07
100.00	20 18 25	2224.23	-26.47	39.80	54.56	104.42	20 55 30	1624.2	-24.23	31.72
100.00	11 3 42	4183.89	8.30	166.30	50.18	61.18	12 13 26	3583.9	4.40	159.69
110.00	21 39 39	1970.09	-29.33	19.55	53.61	108.40	22 12 29	1370.1	-26.54	11.48
110.00	11 58 58	4010.80	10.87	151.62	48.64	57.39	13 5 49	3410.8	6.49	145.26

DIFFERENTIAL CORRECTIONS
TDE -.7599 TRA 6.2302 TC-13.8881 BAU 2.7430
RDE .3603 RRA .1385 RC3 .3022 FAU .11982
FDE-1.0571 FRA 3.9742 FC3-7.0232 BSP 50493
BDE .8410 BRA 6.2317 BC313.8913 FSP 2533

MID-COURSE EXECUTION ACCURACY
SGT14317.6 SGR 621.9 SG3 713.2
RRT -.1228 RRF -.1612 RTF .9871
SGB14331.1 R23 .0401 R13 -.9871
SG114317.8 SG2 617.2 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 3076.4 SR 540.8 SS 1105.0
CRT -.2591 CRS .5629 CST -.9438
LSA 3254.5 MSA 620.9 SSA 23.1
EL1 3079.7 EL2 521.8 ALF 177.31

LAUNCH DATE NOV 21 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 871.020 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.091 GAL -4.94 AZL 88.12 HCA 260.52 SMA 189.24 ECC .23470 INC 1.8754 V1 30.153
RP 207.36 LAP -1.85 LOP 319.24 VP 24.056 GAP -12.43 AZP 90.31 TAL 333.55 TAP 234.08 RCA 144.82 APO 233.65 V2 26.416
RC 323.141 GL 16.03 GP -1.33 ZAL 129.85 ZAP 32.70 ETS 176.92 ZAE 52.88 ETE 178.68 ZAC 84.68 ETC 256.94 CLP 32.67

PLANETOCENTRIC CONIC

C3 15.272 VHL 3.908 DLA 10.57 RAL 196.00 RAD 6567.6 VEL 11.690 PTH 2.06 VHP 5.403 DPA 3.42 RAP 172.65 ECC 1.2513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 53	2486.08	-25.10	59.44	56.11	103.56	19 43 19	1886.1	-22.98	51.41
90.00	9 45 30	4461.77	8.38	186.69	52.14	62.85	10 59 52	3861.8	4.68	179.97
100.00	20 28 30	2206.75	-26.17	38.59	55.80	104.99	21 5 17	1606.8	-23.86	30.56
100.00	11 1 35	4216.32	9.36	168.12	51.61	61.48	12 11 51	3616.3	5.48	161.48
110.00	21 48 41	1955.82	-29.02	18.56	54.82	108.91	22 21 17	1355.8	-26.17	10.54
110.00	11 57 53	4040.03	11.93	153.21	50.08	57.73	13 5 13	3440.0	7.59	146.81

DIFFERENTIAL CORRECTIONS
TDE -.8801 TRA 6.4986 TC-13.5801 BAU 2.7733
RDE .3701 RRA .1352 RC3 .3033 FAU .11293
FDE-1.0845 FRA 3.8934 FC3-6.4016 BSP 50977
BDE .9547 BRA 6.5000 BC313.5835 FSP 2415

MID-COURSE EXECUTION ACCURACY
SGT14431.3 SGR 625.6 SG3 676.4
RRT -.1398 RRF -.1793 RTF .9864
SGB14444.9 R23 .0416 R13 -.9864
SG114431.6 SG2 619.4 THA 179.65

ORBIT DETERMINATION ACCURACY
ST 3197.0 SR 546.1 SS 1103.3
CRT -.3016 CRS .5878 CST -.9483
LSA 3370.6 MSA 612.1 SSA 22.6
EL1 3201.4 EL2 519.9 ALF 176.97

LAUNCH DATE NOV 21 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 875.276 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.097 GAL -5.13 AZL 88.13 HCA 261.79 SMA 189.35 ECC .23631 INC 1.8686 V1 30.153
RP 207.26 LAP -1.85 LOP 320.50 VP 24.078 GAP -12.56 AZP 90.27 TAL 332.66 TAP 234.44 RCA 144.61 APO 234.10 V2 26.428
RC 323.990 GL 15.69 GP -1.31 ZAL 131.10 ZAP 32.12 ETS 176.90 ZAE 52.00 ETE 178.68 ZAC 84.85 ETC 256.88 CLP 32.10

PLANETOCENTRIC CONIC

C3 15.809 VHL 3.976 DLA 9.78 RAL 196.99 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 5.496 DPA 3.16 RAP 173.29 ECC 1.2602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 16	2467.82	-24.80	58.18	57.38	104.13	19 53 24	1867.8	-22.61	50.19
90.00	9 43 1	4495.62	9.43	188.63	53.59	63.18	10 57 57	3895.6	5.76	181.87
100.00	20 38 26	2189.93	-25.87	37.43	57.06	105.52	21 14 56	1589.9	-23.49	29.44
100.00	10 59 33	4248.73	10.41	169.96	53.07	61.82	12 10 22	3648.7	6.56	163.28
110.00	21 57 37	1942.11	-28.71	17.61	56.06	109.40	22 30 0	1342.1	-25.80	9.64
110.00	11 56 50	4069.33	12.99	154.82	51.55	58.10	13 4 40	3469.3	8.69	148.37

DIFFERENTIAL CORRECTIONS
TDE-1.0033 TRA 6.7730 TC-13.2680 BAU 2.8049
RDE .3804 RRA .1316 RC3 .3035 FAU .10630
FDE-1.1075 FRA 3.8083 FC3-5.8212 BSP 51423
BDE 1.0730 BRA 6.7743 BC313.2715 FSP 2298

MID-COURSE EXECUTION ACCURACY
SGT14543.0 SGR 629.1 SG3 640.7
RRT -.1566 RRF -.1973 RTF .9857
SGB14556.6 R23 .0432 R13 -.9857
SG114543.3 SG2 621.4 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3319.4 SR 551.3 SS 1099.1
CRT -.3406 CRS .6109 CST -.9521
LSA 3488.0 MSA 603.3 SSA 22.1
EL1 3324.9 EL2 517.5 ALF 176.68

LAUNCH DATE NOV 21 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 879.526 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.104 GAL -5.32 AZL 88.14 HCA 263.05 SMA 189.47 ECC .23799 INC 1.8618 V1 30.153
RP 207.16 LAP -1.85 LOP 321.77 VP 24.100 GAP -12.70 AZP 90.23 TAL 331.74 TAP 234.79 RCA 144.38 APO 234.56 V2 26.439
RC 324.833 GL 15.34 GP -1.28 ZAL 132.35 ZAP 31.56 ETS 176.88 ZAE 51.13 ETE 178.69 ZAC 85.02 ETC 256.82 CLP 31.54

PLANETOCENTRIC CONIC

C3 16.383 VHL 4.048 DLA 8.99 RAL 197.97 RAD 6567.7 VEL 11.737 PTH 2.07 VHP 5.591 DPA 2.89 RAP 173.94 ECC 1.2696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 29	2450.27	-24.50	56.98	58.67	104.66	20 3 20	1850.3	-22.25	49.04
90.00	9 40 38	4529.40	10.46	190.57	55.08	63.54	10 56 8	3929.4	6.82	183.78
100.00	20 48 13	2173.78	-25.57	36.32	58.34	106.03	21 24 27	1573.8	-23.12	28.38
100.00	10 57 36	4281.13	11.45	171.80	54.57	62.20	12 8 57	3681.1	7.64	165.09
110.00	22 6 27	1928.96	-28.41	16.70	57.31	109.86	22 38 36	1329.0	-25.44	8.79
110.00	11 55 51	4098.71	14.04	156.45	53.05	58.51	13 4 10	3498.7	9.78	149.95

DIFFERENTIAL CORRECTIONS
TDE-1.1288 TRA 7.0566 TC-12.9475 BAU 2.8366
RDE .3911 RRA .1277 RC3 .3029 FAU .09985
FDE-1.1260 FRA 3.7206 FC3-5.2767 BSP 51854
BDE 1.1947 BRA 7.0578 BC312.9511 FSP 2185

MID-COURSE EXECUTION ACCURACY
SGT14652.2 SGR 632.6 SG3 606.2
RRT -.1731 RRF -.2150 RTF .9849
SGB14665.8 R23 .0449 R13 -.9849
SG114652.6 SG2 623.0 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3443.4 SR 556.5 SS 1092.6
CRT -.3760 CRS .6322 CST -.9553
LSA 3606.4 MSA 595.0 SSA 21.7
EL1 3449.9 EL2 514.6 ALF 176.44

LAUNCH DATE NOV 21 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 883.769 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.111 GAL -5.52 AZL 88.14 HCA 264.31 SMA 189.59 ECC .23975 INC 1.8550 V1 30.153
RP 207.08 LAP -1.85 LOP 323.03 VP 24.120 GAP -12.84 AZP 90.18 TAL 330.81 TAP 235.13 RCA 144.13 APO 235.04 V2 26.449
RC 325.671 GL 15.00 GP -1.26 ZAL 133.59 ZAP 31.02 ETS 176.85 ZAE 50.28 ETE 178.69 ZAC 85.19 ETC 256.75 CLP 31.00

PLANETOCENTRIC CONIC

C3 16.996 VHL 4.123 DLA 8.20 RAL 198.95 RAD 6567.7 VEL 11.763 PTH 2.08 VHP 5.688 DPA 2.62 RAP 174.61 ECC 1.2797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 33	2433.43	-24.21	55.84	59.97	105.16	20 13 7	1833.4	-21.89	47.93
90.00	9 38 21	4563.10	11.48	192.53	56.60	63.94	10 54 24	3963.1	7.88	185.69
100.00	20 57 52	2158.28	-25.27	35.27	59.64	106.52	21 33 50	1558.3	-22.77	27.37
100.00	10 55 43	4313.49	12.47	173.66	56.09	62.61	12 7 37	3713.5	8.70	166.90
110.00	22 15 10	1916.39	-28.12	15.84	58.58	110.29	22 47 6	1316.4	-25.10	7.97
110.00	11 54 55	4128.14	15.09	158.09	54.59	58.96	13 3 43	3528.1	10.86	151.54

DIFFERENTIAL CORRECTIONS
TDE-1.2578 TRA 7.3475 TC-12.6211 BAU 2.8686
RDE .4023 RRA .1234 RC3 .3016 FAU .09360
FDE-1.1407 FRA 3.6301 FC3-4.7679 BSP 52263
BDE 1.3206 BRA 7.3485 BC312.6247 FSP 2074

MID-COURSE EXECUTION ACCURACY
SGT14757.8 SGR 636.0 SG3 572.8
RRT -.1894 RRF -.2326 RTF .9840
SGB14771.5 R23 .0468 R13 -.9840
SG114758.3 SG2 624.4 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 3568.4 SR 561.6 SS 1084.0
CRT -.4086 CRS .6521 CST -.9581
LSA 3725.4 MSA 586.8 SSA 21.2
EL1 3575.9 EL2 511.5 ALF 176.24

LAUNCH DATE NOV 21 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 888.004 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.117 GAL -5.73 AZL 88.15 HCA 265.58 SMA 189.71 ECC .24158 INC 1.8483 V1 30.153
RP 207.00 LAP -1.84 LOP 324.30 VP 24.139 GAP -12.98 AZP 90.14 TAL 329.87 TAP 235.45 RCA 143.88 APO 235.54 V2 26.459
RC 326.503 GL 14.65 GP -1.23 ZAL 134.82 ZAP 30.49 ETS 176.83 ZAE 49.45 ETE 178.70 ZAC 85.37 ETC 256.69 CLP 30.47

PLANETOCENTRIC CONIC

C3 17.651 VHL 4.201 DLA 7.43 RAL 199.91 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 5.786 DPA 2.34 RAP 175.29 ECC 1.2905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 28	2417.30	-23.92	54.75	61.30	105.63	20 22 46	1817.3	-21.54	46.88
90.00	9 36 8	4596.73	12.48	194.49	58.16	64.37	10 52 45	3996.7	8.92	187.61
100.00	21 7 23	2143.45	-24.98	34.26	60.96	106.97	21 43 6	1543.4	-22.42	26.40
100.00	10 53 55	4345.82	13.47	175.54	57.65	63.06	12 6 21	3745.8	9.75	168.72
110.00	22 23 46	1904.40	-27.83	15.03	59.87	110.69	22 55 30	1304.4	-24.76	7.20
110.00	11 54 1	4157.63	16.11	159.76	56.15	59.44	13 3 19	3557.6	11.94	153.14

DIFFERENTIAL CORRECTIONS
TDE-1.3890 TRA 7.6467 TC-12.2919 BAU 2.9015
RDE .4139 RRA .1188 RC3 .2996 FAU .08758
FDE-1.1512 FRA 3.5362 FC3-4.2956 BSP 52647
BDE 1.4493 BRA 7.6476 BC312.2956 FSP 1966

MID-COURSE EXECUTION ACCURACY
SGT14861.4 SGR 639.2 SG3 540.6
RRT -.2054 RRF -.2501 RTF .9830
SGB14875.1 R23 .0489 R13 -.9830
SG114861.9 SG2 625.6 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 3692.9 SR 566.6 SS 1072.8
CRT -.4382 CRS .6706 CST -.9603
LSA 3843.6 MSA 579.1 SSA 20.8
EL1 3701.4 EL2 508.1 ALF 176.08

LAUNCH DATE NOV 21 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 892.231 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.124 GAL -5.94 AZL 88.16 HCA 266.84 SMA 189.83 ECC .24349 INC 1.8415 V1 30.153
RP 206.93 LAP -1.84 LOP 325.56 VP 24.158 GAP -13.13 AZP 90.10 TAL 328.91 TAP 235.75 RCA 143.61 APO 236.05 V2 26.467
RC 327.330 GL 14.31 GP -1.21 ZAL 136.05 ZAP 29.97 ETS 176.80 ZAE 48.62 ETE 178.70 ZAC 85.55 ETC 256.63 CLP 29.95

PLANETOCENTRIC CONIC

C3 18.351 VHL 4.284 DLA 6.66 RAL 200.87 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 5.886 DPA 2.05 RAP 175.98 ECC 1.3020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 14	2401.87	-23.63	53.71	62.65	106.08	20 32 16	1801.9	-21.20	45.88
90.00	9 34 1	4630.28	13.45	196.47	59.74	64.85	10 51 11	4030.3	9.96	189.54
100.00	21 16 45	2129.28	-24.70	33.31	62.29	107.40	21 52 15	1529.3	-22.08	25.48
100.00	10 52 11	4378.11	14.46	177.43	59.24	63.55	12 5 9	3778.1	10.79	170.56
110.00	22 32 15	1892.99	-27.56	14.25	61.18	111.08	23 3 48	1293.0	-24.44	6.47
110.00	11 53 11	4187.16	17.13	161.45	57.75	59.96	13 2 58	3587.2	13.01	154.76

DIFFERENTIAL CORRECTIONS
TDE-1.5229 TRA 7.9536 TC-11.9601 BAU 2.9351
RDE .4259 RRA .1138 RC3 .2969 FAU .08173
FDE-1.1575 FRA 3.4390 FC3-3.8560 BSP 53005
BDE 1.5813 BRA 7.9545 BC311.9638 FSP 1860

MID-COURSE EXECUTION ACCURACY
SGT14961.9 SGR 642.4 SG3 509.4
RRT -.2212 RRF -.2674 RTF .9818
SGB14975.7 R23 .0511 R13 -.9818
SG114962.6 SG2 626.5 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 3816.7 SR 571.5 SS 1059.1
CRT -.4652 CRS .6879 CST -.9622
LSA 3960.8 MSA 571.7 SSA 20.4
EL1 3826.1 EL2 504.7 ALF 175.94

LAUNCH DATE NOV 21 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 896.448 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.131 GAL -6.16 AZL 88.17 HCA 268.11 SMA 189.95 ECC .24548 INC 1.8348 V1 30.153
RP 206.86 LAP -1.83 LOP 326.83 VP 24.175 GAP -13.28 AZP 90.06 TAL 327.94 TAP 236.05 RCA 143.32 APO 236.58 V2 26.474
RC 328.152 GL 13.97 GP -1.19 ZAL 137.26 ZAP 29.47 ETS 176.78 ZAE 47.81 ETE 178.70 ZAC 85.74 ETC 256.57 CLP 29.45

PLANETOCENTRIC CONIC

C3 19.097 VHL 4.370 DLA 5.90 RAL 201.82 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 5.989 DPA 1.75 RAP 176.69 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 52	2387.15	-23.35	52.72	64.01	106.49	20 41 39	1787.1	-20.87	44.93
90.00	9 31 59	4663.76	14.41	198.46	61.36	65.36	10 49 42	4063.8	10.97	191.48
100.00	21 26 0	2115.77	-24.42	32.40	63.65	107.80	22 1 16	1515.8	-21.76	24.61
100.00	10 50 32	4410.37	15.43	179.33	60.86	64.08	12 4 2	3810.4	11.82	172.40
110.00	22 40 38	1882.18	-27.29	13.53	62.51	111.43	23 12 0	1282.2	-24.13	5.78
110.00	11 52 23	4216.72	18.13	163.16	59.38	60.51	13 2 39	3616.7	14.06	156.40

DIFFERENTIAL CORRECTIONS
TDE-1.6593 TRA 8.2707 TC-11.6248 BAU 2.9689
RDE .4383 RRA .1084 RC3 .2937 FAU .07607
FDE-1.1606 FRA 3.3388 FC3-3.4484 BSP 53358
BDE 1.7162 BRA 8.2714 BC311.6285 FSP 1756

MID-COURSE EXECUTION ACCURACY
SGT15059.9 SGR 645.4 SG3 479.2
RRT -.2366 RRF -.2847 RTF .9805
SGB15073.8 R23 .0538 R13 -.9806
SG115060.7 SG2 627.1 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 3939.7 SR 576.3 SS 1043.4
CRT -.4899 CRS .7043 CST -.9636
LSA 4077.1 MSA 564.7 SSA 20.0
EL1 3950.0 EL2 501.1 ALF 175.83

LAUNCH DATE NOV 21 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 900.655 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.138 GAL -6.38 AZL 88.17 HCA 269.38 SMA 190.07 ECC .24756 INC 1.8281 V1 30.153
RP 206.81 LAP -1.83 LOP 328.10 VP 24.191 GAP -13.43 AZP 90.02 TAL 326.95 TAP 236.33 RCA 143.02 APO 237.13 V2 26.480
RC 328.970 GL 13.62 GP -1.17 ZAL 138.46 ZAP 28.98 ETS 176.76 ZAE 47.02 ETE 178.70 ZAC 85.93 ETC 256.51 CLP 28.96

PLANETOCENTRIC CONIC

C3 19.894 VHL 4.460 DLA 5.14 RAL 202.76 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 6.093 DPA 1.44 RAP 177.41 ECC 1.3274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 20	2373.11	-23.07	51.78	65.39	106.89	20 50 53	1773.1	-20.54	44.02
90.00	9 30 1	4697.16	15.35	200.46	63.01	65.91	10 48 18	4097.2	11.97	193.42
100.00	21 35 6	2102.93	-24.15	31.54	65.02	108.17	22 10 9	1502.9	-21.44	23.79
100.00	10 48 56	4442.57	16.38	181.25	62.52	64.64	12 2 58	3842.6	12.83	174.26
110.00	22 48 54	1871.96	-27.03	12.84	63.86	111.76	23 20 6	1272.0	-23.84	5.14
110.00	11 51 37	4246.30	19.11	164.89	61.05	61.10	13 2 23	3646.3	15.11	158.06

DIFFERENTIAL CORRECTIONS
TDE-1.7989 TRA 8.5949 TC-11.2923 BAU 3.0043
RDE .4512 RRA .1027 RC3 .2900 FAU .07059
FDE-1.1596 FRA 3.2356 FC3-3.0718 BSP 53673
BDE 1.8546 BRA 8.5955 BC311.2961 FSP 1656

MID-COURSE EXECUTION ACCURACY
SGT15155.8 SGR 648.4 SG3 450.1
RRT -.2521 RRF -.3018 RTF .9791
SGB15169.7 R23 .0564 R13 -.9791
SG115156.7 SG2 627.4 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 4060.9 SR 581.0 SS 1025.2
CRT -.5127 CRS .7196 CST -.9648
LSA 4191.4 MSA 557.8 SSA 19.6
EL1 4072.0 EL2 497.5 ALF 175.74

LAUNCH DATE NOV 21 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 904.851 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.144 GAL -6.61 AZL 88.18 HCA 270.64 SMA 190.20 ECC .24973 INC 1.8214 V1 30.153
RP 206.77 LAP -1.82 LOP 329.37 VP 24.206 GAP -13.59 AZP 89.98 TAL 325.95 TAP 236.59 RCA 142.70 APO 237.69 V2 26.486
RC 329.784 GL 13.28 GP -1.15 ZAL 139.65 ZAP 28.51 ETS 176.73 ZAE 46.24 ETE 178.70 ZAC 86.12 ETC 256.45 CLP 28.49

PLANETOCENTRIC CONIC

C3 20.744 VHL 4.555 DLA 4.40 RAL 203.70 RAD 6567.8 VEL 11.922 PTH 2.12 VHP 6.199 DPA 1.13 RAP 178.14 ECC 1.3414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 41	2359.77	-22.81	50.89	66.79	107.25	21 0 0	1759.8	-20.23	43.17
90.00	9 28 7	4730.47	16.27	202.48	64.69	66.50	10 46 57	4130.5	12.95	195.37
100.00	21 44 5	2090.74	-23.89	30.73	66.40	108.52	22 18 56	1490.7	-21.14	23.01
100.00	10 47 23	4474.73	17.31	183.19	64.21	65.24	12 1 58	3874.7	13.82	176.13
110.00	22 57 4	1862.34	-26.79	12.20	65.22	112.07	23 28 6	1262.3	-23.56	4.53
110.00	11 50 54	4275.90	20.07	166.64	62.75	61.73	13 2 10	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-1.9411 TRA 8.9281 TC-10.9606 BAU 3.0407
RDE .4645 RRA .0965 RC3 .2858 FAU .06528
FDE-1.1554 FRA 3.1284 FC3-2.7244 BSP 53963
BDE 1.9959 BRA 8.9286 BC310.9643 FSP 1557

MID-COURSE EXECUTION ACCURACY
SGT15249.2 SGR 651.2 SG3 422.0
RRT -.2673 RRF -.3191 RTF .9774
SGB15263.1 R23 .0596 R13 -.9774
SG115250.2 SG2 627.5 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4180.1 SR 585.6 SS 1004.9
CRT -.5335 CRS .7343 CST -.9656
LSA 4303.7 MSA 551.4 SSA 19.2
EL1 4191.9 EL2 493.9 ALF 175.67

LAUNCH DATE NOV 21 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 909.034 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.151 GAL -6.84 AZL 88.19 HCA 271.91 SMA 190.32 ECC .25199 INC 1.8147 V1 30.153
RP 206.73 LAP -1.81 LOP 330.63 VP 24.220 GAP -13.75 AZP 89.94 TAL 324.93 TAP 236.84 RCA 142.36 APO 238.28 V2 26.490
RC 330.595 GL 12.95 GP -1.13 ZAL 140.83 ZAP 28.05 ETS 176.71 ZAE 45.47 ETE 178.70 ZAC 86.31 ETC 256.40 CLP 28.03

PLANETOCENTRIC CONIC

C3 21.650 VHL 4.653 DLA 3.66 RAL 204.62 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 6.308 DPA .81 RAP 178.88 ECC 1.3563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 52	2347.10	-22.55	50.05	68.20	107.60	21 9 0	1747.1	-19.93	42.36
90.00	9 26 17	4763.70	17.16	204.51	66.40	67.12	10 45 41	4163.7	13.91	197.34
100.00	21 52 56	2079.20	-23.64	29.96	67.81	108.85	22 27 35	1479.2	-20.85	22.28
100.00	10 45 55	4506.83	18.21	185.15	65.92	65.88	12 1 2	3906.8	14.80	178.01
110.00	23 5 6	1853.30	-26.56	11.60	66.60	112.36	23 36 0	1253.3	-23.29	3.96
110.00	11 50 14	4305.49	21.02	168.42	64.48	62.40	13 1 59	3705.5	17.16	161.42

DIFFERENTIAL CORRECTIONS
TDE-2.0854 TRA 9.2712 TC-10.6301 BAU 3.0778
RDE .4783 RRA .0899 RC3 .2812 FAU .06010
FDE-1.1477 FRA 3.0185 FC3-2.4035 BSP 54231
BDE 2.1395 BRA 9.2716 BC310.6338 FSP 1461

MID-COURSE EXECUTION ACCURACY
SGT15340.1 SGR 653.9 SG3 394.7
RRT -.2823 RRF -.3362 RTF .9755
SGB15354.1 R23 .0629 R13 -.9755
SG115341.3 SG2 627.3 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4296.6 SR 589.9 SS 982.5
CRT -.5525 CRS .7481 CST -.9661
LSA 4413.2 MSA 545.3 SSA 18.9
EL1 4309.1 EL2 490.3 ALF 175.60

LAUNCH DATE NOV 21 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 913.203 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.158 GAL -7.09 AZL 88.19 HCA 273.18 SMA 190.45 ECC .25435 INC 1.8080 V1 30.153
RP 206.70 LAP -1.81 LOP 331.90 VP 24.234 GAP -13.91 AZP 89.90 TAL 323.90 TAP 237.08 RCA 142.01 APO 238.89 V2 26.493
RC 331.403 GL 12.61 GP -1.11 ZAL 142.00 ZAP 27.60 ETS 176.68 ZAE 44.71 ETE 178.70 ZAC 86.50 ETC 256.34 CLP 27.58

PLANETOCENTRIC CONIC

C3 22.616 VHL 4.756 DLA 2.94 RAL 205.53 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 6.418 DPA .49 RAP 179.63 ECC 1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 56	2335.10	-22.30	49.26	69.63	107.92	21 17 51	1735.1	-19.64	41.60
90.00	9 24 31	4796.84	18.02	206.56	68.15	67.78	10 44 28	4196.8	14.85	199.32
100.00	22 1 39	2068.31	-23.40	29.24	69.23	109.16	22 36 7	1468.3	-20.57	21.59
100.00	10 44 29	4538.87	19.09	187.12	67.67	66.55	12 0 8	3938.9	15.76	179.91
110.00	23 13 2	1844.86	-26.34	11.04	67.99	112.62	23 43 47	1244.9	-23.04	3.44
110.00	11 49 35	4335.08	21.94	170.22	66.24	63.10	13 1 50	3735.1	18.16	163.13

DIFFERENTIAL CORRECTIONS
TDE-2.2331 TRA 9.6225 TC-10.3031 BAU 3.1163
RDE .4924 RRA .0829 RC3 .2763 FAU .05510
FDE-1.1368 FRA 2.9049 FC3-2.1093 BSP 54460
BDE 2.2868 BRA 9.6228 BC310.3068 FSP 1367

MID-COURSE EXECUTION ACCURACY
SGT15428.1 SGR 656.5 SG3 368.4
RRT -.2972 RRF -.3535 RTF .9733
SGB15442.0 R23 .0667 R13 -.9733
SG115429.3 SG2 626.8 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4410.6 SR 594.1 SS 958.1
CRT -.5702 CRS .7614 CST -.9664
LSA 4520.3 MSA 539.3 SSA 18.6
EL1 4423.7 EL2 486.6 ALF 175.55

LAUNCH DATE NOV 21 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 917.357 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.165 GAL -7.34 AZL 88.20 HCA 274.45 SMA 190.58 ECC .25681 INC 1.8012 V1 30.153
RP 206.68 LAP -1.80 LOP 333.17 VP 24.246 GAP -14.09 AZP 89.86 TAL 322.85 TAP 237.30 RCA 141.63 APO 239.52 V2 26.495
RC 332.208 GL 12.28 GP -1.09 ZAL 143.15 ZAP 27.16 ETS 176.65 ZAE 43.97 ETE 178.70 ZAC 86.70 ETC 256.29 CLP 27.14

PLANETOCENTRIC CONIC

C3 23.646 VHL 4.863 DLA 2.22 RAL 206.44 RAD 6568.0 VEL 12.043 PTH 2.15 VHP 6.531 DPA .16 RAP 180.39 ECC 1.3892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 52	2323.76	-22.06	48.52	71.08	108.22	21 26 36	1723.8	-19.37	40.88
90.00	9 22 49	4829.89	18.86	208.62	69.92	68.48	10 43 19	4229.9	15.77	201.31
100.00	22 10 15	2058.05	-23.17	28.57	70.67	109.44	22 44 33	1458.0	-20.30	20.94
100.00	10 43 7	4570.84	19.94	189.11	69.46	67.26	11 59 18	3970.8	16.69	181.83
110.00	23 20 52	1837.01	-26.13	10.53	69.41	112.86	23 51 29	1237.0	-22.80	2.95
110.00	11 49 0	4364.65	22.84	172.05	68.04	63.85	13 1 44	3764.6	19.14	164.86

DIFFERENTIAL CORRECTIONS
TDE-2.3832 TRA 9.9833 TC3-9.9812 BAU 3.1565
RDE .5071 RRA .0754 RC3 .2710 FAU .05024
FDE-1.1227 FRA 2.7878 FC3-1.8392 BSP 54669
BDE 2.4365 BRA 9.9836 BC3 9.9848 FSP 1276

MID-COURSE EXECUTION ACCURACY
SGT15514.2 SGR 659.0 SG3 342.9
RRT -.3120 RRF -.3707 RTF .9707
SGB15528.2 R23 .0709 R13 -.9707
SG115515.5 SG2 626.1 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 4521.2 SR 598.1 SS 931.6
CRT -.5864 CRS .7742 CST -.9664
LSA 4624.1 MSA 533.6 SSA 18.2
EL1 4535.0 EL2 483.0 ALF 175.51

LAUNCH DATE NOV 21 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 921.495 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.172 GAL -7.59 AZL 88.21 HCA 275.72 SMA 190.70 ECC .25937 INC 1.7944 V1 30.153
RP 206.67 LAP -1.79 LOP 334.44 VP 24.257 GAP -14.26 AZP 89.82 TAL 321.79 TAP 237.51 RCA 141.24 APO 240.17 V2 26.497
RC 333.009 GL 11.95 GP -1.08 ZAL 144.29 ZAP 26.74 ETS 176.63 ZAE 43.23 ETE 178.70 ZAC 86.90 ETC 256.24 CLP 26.72

PLANETOCENTRIC CONIC

C3 24.744 VHL 4.974 DLA 1.52 RAL 207.34 RAD 6568.0 VEL 12.088 PTH 2.16 VHP 6.647 DPA -.18 RAP 181.17 ECC 1.4072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 40	2313.08	-21.83	47.82	72.54	108.50	21 35 13	1713.1	-19.10	40.21
90.00	9 21 11	4862.84	19.67	210.70	71.73	69.21	10 42 13	4262.8	16.67	203.31
100.00	22 18 43	2048.42	-22.95	27.94	72.12	109.70	22 52 52	1448.4	-20.05	20.34
100.00	10 41 49	4602.73	20.77	191.12	71.27	68.01	11 58 31	4002.7	17.60	183.75
110.00	23 28 35	1829.73	-25.94	10.05	70.83	113.09	23 59 5	1229.7	-22.59	2.50
110.00	11 48 26	4394.18	23.71	173.89	69.87	64.63	13 1 40	3794.2	20.10	166.62

DIFFERENTIAL CORRECTIONS
TDE-2.5360 TRA10.3546 TC3-9.6623 BAU 3.1975
RDE .5221 RRA .0674 RC3 .2655 FAU .04550
FDE-1.1055 FRA 2.6674 FC3-1.5919 BSP 54841
BDE 2.5892 BRA10.3548 BC3 9.6659 FSP 1186

MID-COURSE EXECUTION ACCURACY
SGT15597.5 SGR 661.4 SG3 318.3
RRT -.3266 RRF -.3880 RTF .9677
SGB15611.5 R23 .0756 R13 -.9677
SG115599.0 SG2 625.1 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 4628.9 SR 601.9 SS 903.3
CRT -.6014 CRS .7866 CST -.9661
LSA 4725.0 MSA 528.1 SSA 17.9
EL1 4643.2 EL2 479.4 ALF 175.48

LAUNCH DATE NOV 21 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 925.616 EARTH TO MARS

RL 147.76 LAL .00 LOL 58.72 VL 33.180 GAL -7.86 AZL 88.21 HCA 276.99 SMA 190.83 ECC .26205 INC 1.7876 V1 30.153
RP 206.67 LAP -1.77 LOP 335.71 VP 24.267 GAP -14.44 AZP 89.78 TAL 320.71 TAP 237.70 RCA 140.83 APO 240.84 V2 26.497
RC 333.807 GL 11.62 GP -1.06 ZAL 145.42 ZAP 26.33 ETS 176.60 ZAE 42.51 ETE 178.70 ZAC 87.10 ETC 256.19 CLP 26.31

PLANETOCENTRIC CONIC

C3 25.914 VHL 5.091 DLA .83 RAL 208.23 RAD 6568.0 VEL 12.136 PTH 2.18 VHP 6.765 DPA -.52 RAP 181.96 ECC 1.4265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 21	2303.02	-21.61	47.16	74.02	108.75	21 43 44	1703.0	-18.85	39.58
90.00	9 19 35	4895.69	20.45	212.80	73.56	69.98	10 41 11	4295.7	17.54	205.33
100.00	22 27 4	2039.40	-22.74	27.35	73.59	109.95	23 1 4	1439.4	-19.81	19.77
100.00	10 40 33	4634.54	21.57	193.14	73.11	68.79	11 57 47	4034.5	18.49	185.70
110.00	23 36 12	1823.02	-25.76	9.61	72.28	113.29	24 6 35	1223.0	-22.38	2.08
110.00	11 47 55	4423.68	24.56	175.76	71.74	65.44	13 1 38	3823.7	21.04	168.39

DIFFERENTIAL CORRECTIONS

TDE-2.6915 TRA10.7349 TC3-9.3507 BAU 3.2408
RDE .5376 RRA .0590 RC3 .2598 FAU .04091
FDE-1.0851 FRA 2.5433 FC3-1.3666 BSP 54971
BDE 2.7447 BRA10.7351 BC3 9.3543 FSP 1099

MID-COURSE EXECUTION ACCURACY

SGT15678.8 SGR 663.7 SG3 294.6
RRT -.3411 RRF -.4053 RTF .9642
SGB15692.8 R23 .0807 R13 -.9642
SG115680.4 SG2 623.9 THA 179.17

ORBIT DETERMINATION ACCURACY

ST 4732.9 SR 605.5 SS 873.0
CRT -.6153 CRS .7986 CST -.9655
LSA 4822.4 MSA 522.8 SSA 17.6
EL1 4747.7 EL2 475.8 ALF 175.45

LAUNCH DATE NOV 22 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 419.113 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 35.182 GAL -4.39 AZL 88.49 HCA 132.37 SMA 237.45 ECC .38443 INC 1.5135 V1 30.159
RP 244.23 LAP 1.12 LOP 192.11 VP 22.976 GAP 22.55 AZP 91.02 TAL 344.11 TAP 116.48 RCA 146.17 APO 328.73 V2 22.463
RC 132.477 GL 9.65 GP .94 ZAL 115.26 ZAP 173.18 ETS 170.78 ZAE 154.08 ETE 359.86 ZAC 89.78 ETC 256.04 CLP 173.24

PLANETOCENTRIC CONIC

C3 30.521 VHL 5.525 DLA 10.69 RAL 179.65 RAD 6568.2 VEL 12.325 PTH 2.22 VHP 10.236 DPA -.10 RAP 185.82 ECC 1.5023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 46	2656.16	-27.27	71.41	52.19	97.95	18 36 2	2056.2	-25.89	63.01
90.00	8 37 17	4624.15	13.28	196.11	46.12	64.76	9 54 21	4024.1	9.77	189.19
100.00	19 18 27	2376.62	-28.59	50.62	51.97	99.11	19 58 3	1776.6	-27.04	42.16
100.00	9 53 18	4378.92	14.48	177.48	45.51	63.56	11 6 17	3778.9	10.82	170.60
110.00	20 38 47	2125.22	-32.14	30.76	51.19	102.32	21 14 12	1525.2	-30.11	22.13
110.00	10 49 27	4203.08	17.67	162.37	43.75	60.25	11 59 30	3603.1	13.58	155.64

DIFFERENTIAL CORRECTIONS

TDE .7835 TRA-2.0573 TC3 .9370 BAU .3830
RDE -.4544 RRA -.1882 RC3 -.0531 FAU .06562
FDE -.3198 FRA 1.3596 FC3-1.8614 BSP 8528
BDE .9058 BRA 2.0659 BC3 .9385 FSP 602

MID-COURSE EXECUTION ACCURACY

SGT 2539.1 SGR 514.8 SG3 218.6
RRT -.0095 RRF -.0061 RTF -.8586
SGB 2590.7 R23 .0146 R13 .8586
SG1 2539.1 SG2 514.8 THA 179.88

ORBIT DETERMINATION ACCURACY

ST 1041.9 SR 475.0 SS 483.7
CRT -.6954 CRS -.5033 CST .9684
LSA 1190.4 MSA 356.6 SSA 31.8
EL1 1098.4 EL2 323.8 ALF 160.66

LAUNCH DATE NOV 22 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 421.374 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 35.077 GAL -4.22 AZL 88.50 HCA 133.28 SMA 234.35 ECC .37587 INC 1.5035 V1 30.159
RP 243.99 LAP 1.09 LOP 193.02 VP 22.838 GAP 21.96 AZP 91.03 TAL 344.50 TAP 117.78 RCA 146.27 APO 322.43 V2 22.486
RC 134.631 GL 9.81 GP .97 ZAL 114.59 ZAP 172.68 ETS 171.05 ZAE 153.95 ETE .08 ZAC 89.90 ETC 256.02 CLP 172.74

PLANETOCENTRIC CONIC

C3 29.033 VHL 5.388 DLA 11.10 RAL 179.09 RAD 6568.2 VEL 12.264 PTH 2.21 VHP 10.001 DPA -.23 RAP 186.20 ECC 1.4778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 10	2657.23	-27.28	71.48	50.87	97.91	18 30 28	2057.2	-25.90	63.09
90.00	8 38 26	4598.03	12.51	194.57	44.76	64.39	9 55 4	3998.0	8.96	187.69
100.00	19 13 5	2376.92	-28.60	50.64	50.65	99.09	19 52 42	1776.9	-27.04	42.19
100.00	9 54 12	4353.58	13.71	175.99	44.15	63.18	11 6 46	3753.6	10.00	169.16
110.00	20 33 57	2123.87	-32.12	30.66	49.88	102.38	21 9 21	1523.9	-30.08	22.03
110.00	10 49 50	4179.39	16.86	161.00	42.38	59.82	11 59 29	3579.4	12.73	154.33

DIFFERENTIAL CORRECTIONS

TDE .7627 TRA-2.0274 TC3 1.0162 BAU .3950
RDE -.4374 RRA -.1814 RC3 -.0536 FAU .06761
FDE -.3138 FRA 1.3791 FC3-2.0162 BSP 8699
BDE .8792 BRA 2.0355 BC3 1.0176 FSP 637

MID-COURSE EXECUTION ACCURACY

SGT 2585.2 SGR 508.2 SG3 229.7
RRT -.0066 RRF -.0096 RTF -.8634
SGB 2634.7 R23 .0155 R13 .8634
SG1 2585.2 SG2 508.2 THA 179.92

ORBIT DETERMINATION ACCURACY

ST 1045.5 SR 468.8 SS 486.2
CRT -.6903 CRS -.4886 CST .9659
LSA 1192.0 MSA 356.9 SSA 32.2
EL1 1099.5 EL2 322.5 ALF 161.11

LAUNCH DATE NOV 22 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 423.743 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	34.976	GAL	-4.04	AZL	88.51	HCA	134.19	SMA	231.47	ECC	.36767	INC	1.4934
RP	243.75	LAP	1.07	LOP	193.93	VP	22.706	GAP	21.37	AZP	91.04	TAL	344.90	TAP	119.09	RCA	146.36	APO	316.57
RC	136.814	GL	9.96	GP	1.01	ZAL	113.89	ZAP	172.16	ETS	171.28	ZAE	153.86	ETE	.31	ZAC	90.03	ETC	256.01

V1	30.159	V2	22.510	CLP	172.23														

PLANETOCENTRIC CONIC

C3	27.641	VHL	5.257	DLA	11.51	RAL	178.51	RAD	6568.1	VEL	12.207	PTH	2.19	VHP	9.773	DPA	-.37	RAP	186.58
ECC	1.4549																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 25	2658.81	-27.29	71.60	49.55	97.86	18 24 44	2058.8	-25.92	63.20
90.00	8 39 34	4571.94	11.74	193.04	43.40	64.05	9 55 46	3971.9	8.16	186.20
100.00	19 7 35	2377.70	-28.61	50.70	49.33	99.07	19 47 13	1777.7	-27.06	42.24
100.00	9 55 5	4328.27	12.93	174.52	42.80	62.81	11 7 14	3728.3	9.18	167.73
110.00	20 29 0	2122.96	-32.11	30.59	48.56	102.42	21 4 23	1523.0	-30.07	21.97
110.00	10 50 10	4155.77	16.05	159.65	41.02	59.41	11 59 26	3555.8	11.87	153.04

DIFFERENTIAL CORRECTIONS

TDE	.7411	TRA	-1.9967	TC3	1.0996	BAU	.4068
RDE	-.4209	RRA	-.1748	RC3	-.0538	FAU	.06970
FDE	-.3066	FRA	1.3982	FC3	-2.1830	BSP	8871
BDE	.8523	BRA	2.0044	BC3	1.1009	FSP	675

MID-COURSE EXECUTION ACCURACY

SGT	2630.7	SGR	501.4	SG3	241.3		
RRT	-.0032	RRF	-.0136	RTF	-.8680		
SGB	2678.1	R23	.0165	R13	.8680		
SG1	2630.7	SG2	501.4	THA	179.96		

ORBIT DETERMINATION ACCURACY

ST	1047.5	SR	462.4	SS	488.0		
CRT	-.6847	CRS	-.4721	CST	.9630		
LSA	1191.8	MSA	357.5	SSA	32.6		
EL1	1099.1	EL2	321.2	ALF	161.55		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 426.211 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	34.879	GAL	-3.87	AZL	88.52	HCA	135.11	SMA	228.78	ECC	.35984	INC	1.4828
RP	243.50	LAP	1.05	LOP	194.85	VP	22.582	GAP	20.78	AZP	91.05	TAL	345.30	TAP	120.41	RCA	146.45	APO	311.10
RC	139.022	GL	10.11	GP	1.05	ZAL	113.18	ZAP	171.64	ETS	171.47	ZAE	153.82	ETE	.53	ZAC	90.15	ETC	255.99

V1	30.159	V2	22.535	CLP	171.71														

PLANETOCENTRIC CONIC

C3	26.339	VHL	5.132	DLA	11.93	RAL	177.91	RAD	6568.1	VEL	12.154	PTH	2.18	VHP	9.549	DPA	-.50	RAP	186.96
ECC	1.4335																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 32	2660.88	-27.31	71.75	48.23	97.79	18 18 53	2060.9	-25.95	63.34
90.00	8 40 41	4545.89	10.96	191.53	42.06	63.73	9 56 27	3945.9	7.34	184.72
100.00	19 1 57	2378.96	-28.62	50.79	48.01	99.02	19 41 35	1779.0	-27.08	42.33
100.00	9 55 57	4303.04	12.14	173.06	41.45	62.47	11 7 40	3703.0	8.36	166.31
110.00	20 23 54	2122.49	-32.10	30.55	47.25	102.44	20 59 17	1522.5	-30.06	21.94
110.00	10 50 29	4132.28	15.23	158.33	39.67	59.02	11 59 21	3532.3	11.01	151.76

DIFFERENTIAL CORRECTIONS

TDE	.7194	TRA	-1.9655	TC3	1.1881	BAU	.4188
RDE	-.4050	RRA	-.1685	RC3	-.0537	FAU	.07189
FDE	-.2984	FRA	1.4170	FC3	-2.3629	BSP	9041
BDE	.8256	BRA	1.9727	BC3	1.1893	FSP	714

MID-COURSE EXECUTION ACCURACY

SGT	2676.2	SGR	494.4	SG3	253.5		
RRT	.0006	RRF	-.0183	RTF	-.8726		
SGB	2721.5	R23	-.0177	R13	-.8726		
SG1	2676.2	SG2	494.4	THA	.01		

ORBIT DETERMINATION ACCURACY

ST	1048.4	SR	455.8	SS	489.2		
CRT	-.6789	CRS	-.4543	CST	.9597		
LSA	1190.3	MSA	358.0	SSA	33.0		
EL1	1097.6	EL2	319.7	ALF	161.98		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 428.769 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	34.787	GAL	-3.71	AZL	88.53	HCA	136.02	SMA	226.26	ECC	.35233	INC	1.4719
RP	243.25	LAP	1.02	LOP	195.76	VP	22.464	GAP	20.19	AZP	91.06	TAL	345.71	TAP	121.73	RCA	146.54	APO	305.98
RC	141.251	GL	10.25	GP	1.09	ZAL	112.44	ZAP	171.12	ETS	171.64	ZAE	153.83	ETE	.76	ZAC	90.28	ETC	255.98

V1	30.159	V2	22.560	CLP	171.18														

PLANETOCENTRIC CONIC

C3	25.120	VHL	5.012	DLA	12.35	RAL	177.29	RAD	6568.0	VEL	12.104	PTH	2.17	VHP	9.331	DPA	-.62	RAP	187.32
ECC	1.4134																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 28	2663.48	-27.34	71.93	46.91	97.69	18 12 52	2063.5	-25.99	63.52
90.00	8 41 47	4519.87	10.17	190.02	40.72	63.43	9 57 7	3919.9	6.52	183.24
100.00	18 56 9	2380.72	-28.64	50.92	46.69	98.95	19 35 50	1780.7	-27.10	42.45
100.00	9 56 48	4277.87	11.34	171.62	40.11	62.16	11 8 5	3677.9	7.53	164.90
110.00	20 18 41	2122.45	-32.10	30.55	45.94	102.44	20 54 4	1522.5	-30.05	21.93
110.00	10 50 45	4108.90	14.41	157.01	38.33	58.66	11 59 14	3508.9	10.15	150.50

DIFFERENTIAL CORRECTIONS

TDE	.7111	TRA	-1.9199	TC3	1.3030	BAU	.4380
RDE	-.3898	RRA	-.1628	RC3	-.0537	FAU	.07404
FDE	-.2857	FRA	1.4387	FC3	-2.5517	BSP	8876
BDE	.8110	BRA	1.9268	BC3	1.3041	FSP	762

MID-COURSE EXECUTION ACCURACY

SGT	2723.0	SGR	487.6	SG3	266.1		
RRT	-.0035	RRF	-.0250	RTF	-.8812		
SGB	2766.4	R23	.0281	R13	.8811		
SG1	2723.0	SG2	487.6	THA	179.96		

ORBIT DETERMINATION ACCURACY

ST	1056.8	SR	449.3	SS	488.9		
CRT	-.6820	CRS	-.4288	CST	.9504		
LSA	1194.8	MSA	359.1	SSA	32.6		
EL1	1104.4	EL2	314.4	ALF	162.35		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 431.410 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	34.698	GAL	-3.55	AZL	88.54	HCA	136.94	SMA	223.92	ECC	.34517	INC	1.4606
RP	243.00	LAP	1.00	LOP	196.68	VP	22.352	GAP	19.62	AZP	91.07	TAL	346.12	TAP	123.06	RCA	146.63	APO	301.20
RC	143.499	GL	10.38	GP	1.13	ZAL	111.69	ZAP	170.58	ETS	171.77	ZAE	153.87	ETE	1.00	ZAC	90.40	ETC	255.96

V1	30.159	V2	22.585	CLP	170.65														

PLANETOCENTRIC CONIC

C3	23.982	VHL	4.897	DLA	12.78	RAL	176.65	RAD	6568.0	VEL	12.057	PTH	2.16	VHP	9.119	DPA	-.74	RAP	187.69
ECC	1.3947																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 19	2666.51	-27.36	72.15	45.60	97.59	18 6 45	2066.5	-26.03	63.74
90.00	8 42 52	4494.06	9.38	188.54	39.40	63.16	9 57 46	3894.1	5.71	181.79
100.00	18 50 15	2382.88	-28.66	51.08	45.38	98.88	19 29 58	1782.9	-27.14	42.61
100.00	9 57 36	4252.78	10.55	170.19	38.78	61.87	11 8 29	3652.8	6.70	163.51
110.00	20 13 22	2122.79	-32.10	30.58	44.63	102.42	20 48 45	1522.8	-30.06	21.96
110.00	10 50 58	4085.77	13.58	155.73	37.00	58.33	11 59 4	3485.8	9.30	149.25

DIFFERENTIAL CORRECTIONS

TDE	.6812	TRA	-1.8958	TC3	1.3876	BAU	.4452
RDE	-.3748	RRA	-.1569	RC3	-.0525	FAU	.07655
FDE	-.2774	FRA	1.4550	FC3	-2.7633	BSP	9225
BDE	.7775	BRA	1.9023	BC3	1.3886	FSP	802

MID-COURSE EXECUTION ACCURACY

SGT	2766.8	SGR	480.0	SG3	279.7		
RRT	.0065	RRF	-.0302	RTF	-.8829		
SGB	2808.1	R23	-.0243	R13	-.8829		
SG1	2766.8	SG2	480.0	THA	.07		

ORBIT DETERMINATION ACCURACY

ST	1049.9	SR	442.1	SS	489.6		
CRT	-.6700	CRS	-.4109	CST	.9492		
LSA	1186.1	MSA	359.8	SSA	33.5		
EL1	1094.9	EL2	314.8	ALF	162.78		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 434.127 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.614 GAL -3.39 AZL 88.55 HCA 137.86 SMA 221.72 ECC .33831 INC 1.4488 V1 30.159
RP 242.74 LAP .97 LOP 197.60 VP 22.247 GAP 19.04 AZP 91.07 TAL 346.54 TAP 124.40 RCA 146.71 APO 296.73 V2 22.611
RC 145.763 GL 10.52 GP 1.18 ZAL 110.93 ZAP 170.03 ETS 171.89 ZAE 153.96 ETE 1.24 ZAC 90.53 ETC 255.95 CLP 170.10

PLANETOCENTRIC CONIC

C3 22.917 VHL 4.787 DLA 13.20 RAL 175.99 RAD 6567.9 VEL 12.012 PTH 2.14 VHP 8.911 DPA -.86 RAP 188.05 ECC 1.3772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 1	2670.00	-27.39	72.40	44.28	97.47	18 0 31	2070.0	-26.08	63.98
90.00	8 43 54	4468.38	8.59	187.07	38.09	62.91	9 58 23	3868.4	4.89	180.34
100.00	18 44 14	2385.48	-28.69	51.26	44.07	98.78	19 24 0	1785.5	-27.18	42.79
100.00	9 58 22	4228.13	9.75	168.79	37.47	61.60	11 8 50	3628.1	5.88	162.14
110.00	20 7 57	2123.53	-32.12	30.63	43.33	102.39	20 43 21	1523.5	-30.08	22.01
110.00	10 51 9	4062.85	12.76	154.46	35.68	58.02	11 58 52	3462.8	8.44	148.03

DIFFERENTIAL CORRECTIONS
TDE .6552 TRA-1.8672 TC3 1.4828 BAU .4546
RDE -.3604 RRA -.1513 RC3 -.0510 FAU .07912
FDE -.2673 FRA 1.4715 FC3-2.9890 BSP 9473
BDE .7478 BRA 1.8733 BC3 1.4836 FSP 846

MID-COURSE EXECUTION ACCURACY
SGT 2810.5 SGR 472.2 SG3 293.8
RRT .0147 RRF -.0367 RTF -.8858
SGB 2849.9 R23 -.0233 R13 -.8858
SG1 2810.6 SG2 472.2 THA .15

ORBIT DETERMINATION ACCURACY
ST 1044.5 SR 434.9 SS 489.5
CRT -.6601 CRS -.3900 CST .9461
LSA 1178.4 MSA 360.6 SSA 34.1
EL1 1087.0 EL2 313.9 ALF 163.19

LAUNCH DATE NOV 22 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 436.916 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.532 GAL -3.24 AZL 88.56 HCA 138.78 SMA 219.66 ECC .33175 INC 1.4367 V1 30.159
RP 242.47 LAP .95 LOP 198.52 VP 22.147 GAP 18.47 AZP 91.08 TAL 346.96 TAP 125.74 RCA 146.79 APO 292.53 V2 22.638
RC 148.041 GL 10.64 GP 1.23 ZAL 110.15 ZAP 169.48 ETS 171.98 ZAE 154.09 ETE 1.49 ZAC 90.65 ETC 255.94 CLP 169.55

PLANETOCENTRIC CONIC

C3 21.921 VHL 4.682 DLA 13.63 RAL 175.32 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 8.708 DPA -.97 RAP 188.40 ECC 1.3608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 36	2673.92	-27.43	72.68	42.97	97.33	17 54 10	2073.9	-26.13	64.26
90.00	8 44 55	4442.90	7.80	185.61	36.78	62.69	9 58 58	3842.9	4.08	178.91
100.00	18 38 6	2388.50	-28.72	51.48	42.77	98.67	19 17 55	1788.5	-27.22	43.00
100.00	9 59 6	4203.55	8.95	167.40	36.16	61.36	11 9 10	3603.6	5.06	160.77
110.00	20 2 26	2124.64	-32.13	30.71	42.03	102.35	20 37 50	1524.6	-30.10	22.09
110.00	10 51 16	4040.18	11.94	153.22	34.37	57.73	11 58 36	3440.2	7.60	146.82

DIFFERENTIAL CORRECTIONS
TDE .6301 TRA-1.8360 TC3 1.5847 BAU .4646
RDE -.3465 RRA -.1461 RC3 -.0489 FAU .08180
FDE -.2551 FRA 1.4881 FC3-3.2305 BSP 9678
BDE .7191 BRA 1.8418 BC3 1.5854 FSP 893

MID-COURSE EXECUTION ACCURACY
SGT 2853.3 SGR 464.4 SG3 308.6
RRT .0229 RRF -.0445 RTF -.8891
SGB 2890.8 R23 -.0235 R13 -.8891
SG1 2853.3 SG2 464.3 THA .22

ORBIT DETERMINATION ACCURACY
ST 1038.1 SR 427.5 SS 488.6
CRT -.6505 CRS -.3655 CST .9415
LSA 1169.2 MSA 361.7 SSA 34.6
EL1 1078.2 EL2 312.6 ALF 163.58

LAUNCH DATE NOV 22 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 439.770 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.455 GAL -3.09 AZL 88.58 HCA 139.70 SMA 217.72 ECC .32547 INC 1.4238 V1 30.159
RP 242.20 LAP .92 LOP 199.44 VP 22.053 GAP 17.90 AZP 91.09 TAL 347.39 TAP 127.09 RCA 146.86 APO 288.58 V2 22.664
RC 150.330 GL 10.76 GP 1.28 ZAL 109.35 ZAP 168.91 ETS 172.06 ZAE 154.25 ETE 1.74 ZAC 90.78 ETC 255.93 CLP 168.99

PLANETOCENTRIC CONIC

C3 20.990 VHL 4.581 DLA 14.05 RAL 174.62 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 8.510 DPA -1.07 RAP 188.75 ECC 1.3454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 4	2678.25	-27.47	72.99	41.67	97.18	17 47 43	2078.2	-26.19	64.56
90.00	8 45 54	4417.64	7.00	184.18	35.49	62.49	9 59 32	3817.6	3.27	177.50
100.00	18 31 52	2391.89	-28.75	51.73	41.46	98.54	19 11 44	1791.9	-27.27	43.24
100.00	9 59 47	4179.23	8.15	166.03	34.87	61.14	11 9 27	3579.2	4.24	159.43
110.00	19 56 49	2126.09	-32.15	30.82	40.74	102.29	20 32 15	1526.1	-30.13	22.19
110.00	10 51 20	4017.79	11.12	152.00	33.08	57.47	11 58 18	3417.8	6.75	145.63

DIFFERENTIAL CORRECTIONS
TDE .6072 TRA-1.8030 TC3 1.6935 BAU .4754
RDE -.3330 RRA -.1411 RC3 -.0462 FAU .08463
FDE -.2427 FRA 1.5037 FC3-3.4908 BSP 9848
BDE .6925 BRA 1.8085 BC3 1.6942 FSP 942

MID-COURSE EXECUTION ACCURACY
SGT 2896.1 SGR 456.5 SG3 324.2
RRT .0309 RRF -.0530 RTF -.8925
SGB 2931.9 R23 -.0247 R13 -.8926
SG1 2896.2 SG2 456.2 THA .29

ORBIT DETERMINATION ACCURACY
ST 1032.0 SR 420.1 SS 487.4
CRT -.6419 CRS -.3403 CST .9361
LSA 1160.3 MSA 362.6 SSA 35.1
EL1 1070.0 EL2 310.6 ALF 163.97

LAUNCH DATE NOV 22 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 442.685 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.380 GAL -2.94 AZL 88.59 HCA 140.63 SMA 215.90 ECC .31947 INC 1.4107 V1 30.159
RP 241.93 LAP .89 LOP 200.37 VP 21.965 GAP 17.34 AZP 91.09 TAL 347.82 TAP 128.45 RCA 146.93 APO 284.88 V2 22.692
RC 152.629 GL 10.86 GP 1.33 ZAL 108.54 ZAP 168.34 ETS 172.12 ZAE 154.45 ETE 2.01 ZAC 90.91 ETC 255.92 CLP 168.41

PLANETOCENTRIC CONIC

C3 20.118 VHL 4.485 DLA 14.48 RAL 173.91 RAD 6567.8 VEL 11.895 PTH 2.11 VHP 8.316 DPA -1.17 RAP 189.10 ECC 1.3311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 27	2682.94	-27.50	73.33	40.36	97.01	17 41 10	2082.9	-26.25	64.89
90.00	8 46 50	4392.66	6.22	182.77	34.20	62.32	10 0 2	3792.7	2.46	176.10
100.00	18 25 33	2395.63	-28.79	52.00	40.17	98.41	19 5 28	1795.6	-27.33	43.50
100.00	10 0 25	4155.21	7.36	164.69	33.58	60.95	11 9 41	3555.2	3.43	158.11
110.00	19 51 7	2127.86	-32.18	30.95	39.45	102.21	20 26 35	1527.9	-30.16	22.32
110.00	10 51 20	3995.74	10.31	150.80	31.79	57.23	11 57 56	3395.7	5.92	144.47

DIFFERENTIAL CORRECTIONS
TDE .5834 TRA-1.7706 TC3 1.8042 BAU .4854
RDE -.3201 RRA -.1364 RC3 -.0429 FAU .08754
FDE -.2277 FRA 1.5202 FC3-3.7673 BSP 10026
BDE .6654 BRA 1.7758 BC3 1.8047 FSP 997

MID-COURSE EXECUTION ACCURACY
SGT 2937.9 SGR 448.4 SG3 340.5
RRT .0405 RRF -.0634 RTF -.8959
SGB 2971.9 R23 -.0262 R13 -.8959
SG1 2937.9 SG2 448.0 THA .36

ORBIT DETERMINATION ACCURACY
ST 1024.1 SR 412.4 SS 485.7
CRT -.6320 CRS -.3105 CST .9293
LSA 1149.2 MSA 364.3 SSA 35.5
EL1 1059.9 EL2 308.8 ALF 164.36

LAUNCH DATE NOV 22 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 445.657 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.309 GAL -2.80 AZL 88.60 HCA 141.56 SMA 214.19 ECC .31373 INC 1.3970 V1 30.159
RP 241.65 LAP .87 LOP 201.29 VP 21.882 GAP 16.78 AZP 91.09 TAL 348.25 TAP 129.81 RCA 146.99 APO 281.39 V2 22.720
RC 154.936 GL 10.96 GP 1.39 ZAL 107.72 ZAP 167.75 ETS 172.17 ZAE 154.70 ETE 2.29 ZAC 91.05 ETC 255.91 CLP 167.83

PLANETOCENTRIC CONIC

C3 19.303 VHL 4.394 DLA 14.89 RAL 173.18 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 8.127 DPA -1.26 RAP 189.43 ECC 1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 45	2687.96	-27.55	73.69	39.07	96.84	17 34 33	2088.0	-26.31	65.24
90.00	8 47 42	4368.01	5.44	181.38	32.93	62.17	10 0 30	3768.0	1.67	174.72
100.00	18 19 8	2399.67	-28.83	52.30	38.87	98.26	18 59 8	1799.7	-27.39	43.79
100.00	10 1 0	4131.53	6.58	163.37	32.31	60.77	11 9 51	3531.5	2.63	156.80
110.00	19 45 21	2129.91	-32.21	31.10	38.17	102.13	20 20 51	1529.9	-30.20	22.46
110.00	10 51 16	3974.06	9.51	149.64	30.52	57.01	11 57 30	3374.1	5.10	143.32

DIFFERENTIAL CORRECTIONS
TDE .5604 TRA-1.7362 TC3 1.9208 BAU .4958
RDE -.3076 RRA -.1319 RC3 -.0387 FAU .09064
FDE -.2122 FRA 1.5351 FC3-4.0651 BSP 10176
BDE .6393 BRA 1.7412 BC3 1.9212 FSP 1053

MID-COURSE EXECUTION ACCURACY
SGT 2978.5 SGR 440.2 SG3 357.6
RRT .0507 RRF -.0748 RTF -.8992
SGB 3010.9 R23 -.0282 R13 -.8992
SG1 2978.6 SG2 439.6 THA .44

ORBIT DETERMINATION ACCURACY
ST 1015.2 SR 404.7 SS 483.6
CRT -.6223 CRS -.2796 CST .9217
LSA 1137.2 MSA 365.9 SSA 35.9
EL1 1049.0 EL2 306.6 ALF 164.73

LAUNCH DATE NOV 22 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 448.681 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.240 GAL -2.66 AZL 88.62 HCA 142.48 SMA 212.59 ECC .30825 INC 1.3826 V1 30.159
RP 241.36 LAP .84 LOP 202.22 VP 21.804 GAP 16.23 AZP 91.10 TAL 348.69 TAP 131.17 RCA 147.06 APO 278.11 V2 22.748
RC 157.250 GL 11.05 GP 1.45 ZAL 106.89 ZAP 167.16 ETS 172.20 ZAE 154.97 ETE 2.59 ZAC 91.18 ETC 255.90 CLP 167.24

PLANETOCENTRIC CONIC

C3 18.541 VHL 4.306 DLA 15.31 RAL 172.43 RAD 6567.8 VEL 11.829 PTH 2.09 VHP 7.942 DPA -1.34 RAP 189.76 ECC 1.3051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 58	2693.27	-27.59	74.08	37.77	96.65	17 27 51	2093.3	-26.38	65.62
90.00	8 48 31	4343.73	4.66	180.01	31.67	62.04	10 0 55	3743.7	.89	173.37
100.00	18 12 40	2403.99	-28.87	52.61	37.58	98.10	18 52 44	1804.0	-27.45	44.09
100.00	10 1 30	4108.24	5.80	162.08	31.04	60.62	11 9 58	3508.2	1.84	155.53
110.00	19 39 32	2132.20	-32.24	31.28	36.89	102.03	20 15 4	1532.2	-30.25	22.63
110.00	10 51 8	3952.80	8.72	148.50	29.25	56.82	11 57 0	3352.8	4.29	142.21

DIFFERENTIAL CORRECTIONS
TDE .5368 TRA-1.7021 TC3 2.0409 BAU .5060
RDE -.2956 RRA -.1277 RC3 -.0337 FAU .09388
FDE -.1949 FRA 1.5499 FC3-4.3837 BSP 10317
BDE .6128 BRA 1.7069 BC3 2.0412 FSP 1111

MID-COURSE EXECUTION ACCURACY
SGT 3018.9 SGR 431.9 SG3 375.5
RRT .0628 RRF -.0881 RTF -.9025
SGB 3049.6 R23 -.0302 R13 -.9025
SG1 3019.0 SG2 431.1 THA .53

ORBIT DETERMINATION ACCURACY
ST 1004.6 SR 396.8 SS 481.1
CRT -.6113 CRS -.2450 CST .9130
LSA 1123.1 MSA 368.0 SSA 36.3
EL1 1036.4 EL2 304.4 ALF 165.11

LAUNCH DATE NOV 22 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 451.755 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.175 GAL -2.52 AZL 88.63 HCA 143.42 SMA 211.07 ECC .30300 INC 1.3676 V1 30.159
RP 241.08 LAP .82 LOP 203.15 VP 21.731 GAP 15.68 AZP 91.10 TAL 349.12 TAP 132.54 RCA 147.12 APO 275.02 V2 22.777
RC 159.568 GL 11.13 GP 1.52 ZAL 106.05 ZAP 166.55 ETS 172.22 ZAE 155.29 ETE 2.91 ZAC 91.31 ETC 255.89 CLP 166.63

PLANETOCENTRIC CONIC

C3 17.828 VHL 4.222 DLA 15.72 RAL 171.67 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 7.762 DPA -1.42 RAP 190.09 ECC 1.2934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 8	2698.81	-27.63	74.48	36.48	96.45	17 21 7	2098.8	-26.45	66.01
90.00	8 49 15	4319.86	3.90	178.67	30.41	61.93	10 1 15	3719.9	.11	172.04
100.00	18 6 9	2408.52	-28.92	52.94	36.30	97.93	18 46 18	1808.5	-27.52	44.42
100.00	10 1 56	4085.38	5.03	160.81	29.79	60.50	11 10 1	3485.4	1.07	154.27
110.00	19 33 40	2134.69	-32.28	31.46	35.61	101.92	20 9 15	1534.7	-30.30	22.81
110.00	10 50 54	3931.98	7.94	147.39	28.00	56.64	11 56 26	3332.0	3.50	141.12

DIFFERENTIAL CORRECTIONS
TDE .5163 TRA-1.6645 TC3 2.1694 BAU .5171
RDE -.2840 RRA -.1238 RC3 -.0278 FAU .09725
FDE -.1761 FRA 1.5638 FC3-4.7223 BSP 10402
BDE .5893 BRA 1.6691 BC3 2.1696 FSP 1175

MID-COURSE EXECUTION ACCURACY
SGT 3058.2 SGR 423.7 SG3 394.2
RRT .0746 RRF -.1031 RTF -.9062
SGB 3087.4 R23 -.0343 R13 -.9063
SG1 3058.3 SG2 422.5 THA .60

ORBIT DETERMINATION ACCURACY
ST 994.6 SR 388.9 SS 478.3
CRT -.6028 CRS -.2074 CST .9013
LSA 1109.4 MSA 370.6 SSA 36.5
EL1 1024.6 EL2 301.3 ALF 165.45

LAUNCH DATE NOV 22 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 454.875 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 34.112 GAL -2.39 AZL 88.65 HCA 144.35 SMA 209.64 ECC .29798 INC 1.3519 V1 30.159
RP 240.79 LAP .79 LOP 204.09 VP 21.663 GAP 15.14 AZP 91.10 TAL 349.56 TAP 133.91 RCA 147.17 APO 272.11 V2 22.806
RC 161.890 GL 11.19 GP 1.59 ZAL 105.20 ZAP 165.93 ETS 172.23 ZAE 155.63 ETE 3.24 ZAC 91.45 ETC 255.88 CLP 166.01

PLANETOCENTRIC CONIC

C3 17.162 VHL 4.143 DLA 16.11 RAL 170.89 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 7.585 DPA -1.48 RAP 190.40 ECC 1.2824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 17	2704.51	-27.67	74.89	35.20	96.25	17 14 21	2104.5	-26.52	66.41
90.00	8 49 55	4296.51	3.15	177.37	29.17	61.84	10 1 31	3696.5	-.64	170.74
100.00	17 59 36	2413.21	-28.96	53.28	35.02	97.75	18 39 50	1813.2	-27.58	44.75
100.00	10 2 16	4063.04	4.28	159.58	28.54	60.39	11 9 59	3463.0	.31	153.05
110.00	19 27 47	2137.33	-32.31	31.66	34.35	101.81	20 3 24	1537.3	-30.35	22.99
110.00	10 50 35	3911.68	7.18	146.31	26.76	56.49	11 55 47	3311.7	2.73	140.05

DIFFERENTIAL CORRECTIONS
TDE .4899 TRA-1.6339 TC3 2.2876 BAU .5249
RDE -.2728 RRA -.1200 RC3 -.0205 FAU .10083
FDE -.1570 FRA 1.5772 FC3-5.0866 BSP 10632
BDE .5607 BRA 1.6383 BC3 2.2877 FSP 1241

MID-COURSE EXECUTION ACCURACY
SGT 3095.9 SGR 415.3 SG3 414.0
RRT .0924 RRF -.1201 RTF -.9084
SGB 3123.6 R23 -.0348 R13 -.9084
SG1 3096.1 SG2 413.5 THA .72

ORBIT DETERMINATION ACCURACY
ST 979.9 SR 380.8 SS 475.8
CRT -.5870 CRS -.1687 CST .8925
LSA 1091.4 MSA 372.8 SSA 37.1
EL1 1007.6 EL2 299.8 ALF 165.87

LAUNCH DATE NOV 22 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 458.038 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	34.052	GAL	-2.26	AZL	88.66	HCA	145.29	SMA	208.29	ECC	.29319	INC	1.3353	V1	30.159
RP	240.49	LAP	.76	LOP	205.02	VP	21.600	GAP	14.61	AZP	91.10	TAL	349.99	TAP	135.28	RCA	147.22	APO	269.36	V2	22.836
RC	164.213	GL	11.24	GP	1.66	ZAL	104.35	ZAP	165.29	ETS	172.22	ZAE	156.02	ETE	3.60	ZAC	91.59	ETC	255.87	CLP	165.38

PLANETOCENTRIC CONIC

C3	16.539	VHL	4.067	DLA	16.50	RAL	170.10	RAD	6567.7	VEL	11.744	PTH	2.07	VHP	7.413	DPA	-1.54	RAP	190.71	ECC	1.2722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 24	2710.33	-27.72	75.31	33.92	96.04	17 7 34	2110.3	-26.59	66.82
90.00	8 50 28	4273.68	2.42	176.09	27.94	61.78	10 1 41	3673.7	-1.38	169.46
100.00	17 53 3	2418.00	-29.00	53.63	33.74	97.57	18 33 21	1818.0	-27.65	45.09
100.00	10 2 30	4041.24	3.55	158.38	27.31	60.30	11 9 51	3441.2	-.43	151.85
110.00	19 21 52	2140.08	-32.35	31.86	33.08	101.70	19 57 32	1540.1	-30.40	23.19
110.00	10 50 10	3891.92	6.44	145.26	25.52	56.36	11 55 2	3291.9	1.97	139.02

DIFFERENTIAL CORRECTIONS

TDE	.4666	TRA	-1.5989	TC3	2.4136	BAU	.5337														
RDE	-.2620	RRA	-.1165	RC3	-.0121	FAU	.10456														
FDE	-.1364	FRA	1.5889	FC3	-5.4735	BSP	10767														
BDE	.5351	BRA	1.6031	BC3	2.4137	FSP	1309														

MID-COURSE EXECUTION ACCURACY

SGT	3131.4	SGR	407.0	SG3	434.7						
RRT	.1102	RRF	-.1393	RTF	-.9110						
SGB	3157.8	R23	-.0374	R13	-.9111						
SG1	3131.7	SG2	404.5	THA	.83						

ORBIT DETERMINATION ACCURACY

ST	965.6	SR	372.6	SS	473.0						
CRT	-.5737	CRS	-.1271	CST	.8805						
LSA	1073.6	MSA	375.5	SSA	37.4						
EL1	991.4	EL2	297.3	ALF	166.26						

LAUNCH DATE NOV 22 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 461.242 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.994	GAL	-2.14	AZL	88.68	HCA	146.23	SMA	207.02	ECC	.28861	INC	1.3179	V1	30.159
RP	240.19	LAP	.73	LOP	205.96	VP	21.541	GAP	14.08	AZP	91.10	TAL	350.43	TAP	136.65	RCA	147.27	APO	266.77	V2	22.866
RC	166.536	GL	11.28	GP	1.74	ZAL	103.49	ZAP	164.64	ETS	172.21	ZAE	156.43	ETE	3.99	ZAC	91.73	ETC	255.87	CLP	164.74

PLANETOCENTRIC CONIC

C3	15.956	VHL	3.994	DLA	16.88	RAL	169.29	RAD	6567.6	VEL	11.719	PTH	2.06	VHP	7.244	DPA	-1.59	RAP	191.01	ECC	1.2626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 31	2716.20	-27.76	75.73	32.64	95.84	17 0 47	2116.2	-26.66	67.24
90.00	8 50 54	4251.44	1.70	174.85	26.72	61.73	10 1 46	3651.4	-2.09	168.22
100.00	17 46 29	2422.84	-29.05	53.98	32.47	97.39	18 26 52	1822.8	-27.72	45.43
100.00	10 2 37	4020.03	2.83	157.21	26.09	60.23	11 9 37	3420.0	-1.15	150.69
110.00	19 15 58	2142.88	-32.39	32.07	31.82	101.58	19 51 41	1542.9	-30.46	23.39
110.00	10 49 38	3872.75	5.71	144.25	24.30	56.24	11 54 11	3272.8	1.24	138.02

DIFFERENTIAL CORRECTIONS

TDE	.4474	TRA	-1.5607	TC3	2.5514	BAU	.5443														
RDE	-.2516	RRA	-.1133	RC3	-.0024	FAU	.10851														
FDE	-.1152	FRA	1.6002	FC3	-5.8877	BSP	10833														
BDE	.5133	BRA	1.5649	BC3	2.5514	FSP	1381														

MID-COURSE EXECUTION ACCURACY

SGT	3168.6	SGR	398.9	SG3	456.4						
RRT	.1280	RRF	-.1607	RTF	-.9144						
SGB	3193.6	R23	-.0421	R13	-.9145						
SG1	3169.0	SG2	395.6	THA	.94						

ORBIT DETERMINATION ACCURACY

ST	953.0	SR	364.5	SS	470.5						
CRT	-.5638	CRS	-.0838	CST	.8651						
LSA	1057.1	MSA	378.7	SSA	37.5						
EL1	977.2	EL2	293.6	ALF	166.60						

LAUNCH DATE NOV 22 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 464.483 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.939	GAL	-2.02	AZL	88.70	HCA	147.17	SMA	205.82	ECC	.28423	INC	1.2997	V1	30.159
RP	239.88	LAP	.70	LOP	206.90	VP	21.487	GAP	13.55	AZP	91.09	TAL	350.86	TAP	138.03	RCA	147.32	APO	264.32	V2	22.897
RC	168.857	GL	11.30	GP	1.82	ZAL	102.63	ZAP	163.98	ETS	172.18	ZAE	156.88	ETE	4.42	ZAC	91.88	ETC	255.86	CLP	164.08

PLANETOCENTRIC CONIC

C3	15.411	VHL	3.926	DLA	17.24	RAL	168.47	RAD	6567.6	VEL	11.696	PTH	2.06	VHP	7.080	DPA	-1.63	RAP	191.31	ECC	1.2536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 41	2722.01	-27.80	76.15	31.37	95.63	16 54 3	2122.0	-26.73	67.65
90.00	8 51 13	4229.92	1.00	173.65	25.50	61.70	10 1 43	3629.9	-2.79	167.02
100.00	17 39 58	2427.63	-29.09	54.33	31.21	97.21	18 20 25	1827.6	-27.78	45.77
100.00	10 2 37	3999.52	2.14	156.08	24.87	60.18	11 9 17	3399.5	-1.85	149.56
110.00	19 10 5	2145.66	-32.43	32.28	30.57	101.46	19 45 51	1545.7	-30.51	23.59
110.00	10 48 59	3854.26	5.01	143.28	23.08	56.14	11 53 13	3254.3	.53	137.06

DIFFERENTIAL CORRECTIONS

TDE	.4223	TRA	-1.5286	TC3	2.6755	BAU	.5512														
RDE	-.2415	RRA	-.1103	RC3	.0089	FAU	.11265														
FDE	-.0926	FRA	1.6109	FC3	-6.3283	BSP	11034														
BDE	.4865	BRA	1.5326	BC3	2.6756	FSP	1458														

MID-COURSE EXECUTION ACCURACY

SGT	3201.5	SGR	390.8	SG3	479.2						
RRT	.1527	RRF	-.1855	RTF	-.9163						
SGB	3225.3	R23	-.0440	R13	-.9164						
SG1	3202.1	SG2	386.2	THA	1.08						

ORBIT DETERMINATION ACCURACY

ST	935.4	SR	356.2	SS	468.2						
CRT	-.5458	CRS	-.0377	CST	.8523						
LSA	1036.3	MSA	381.6	SSA	38.0						
EL1	957.5	EL2	291.5	ALF	167.04						

LAUNCH DATE NOV 22 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 467.760 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.886	GAL	-1.90	AZL	88.72	HCA	148.11	SMA	204.68	ECC	.28005	INC	1.2804	V1	30.159
RP	239.58	LAP	.68	LOP	207.85	VP	21.436	GAP	13.03	AZP	91.09	TAL	351.30	TAP	139.41	RCA	147.36	APO	262.00	V2	22.928
RC	171.174	GL	11.31	GP	1.92	ZAL	101.76	ZAP	163.30	ETS	172.14	ZAE	157.36	ETE	4.87	ZAC	92.03	ETC	255.85	CLP	163.41

PLANETOCENTRIC CONIC

C3	14.901	VHL	3.860	DLA	17.59	RAL	167.64	RAD	6567.6	VEL	11.674	PTH	2.05	VHP	6.919	DPA	-1.66	RAP	191.59	ECC	1.2452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 53	2727.70	-27.83	76.57	30.11	95.42	16 47 21	2127.7	-26.79	68.05
90.00	8 51 23	4209.13	.33	172.49	24.30	61.68	10 1 32	3609.1	-3.45	165.86
100.00	17 33 29	2432.31	-29.13	54.68	29.95	97.04	18 14 2	1832.3	-27.85	46.11
100.00	10 2 28	3979.75	1.47	155.00	23.67	60.14	11 8 48	3379.8	-2.51	148.47
110.00	19 4 15	2148.36	-32.46	32.48	29.32	101.35	19 40 3	1548.4	-30.56	23.78
110.00	10 48 12	3836.47	4.34	142.34	21.88	56.06	11 52 9	3236.5	-.15	136.13

DIFFERENTIAL CORRECTIONS

TDE	.4000	TRA	-1.4937	TC3	2.8053	BAU	.5589														
RDE	-.2319	RRA	-.1075	RC3	.0219	FAU	.11697														
FDE	-.0690	FRA	1.6204	FC3	-6.7956	BSP	11152														
BDE	.4624	BRA	1.4975	BC3	2.8054	FSP	1538														

MID-COURSE EXECUTION ACCURACY

SGT	3233.0	SGR	383.1	SG3	503.1						
RRT	.1788	RRF	-.2132	RTF	-.9186						
SGB	3255.6	R23	-.0475	R13	-.9187						
SG1	3233.7	SG2	376.8	THA	1.23						

ORBIT DETERMINATION ACCURACY

ST	918.5	SR	347.8	SS	466.2						
CRT	-.5300	CRS	.0104	CST	.8365						
LSA	1016.0	MSA	385.0	SSA	38.3						
EL1	938.8	EL2	288.6	ALF	167.45						

LAUNCH DATE NOV 22 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 471.071 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.836 GAL -1.79 AZL 88.74 HCA 149.06 SMA 203.61 ECC .27606 INC 1.2601 V1 30.159
RP 239.26 LAP .65 LOP 208.79 VP 21.390 GAP 12.52 AZP 91.08 TAL 351.73 TAP 140.78 RCA 147.40 APO 259.82 V2 22.959
RC 173.485 GL 11.29 GP 2.01 ZAL 100.90 ZAP 162.61 ETS 172.09 ZAE 157.88 ETE 5.38 ZAC 92.18 ETC 255.85 CLP 162.72

PLANETOCENTRIC CONIC

C3 14.424 VHL 3.798 DLA 17.92 RAL 166.80 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 6.761 DPA -1.68 RAP 191.87 ECC 1.2374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 11	2733.18	-27.87	76.96	28.85	95.23	16 40 44	2133.2	-26.85	68.44
90.00	8 51 23	4189.18	-.31	171.38	23.10	61.68	10 1 12	3589.2	-4.09	164.74
100.00	17 27 6	2436.79	-29.16	55.00	28.69	96.87	18 7 42	1836.8	-27.91	46.43
100.00	10 2 9	3960.80	.83	153.96	22.47	60.12	11 8 10	3360.8	-3.15	147.43
110.00	18 58 28	2150.91	-32.50	32.67	28.07	101.24	19 34 19	1550.9	-30.61	23.97
110.00	10 47 16	3819.45	3.69	141.45	20.68	55.99	11 50 56	3219.4	-.80	135.24

DIFFERENTIAL CORRECTIONS
TDE .3788 TRA-1.4580 TC3 2.9370 BAU .5664
RDE -.2226 RRA -.1049 RC3 .0367 FAU .12150
FDE -.0445 FRA 1.6287 FC3-7.2926 BSP 11243
BDE .4394 BRA 1.4618 BC3 2.9372 FSP 1621

MID-COURSE EXECUTION ACCURACY
SGT 3263.1 SGR 375.8 SG3 528.1
RRT .2078 RRF -.2444 RTF -.9209
SGB 3284.6 R23 -.0518 R13 -.9210
SG1 3264.0 SG2 367.5 THA 1.39

ORBIT DETERMINATION ACCURACY
ST 901.1 SR 339.5 SS 464.5
CRT -.5140 CRS .0601 CST .8189
LSA 995.2 MSA 388.7 SSA 38.5
EL1 919.7 EL2 285.3 ALF 167.85

LAUNCH DATE NOV 22 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 474.414 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.788 GAL -1.68 AZL 88.76 HCA 150.00 SMA 202.59 ECC .27225 INC 1.2385 V1 30.159
RP 238.95 LAP .62 LOP 209.74 VP 21.348 GAP 12.01 AZP 91.07 TAL 352.15 TAP 142.16 RCA 147.44 APO 257.75 V2 22.991
RC 175.790 GL 11.26 GP 2.12 ZAL 100.03 ZAP 161.90 ETS 172.03 ZAE 158.42 ETE 5.93 ZAC 92.34 ETC 255.84 CLP 162.02

PLANETOCENTRIC CONIC

C3 13.978 VHL 3.739 DLA 18.23 RAL 165.95 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 6.608 DPA -1.69 RAP 192.14 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 36	2738.33	-27.90	77.34	27.59	95.04	16 34 14	2138.3	-26.91	68.81
90.00	8 51 11	4170.17	-.92	170.32	21.91	61.70	10 0 41	3570.2	-4.70	163.67
100.00	17 20 48	2440.98	-29.20	55.31	27.44	96.71	18 1 29	1841.0	-27.96	46.73
100.00	10 1 39	3942.75	.21	152.97	21.28	60.11	11 7 22	3342.7	-3.76	146.44
110.00	18 52 46	2153.24	-32.53	32.85	26.83	101.14	19 28 40	1553.2	-30.65	24.13
110.00	10 46 11	3803.26	3.07	140.60	19.49	55.94	11 49 34	3203.3	-1.42	134.40

DIFFERENTIAL CORRECTIONS
TDE .3581 TRA-1.4220 TC3 3.0713 BAU .5740
RDE -.2136 RRA -.1026 RC3 .0536 FAU .12627
FDE -.0183 FRA 1.6365 FC3-7.8204 BSP 11346
BDE .4170 BRA 1.4257 BC3 3.0717 FSP 1712

MID-COURSE EXECUTION ACCURACY
SGT 3292.3 SGR 369.0 SG3 554.4
RRT .2403 RRF -.2796 RTF -.9232
SGB 3312.9 R23 -.0567 R13 -.9234
SG1 3293.5 SG2 358.1 THA 1.56

ORBIT DETERMINATION ACCURACY
ST 883.0 SR 331.2 SS 463.5
CRT -.4974 CRS .1129 CST .7990
LSA 973.7 MSA 393.1 SSA 38.6
EL1 899.9 EL2 281.9 ALF 168.27

LAUNCH DATE NOV 22 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 477.787 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.741 GAL -1.57 AZL 88.78 HCA 150.95 SMA 201.63 ECC .26860 INC 1.2156 V1 30.159
RP 238.63 LAP .59 LOP 210.69 VP 21.310 GAP 11.51 AZP 91.06 TAL 352.58 TAP 143.53 RCA 147.47 APO 255.79 V2 23.024
RC 178.086 GL 11.21 GP 2.23 ZAL 99.17 ZAP 161.17 ETS 171.96 ZAE 159.00 ETE 6.55 ZAC 92.50 ETC 255.84 CLP 161.30

PLANETOCENTRIC CONIC

C3 13.560 VHL 3.682 DLA 18.52 RAL 165.09 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 6.457 DPA -1.68 RAP 192.39 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 8	2743.06	-27.93	77.68	26.33	94.87	16 27 52	2143.1	-26.96	69.15
90.00	8 50 46	4152.16	-1.51	169.31	20.73	61.72	9 59 58	3552.2	-5.28	162.66
100.00	17 14 38	2444.78	-29.23	55.59	26.19	96.56	17 55 23	1844.8	-28.01	47.00
100.00	10 0 57	3925.67	-.36	152.03	20.09	60.11	11 6 23	3325.7	-4.34	145.50
110.00	18 47 11	2155.26	-32.55	33.00	25.59	101.05	19 23 6	1555.3	-30.69	24.28
110.00	10 44 54	3787.95	2.49	139.80	18.31	55.90	11 48 2	3188.0	-2.00	133.60

DIFFERENTIAL CORRECTIONS
TDE .3450 TRA-1.3794 TC3 3.2225 BAU .5844
RDE -.2051 RRA -.1005 RC3 .0726 FAU .13134
FDE .0058 FRA 1.6402 FC3-8.3849 BSP 11272
BDE .4013 BRA 1.3831 BC3 3.2233 FSP 1801

MID-COURSE EXECUTION ACCURACY
SGT 3323.3 SGR 363.1 SG3 582.0
RRT .2725 RRF -.3175 RTF -.9266
SGB 3343.0 R23 -.0647 R13 -.9268
SG1 3324.8 SG2 349.2 THA 1.72

ORBIT DETERMINATION ACCURACY
ST 868.5 SR 322.9 SS 462.2
CRT -.4905 CRS .1612 CST .7736
LSA 955.1 MSA 398.1 SSA 38.2
EL1 884.4 EL2 276.3 ALF 168.53

LAUNCH DATE NOV 22 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 481.188 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.697 GAL -1.47 AZL 88.81 HCA 151.91 SMA 200.72 ECC .26513 INC 1.1912 V1 30.159
RP 238.31 LAP .56 LOP 211.64 VP 21.275 GAP 11.02 AZP 91.05 TAL 353.00 TAP 144.90 RCA 147.50 APO 253.94 V2 23.056
RC 180.373 GL 11.13 GP 2.36 ZAL 98.32 ZAP 160.43 ETS 171.88 ZAE 159.61 ETE 7.24 ZAC 92.67 ETC 255.83 CLP 160.57

PLANETOCENTRIC CONIC

C3 13.170 VHL 3.629 DLA 18.78 RAL 164.22 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 6.311 DPA -1.66 RAP 192.64 ECC 1.2167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 54	2747.18	-27.95	77.98	25.09	94.73	16 21 41	2147.2	-27.00	69.44
90.00	8 50 6	4135.35	-2.05	168.37	19.55	61.75	9 59 1	3535.4	-5.81	161.71
100.00	17 8 40	2448.02	-29.25	55.83	24.94	96.44	17 49 28	1848.0	-28.05	47.23
100.00	10 0 1	3909.74	-.51	151.16	18.92	60.12	11 5 11	3309.7	-4.87	144.62
110.00	18 41 44	2156.85	-32.58	33.12	24.35	100.99	19 17 41	1556.9	-30.72	24.39
110.00	10 43 26	3773.67	1.94	139.06	17.14	55.87	11 46 20	3173.7	-2.55	132.85

DIFFERENTIAL CORRECTIONS
TDE .3169 TRA-1.3534 TC3 3.3274 BAU .5861
RDE -.1967 RRA -.0985 RC3 .0946 FAU .13652
FDE .0338 FRA 1.6477 FC3-8.9744 BSP 11569
BDE .3730 BRA 1.3570 BC3 3.3287 FSP 1902

MID-COURSE EXECUTION ACCURACY
SGT 3343.1 SGR 357.9 SG3 610.8
RRT .3186 RRF -.3617 RTF -.9268
SGB 3362.3 R23 -.0668 R13 -.9271
SG1 3345.1 SG2 339.1 THA 1.97

ORBIT DETERMINATION ACCURACY
ST 845.0 SR 314.4 SS 462.8
CRT -.4586 CRS .2159 CST .7606
LSA 930.1 MSA 400.6 SSA 39.0
EL1 858.7 EL2 274.9 ALF 169.20

LAUNCH DATE NOV 22 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 484.616 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.655	GAL	-1.37	AZL	88.83	HCA	152.86	SMA	199.86	ECC	.26182	INC	1.1650	V1	30.159
RP	237.98	LAP	.53	LOP	212.60	VP	21.244	GAP	10.53	AZP	91.04	TAL	353.41	TAP	146.27	RCA	147.53	APO	252.18	V2	23.089
RC	182.651	GL	11.02	GP	2.49	ZAL	97.47	ZAP	159.66	ETS	171.78	ZAE	160.24	ETE	8.01	ZAC	92.84	ETC	255.83	CLP	159.81

PLANETOCENTRIC CONIC

C3	12.804	VHL	3.578	DLA	19.02	RAL	163.35	RAD	6567.5	VEL	11.584	PTH	2.03	VHP	6.167	DPA	-1.62	RAP	192.88	ECC	1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 53	2750.61	-27.97	78.23	23.84	94.60	16 15 43	2150.6	-27.04	69.69
90.00	8 49 9	4119.77	-2.55	167.50	18.38	61.79	9 57 49	3519.8	-6.30	160.83
100.00	17 2 54	2450.65	-29.27	56.02	23.70	96.34	17 43 45	1850.6	-28.09	47.42
100.00	9 58 49	3894.97	-1.41	150.35	17.75	60.14	11 3 44	3295.0	-5.37	143.80
110.00	18 36 27	2157.96	-32.59	33.20	23.11	100.94	19 12 25	1558.0	-30.74	24.47
110.00	10 41 45	3760.43	1.44	138.37	15.97	55.84	11 44 26	3160.4	-3.05	132.16

DIFFERENTIAL CORRECTIONS

TDE	.2981	TRA	-1.3187	TC3	3.4518	BAU	.5912
RDE	-.1886	RRA	-.0968	RC3	.1192	FAU	.14200
FDE	.0603	FRA	1.6509	FC3	-9.6010	BSP	11668
BDE	.3527	BRA	1.3223	BC3	3.4538	FSP	2006

MID-COURSE EXECUTION ACCURACY

SGT	3364.3	SGR	354.1	SG3	641.0		
RRT	.3634	RRF	-.4088	RTF	-.9284		
SGB	3382.9	R23	-.0731	R13	-.9287		
SG1	3366.8	SG2	329.7	THA	2.21		

ORBIT DETERMINATION ACCURACY

ST	826.0	SR	306.0	SS	463.1
CRT	-.4391	CRS	.2667	CST	.7400
LSA	908.5	MSA	404.3	SSA	39.1
EL1	838.1	EL2	270.9	ALF	169.67

LAUNCH DATE NOV 22 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 488.070 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.614	GAL	-1.27	AZL	88.86	HCA	153.82	SMA	199.04	ECC	.25866	INC	1.1371	V1	30.159
RP	237.65	LAP	.50	LOP	213.56	VP	21.216	GAP	10.04	AZP	91.02	TAL	353.82	TAP	147.64	RCA	147.56	APO	250.52	V2	23.123
RC	184.919	GL	10.89	GP	2.63	ZAL	96.62	ZAP	158.88	ETS	171.67	ZAE	160.90	ETE	8.87	ZAC	93.02	ETC	255.82	CLP	159.04

PLANETOCENTRIC CONIC

C3	12.461	VHL	3.530	DLA	19.23	RAL	162.47	RAD	6567.5	VEL	11.569	PTH	2.02	VHP	6.027	DPA	-1.56	RAP	193.11	ECC	1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 7	2753.19	-27.99	78.42	22.60	94.51	16 10 1	2153.2	-27.07	69.87
90.00	8 47 53	4105.59	-3.01	166.71	17.21	61.83	9 56 19	3505.6	-6.75	160.03
100.00	16 57 22	2452.51	-29.29	56.16	22.46	96.27	17 38 15	1852.5	-28.11	47.55
100.00	9 57 20	3881.51	-1.86	149.61	16.58	60.16	11 2 1	3281.5	-5.82	143.05
110.00	18 31 21	2158.45	-32.60	33.24	21.87	100.92	19 7 20	1558.5	-30.75	24.51
110.00	10 39 50	3748.32	.98	137.73	14.80	55.83	11 42 18	3148.3	-3.51	131.53

DIFFERENTIAL CORRECTIONS

TDE	.2809	TRA	-1.2829	TC3	3.5773	BAU	.5965
RDE	-.1809	RRA	-.0954	RC3	.1470	FAU	.14776
FDE	.0860	FRA	1.6519	FC	-10.2657	BSP	11756
BDE	.3341	BRA	1.2864	BC3	3.5804	FSP	2115

MID-COURSE EXECUTION ACCURACY

SGT	3383.8	SGR	351.9	SG3	672.7		
RRT	.4114	RRF	-.4595	RTF	-.9301		
SGB	3402.0	R23	-.0805	R13	-.9305		
SG1	3386.9	SG2	320.4	THA	2.47		

ORBIT DETERMINATION ACCURACY

ST	807.0	SR	297.7	SS	463.6
CRT	-.4207	CRS	.3154	CST	.7188
LSA	887.1	MSA	407.7	SSA	39.1
EL1	817.9	EL2	266.5	ALF	170.12

LAUNCH DATE NOV 22 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 491.550 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.575	GAL	-1.18	AZL	88.89	HCA	154.78	SMA	198.27	ECC	.25564	INC	1.1070	V1	30.159
RP	237.31	LAP	.47	LOP	214.52	VP	21.192	GAP	9.57	AZP	91.00	TAL	354.22	TAP	149.01	RCA	147.58	APO	248.95	V2	23.157
RC	187.176	GL	10.73	GP	2.79	ZAL	95.79	ZAP	158.08	ETS	171.55	ZAE	161.59	ETE	9.86	ZAC	93.21	ETC	255.82	CLP	158.25

PLANETOCENTRIC CONIC

C3	12.140	VHL	3.484	DLA	19.40	RAL	161.58	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	5.890	DPA	-1.49	RAP	193.33	ECC	1.1998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 41	2754.77	-27.99	78.53	21.35	94.45	16 4 35	2154.8	-27.08	69.98
90.00	8 46 16	4092.92	-3.41	166.00	16.04	61.87	9 54 29	3492.9	-7.15	159.32
100.00	16 52 7	2453.46	-29.29	56.23	21.21	96.24	17 33 0	1853.5	-28.12	47.62
100.00	9 55 31	3869.47	-2.27	148.94	15.41	60.19	11 0 0	3269.5	-6.22	142.39
110.00	18 26 29	2158.24	-32.59	33.23	20.63	100.93	19 2 27	1558.2	-30.74	24.49
110.00	10 37 38	3737.45	.56	137.17	13.64	55.82	11 39 56	3137.4	-3.93	130.96

DIFFERENTIAL CORRECTIONS

TDE	.2694	TRA	-1.2433	TC3	3.7133	BAU	.6034
RDE	-.1734	RRA	-.0941	RC3	.1784	FAU	.15391
FDE	.1088	FRA	1.6493	FC	-10.9758	BSP	11692
BDE	.3203	BRA	1.2469	BC3	3.7175	FSP	2222

MID-COURSE EXECUTION ACCURACY

SGT	3404.5	SGR	351.7	SG3	706.2		
RRT	.4603	RRF	-.5128	RTF	-.9324		
SGB	3422.6	R23	-.0900	R13	-.9328		
SG1	3408.4	SG2	311.8	THA	2.75		

ORBIT DETERMINATION ACCURACY

ST	790.7	SR	289.3	SS	463.3
CRT	-.4108	CRS	.3581	CST	.6940
LSA	867.7	MSA	411.2	SSA	38.9
EL1	800.6	EL2	260.5	ALF	170.43

LAUNCH DATE NOV 22 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 495.052 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.538	GAL	-1.08	AZL	88.92	HCA	155.75	SMA	197.53	ECC	.25277	INC	1.0750	V1	30.159
RP	236.98	LAP	.44	LOP	215.48	VP	21.171	GAP	9.10	AZP	90.98	TAL	354.62	TAP	150.37	RCA	147.60	APO	247.46	V2	23.191
RC	189.421	GL	10.54	GP	2.96	ZAL	94.96	ZAP	157.25	ETS	171.41	ZAE	162.30	ETE	10.99	ZAC	93.42	ETC	255.81	CLP	157.44

PLANETOCENTRIC CONIC

C3	11.839	VHL	3.441	DLA	19.54	RAL	160.69	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	5.757	DPA	-1.39	RAP	193.54	ECC	1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 37	2755.12	-28.00	78.56	20.11	94.44	15 59 32	2155.1	-27.09	70.01
90.00	8 44 14	4081.99	-3.76	165.39	14.88	61.91	9 52 16	3482.0	-7.49	158.69
100.00	16 47 13	2453.30	-29.29	56.21	19.97	96.24	17 28 6	1853.3	-28.12	47.61
100.00	9 53 19	3859.04	-2.62	148.37	14.25	60.21	10 57 39	3259.0	-6.57	141.81
110.00	18 21 52	2157.16	-32.58	33.14	19.39	100.97	18 57 49	1557.2	-30.72	24.42
110.00	10 35 9	3727.95	.20	136.67	12.49	55.82	11 37 17	3127.9	-4.29	130.46

DIFFERENTIAL CORRECTIONS

TDE	.2501	TRA	-1.2119	TC3	3.8142	BAU	.6046
RDE	-.1661	RRA	-.0931	RC3	.2139	FAU	.16012
FDE	.1346	FRA	1.6483	FC	-11.7091	BSP	11874
BDE	.3002	BRA	1.2155	BC3	3.8202	FSP	2347

MID-COURSE EXECUTION ACCURACY

SGT	3413.0	SGR	353.9	SG3	740.5		
RRT	.5161	RRF	-.5694	RTF	-.9330		
SGB	3431.3	R23	-.0981	R13	-.9335		
SG1	3417.9	SG2	302.7	THA	3.09		

ORBIT DETERMINATION ACCURACY

ST	769.7	SR	281.0	SS	464.5
CRT	-.3845	CRS	.4047	CST	.6775
LSA	845.6	MSA	412.8	SSA	39.2
EL1	778.1	EL2	256.6	ALF	171.03

LAUNCH DATE NOV 22 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 498.577 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.503 GAL -1.00 AZL 88.96 HCA 156.71 SMA 196.83 ECC .25002 INC 1.0402 V1 30.159
RP 236.64 LAP .41 LOP 216.45 VP 21.153 GAP 8.64 AZP 90.96 TAL 355.01 TAP 151.72 RCA 147.62 APO 246.05 V2 23.226
RC 191.655 GL 10.31 GP 3.15 ZAL 94.15 ZAP 156.40 ETS 171.26 ZAE 163.03 ETE 12.29 ZAC 93.63 ETC 255.81 CLP 156.60

PLANETOCENTRIC CONIC

C3 11.556 VHL 3.399 DLA 19.64 RAL 159.80 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.626 DPA -1.28 RAP 193.74 ECC 1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 57	2754.11	-27.99	78.48	18.86	94.48	15 54 51	2154.1	-27.08	69.94
90.00	8 41 45	4072.88	-4.05	164.88	13.71	61.95	9 49 38	3472.9	-7.78	158.18
100.00	16 42 40	2451.93	-29.28	56.11	18.72	96.29	17 23 31	1851.9	-28.10	47.51
100.00	9 50 44	3850.29	-2.92	147.89	13.08	60.24	10 54 54	3250.3	-6.86	141.32
110.00	18 17 32	2155.12	-32.55	32.99	18.14	101.06	18 53 27	1555.1	-30.69	24.27
110.00	10 32 21	3719.87	-.11	136.25	11.33	55.82	11 34 21	3119.9	-4.60	130.04

DIFFERENTIAL CORRECTIONS
TDE .2422 TRA-1.1714 TC3 3.9507 BAU .6116
RDE -.1591 RRA -.0923 RC3 .2539 FAU .16689
FDE .1551 FRA 1.6418 FC-12.5030 BSP 11758
BDE .2898 BRA 1.1750 BC3 3.9589 FSP 2465

MID-COURSE EXECUTION ACCURACY
SGT 3431.6 SGR 359.1 SG3 777.4
RRT .5684 RRF -.6260 RTF -.9355
SGB 3450.3 R23 -.1098 R13 -.9361
SG1 3437.7 SG2 295.0 THA 3.43

ORBIT DETERMINATION ACCURACY
ST 754.1 SR 272.7 SS 463.8
CRT -.3787 CRS .4423 CST .6506
LSA 826.7 MSA 416.1 SSA 38.8
EL1 762.0 EL2 249.8 ALF 171.25

LAUNCH DATE NOV 22 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 502.122 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.469 GAL -.91 AZL 89.00 HCA 157.68 SMA 196.18 ECC .24741 INC 1.0021 V1 30.159
RP 236.29 LAP .38 LOP 217.42 VP 21.138 GAP 8.18 AZP 90.93 TAL 355.39 TAP 153.08 RCA 147.64 APO 244.71 V2 23.261
RC 193.877 GL 10.04 GP 3.36 ZAL 93.35 ZAP 155.53 ETS 171.09 ZAE 163.79 ETE 13.80 ZAC 93.86 ETC 255.81 CLP 155.75

PLANETOCENTRIC CONIC

C3 11.290 VHL 3.360 DLA 19.69 RAL 158.90 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 5.499 DPA -1.13 RAP 193.93 ECC 1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 47	2751.45	-27.98	78.29	17.61	94.57	15 50 39	2151.5	-27.05	69.75
90.00	8 38 46	4065.88	-4.28	164.49	12.53	61.98	9 46 32	3465.9	-7.99	157.78
100.00	16 38 34	2449.07	-29.26	55.90	17.47	96.40	17 19 23	1849.1	-28.07	47.30
100.00	9 47 41	3843.49	-3.15	147.52	11.91	60.26	10 51 44	3243.5	-7.08	140.94
110.00	18 13 33	2151.90	-32.51	32.75	16.89	101.20	18 49 25	1551.9	-30.63	24.04
110.00	10 29 11	3713.43	-.36	135.92	10.17	55.82	11 31 4	3113.4	-4.84	129.70

DIFFERENTIAL CORRECTIONS
TDE .2248 TRA-1.1422 TC3 4.0335 BAU .6105
RDE -.1522 RRA -.0917 RC3 .2991 FAU .17366
FDE .1764 FRA 1.6362 FC-13.3166 BSP 11947
BDE .2715 BRA 1.1458 BC3 4.0446 FSP 2602

MID-COURSE EXECUTION ACCURACY
SGT 3431.2 SGR 367.9 SG3 814.9
RRT .6250 RRF -.6828 RTF -.9354
SGB 3450.8 R23 -.1205 R13 -.9361
SG1 3438.9 SG2 286.5 THA 3.86

ORBIT DETERMINATION ACCURACY
ST 734.0 SR 264.3 SS 463.8
CRT -.3510 CRS .4805 CST .6395
LSA 806.4 MSA 414.6 SSA 39.3
EL1 740.5 EL2 245.3 ALF 171.90

LAUNCH DATE NOV 22 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 505.688 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.437 GAL -.83 AZL 89.04 HCA 158.66 SMA 195.55 ECC .24493 INC .9608 V1 30.159
RP 235.94 LAP .35 LOP 218.39 VP 21.126 GAP 7.73 AZP 90.90 TAL 355.77 TAP 154.42 RCA 147.65 APO 243.45 V2 23.297
RC 196.086 GL 9.72 GP 3.59 ZAL 92.57 ZAP 154.63 ETS 170.90 ZAE 164.55 ETE 15.56 ZAC 94.10 ETC 255.80 CLP 154.87

PLANETOCENTRIC CONIC

C3 11.040 VHL 3.323 DLA 19.69 RAL 158.00 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 5.375 DPA -.97 RAP 194.11 ECC 1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 9	2746.97	-27.95	77.96	16.36	94.73	15 46 56	2147.0	-27.00	69.43
90.00	8 35 12	4061.13	-4.43	164.22	11.36	62.00	9 42 53	3461.1	-8.14	157.51
100.00	16 34 56	2444.58	-29.23	55.57	16.22	96.57	17 15 40	1844.6	-28.01	46.98
100.00	9 44 7	3838.76	-3.31	147.26	10.74	60.27	10 48 5	3238.8	-7.24	140.68
110.00	18 9 55	2147.38	-32.45	32.41	15.62	101.39	18 45 43	1547.4	-30.54	23.71
110.00	10 25 36	3708.72	-.54	135.67	9.01	55.82	11 27 25	3108.7	-5.02	129.45

DIFFERENTIAL CORRECTIONS
TDE .2130 TRA-1.1082 TC3 4.1374 BAU .6129
RDE -.1455 RRA -.0913 RC3 .3503 FAU .18096
FDE .1945 FRA 1.6270 FC-14.1900 BSP 11973
BDE .2579 BRA 1.1120 BC3 4.1522 FSP 2739

MID-COURSE EXECUTION ACCURACY
SGT 3437.2 SGR 381.0 SG3 854.9
RRT .6778 RRF -.7369 RTF -.9365
SGB 3458.2 R23 -.1332 R13 -.9373
SG1 3446.9 SG2 279.3 THA 4.32

ORBIT DETERMINATION ACCURACY
ST 715.9 SR 256.0 SS 462.5
CRT -.3329 CRS .5139 CST .6236
LSA 786.9 MSA 413.6 SSA 39.4
EL1 721.6 EL2 239.5 ALF 172.37

LAUNCH DATE NOV 22 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 509.274 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.406 GAL -.76 AZL 89.08 HCA 159.63 SMA 194.96 ECC .24256 INC .9159 V1 30.159
RP 235.59 LAP .32 LOP 219.36 VP 21.116 GAP 7.29 AZP 90.86 TAL 356.13 TAP 155.76 RCA 147.67 APO 242.25 V2 23.333
RC 198.280 GL 9.35 GP 3.84 ZAL 91.80 ZAP 153.71 ETS 170.69 ZAE 165.33 ETE 17.64 ZAC 94.36 ETC 255.79 CLP 153.97

PLANETOCENTRIC CONIC

C3 10.805 VHL 3.287 DLA 19.64 RAL 157.09 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 5.255 DPA -.76 RAP 194.28 ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 7	2740.39	-27.91	77.49	15.09	94.97	15 43 48	2140.4	-26.93	68.96
90.00	8 31 0	4058.89	-4.50	164.10	10.17	62.01	9 38 39	3458.9	-8.21	157.38
100.00	16 31 50	2438.20	-29.18	55.11	14.95	96.81	17 12 28	1838.2	-27.93	46.53
100.00	9 39 58	3836.32	-3.39	147.12	9.55	60.28	10 43 54	3236.3	-7.32	140.54
110.00	18 6 43	2141.36	-32.37	31.96	14.34	101.64	18 42 24	1541.4	-30.43	23.28
110.00	10 21 35	3705.92	-.65	135.52	7.84	55.82	11 23 21	3105.9	-5.13	129.30

DIFFERENTIAL CORRECTIONS
TDE .2052 TRA-1.0760 TC3 4.2257 BAU .6133
RDE -.1389 RRA -.0913 RC3 .4080 FAU .18839
FDE .2063 FRA 1.6173 FC-15.0944 BSP 12008
BDE .2478 BRA 1.0798 BC3 4.2453 FSP 2886

MID-COURSE EXECUTION ACCURACY
SGT 3436.7 SGR 398.8 SG3 896.1
RRT .7259 RRF -.7868 RTF -.9371
SGB 3459.7 R23 -.1486 R13 -.9381
SG1 3448.9 SG2 273.3 THA 4.85

ORBIT DETERMINATION ACCURACY
ST 701.2 SR 247.4 SS 459.5
CRT -.3205 CRS .5390 CST .6095
LSA 770.5 MSA 410.9 SSA 39.5
EL1 706.3 EL2 232.7 ALF 172.76

LAUNCH DATE NOV 22 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 512.879 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.376 GAL -.68 AZL 89.13 HCA 160.61 SMA 194.39 ECC .24031 INC .8663 V1 30.159
RP 235.24 LAP .29 LOP 220.34 VP 21.110 GAP 6.85 AZP 90.82 TAL 356.49 TAP 157.10 RCA 147.68 APO 241.11 V2 23.369
RC 200.460 GL 8.93 GP 4.12 ZAL 91.04 ZAP 152.75 ETS 170.45 ZAE 166.11 ETE 20.11 ZAC 94.65 ETC 255.79 CLP 153.04

PLANETOCENTRIC CONIC

C3 10.584 VHL 3.253 DLA 19.53 RAL 156.18 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 5.137 DPA -.53 RAP 194.44 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 46	2731.43	-27.86	76.84	13.82	95.29	15 41 17	2131.4	-26.83	68.32
90.00	8 26 5	4059.42	-4.49	164.13	8.97	62.01	9 33 44	3459.4	-8.20	157.41
100.00	16 29 21	2429.66	-29.11	54.48	13.66	97.14	17 9 50	1829.7	-27.81	45.92
100.00	9 35 11	3836.42	-3.39	147.13	8.36	60.28	10 39 8	3236.4	-7.32	140.55
110.00	18 3 58	2133.61	-32.26	31.38	13.04	101.97	18 39 32	1533.6	-30.28	22.73
110.00	10 17 3	3705.24	-.67	135.49	6.67	55.82	11 18 48	3105.2	-5.15	129.27

DIFFERENTIAL CORRECTIONS
TDE .1977 TRA-1.0400 TC3 4.3113 BAU .6137
RDE -.1323 RRA -.0913 RC3 .4737 FAU .19625
FDE .2136 FRA 1.5981 FC-16.0529 BSP 11970
BDE .2379 BRA 1.0440 BC3 4.3373 FSP 3030

MID-COURSE EXECUTION ACCURACY
SGT 3430.3 SGR 422.3 SG3 939.2
RRT .7697 RRF -.8313 RTF -.9379
SGB 3456.2 R23 -.1644 R13 -.9392
SG1 3445.8 SG2 268.4 THA 5.45

ORBIT DETERMINATION ACCURACY
ST 684.3 SR 238.7 SS 453.1
CRT -.3092 CRS .5597 CST .5979
LSA 751.5 MSA 405.4 SSA 39.8
EL1 688.8 EL2 225.5 ALF 173.10

LAUNCH DATE NOV 22 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 516.502 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.348 GAL -.61 AZL 89.19 HCA 161.59 SMA 193.86 ECC .23816 INC .8113 V1 30.159
RP 234.89 LAP .26 LOP 221.32 VP 21.106 GAP 6.42 AZP 90.77 TAL 356.83 TAP 158.42 RCA 147.69 APO 240.03 V2 23.405
RC 202.623 GL 8.44 GP 4.44 ZAL 90.31 ZAP 151.77 ETS 170.19 ZAE 166.89 ETE 23.07 ZAC 94.96 ETC 255.78 CLP 152.09

PLANETOCENTRIC CONIC

C3 10.375 VHL 3.221 DLA 19.34 RAL 155.26 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.023 DPA -.26 RAP 194.60 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 9	2719.77	-27.78	75.99	12.52	95.71	15 39 29	2119.8	-26.70	67.49
90.00	8 20 22	4063.02	-4.37	164.33	7.75	61.99	9 28 5	3463.0	-8.08	157.62
100.00	16 27 31	2418.68	-29.01	53.68	12.36	97.55	17 7 50	1818.7	-27.66	45.14
100.00	9 29 41	3839.34	-3.29	147.29	7.15	60.27	10 33 41	3239.3	-7.22	140.71
110.00	18 1 45	2123.88	-32.12	30.66	11.72	102.38	18 37 9	1523.9	-30.08	22.04
110.00	10 11 57	3706.90	-.61	135.57	5.48	55.82	11 13 44	3106.9	-5.09	129.35

DIFFERENTIAL CORRECTIONS
TDE .1926 TRA-1.0073 TC3 4.3810 BAU .6124
RDE -.1256 RRA -.0917 RC3 .5482 FAU .20431
FDE .2135 FRA 1.5789 FC-17.0487 BSP 12002
BDE .2299 BRA 1.0115 BC3 4.4151 FSP 3192

MID-COURSE EXECUTION ACCURACY
SGT 3418.8 SGR 452.2 SG3 983.7
RRT .8074 RRF -.8697 RTF -.9382
SGB 3448.6 R23 -.1824 R13 -.9397
SG1 3438.4 SG2 265.3 THA 6.13

ORBIT DETERMINATION ACCURACY
ST 670.1 SR 229.6 SS 444.7
CRT -.2996 CRS .5722 CST .5920
LSA 735.1 MSA 396.9 SSA 40.2
EL1 674.0 EL2 217.8 ALF 173.45

LAUNCH DATE NOV 22 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 520.142 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.321 GAL -.54 AZL 89.25 HCA 162.57 SMA 193.35 ECC .23612 INC .7505 V1 30.159
RP 234.53 LAP .22 LOP 222.31 VP 21.104 GAP 5.99 AZP 90.72 TAL 357.17 TAP 159.74 RCA 147.70 APO 239.01 V2 23.442
RC 204.770 GL 7.87 GP 4.79 ZAL 89.59 ZAP 150.75 ETS 169.89 ZAE 167.63 ETE 26.61 ZAC 95.30 ETC 255.77 CLP 151.11

PLANETOCENTRIC CONIC

C3 10.178 VHL 3.190 DLA 19.07 RAL 154.34 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.911 DPA .06 RAP 194.75 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 22	2705.05	-27.68	74.93	11.20	96.23	15 38 27	2105.1	-26.53	66.45
90.00	8 13 46	4070.02	-4.15	164.72	6.52	61.96	9 21 36	3470.0	-7.87	158.01
100.00	16 26 27	2404.91	-28.88	52.68	11.02	98.06	17 6 32	1804.9	-27.47	44.16
100.00	9 23 23	3845.40	-3.08	147.62	5.93	60.25	10 27 28	3245.4	-7.02	141.05
110.00	18 0 6	2111.88	-31.94	29.77	10.37	102.88	18 35 18	1511.9	-29.84	21.19
110.00	10 6 12	3711.20	-.44	135.80	4.28	55.82	11 8 3	3111.2	-4.93	129.58

DIFFERENTIAL CORRECTIONS
TDE .1865 TRA -.9740 TC3 4.4582 BAU .6127
RDE -.1190 RRA -.0923 RC3 .6340 FAU .21295
FDE .2103 FRA 1.5549 FC-18.1144 BSP 11947
BDE .2212 BRA .9784 BC3 4.5031 FSP 3352

MID-COURSE EXEGUTION ACCURACY
SGT 3410.2 SGR 489.9 SG3 1031.2
RRT .8401 RRF -.9019 RTF -.9390
SGB 3445.2 R23 -.1997 R13 -.9409
SG1 3435.1 SG2 263.8 THA 6.92

ORBIT DETERMINATION ACCURACY
ST 654.1 SR 220.4 SS 434.6
CRT -.2867 CRS .5829 CST .5901
LSA 717.3 MSA 386.0 SSA 40.8
EL1 657.5 EL2 210.0 ALF 173.85

LAUNCH DATE NOV 22 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 523.799 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.296 GAL -.47 AZL 89.32 HCA 163.56 SMA 192.88 ECC .23419 INC .6824 V1 30.159
RP 234.17 LAP .19 LOP 223.29 VP 21.105 GAP 5.58 AZP 90.66 TAL 357.50 TAP 161.06 RCA 147.71 APO 238.04 V2 23.479
RC 206.900 GL 7.21 GP 5.19 ZAL 88.89 ZAP 149.69 ETS 169.56 ZAE 168.34 ETE 30.88 ZAC 95.69 ETC 255.76 CLP 150.10

PLANETOCENTRIC CONIC

C3 9.991 VHL 3.161 DLA 18.71 RAL 153.40 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.804 DPA .44 RAP 194.89 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 30	2686.87	-27.54	73.61	9.84	96.87	15 38 17	2086.9	-26.30	65.17
90.00	8 6 9	4080.83	-3.80	165.33	5.26	61.92	9 14 10	3480.8	-7.53	158.63
100.00	16 26 12	2387.96	-28.71	51.44	9.66	98.69	17 6 0	1788.0	-27.21	42.96
100.00	9 16 9	3854.97	-2.76	148.15	4.69	60.22	10 20 24	3255.0	-6.70	141.58
110.00	17 59 7	2097.25	-31.71	28.69	8.98	103.48	18 34 4	1497.2	-29.54	20.15
110.00	9 59 43	3718.45	-.17	136.18	3.07	55.82	11 1 42	3118.5	-4.65	129.96

DIFFERENTIAL CORRECTIONS
TDE .1926 TRA -.9422 TC3 4.5132 BAU .6107
RDE -.1115 RRA -.0931 RC3 .7317 FAU .22167
FDE .1805 FRA 1.5276 FC-19.2068 BSP 11921
BDE .2226 BRA .9468 BC3 4.5721 FSP 3524

MID-COURSE EXECUTION ACCURACY
SGT 3393.2 SGR 535.3 SG3 1079.4
RRT .8647 RRF -.9276 RTF -.9389
SGB 3435.1 R23 -.2205 R13 -.9413
SG1 3424.8 SG2 266.4 THA 7.82

ORBIT DETERMINATION ACCURACY
ST 649.5 SR 209.5 SS 416.9
CRT -.2972 CRS .5612 CST .5998
LSA 709.0 MSA 367.6 SSA 41.8
EL1 652.8 EL2 199.0 ALF 173.96

LAUNCH DATE NOV 22 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 527.473 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.271 GAL -.41 AZL 89.39 HCA 164.55 SMA 192.42 ECC .23234 INC .6051 V1 30.159
RP 233.80 LAP .16 LOP 224.28 VP 21.108 GAP 5.17 AZP 90.58 TAL 357.81 TAP 162.36 RCA 147.71 APO 237.13 V2 23.517
RC 209.011 GL 6.45 GP 5.64 ZAL 88.21 ZAP 148.60 ETS 169.18 ZAE 168.97 ETE 36.02 ZAC 96.12 ETC 255.75 CLP 149.08

PLANETOCENTRIC CONIC

C3 9.816 VHL 3.133 DLA 18.24 RAL 152.45 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 4.699 DPA .87 RAP 195.03 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 39	2664.74	-27.35	72.02	8.45	97.65	15 39 4	2064.7	-26.00	63.61
90.00	7 57 25	4095.93	-3.32	166.17	3.98	61.86	9 5 41	3495.9	-7.05	159.49
100.00	16 26 52	2367.36	-28.49	49.95	8.25	99.44	17 6 19	1767.4	-26.89	41.52
100.00	9 7 53	3868.54	-2.30	148.89	3.42	60.19	10 12 21	3268.5	-6.25	142.33
110.00	17 58 51	2079.57	-31.43	27.39	7.54	104.20	18 33 31	1479.6	-29.16	18.92
110.00	9 52 23	3729.10	.24	136.73	1.83	55.82	10 54 32	3129.1	-4.25	130.52

DIFFERENTIAL CORRECTIONS
TDE .1962 TRA -.9087 TC3 4.5608 BAU .6087
RDE -.1036 RRA -.0940 RC3 .8449 FAU .23082
FDE .1430 FRA 1.4894 FC-20.3576 BSP 11899
BDE .2218 BRA .9136 BC3 4.6384 FSP 3703

MID-COURSE EXECUTION ACCURACY
SGT 3370.1 SGR 590.7 SG3 1129.9
RRT .8850 RRF -.9479 RTF -.9389
SGB 3421.5 R23 -.2394 R13 -.9420
SG1 3410.7 SG2 271.7 THA 8.87

ORBIT DETERMINATION ACCURACY
ST 641.6 SR 197.7 SS 396.8
CRT -.3003 CRS .5298 CST .6230
LSA 698.8 MSA 343.3 SSA 43.4
EL1 644.6 EL2 187.7 ALF 174.22

LAUNCH DATE NOV 22 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 531.162 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.248 GAL -.35 AZL 89.48 HCA 165.54 SMA 191.99 ECC .23059 INC .5168 V1 30.159
RP 233.44 LAP .13 LOP 225.28 VP 21.114 GAP 4.76 AZP 90.50 TAL 358.12 TAP 163.66 RCA 147.72 APO 236.26 V2 23.555
RC 211.104 GL 5.56 GP 6.16 ZAL 87.56 ZAP 147.47 ETS 168.76 ZAE 169.49 ETE 42.13 ZAC 96.61 ETC 255.74 CLP 147.99

PLANETOCENTRIC CONIC

C3 9.651 VHL 3.107 DLA 17.64 RAL 151.48 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.599 DPA 1.37 RAP 195.18 ECC 1.1588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 56	2638.06	-27.09	70.11	7.00	98.58	15 40 54	2038.1	-25.63	61.75
90.00	7 47 22	4115.91	-2.67	167.29	2.66	61.80	8 55 58	3515.9	-6.42	160.62
100.00	16 28 35	2342.53	-28.20	48.16	6.79	100.34	17 7 37	1742.5	-26.49	39.78
100.00	8 58 25	3886.67	-1.69	149.89	2.11	60.15	10 3 11	3286.7	-5.65	143.34
110.00	17 59 25	2058.31	-31.06	25.84	6.05	105.05	18 33 44	1458.3	-28.68	17.44
110.00	9 44 4	3743.66	.80	137.49	.56	55.83	10 46 27	3143.7	-3.69	131.28

DIFFERENTIAL CORRECTIONS
TDE .2035 TRA -.8732 TC3 4.6033 BAU .6072
RDE -.0946 RRA -.0948 RC3 .9766 FAU .24039
FDE .0841 FRA 1.4378 FC-21.5633 BSP 11868
BDE .2244 BRA .8784 BC3 4.7058 FSP 3886

MID-COURSE EXECUTION ACCURACY
SGT 3343.3 SGR 657.5 SG3 1182.3
RRT .9008 RRF -.9633 RTF -.9391
SGB 3407.3 R23 -.2564 R13 -.9430
SG1 3395.7 SG2 281.1 THA 10.12

ORBIT DETERMINATION ACCURACY
ST 636.6 SR 183.8 SS 373.2
CRT -.3077 CRS .4652 CST .6679
LSA 693.0 MSA 309.9 SSA 46.2
EL1 639.3 EL2 174.1 ALF 174.51

LAUNCH DATE NOV 22 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 534.866 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.226 GAL -.30 AZL 89.58 HCA 166.54 SMA 191.58 ECC .22893 INC .4160 V1 30.159
RP 233.07 LAP .10 LOP 226.27 VP 21.122 GAP 4.36 AZP 90.41 TAL 358.41 TAP 164.95 RCA 147.72 APO 235.44 V2 23.593
RC 213.179 GL 4.52 GP 6.75 ZAL 86.92 ZAP 146.29 ETS 168.27 ZAE 169.84 ETE 49.25 ZAC 97.17 ETC 255.72 CLP 146.89

PLANETOCENTRIC CONIC

C3 9.497 VHL 3.082 DLA 16.88 RAL 150.48 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 4.502 DPA 1.96 RAP 195.33 ECC 1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 29	2606.12	-26.75	67.84	5.48	99.67	15 43 56	2006.1	-25.14	59.54
90.00	7 35 50	4141.52	-1.85	168.72	1.31	61.74	8 44 52	3541.5	-5.61	162.06
100.00	16 31 27	2312.78	-27.82	46.04	5.25	101.40	17 10 0	1712.8	-25.97	37.73
100.00	8 47 34	3910.10	-.89	151.18	.78	60.12	9 52 44	3310.1	-4.86	144.64
110.00	18 0 56	2032.83	-30.60	24.00	4.48	106.04	18 34 49	1432.8	-28.09	15.70
110.00	9 34 34	3762.81	1.53	138.49	359.26	55.85	10 37 17	3162.8	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE .2111 TRA -.8447 TC3 4.6062 BAU .6021
RDE -.0845 RRA -.0963 RC3 1.1276 FAU .24961
FDE .0105 FRA 1.3918 FC-22.7547 BSP 11758
BDE .2274 BRA .8502 BC3 4.7422 FSP 4067

MID-COURSE EXECUTION ACCURACY
SGT 3302.6 SGR 736.7 SG3 1234.1
RRT .9118 RRF -.9747 RTF -.9380
SGB 3383.8 R23 -.2739 R13 -.9431
SG1 3370.8 SG2 296.3 THA 11.59

ORBIT DETERMINATION ACCURACY
ST 635.4 SR 168.1 SS 355.5
CRT -.3018 CRS .3733 CST .7363
LSA 694.6 MSA 271.0 SSA 50.0
EL1 637.5 EL2 159.8 ALF 175.13

LAUNCH DATE NOV 22 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 538.585 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.205 GAL -.24 AZL 89.70 HCA 167.54 SMA 191.20 ECC .22736 INC .2964 V1 30.159
RP 232.70 LAP .07 LOP 227.27 VP 21.131 GAP 3.97 AZP 90.29 TAL 358.69 TAP 166.23 RCA 147.73 APO 234.67 V2 23.631
RC 215.236 GL 3.28 GP 7.45 ZAL 86.31 ZAP 145.05 ETS 167.71 ZAE 169.96 ETE 57.25 ZAC 97.81 ETC 255.70 CLP 145.76

PLANETOCENTRIC CONIC

C3 9.355 VHL 3.059 DLA 15.93 RAL 149.44 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 4.409 DPA 2.65 RAP 195.49 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 29	2568.01	-26.28	65.14	3.88	100.94	15 48 17	1968.0	-24.51	56.93
90.00	7 22 34	4173.73	-.81	170.52	359.91	61.69	8 32 8	3573.7	-4.59	163.87
100.00	16 35 40	2277.19	-27.32	43.51	3.64	102.64	17 13 37	1677.2	-25.30	35.29
100.00	8 35 4	3939.78	.11	152.80	359.40	60.11	9 40 44	3339.8	-3.86	146.28
110.00	18 3 32	2002.29	-30.00	21.82	2.82	107.21	18 36 54	1402.3	-27.35	13.63
110.00	9 23 42	3787.45	2.47	139.78	357.93	55.90	10 26 50	3187.5	-2.02	133.57

DIFFERENTIAL CORRECTIONS
TDE .2269 TRA -.8088 TC3 4.6199 BAU .6005
RDE -.0716 RRA -.0969 RC3 1.3078 FAU .25961
FDE -.1046 FRA 1.3167 FC-24.0258 BSP 11718
BDE .2379 BRA .8146 BC3 4.8015 FSP 4258

MID-COURSE EXECUTION ACCURACY
SGT 3263.4 SGR 832.9 SG3 1289.1
RRT .9203 RRF -.9830 RTF -.9377
SGB 3368.0 R23 -.2857 R13 -.9444
SG1 3353.0 SG2 317.1 THA 13.34

ORBIT DETERMINATION ACCURACY
ST 641.3 SR 147.6 SS 346.0
CRT -.2981 CRS .2080 CST .8316
LSA 708.2 MSA 219.0 SSA 57.1
EL1 642.9 EL2 140.6 ALF 175.88

LAUNCH DATE NOV 22 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 542.318 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.185	GAL	-.19	AZL	89.83	HCA	168.54	SMA	190.83	ECC	.22586	INC	.1540
RP	232.32	LAP	.03	LOP	228.27	VP	21.143	GAP	3.59	AZP	90.16	TAL	358.96	TAP	167.50	RCA	147.73	APO	233.93
RC	217.275	GL	1.80	GP	8.27	ZAL	85.73	ZAP	143.76	ETS	167.06	ZAE	169.79	ETE	65.79	ZAC	98.58	ETC	255.68

V1	30.159	V2	23.670	CLP	144.58														

PLANETOCENTRIC CONIC

C3	9.227	VHL	3.038	DLA	14.74	RAL	148.35	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	4.322	DPA	3.46	RAP	195.68
ECC	1.1518																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 9	2522.51	-25.65	61.96	2.18	102.42	15 54 12	1922.5	-23.69	53.84
90.00	7 7 13	4213.87	.49	172.75	358.47	61.69	8 17 27	3613.9	-3.30	166.12
100.00	16 41 26	2234.59	-26.65	40.52	1.92	104.07	17 18 41	1634.6	-24.45	32.41
100.00	8 20 38	3977.01	1.38	154.85	357.98	60.14	9 26 55	3377.0	-2.61	148.32
110.00	18 7 24	1965.59	-29.23	19.24	1.06	108.56	18 40 10	1365.6	-26.42	11.18
110.00	9 11 9	3818.78	3.67	141.42	356.55	55.99	10 14 48	3218.8	-.82	135.21

DIFFERENTIAL CORRECTIONS

TDE	.2470	TRA	-.7776	TC3	4.6291	BAU	.6011
RDE	-.0554	RRA	-.0978	RC3	1.5220	FAU	.26985
FDE	-.2556	FRA	1.2376	FC-25.3201		BSP	11553
BDE	.2531	BRA	.7837	BC3	4.8729	FSP	4432

MID-COURSE EXECUTION ACCURACY

SGT	3228.8	SGR	949.8	SG3	1345.9		
RRT	.9263	RRF	-.9889	RTF	-.9373		
SGB	3365.7	R23	-.2937	R13	-.9460		
SG1	3347.9	SG2	345.3	THA	15.41		

ORBIT DETERMINATION ACCURACY

ST	656.6	SR	122.3	SS	367.7
CRT	-.2530	CRS	.0319	CST	.9171
LSA	741.6	MSA	162.9	SSA	68.8
EL1	657.4	EL2	118.2	ALF	177.21

LAUNCH DATE NOV 22 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 546.065 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.166	GAL	-.14	AZL	90.00	HCA	169.55	SMA	190.48	ECC	.22444	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	21.157	GAP	3.21	AZP	90.00	TAL	359.22	TAP	168.77	RCA	147.73	APO	233.24
RC	219.295	GL	.02	GP	9.25	ZAL	85.17	ZAP	142.38	ETS	166.29	ZAE	169.26	ETE	74.34	ZAC	99.49	ETC	255.64

V1	30.159	V2	23.709	CLP	143.37														

PLANETOCENTRIC CONIC

C3	9.117	VHL	3.019	DLA	13.24	RAL	147.19	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	4.239	DPA	4.44	RAP	195.90
ECC	1.1500																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 48	2468.01	-24.80	58.20	.35	104.12	16 1 56	1868.0	-22.62	50.21
90.00	6 49 21	4263.74	2.10	175.54	356.98	61.75	8 0 25	3663.7	-1.70	168.91
100.00	16 49 2	2183.41	-25.75	36.98	.07	105.73	17 25 26	1583.4	-23.34	29.01
100.00	8 3 48	4023.57	2.95	157.40	356.51	60.24	9 10 51	3423.6	-1.03	150.88
110.00	18 12 49	1921.29	-28.24	16.18	359.17	110.12	18 44 50	1321.3	-25.23	8.29
110.00	8 56 31	3858.46	5.17	143.50	355.13	56.16	10 0 49	3258.5	.69	137.28

DIFFERENTIAL CORRECTIONS

TDE	.2679	TRA	-.7501	TC3	4.5572	BAU	.5958
RDE	-.0347	RRA	-.0990	RC3	1.7676	FAU	.27849
FDE	-.4433	FRA	1.1545	FC-26.4446		BSP	11560
BDE	.2701	BRA	.7566	BC3	4.8880	FSP	4642

MID-COURSE EXECUTION ACCURACY

SGT	3157.6	SGR	1086.7	SG3	1395.3		
RRT	.9286	RRF	-.9929	RTF	-.9348		
SGB	3339.3	R23	-.3011	R13	-.9468		
SG1	3317.2	SG2	383.9	THA	17.97		

ORBIT DETERMINATION ACCURACY

ST	676.5	SR	93.4	SS	432.3
CRT	-.0864	CRS	-.0091	CST	.9560
LSA	795.6	MSA	114.6	SSA	84.7
EL1	676.5	EL2	93.0	ALF	179.30

LAUNCH DATE NOV 22 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 549.828 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.148	GAL	-.10	AZL	90.20	HCA	170.56	SMA	190.16	ECC	.22310	INC	.2034
RP	231.57	LAP	-.03	LOP	230.29	VP	21.173	GAP	2.84	AZP	89.81	TAL	359.46	TAP	170.02	RCA	147.73	APO	232.58
RC	221.297	GL	-2.17	GP	10.43	ZAL	84.64	ZAP	140.92	ETS	165.38	ZAE	168.32	ETE	82.31	ZAC	100.59	ETC	255.59

V1	30.159	V2	23.748	CLP	142.12														

PLANETOCENTRIC CONIC

C3	9.035	VHL	3.006	DLA	11.35	RAL	145.94	RAD	6567.3	VEL	11.420	PTH	1.98	VHP	4.164	DPA	5.62	RAP	196.17
ECC	1.1487																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 48	2402.30	-23.64	53.73	358.37	106.06	16 11 50	1802.3	-21.21	45.90
90.00	6 28 19	4325.94	4.09	179.02	355.45	61.96	7 40 25	3725.9	.31	172.38
100.00	16 58 52	2121.50	-24.54	32.78	358.07	107.63	17 34 13	1521.5	-21.90	24.98
100.00	7 43 56	4081.97	4.92	160.62	354.99	60.48	8 51 58	3482.0	.95	154.08
110.00	18 20 4	1867.41	-26.92	12.54	357.12	111.91	18 51 11	1267.4	-23.70	4.85
110.00	8 39 14	3908.83	7.08	146.16	353.66	56.47	9 44 22	3308.8	2.62	139.91

DIFFERENTIAL CORRECTIONS

TDE	.3276	TRA	-.7132	TC3	4.5369	BAU	.6023
RDE	-.0015	RRA	-.0987	RC3	2.0693	FAU	.28786
FDE	-.7554	FRA	1.0403	FC-27.5839		BSP	11470
BDE	.3276	BRA	.7200	BC3	4.9866	FSP	4851

MID-COURSE EXECUTION ACCURACY

SGT	3122.7	SGR	1258.7	SG3	1448.7		
RRT	.9304	RRF	-.9956	RTF	-.9345		
SGB	3366.8	R23	-.2976	R13	-.9504		
SG1	3339.1	SG2	431.3	THA	20.92		

ORBIT DETERMINATION ACCURACY

ST	754.8	SR	68.7	SS	589.9
CRT	.4870	CRS	.4391	CST	.9633
LSA	950.2	MSA	126.5	SSA	59.1
EL1	755.5	EL2	59.9	ALF	2.55

LAUNCH DATE NOV 22 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 553.601 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.130	GAL	-.06	AZL	90.44	HCA	171.57	SMA	189.85	ECC	.22183	INC	.4396
RP	231.20	LAP	-.06	LOP	231.30	VP	21.190	GAP	2.47	AZP	89.56	TAL	359.69	TAP	171.26	RCA	147.73	APO	231.96
RC	223.281	GL	-4.90	GP	11.90	ZAL	84.16	ZAP	139.34	ETS	164.29	ZAE	166.92	ETE	89.21	ZAC	101.95	ETC	255.53

V1	30.159	V2	23.788	CLP	140.82														

PLANETOCENTRIC CONIC

C3	8.995	VHL	2.999	DLA	8.94	RAL	144.55	RAD	6567.3	VEL	11.419	PTH	1.98	VHP	4.097	DPA	7.06	RAP	196.53
ECC	1.1480																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 50	2322.11	-22.02	48.41	356.23	108.26	16 24 32	1722.1	-19.33	40.78
90.00	6 3 12	4404.43	6.59	183.43	353.90	62.40	7 16 37	3804.4	2.84	176.76
100.00	17 11 32	2045.70	-22.88	27.76	355.91	109.78	17 45 38	1445.7	-19.98	20.17
100.00	7 20 11	4156.07	7.39	164.74	353.46	60.95	8 29 27	3556.1	3.46	158.15
110.00	18 29 43	1801.07	-25.16	8.19	354.91	113.94	18 59 44	1201.1	-21.71	.74
110.00	8 18 30	3973.47	9.49	149.60	352.19	57.01	9 24 44	3373.5	5.08	143.29

DIFFERENTIAL CORRECTIONS

TDE	.3397	TRA	-.6831	TC3	4.3161	BAU	.5946
RDE	.0384	RRA	-.0944	RC3	2.4133	FAU	.29423
FDE	-1.0631	FRA	.8736	FC-28.3192		BSP	11696
BDE	.3418	BRA	.6896	BC3	4.9450	FSP	5027

MID-COURSE EXECUTION ACCURACY

SGT	2978.1	SGR	1460.9	SG3	1485.3		
RRT	.9278	RRF	-.9973	RTF	-.9283		
SGB	3317.1	R23	-.2983	R13	-.9517		
SG1	3280.0	SG2	494.8	THA	25.08		

ORBIT DETERMINATION ACCURACY

ST	764.3	SR	101.4	SS	762.6
CRT	.9386	CRS	.9111	CST	.9464
LSA	1069.4	MSA	177.0	SSA	34.1
EL1	770.2	EL2	34.7	ALF	7.11

LAUNCH DATE NOV 22 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 557.385 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.114 GAL -.02 AZL 90.76 HCA 172.58 SMA 189.55 ECC .22063 INC .7566 V1 30.159
RP 230.82 LAP -.10 LOP 232.32 VP 21.209 GAP 2.11 AZP 89.25 TAL 359.91 TAP 172.50 RCA 147.73 APO 231.37 V2 23.827
RC 225.247 GL -8.37 GP 13.75 ZAL 83.73 ZAP 137.59 ETS 162.95 ZAE 164.98 ETE 94.81 ZAC 103.68 ETC 255.43 CLP 139.47

PLANETOCENTRIC CONIC

C3 9.028 VHL 3.005 DLA 5.80 RAL 142.96 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 4.043 DPA 8.88 RAP 197.01 ECC 1.1486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 51	2222.75	-19.77	42.00	353.92	110.70	16 40 54	1622.7	-16.77	34.60
90.00	5 32 33	4505.19	9.72	189.18	352.38	63.27	6 47 39	3905.2	6.06	182.41
100.00	17 27 56	1951.52	-20.59	21.71	353.58	112.17	18 0 28	1351.5	-17.40	14.36
100.00	6 51 9	4251.62	10.51	170.12	351.97	61.85	8 2 1	3651.6	6.66	163.44
110.00	18 42 29	1718.25	-22.77	2.94	352.52	116.21	19 11 7	1118.3	-19.06	355.77
110.00	7 53 6	4057.69	12.57	154.18	350.74	57.95	9 0 44	3457.7	8.25	147.75

DIFFERENTIAL CORRECTIONS
TDE .3994 TRA -.6662 TC3 4.0143 BAU .5911
RDE .1061 RRA -.0909 RC3 2.8055 FAU .29728
FDE-1.5501 FRA .7201 FC-28.5089 BSP 13044
BDE .4133 BRA .6723 BC3 4.8975 FSP 5441

MID-COURSE EXECUTION ACCURACY
SGT 2833.7 SGR 1706.9 SG3 1506.8
RRT .9187 RRF -.9984 RTF -.9175
SGB 3308.0 R23 -.2965 R13 -.9534
SG1 3255.5 SG2 586.9 THA 30.03

ORBIT DETERMINATION ACCURACY
ST 855.6 SR 214.9 SS 1058.1
CRT .9664 CRS .9916 CST .9443
LSA 1359.5 MSA 222.0 SSA 19.5
EL1 880.6 EL2 53.7 ALF 13.70

LAUNCH DATE NOV 22 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 561.187 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.099 GAL .02 AZL 91.17 HCA 173.60 SMA 189.28 ECC .21949 INC 1.1734 V1 30.159
RP 230.43 LAP -.13 LOP 233.33 VP 21.230 GAP 1.76 AZP 88.84 TAL .12 TAP 173.72 RCA 147.73 APO 230.82 V2 23.867
RC 227.193 GL -12.90 GP 16.14 ZAL 83.38 ZAP 135.60 ETS 161.28 ZAE 162.39 ETE 99.05 ZAC 105.92 ETC 255.28 CLP 138.06

PLANETOCENTRIC CONIC

C3 9.194 VHL 3.032 DLA 1.66 RAL 141.09 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 4.009 DPA 11.21 RAP 197.67 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 28	2096.84	-16.55	34.16	351.48	113.31	17 2 25	1496.8	-13.25	27.03
90.00	4 54 0	4638.17	13.68	196.94	351.03	64.96	6 11 18	4038.2	10.20	189.99
100.00	17 49 35	1831.98	-17.34	14.31	351.11	114.74	18 20 7	1232.0	-13.86	7.25
100.00	6 14 34	4378.26	14.46	177.44	350.64	63.55	7 27 32	3778.3	10.80	170.57
110.00	18 59 36	1612.84	-19.46	356.56	349.99	118.68	19 26 29	1012.8	-15.48	349.70
110.00	7 21 3	4170.17	16.55	160.47	349.47	59.65	8 30 33	3570.2	12.39	153.83

DIFFERENTIAL CORRECTIONS
TDE .5413 TRA -.4648 TC3 4.1578 BAU .6601
RDE .2334 RRA -.0257 RC3 3.3990 FAU .31006
FDE-2.3577 FRA .0487 FC-29.1962 BSP 11416
BDE .5894 BRA .4655 BC3 5.3703 FSP 5115

MID-COURSE EXECUTION ACCURACY
SGT 2859.3 SGR 2108.5 SG3 1577.5
RRT .9440 RRF -.9992 RTF -.9440
SGB 3552.6 R23 -.2154 R13 -.9757
SG1 3507.0 SG2 567.2 THA 35.93

ORBIT DETERMINATION ACCURACY
ST 1058.9 SR 445.6 SS 1554.0
CRT .9741 CRS .9994 CST .9691
LSA 1920.0 MSA 218.8 SSA 10.8
EL1 1145.0 EL2 93.2 ALF 22.45

LAUNCH DATE NOV 22 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 564.996 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.084 GAL .06 AZL 91.74 HCA 174.62 SMA 189.02 ECC .21841 INC 1.7431 V1 30.159
RP 230.05 LAP -.16 LOP 234.36 VP 21.252 GAP 1.41 AZP 88.26 TAL .31 TAP 174.94 RCA 147.73 APO 230.30 V2 23.907
RC 229.120 GL -18.94 GP 19.34 ZAL 83.16 ZAP 133.24 ETS 159.18 ZAE 158.93 ETE 101.98 ZAC 108.93 ETC 255.03 CLP 136.55

PLANETOCENTRIC CONIC

C3 9.631 VHL 3.103 DLA -3.94 RAL 138.78 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 4.006 DPA 14.31 RAP 198.64 ECC 1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 49	1932.18	-11.87	24.34	349.08	115.90	17 32 1	1332.2	-8.29	17.49
90.00	4 3 10	4820.96	18.64	208.06	350.18	68.29	5 23 31	4221.0	15.53	200.77
100.00	18 19 19	1675.73	-12.66	5.07	348.67	117.30	18 47 14	1075.7	-8.91	358.30
100.00	5 26 21	4552.64	19.46	187.97	349.82	66.85	6 42 14	3952.6	16.16	180.73
110.00	19 23 19	1475.34	-14.78	348.65	347.45	121.18	19 47 55	875.3	-10.54	342.11
110.00	6 38 50	4325.80	21.65	169.65	348.72	62.88	7 50 56	3725.8	17.84	162.59

DIFFERENTIAL CORRECTIONS
TDE .6109 TRA -.5174 TC3 3.7907 BAU .7069
RDE .4149 RRA -.0093 RC3 3.9716 FAU .31024
FDE-3.1717 FRA -.0977 FC-27.8883 BSP 12680
BDE .7385 BRA .5175 BC3 5.4902 FSP 5195

MID-COURSE EXECUTION ACCURACY
SGT 2779.3 SGR 2581.3 SG3 1578.9
RRT .9311 RRF -.9996 RTF -.9285
SGB 3793.1 R23 -.2056 R13 -.9782
SG1 3727.6 SG2 702.0 THA 42.73

ORBIT DETERMINATION ACCURACY
ST 1166.1 SR 769.5 SS 2034.9
CRT .9703 CRS .9998 CST .9665
LSA 2454.2 MSA 263.5 SSA 6.8
EL1 1388.3 EL2 156.4 ALF 33.11

LAUNCH DATE NOV 22 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 568.816 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.070 GAL .09 AZL 92.59 HCA 175.65 SMA 188.77 ECC .21740 INC 2.5896 V1 30.159
RP 229.67 LAP -.20 LOP 235.38 VP 21.276 GAP 1.07 AZP 87.42 TAL .49 TAP 176.14 RCA 147.73 APO 229.81 V2 23.948
RC 231.027 GL -27.21 GP 23.79 ZAL 83.18 ZAP 130.24 ETS 156.51 ZAE 154.21 ETE 103.77 ZAC 113.12 ETC 254.61 CLP 134.90

PLANETOCENTRIC CONIC

C3 10.675 VHL 3.267 DLA -11.65 RAL 135.73 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.065 DPA 18.57 RAP 200.10 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 7	1705.05	-4.83	11.36	347.26	117.94	18 16 32	1105.0	-1.06	4.71
90.00	2 50 35	5089.28	24.42	225.60	350.63	75.19	4 15 24	4489.3	22.14	217.66
100.00	19 3 33	1461.65	-5.71	352.98	346.77	119.39	19 27 55	861.7	-1.75	346.43
100.00	4 17 50	4807.91	25.38	204.60	350.34	73.66	5 37 58	4207.9	22.90	196.69
110.00	19 58 27	1289.73	-8.01	338.53	345.36	123.34	20 19 57	689.7	-3.57	332.26
110.00	5 39 25	4552.60	27.93	184.26	349.39	69.45	6 55 18	3952.6	24.88	176.42

DIFFERENTIAL CORRECTIONS
TDE .7714 TRA -.5128 TC3 3.2181 BAU .7834
RDE .7604 RRA .0502 RC3 4.4475 FAU .29815
FDE-4.3146 FRA -.4334 FC-24.1802 BSP 13964
BDE 1.0832 BRA .5152 BC3 5.4897 FSP 5066

MID-COURSE EXECUTION ACCURACY
SGT 2663.7 SGR 3198.8 SG3 1515.1
RRT .9193 RRF -.9997 RTF -.9152
SGB 4162.6 R23 -.1724 R13 -.9848
SG1 4080.7 SG2 821.8 THA 50.66

ORBIT DETERMINATION ACCURACY
ST 1382.0 SR 1336.6 SS 2663.9
CRT .9755 CRS .9999 CST .9732
LSA 3272.7 MSA 287.0 SSA 4.2
EL1 1910.8 EL2 212.5 ALF 44.02

LAUNCH DATE NOV 22 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 572.646 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.057 GAL .12 AZL 93.96 HCA 176.67 SMA 188.54 ECC .21644 INC 3.9516 V1 30.159
RP 229.28 LAP -.23 LOP 236.41 VP 21.302 GAP .74 AZP 86.05 TAL .66 TAP 177.34 RCA 147.73 APO 229.35 V2 23.988
RC 232.913 GL -38.67 GP 30.27 ZAL 83.63 ZAP 126.07 ETS 153.18 ZAE 147.48 ETE 104.66 ZAC 119.21 ETC 253.77 CLP 132.97

PLANETOCENTRIC CONIC

C3 13.330 VHL 3.651 DLA -22.34 RAL 131.39 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 4.260 DPA 24.72 RAP 202.44 ECC 1.2194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 17	1339.64	6.89	350.90	348.13	117.53	19 41 36	739.6	10.52	344.11
90.00	0 44 45	5548.13	28.30	258.39	353.80	91.00	2 17 13	4948.1	28.14	249.73
100.00	20 24 24	1129.46	5.50	334.70	347.37	119.43	20 43 13	529.5	9.38	328.06
100.00	2 22 19	5233.55	29.88	235.25	353.80	89.03	3 49 33	4633.5	29.42	226.47
110.00	20 59 9	1020.54	2.23	324.41	345.34	124.12	21 16 9	420.5	6.69	318.17
110.00	4 4 4	4915.23	33.72	210.80	353.53	84.05	5 25 59	4315.2	32.53	201.76

DIFFERENTIAL CORRECTIONS
TDE 1.0463 TRA -.4363 TC3 2.5457 BAU .9634
RDE 1.5082 RRA .2732 RC3 4.7691 FAU .28082
FDE-5.8922 FRA-1.2115 FC-18.2376 BSP 14788
BDE 1.8356 BRA .5148 BC3 5.4060 FSP 4167

MID-COURSE EXECUTION ACCURACY
SGT 2588.3 SGR 4236.0 SG3 1412.0
RRT .9136 RRF -.9998 RTF -.9082
SGB 4964.2 R23 -.1217 R13 -.9925
SG1 4879.4 SG2 913.8 THA 59.65

ORBIT DETERMINATION ACCURACY
ST 1657.8 SR 2373.2 SS 3414.4
CRT .9814 CRS 1.0000 CST .9798
LSA 4466.1 MSA 304.8 SSA 2.5
EL1 2883.0 EL2 262.1 ALF 55.24

LAUNCH DATE NOV 22 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 576.483 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.045 GAL .15 AZL 96.55 HCA 177.70 SMA 188.32 ECC .21554 INC 6.5465 V1 30.159
RP 228.89 LAP -.26 LOP 237.44 VP 21.328 GAP .41 AZP 83.45 TAL .83 TAP 178.53 RCA 147.73 APO 228.91 V2 24.029
RC 234.778 GL -54.34 GP 40.02 ZAL 84.79 ZAP 119.67 ETS 149.58 ZAE 137.47 ETE 105.39 ZAC 128.25 ETC 251.95 CLP 130.27

PLANETOCENTRIC CONIC

C3 21.534 VHL 4.641 DLA -36.77 RAL 124.32 RAD 6567.9 VEL 11.955 PTH 2.13 VHP 4.832 DPA 33.94 RAP 206.42 ECC 1.3544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.49	18 36 47	1462.52	24.51	9.61	356.70	118.31	19 1 10	862.5	28.10	2.05
114.51	0 30 50	5645.70	24.53	264.37	356.70	118.30	2 4 56	5045.7	28.11	256.80
65.49	18 36 47	1462.52	24.51	9.61	356.70	118.31	19 1 10	862.5	28.10	2.05
114.51	0 30 50	5645.70	24.53	264.37	356.70	118.30	2 4 56	5045.7	28.11	256.80
65.49	18 36 47	1462.52	24.51	9.61	356.70	118.31	19 1 10	862.5	28.10	2.05
114.51	0 30 50	5645.70	24.53	264.37	356.70	118.30	2 4 56	5045.7	28.11	256.80

DIFFERENTIAL CORRECTIONS
TDE 1.5257 TRA -.3349 TC3 1.4677 BAU 1.2445
RDE 3.1858 RRA .7921 RC3 4.0659 FAU .22218
FDE-7.0818 FRA-1.9192 FC3-8.9323 BSP 17275
BDE 3.5323 BRA .8600 BC3 4.3227 FSP 2997

MID-COURSE EXECUTION ACCURACY
SGT 2381.3 SGR 5585.9 SG3 1072.0
RRT .8961 RRF -.9998 RTF -.8881
SGB 6072.3 R23 -.0823 R13 -.9965
SG1 5991.8 SG2 985.3 THA 68.48

ORBIT DETERMINATION ACCURACY
ST 1890.6 SR 3952.1 SS 3670.7
CRT .9847 CRS 1.0000 CST .9833
LSA 5706.6 MSA 318.6 SSA 1.8
EL1 4370.9 EL2 297.6 ALF 64.65

LAUNCH DATE NOV 22 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 595.959 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.994 GAL .22 AZL 81.69 HCA 182.96 SMA 187.42 ECC .21179 INC 8.3127 V1 30.159
RP 226.95 LAP -.43 LOP 242.66 VP 21.481 GAP -1.14 AZP 98.30 TAL 1.28 TAP 184.24 RCA 147.73 APO 227.11 V2 24.235
RC 243.792 GL 62.04 GP -36.08 ZAL 85.05 ZAP 116.35 ETS 199.52 ZAE 140.73 ETE 236.79 ZAC 53.94 ETC 252.66 CLP 123.31

PLANETOCENTRIC CONIC

C3 29.180 VHL 5.402 DLA 68.81 RAL 191.15 RAD 6568.2 VEL 12.270 PTH 2.21 VHP 4.131 DPA -33.52 RAP 168.87 ECC 1.4802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
19.61	11 7 36	4328.71	-48.29	231.48	117.94	26.36	12 19 45	3728.7	-55.31	225.67
19.61	6 11 42	4698.54	-24.96	241.96	55.79	19.02	7 30 0	4098.5	-32.49	239.30
24.24	8 49 32	4501.65	-35.75	232.39	84.96	26.44	10 4 34	3901.7	-42.82	227.96
155.76	19 11 17	2756.14	-35.74	83.80	84.94	26.44	19 57 13	2156.1	-42.81	79.37
24.24	8 49 32	4501.65	-35.75	232.39	84.96	26.44	10 4 34	3901.7	-42.82	227.96
155.76	19 11 17	2756.14	-35.74	83.80	84.94	26.44	19 57 13	2156.1	-42.81	79.37

DIFFERENTIAL CORRECTIONS
TDE .5200 TRA -.3847 TC3 .5216 BAU 1.1749
RDE 1.9818 RRA 1.2890 RC3-2.9662 FAU .31411
FDE 6.3127 FRA 3.8864 FC3-9.3190 BSP 17896
BDE 2.0489 BRA 1.3452 BC3 3.0117 FSP 4625

MID-COURSE EXECUTION ACCURACY
SGT 1377.2 SGR 5385.1 SG3 1436.1
RRT -.6631 RRF .9997 RTF -.6491
SGB 5558.4 R23 -.0511 R13 .9986
SG1 5464.7 SG2 1015.8 THA 99.97

ORBIT DETERMINATION ACCURACY
ST 647.5 SR 2390.8 SS 2686.0
CRT .4996 CRS -.9997 CST -.5190
LSA 3611.2 MSA 555.8 SSA 2.1
EL1 2413.8 EL2 555.5 ALF 81.86

LAUNCH DATE NOV 22 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 599.865 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.985 GAL .24 AZL 83.39 HCA 184.01 SMA 187.27 ECC .21118 INC 6.6057 V1 30.159
RP 226.56 LAP -.46 LOP 243.71 VP 21.516 GAP -1.43 AZP 96.59 TAL 1.35 TAP 185.36 RCA 147.73 APO 226.82 V2 24.277
RC 245.534 GL 55.06 GP -29.08 ZAL 84.14 ZAP 117.76 ETS 195.50 ZAE 145.82 ETE 229.61 ZAC 60.69 ETC 253.95 CLP 122.21

PLANETOCENTRIC CONIC

C3 21.432 VHL 4.629 DLA 64.18 RAL 177.97 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 3.702 DPA -27.38 RAP 172.76 ECC 1.3527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.65	8 9 9	4407.79	-38.68	223.14	65.19	33.91	9 22 36	3807.8	-45.16	217.23
150.35	18 6 31	2698.14	-38.67	80.51	65.17	33.91	18 51 29	2098.1	-45.15	74.61
29.65	8 9 9	4407.79	-38.68	223.14	65.19	33.91	9 22 36	3807.8	-45.16	217.23
150.35	18 6 31	2698.14	-38.67	80.51	65.17	33.91	18 51 29	2098.1	-45.15	74.61
29.65	8 9 9	4407.79	-38.68	223.14	65.19	33.91	9 22 36	3807.8	-45.16	217.23
150.35	18 6 31	2698.14	-38.67	80.51	65.17	33.91	18 51 29	2098.1	-45.15	74.61

DIFFERENTIAL CORRECTIONS
TDE .3085 TRA -.4058 TC3 .6315 BAU .9330
RDE 1.8230 RRA .9187 RC3-3.1943 FAU .37770
FDE 8.6334 FRA 4.1782 FC-15.2570 BSP 15645
BDE 1.8489 BRA 1.0043 BC3 3.2562 FSP 6137

MID-COURSE EXECUTION ACCURACY
SGT 1348.1 SGR 4544.6 SG3 1842.4
RRT -.6330 RRF .9998 RTF -.6217
SGB 4740.3 R23 -.0582 R13 .9982
SG1 4628.3 SG2 1024.8 THA 101.19

ORBIT DETERMINATION ACCURACY
ST 515.6 SR 2389.9 SS 3605.1
CRT .4781 CRS -.9999 CST -.4888
LSA 4332.6 MSA 450.6 SSA 2.4
EL1 2403.1 EL2 450.3 ALF 83.90

LAUNCH DATE NOV 22 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 603.784 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.977 GAL .24 AZL 84.40 HCA 185.07 SMA 187.14 ECC .21061 INC 5.6040 V1 30.159
RP 226.17 LAP -.49 LOP 244.77 VP 21.551 GAP -1.72 AZP 95.58 TAL 1.40 TAP 186.47 RCA 147.73 APO 226.55 V2 24.318
RC 247.256 GL 49.97 GP -24.29 ZAL 83.48 ZAP 117.76 ETS 192.29 ZAE 148.34 ETE 222.23 ZAC 65.24 ETC 254.62 CLP 120.73

PLANETOCENTRIC CONIC

C3 17.688 VHL 4.206 DLA 60.28 RAL 170.92 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 3.470 DPA -22.95 RAP 174.83 ECC 1.2911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.27	7 52 13	4343.13	-39.49	215.35	52.89	39.96	9 4 37	3743.1	-45.40	208.45
145.73	17 27 15	2671.86	-39.48	78.16	52.87	39.96	18 11 47	2071.9	-45.39	71.27
34.27	7 52 13	4343.13	-39.49	215.35	52.89	39.96	9 4 37	3743.1	-45.40	208.45
145.73	17 27 15	2671.86	-39.48	78.16	52.87	39.96	18 11 47	2071.9	-45.39	71.27
34.27	7 52 13	4343.13	-39.49	215.35	52.89	39.96	9 4 37	3743.1	-45.40	208.45
145.73	17 27 15	2671.86	-39.48	78.16	52.87	39.96	18 11 47	2071.9	-45.39	71.27

DIFFERENTIAL CORRECTIONS
TDE .2648 TRA -.4005 TC3 .6262 BAU .7745
RDE 1.5029 RRA .7067 RC3-3.2148 FAU .42115
FDE 9.4320 FRA 4.2701 FC-20.6134 BSP 13760
BDE 1.5261 BRA .8123 BC3 3.2752 FSP 7241

MID-COURSE EXECUTION ACCURACY
SGT 1272.5 SGR 3908.5 SG3 2122.5
RRT -.5677 RRF .9997 RTF -.5571
SGB 4110.5 R23 -.0639 R13 .9978
SG1 3979.6 SG2 1028.8 THA 101.23

ORBIT DETERMINATION ACCURACY
ST 489.3 SR 2130.4 SS 3997.9
CRT .5227 CRS-1.0000 CST -.5310
LSA 4537.5 MSA 414.9 SSA 3.0
EL1 2146.2 EL2 414.0 ALF 82.89

LAUNCH DATE NOV 22 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 607.715 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.970 GAL .25 AZL 85.06 HCA 186.13 SMA 187.01 ECC .21007 INC 4.9434 V1 30.159
RP 225.78 LAP -.53 LOP 245.83 VP 21.587 GAP -2.00 AZP 94.92 TAL 1.44 TAP 187.57 RCA 147.73 APO 226.30 V2 24.360
RC 248.959 GL 46.12 GP -20.85 ZAL 82.99 ZAP 117.01 ETS 189.79 ZAE 149.26 ETE 215.44 ZAC 68.45 ETC 255.01 CLP 119.08

PLANETOCENTRIC CONIC

C3 15.545 VHL 3.943 DLA 57.14 RAL 166.62 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.323 DPA -19.64 RAP 175.96 ECC 1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.04	7 44 51	4294.81	-39.41	209.10	44.59	44.60	8 56 26	3694.8	-44.85	201.60
141.96	17 0 18	2661.01	-39.39	76.67	44.58	44.59	17 44 39	2061.0	-44.84	69.17
38.04	7 44 51	4294.81	-39.41	209.10	44.59	44.60	8 56 26	3694.8	-44.85	201.60
141.96	17 0 18	2661.01	-39.39	76.67	44.58	44.59	17 44 39	2061.0	-44.84	69.17
38.04	7 44 51	4294.81	-39.41	209.10	44.59	44.60	8 56 26	3694.8	-44.85	201.60
141.96	17 0 18	2661.01	-39.39	76.67	44.58	44.59	17 44 39	2061.0	-44.84	69.17

DIFFERENTIAL CORRECTIONS
TDE .2819 TRA -.3801 TC3 .5469 BAU .6715
RDE 1.2253 RRA .5535 RC3-3.1845 FAU .45989
FDE 9.5204 FRA 4.1392 FC-25.6131 BSP 11827
BDE 1.2573 BRA .6714 BC3 3.2311 FSP 7822

MID-COURSE EXECUTION ACCURACY
SGT 1179.0 SGR 3416.8 SG3 2322.0
RRT -.4624 RRF .9996 RTF -.4522
SGB 3614.5 R23 -.0634 R13 .9977
SG1 3464.3 SG2 1031.1 THA 99.96

ORBIT DETERMINATION ACCURACY
ST 511.1 SR 1836.9 SS 4088.7
CRT .6311 CRS-1.0000 CST -.6379
LSA 4494.3 MSA 393.3 SSA 3.6
EL1 1866.4 EL2 390.2 ALF 79.58

LAUNCH DATE NOV 22 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 611.658 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.963 GAL .25 AZL 85.52 HCA 187.19 SMA 186.89 ECC .20958 INC 4.4775 V1 30.159
RP 225.38 LAP -.56 LOP 246.90 VP 21.623 GAP -2.28 AZP 94.44 TAL 1.46 TAP 188.65 RCA 147.73 APO 226.06 V2 24.402
RC 250.643 GL 43.12 GP -18.29 ZAL 82.63 ZAP 115.85 ETS 187.85 ZAE 149.16 ETE 209.57 ZAC 70.79 ETC 255.27 CLP 117.34

PLANETOCENTRIC CONIC

C3 14.176 VHL 3.765 DLA 54.61 RAL 163.75 RAD 6567.6 VEL 11.643 PTH 2.04 VHP 3.218 DPA -17.06 RAP 176.55 ECC 1.2333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.13	7 41 55	4256.63	-38.97	204.10	38.69	48.15	8 52 52	3656.6	-44.03	196.23
138.87	16 40 19	2658.08	-38.96	75.80	38.68	48.14	17 24 37	2058.1	-44.02	67.93
41.13	7 41 55	4256.63	-38.97	204.10	38.69	48.15	8 52 52	3656.6	-44.03	196.23
138.87	16 40 19	2658.08	-38.96	75.80	38.68	48.14	17 24 37	2058.1	-44.02	67.93
41.13	7 41 55	4256.63	-38.97	204.10	38.69	48.15	8 52 52	3656.6	-44.03	196.23
138.87	16 40 19	2658.08	-38.96	75.80	38.68	48.14	17 24 37	2058.1	-44.02	67.93

DIFFERENTIAL CORRECTIONS
TDE .3169 TRA -.3601 TC3 .3758 BAU .5835
RDE 1.0389 RRA .4676 RC3-3.0557 FAU .48444
FDE 9.5673 FRA 4.1507 FC-29.5844 BSP 10562
BDE 1.0862 BRA .5901 BC3 3.0787 FSP 8480

MID-COURSE EXECUTION ACCURACY
SGT 1099.1 SGR 3050.2 SG3 2485.0
RRT -.3136 RRF .9994 RTF -.3038
SGB 3242.2 R23 -.0531 R13 .9981
SG1 3072.2 SG2 1036.1 THA 97.28

ORBIT DETERMINATION ACCURACY
ST 559.6 SR 1624.9 SS 4152.7
CRT .7227 CRS-1.0000 CST -.7280
LSA 4477.9 MSA 382.6 SSA 4.3
EL1 1677.2 EL2 374.7 ALF 75.27

LAUNCH DATE NOV 22 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 615.611 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.957 GAL .25 AZL 85.87 HCA 188.26 SMA 186.79 ECC .20913 INC 4.1289 V1 30.159
RP 224.99 LAP -.59 LOP 247.97 VP 21.661 GAP -2.55 AZP 94.09 TAL 1.47 TAP 189.73 RCA 147.73 APO 225.85 V2 24.444
RC 252.307 GL 40.72 GP -16.32 ZAL 82.37 ZAP 114.43 ETS 186.31 ZAE 148.41 ETE 204.65 ZAC 72.55 ETC 255.46 CLP 115.53

PLANETOCENTRIC CONIC

C3 13.235 VHL 3.638 DLA 52.54 RAL 161.72 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 3.137 DPA -14.97 RAP 176.78 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.69	7 41 18	4225.22	-38.41	200.02	34.32	50.91	8 51 43	3625.2	-43.16	191.92
136.31	16 24 43	2659.43	-38.40	75.33	34.31	50.90	17 9 3	2059.4	-43.15	67.24
43.69	7 41 18	4225.22	-38.41	200.02	34.32	50.91	8 51 43	3625.2	-43.16	191.92
136.31	16 24 43	2659.43	-38.40	75.33	34.31	50.90	17 9 3	2059.4	-43.15	67.24
43.69	7 41 18	4225.22	-38.41	200.02	34.32	50.91	8 51 43	3625.2	-43.16	191.92
136.31	16 24 43	2659.43	-38.40	75.33	34.31	50.90	17 9 3	2059.4	-43.15	67.24

DIFFERENTIAL CORRECTIONS
TDE .3666 TRA -.3397 TC3 .1552 BAU .5208
RDE .8889 RRA .4002 RC3-2.9393 FAU .50901
FDE 9.4110 FRA 4.0888 FC-33.2965 BSP 9383
BDE .9615 BRA .5249 BC3 2.9434 FSP 8875

MID-COURSE EXECUTION ACCURACY
SGT 1058.4 SGR 2758.2 SG3 2618.8
RRT -.1181 RRF .9992 RTF -.1089
SGB 2954.3 R23 -.0293 R13 .9988
SG1 2761.5 SG2 1049.7 THA 93.03

ORBIT DETERMINATION ACCURACY
ST 634.9 SR 1435.5 SS 4113.7
CRT .7967 CRS-1.0000 CST -.8010
LSA 4386.7 MSA 378.0 SSA 5.1
EL1 1527.7 EL2 360.6 ALF 69.39

LAUNCH DATE NOV 22 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 619.574 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.951 GAL .25 AZL 86.14 HCA 189.33 SMA 186.69 ECC .20871 INC 3.8597 V1 30.159
RP 224.60 LAP -.63 LOP 249.04 VP 21.700 GAP -2.81 AZP 93.81 TAL 1.46 TAP 190.79 RCA 147.73 APO 225.65 V2 24.486
RC 253.951 GL 38.77 GP -14.75 ZAL 82.18 ZAP 112.85 ETS 185.06 ZAE 147.23 ETE 200.59 ZAC 73.91 ETC 255.61 CLP 113.67

PLANETOCENTRIC CONIC

C3 12.549 VHL 3.542 DLA 50.83 RAL 160.22 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 3.073 DPA -13.23 RAP 176.78 ECC 1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.85	7 41 59	4198.60	-37.83	196.62	30.99	53.10	8 51 58	3598.6	-42.32	188.38
134.15	16 12 7	2663.18	-37.82	75.15	30.98	53.09	16 56 30	2063.2	-42.31	66.91
45.85	7 41 59	4198.60	-37.83	196.62	30.99	53.10	8 51 58	3598.6	-42.32	188.38
134.15	16 12 7	2663.18	-37.82	75.15	30.98	53.09	16 56 30	2063.2	-42.31	66.91
45.85	7 41 59	4198.60	-37.83	196.62	30.99	53.10	8 51 58	3598.6	-42.32	188.38
134.15	16 12 7	2663.18	-37.82	75.15	30.98	53.09	16 56 30	2063.2	-42.31	66.91

DIFFERENTIAL CORRECTIONS
TDE .4158 TRA -.3129 TC3 -.1189 BAU .4704
RDE .7837 RRA .3522 RC3-2.8012 FAU .52753
FDE 9.3289 FRA 4.0583 FC-36.3928 BSP 8667
BDE .8872 BRA .4711 BC3 2.8037 FSP 9413

MID-COURSE EXECUTION ACCURACY
SGT 1049.5 SGR 2521.7 SG3 2732.8
RRT .1123 RRF .9989 RTF .1204
SGB 2731.4 R23 .0150 R13 .9988
SG1 2525.0 SG2 1041.5 THA 86.78

ORBIT DETERMINATION ACCURACY
ST 714.3 SR 1297.5 SS 4095.7
CRT .8499 CRS-1.0000 CST -.8532
LSA 4339.6 MSA 369.2 SSA 5.9
EL1 1441.9 EL2 338.6 ALF 63.34

LAUNCH DATE NOV 22 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 623.547 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.946 GAL .25 AZL 86.35 HCA 190.41 SMA 186.60 ECC .20832 INC 3.6446 V1 30.159
RP 224.21 LAP -.66 LOP 250.12 VP 21.739 GAP -3.07 AZP 93.59 TAL 1.44 TAP 191.84 RCA 147.73 APO 225.47 V2 24.527
RC 255.576 GL 37.15 GP -13.47 ZAL 82.05 ZAP 111.15 ETS 184.04 ZAE 145.75 ETE 197.25 ZAC 74.98 ETC 255.73 CLP 111.78

PLANETOCENTRIC CONIC

C3 12.028 VHL 3.468 DLA 49.38 RAL 159.10 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 3.020 DPA -11.73 RAP 176.61 ECC 1.1980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.70	7 43 25	4175.60	-37.25	193.76	28.39	54.89	8 53 1	3575.6	-41.54	185.42
132.30	16 1 42	2668.20	-37.24	75.13	28.38	54.87	16 46 10	2068.2	-41.53	66.81
47.70	7 43 25	4175.60	-37.25	193.76	28.39	54.89	8 53 1	3575.6	-41.54	185.42
132.30	16 1 42	2668.20	-37.24	75.13	28.38	54.87	16 46 10	2068.2	-41.53	66.81
47.70	7 43 25	4175.60	-37.25	193.76	28.39	54.89	8 53 1	3575.6	-41.54	185.42
132.30	16 1 42	2668.20	-37.24	75.13	28.38	54.87	16 46 10	2068.2	-41.53	66.81

DIFFERENTIAL CORRECTIONS
TDE .4708 TRA -.2867 TC3 -.4230 BAU .4355
RDE .6992 RRA .3152 RC3-2.6752 FAU .54535
FDE 9.1955 FRA 4.0266 FC-39.2514 BSP 7981
BDE .8429 BRA .4260 BC3 2.7085 FSP 9711

MID-COURSE EXECUTION ACCURACY
SGT 1104.6 SGR 2327.5 SG3 2834.7
RRT .3350 RRF .9984 RTF .3414
SGB 2576.3 R23 .0777 R13 .9954
SG1 2363.7 SG2 1024.8 THA 78.84

ORBIT DETERMINATION ACCURACY
ST 807.9 SR 1181.1 SS 4048.9
CRT .8872 CRS-1.0000 CST -.8897
LSA 4278.9 MSA 363.9 SSA 6.7
EL1 1395.7 EL2 315.3 ALF 56.84

LAUNCH DATE NOV 22 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 627.529 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.941 GAL .24 AZL 86.53 HCA 191.49 SMA 186.51 ECC .20797 INC 3.4689 V1 30.159
RP 223.82 LAP -.69 LOP 251.20 VP 21.779 GAP -3.33 AZP 93.40 TAL 1.40 TAP 192.88 RCA 147.73 APO 225.30 V2 24.569
RC 257.180 GL 35.79 GP -12.40 ZAL 81.98 ZAP 109.38 ETS 183.18 ZAE 144.07 ETE 194.50 ZAC 75.83 ETC 255.84 CLP 109.86

PLANETOCENTRIC CONIC

C3 11.619 VHL 3.409 DLA 48.13 RAL 158.24 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 2.975 DPA -10.42 RAP 176.31 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.30	7 45 23	4155.30	-36.71	191.28	26.32	56.36	8 54 38	3555.3	-40.83	182.89
130.70	15 52 55	2673.97	-36.70	75.24	26.31	56.35	16 37 29	2074.0	-40.82	66.85
49.30	7 45 23	4155.30	-36.71	191.28	26.32	56.36	8 54 38	3555.3	-40.83	182.89
130.70	15 52 55	2673.97	-36.70	75.24	26.31	56.35	16 37 29	2074.0	-40.82	66.85
49.30	7 45 23	4155.30	-36.71	191.28	26.32	56.36	8 54 38	3555.3	-40.83	182.89
130.70	15 52 55	2673.97	-36.70	75.24	26.31	56.35	16 37 29	2074.0	-40.82	66.85

DIFFERENTIAL CORRECTIONS
TDE .5268 TRA -.2620 TC3 -.7764 BAU .4135
RDE .6323 RRA .2878 RC3-2.5462 FAU .55977
FDE 9.0595 FRA 4.0253 FC-41.7076 BSP 7577
BDE .8230 BRA .3892 BC3 2.6619 FSP 10002

MID-COURSE EXECUTION ACCURACY
SGT 1224.7 SGR 2160.6 SG3 2921.2
RRT .5222 RRF .9978 RTF .5276
SGB 2483.5 R23 .1530 R13 .9860
SG1 2277.2 SG2 990.9 THA 69.45

ORBIT DETERMINATION ACCURACY
ST 907.5 SR 1086.1 SS 3997.5
CRT .9120 CRS-1.0000 CST -.9137
LSA 4225.2 MSA 361.8 SSA 7.6
EL1 1384.9 EL2 291.9 ALF 50.60

LAUNCH DATE NOV 22 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 631.522 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.937 GAL .23 AZL 86.68 HCA 192.57 SMA 186.44 ECC .20765 INC 3.3225 V1 30.159
RP 223.44 LAP -.72 LOP 252.28 VP 21.820 GAP -3.58 AZP 93.24 TAL 1.34 TAP 193.91 RCA 147.73 APO 225.15 V2 24.611
RC 258.763 GL 34.63 GP -11.50 ZAL 81.96 ZAP 107.54 ETS 182.45 ZAE 142.24 ETE 192.23 ZAC 76.53 ETC 255.94 CLP 107.91

PLANETOCENTRIC CONIC

C3 11.289 VHL 3.360 DLA 47.05 RAL 157.59 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.937 DPA -9.24 RAP 175.92 ECC 1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.71	7 47 40	4137.15	-36.21	189.12	24.65	57.61	8 56 37	3537.2	-40.17	180.69
129.29	15 45 25	2680.14	-36.20	75.43	24.64	57.59	16 30 5	2080.1	-40.16	67.00
50.71	7 47 40	4137.15	-36.21	189.12	24.65	57.61	8 56 37	3537.2	-40.17	180.69
129.29	15 45 25	2680.14	-36.20	75.43	24.64	57.59	16 30 5	2080.1	-40.16	67.00
50.71	7 47 40	4137.15	-36.21	189.12	24.65	57.61	8 56 37	3537.2	-40.17	180.69
129.29	15 45 25	2680.14	-36.20	75.43	24.64	57.59	16 30 5	2080.1	-40.16	67.00

DIFFERENTIAL CORRECTIONS
TDE .5850 TRA -.2346 TC3-1.1603 BAU .4054
RDE .5775 RRA .2650 RC3-2.4223 FAU .57223
FDE 8.9098 FRA 4.0142 FC-43.8835 BSP 7446
BDE .8221 BRA .3539 BC3 2.6858 FSP 10344

MID-COURSE EXECUTION ACCURACY
SGT 1395.7 SGR 2014.8 SG3 2994.7
RRT .6622 RRF .9970 RTF .6666
SGB 2451.0 R23 .2232 R13 .9718
SG1 2268.1 SG2 929.1 THA 59.77

ORBIT DETERMINATION ACCURACY
ST 1013.4 SR 1005.9 SS 3937.5
CRT .9306 CRS-1.0000 CST -.9316
LSA 4173.0 MSA 358.8 SSA 8.5
EL1 1402.9 EL2 266.0 ALF 44.77

LAUNCH DATE NOV 22 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 635.523 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.933	GAL	.22	AZL	86.80	HCA	193.66	SMA	186.37	ECC	.20736	INC	3.1988	V1	30.159
RP	223.05	LAP	-.75	LOP	253.37	VP	21.861	GAP	-3.82	AZP	93.11	TAL	1.27	TAP	194.93	RCA	147.73	APO	225.02	V2	24.653
RC	260.326	GL	33.62	GP	-10.72	ZAL	81.98	ZAP	105.65	ETS	181.84	ZAE	140.31	ETE	190.34	ZAC	77.09	ETC	256.03	CLP	105.94

PLANETOCENTRIC CONIC

C3	11.016	VHL	3.319	DLA	46.10	RAL	157.10	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	2.906	DPA	-8.17	RAP	175.46	ECC	1.1813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.97	7 50 12	4120.71	-35.73	187.19	23.29	58.67	8 58 53	3520.7	-39.57	178.74
128.03	15 38 57	2686.49	-35.72	75.67	23.29	58.66	16 23 43	2086.5	-39.57	67.22
51.97	7 50 12	4120.71	-35.73	187.19	23.29	58.67	8 58 53	3520.7	-39.57	178.74
128.03	15 38 57	2686.49	-35.72	75.67	23.29	58.66	16 23 43	2086.5	-39.57	67.22
51.97	7 50 12	4120.71	-35.73	187.19	23.29	58.67	8 58 53	3520.7	-39.57	178.74
128.03	15 38 57	2686.49	-35.72	75.67	23.29	58.66	16 23 43	2086.5	-39.57	67.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6414	TRA	-.2117	TC3	-1.5578	BAU	.4102	SGT	1604.1	SGR	1894.4	SG3	3068.8	ST	1118.9	SR	942.3	SS	3892.3
RDE	.5343	RRA	.2507	RC3	-2.3086	FAU	.58391	RRT	.7494	RRF	.9961	RTF	.7537	CRT	.9419	CRS	-.9999	CST	-.9423
FDE	8.7903	FRA	4.0843	FC	-45.8885	BSP	7538	SGB	2482.3	R23	.2738	R13	.9578	LSA	4142.3	MSA	362.1	SSA	9.4
BDE	.8348	BRA	.3281	BC3	2.7850	FSP	10577	SG1	2326.8	SG2	864.7	THA	51.29	EL1	1442.1	EL2	245.5	ALF	39.81

LAUNCH DATE NOV 22 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 639.535 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.930	GAL	.20	AZL	86.91	HCA	194.75	SMA	186.31	ECC	.20710	INC	3.0924	V1	30.159
RP	222.66	LAP	-.79	LOP	254.46	VP	21.903	GAP	-4.06	AZP	92.99	TAL	1.19	TAP	195.94	RCA	147.73	APO	224.90	V2	24.695
RC	261.869	GL	32.75	GP	-10.04	ZAL	82.05	ZAP	103.73	ETS	181.30	ZAE	138.30	ETE	188.75	ZAC	77.56	ETC	256.12	CLP	103.95

PLANETOCENTRIC CONIC

C3	10.787	VHL	3.284	DLA	45.25	RAL	156.73	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	2.879	DPA	-7.19	RAP	174.94	ECC	1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.10	7 52 57	4105.60	-35.29	185.46	22.19	59.60	9 1 23	3505.6	-39.02	176.99
126.90	15 33 18	2693.00	-35.28	75.95	22.18	59.59	16 18 11	2093.0	-39.01	67.48
53.10	7 52 57	4105.60	-35.29	185.46	22.19	59.60	9 1 23	3505.6	-39.02	176.99
126.90	15 33 18	2693.00	-35.28	75.95	22.18	59.59	16 18 11	2093.0	-39.01	67.48
53.10	7 52 57	4105.60	-35.29	185.46	22.19	59.60	9 1 23	3505.6	-39.02	176.99
126.90	15 33 18	2693.00	-35.28	75.95	22.18	59.59	16 18 11	2093.0	-39.01	67.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6988	TRA	-.1824	TC3	-1.9776	BAU	.4271	SGT	1837.9	SGR	1784.9	SG3	3131.1	ST	1227.2	SR	884.6	SS	3827.8
RDE	.4965	RRA	.2349	RC3	-2.2045	FAU	.59515	RRT	.8151	RRF	.9950	RTF	.8189	CRT	.9523	CRS	-.9999	CST	-.9522
FDE	8.6316	FRA	4.0784	FC	-47.7656	BSP	7832	SGB	2562.0	R23	.2993	R13	.9490	LSA	4100.2	MSA	359.3	SSA	10.4
BDE	.8572	BRA	.2974	BC3	2.9615	FSP	10756	SG1	2440.8	SG2	778.7	THA	43.97	EL1	1496.6	EL2	221.3	ALF	35.36

LAUNCH DATE NOV 22 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 643.555 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.927	GAL	.19	AZL	87.00	HCA	195.84	SMA	186.26	ECC	.20687	INC	3.0003	V1	30.159
RP	222.28	LAP	-.82	LOP	255.55	VP	21.946	GAP	-4.30	AZP	92.89	TAL	1.09	TAP	196.93	RCA	147.73	APO	224.79	V2	24.737
RC	263.392	GL	31.98	GP	-9.45	ZAL	82.15	ZAP	101.79	ETS	180.83	ZAE	136.23	ETE	187.41	ZAC	77.94	ETC	256.21	CLP	101.95

PLANETOCENTRIC CONIC

C3	10.591	VHL	3.254	DLA	44.49	RAL	156.48	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	2.857	DPA	-6.27	RAP	174.37	ECC	1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.14	7 55 53	4091.58	-34.88	183.88	21.29	60.42	9 4 5	3491.6	-38.51	175.40
125.86	15 28 21	2699.56	-34.87	76.26	21.28	60.40	16 13 20	2099.6	-38.50	67.78
54.14	7 55 53	4091.58	-34.88	183.88	21.29	60.42	9 4 5	3491.6	-38.51	175.40
125.86	15 28 21	2699.56	-34.87	76.26	21.28	60.40	16 13 20	2099.6	-38.50	67.78
54.14	7 55 53	4091.58	-34.88	183.88	21.29	60.42	9 4 5	3491.6	-38.51	175.40
125.86	15 28 21	2699.56	-34.87	76.26	21.28	60.40	16 13 20	2099.6	-38.50	67.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7564	TRA	-.1497	TC3	-2.4249	BAU	.4540	SGT	2097.8	SGR	1683.4	SG3	3178.6	ST	1337.1	SR	836.2	SS	3768.1
RDE	.4651	RRA	.2214	RC3	-2.0979	FAU	.60309	RRT	.8619	RRF	.9936	RTF	.8658	CRT	.9609	CRS	-.9999	CST	-.9602
FDE	8.4819	FRA	4.0708	FC	-49.2982	BSP	8354	SGB	2689.7	R23	.3037	R13	.9462	LSA	4069.4	MSA	354.2	SSA	11.4
BDE	.8880	BRA	.2673	BC3	3.2065	FSP	10937	SG1	2600.1	SG2	688.7	THA	37.78	EL1	1564.6	EL2	198.0	ALF	31.56

LAUNCH DATE NOV 22 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 647.585 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.924	GAL	.17	AZL	87.08	HCA	196.94	SMA	186.21	ECC	.20666	INC	2.9195	V1	30.159
RP	221.89	LAP	-.85	LOP	256.65	VP	21.989	GAP	-4.53	AZP	92.79	TAL	.98	TAP	197.92	RCA	147.73	APO	224.70	V2	24.779
RC	264.895	GL	31.30	GP	-8.92	ZAL	82.28	ZAP	99.82	ETS	180.43	ZAE	134.11	ETE	186.27	ZAC	78.27	ETC	256.30	CLP	99.95

PLANETOCENTRIC CONIC

C3	10.421	VHL	3.228	DLA	43.79	RAL	156.32	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	2.840	DPA	-5.42	RAP	173.78	ECC	1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.09	7 58 59	4078.46	-34.49	182.42	20.55	61.15	9 6 57	3478.5	-38.03	173.94
124.91	15 23 59	2706.15	-34.48	76.59	20.54	61.13	16 9 5	2106.1	-38.02	68.11
55.09	7 58 59	4078.46	-34.49	182.42	20.55	61.15	9 6 57	3478.5	-38.03	173.94
124.91	15 23 59	2706.15	-34.48	76.59	20.54	61.13	16 9 5	2106.1	-38.02	68.11
55.09	7 58 59	4078.46	-34.49	182.42	20.55	61.15	9 6 57	3478.5	-38.03	173.94
124.91	15 23 59	2706.15	-34.48	76.59	20.54	61.13	16 9 5	2106.1	-38.02	68.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8148	TRA	-.1185	TC3	-2.8864	BAU	.4892	SGT	2376.8	SGR	1592.5	SG3	3220.6	ST	1449.9	SR	791.1	SS	3690.4
RDE	.4365	RRA	.2110	RC3	-1.9996	FAU	.61054	RRT	.8917	RRF	.9919	RTF	.8958	CRT	.9668	CRS	-.9999	CST	-.9655
FDE	8.2847	FRA	4.0856	FC	-50.7190	BSP	9017	SGB	2861.0	R23	.2979	R13	.9464	LSA	4027.6	MSA	353.6	SSA	12.3
BDE	.9244	BRA	.2420	BC3	3.5114	FSP	11112	SG1	2794.5	SG2	613.0	THA	32.62	EL1	1642.0	EL2	178.6	ALF	28.17

LAUNCH DATE NOV 22 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 651.623 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.922	GAL	.15	AZL	87.15	HCA	198.05	SMA	186.17	ECC	.20649	INC	2.8480	V1	30.159
RP	221.51	LAP	-.88	LOP	257.75	VP	22.032	GAP	-4.75	AZP	92.71	TAL	.85	TAP	198.89	RCA	147.73	APO	224.62	V2	24.820
RC	266.379	GL	30.69	GP	-8.44	ZAL	82.46	ZAP	97.85	ETS	180.07	ZAE	131.97	ETE	185.29	ZAC	78.54	ETC	256.39	CLP	97.94

PLANETOCENTRIC CONIC

C3	10.273	VHL	3.205	DLA	43.14	RAL	156.24	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	2.826	DPA	-4.61	RAP	173.16	ECC	1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.98	8 2 13	4066.04	-34.12	181.07	19.96	61.81	9 10 0	3466.0	-37.58	172.58
124.02	15 20 6	2712.78	-34.11	76.95	19.95	61.79	16 5 19	2112.8	-37.57	68.46
55.98	8 2 13	4066.04	-34.12	181.07	19.96	61.81	9 10 0	3466.0	-37.58	172.58
124.02	15 20 6	2712.78	-34.11	76.95	19.95	61.79	16 5 19	2112.8	-37.57	68.46
55.98	8 2 13	4066.04	-34.12	181.07	19.96	61.81	9 10 0	3466.0	-37.58	172.58
124.02	15 20 6	2712.78	-34.11	76.95	19.95	61.79	16 5 19	2112.8	-37.57	68.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8693	TRA	-.0907	TC3	-3.3763	BAU	.5319	SGT	2673.6	SGR	1510.6	SG3	3254.1	ST	1556.7	SR	755.9	SS	3635.5
RDE	.4138	RRA	.2060	RC3	-1.8978	FAU	.61445	RRT	.9088	RRF	.9898	RTF	.9150	CRT	.9702	CRS	-.9998	CST	-.9682
FDE	8.1290	FRA	4.1935	FC	-51.7806	BSP	9810	SGB	3070.8	R23	.2871	R13	.9480	LSA	4010.2	MSA	360.0	SSA	13.3
BDE	.9627	BRA	.2251	BC3	3.8731	FSP	11241	SG1	3019.7	SG2	558.1	THA	28.23	EL1	1722.6	EL2	165.4	ALF	25.48

LAUNCH DATE NOV 22 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 655.672 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.920	GAL	.12	AZL	87.22	HCA	199.15	SMA	186.14	ECC	.20634	INC	2.7844	V1	30.159
RP	221.13	LAP	-.91	LOP	258.86	VP	22.076	GAP	-4.97	AZP	92.63	TAL	.71	TAP	199.86	RCA	147.73	APO	224.55	V2	24.862
RC	267.844	GL	30.14	GP	-8.00	ZAL	82.66	ZAP	95.87	ETS	179.75	ZAE	129.81	ETE	184.45	ZAC	78.77	ETC	256.48	CLP	95.93

PLANETOCENTRIC CONIC

C3	10.142	VHL	3.185	DLA	42.54	RAL	156.23	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	2.817	DPA	-3.84	RAP	172.53	ECC	1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.82	8 5 38	4054.21	-33.77	179.79	19.48	62.41	9 13 12	3454.2	-37.15	171.31
123.18	15 16 39	2719.48	-33.75	77.31	19.48	62.40	16 1 58	2119.5	-37.14	68.83
56.82	8 5 38	4054.21	-33.77	179.79	19.48	62.41	9 13 12	3454.2	-37.15	171.31
123.18	15 16 39	2719.48	-33.75	77.31	19.48	62.40	16 1 58	2119.5	-37.14	68.83
56.82	8 5 38	4054.21	-33.77	179.79	19.48	62.41	9 13 12	3454.2	-37.15	171.31
123.18	15 16 39	2719.48	-33.75	77.31	19.48	62.40	16 1 58	2119.5	-37.14	68.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9244	TRA	-.0533	TC3	-3.8651	BAU	.5786	SGT	2973.8	SGR	1431.4	SG3	3275.3	ST	1665.2	SR	719.1	SS	3543.7
RDE	.3912	RRA	.1953	RC3	-1.8079	FAU	.61918	RRT	.9264	RRF	.9874	RTF	.9330	CRT	.9751	CRS	-.9997	CST	-.9726
FDE	7.8959	FRA	4.1368	FC	-52.8528	BSP	10734	SGB	3300.3	R23	.2618	R13	.9533	LSA	3965.2	MSA	352.4	SSA	14.3
BDE	1.0038	BRA	.2024	BC3	4.2670	FSP	11118	SG1	3263.6	SG2	491.0	THA	24.63	EL1	1807.9	EL2	147.0	ALF	23.00

LAUNCH DATE NOV 22 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 659.727 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.918	GAL	.09	AZL	87.27	HCA	200.26	SMA	186.11	ECC	.20622	INC	2.7273	V1	30.159
RP	220.75	LAP	-.94	LOP	259.97	VP	22.120	GAP	-5.19	AZP	92.56	TAL	.55	TAP	200.81	RCA	147.73	APO	224.49	V2	24.903
RC	269.292	GL	29.65	GP	-7.61	ZAL	82.90	ZAP	93.89	ETS	179.46	ZAE	127.63	ETE	183.73	ZAC	78.97	ETC	256.57	CLP	93.93

PLANETOCENTRIC CONIC

C3	10.026	VHL	3.166	DLA	41.98	RAL	156.29	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	2.811	DPA	-3.12	RAP	171.89	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.62	8 9 12	4042.80	-33.42	178.58	19.12	62.97	9 16 35	3442.8	-36.75	170.10
122.38	15 13 33	2726.26	-33.41	77.70	19.11	62.95	15 58 59	2126.3	-36.74	69.22
57.62	8 9 12	4042.80	-33.42	178.58	19.12	62.97	9 16 35	3442.8	-36.75	170.10
122.38	15 13 33	2726.26	-33.41	77.70	19.11	62.95	15 58 59	2126.3	-36.74	69.22
57.62	8 9 12	4042.80	-33.42	178.58	19.12	62.97	9 16 35	3442.8	-36.75	170.10
122.38	15 13 33	2726.26	-33.41	77.70	19.11	62.95	15 58 59	2126.3	-36.74	69.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9770	TRA	-.0178	TC3	-4.3667	BAU	.6289	SGT	3282.4	SGR	1362.6	SG3	3295.4	ST	1769.8	SR	692.7	SS	3491.0
RDE	.3746	RRA	.1906	RC3	-1.7169	FAU	.62120	RRT	.9356	RRF	.9846	RTF	.9445	CRT	.9781	CRS	-.9996	CST	-.9750
FDE	7.7388	FRA	4.2044	FC	-53.6414	BSP	11673	SGB	3554.0	R23	.2381	R13	.9577	LSA	3959.1	MSA	352.8	SSA	15.3
BDE	1.0463	BRA	.1914	BC3	4.6921	FSP	11372	SG1	3525.7	SG2	447.8	THA	21.59	EL1	1895.8	EL2	134.6	ALF	21.06

LAUNCH DATE NOV 22 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 663.793 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.917	GAL	.06	AZL	87.32	HCA	201.38	SMA	186.09	ECC	.20612	INC	2.6755	V1	30.159
RP	220.37	LAP	-.97	LOP	261.09	VP	22.165	GAP	-5.40	AZP	92.49	TAL	.38	TAP	201.75	RCA	147.73	APO	224.45	V2	24.945
RC	270.721	GL	29.20	GP	-7.24	ZAL	83.18	ZAP	91.92	ETS	179.21	ZAE	125.45	ETE	183.10	ZAC	79.14	ETC	256.66	CLP	91.93

PLANETOCENTRIC CONIC

C3	9.921	VHL	3.150	DLA	41.44	RAL	156.41	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	2.809	DPA	-2.43	RAP	171.24	ECC	1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.38	8 12 56	4031.77	-33.09	177.42	18.85	63.48	9 20 7	3431.8	-36.35	168.94
121.62	15 10 46	2733.13	-33.08	78.10	18.84	63.47	15 56 19	2133.1	-36.34	69.62
58.38	8 12 56	4031.77	-33.09	177.42	18.85	63.48	9 20 7	3431.8	-36.35	168.94
121.62	15 10 46	2733.13	-33.08	78.10	18.84	63.47	15 56 19	2133.1	-36.34	69.62
58.38	8 12 56	4031.77	-33.09	177.42	18.85	63.48	9 20 7	3431.8	-36.35	168.94
121.62	15 10 46	2733.13	-33.08	78.10	18.84	63.47	15 56 19	2133.1	-36.34	69.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0290	TRA	.0166	TC3	-4.8779	BAU	.6824	SGT	3598.4	SGR	1296.9	SG3	3307.1	ST	1874.1	SR	662.4	SS	3389.9
RDE	.3562	RRA	.1850	RC3	-1.6348	FAU	.62366	RRT	.9419	RRF	.9813	RTF	.9525	CRT	.9804	CRS	-.9995	CST	-.9765
FDE	7.4678	FRA	4.2278	FC	-54.4203	BSP	12682	SGB	3824.9	R23	.2149	R13	.9612	LSA	3913.5	MSA	355.6	SSA	16.3
BDE	1.0889	BRA	.1858	BC3	5.1446	FSP	11344	SG1	3802.6	SG2	412.3	THA	18.98	EL1	1983.9	EL2	123.3	ALF	19.19

LAUNCH DATE NOV 22 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 667.867 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.916 GAL .03 AZL 87.37 HCA 202.50 SMA 186.07 ECC .20605 INC 2.6288 V1 30.159
RP 220.00 LAP -1.01 LOP 262.20 VP 22.210 GAP -5.60 AZP 92.43 TAL .19 TAP 202.69 RCA 147.73 APO 224.41 V2 24.986
RC 272.134 GL 28.79 GP -6.91 ZAL 83.48 ZAP 89.95 ETS 178.99 ZAE 123.27 ETE 182.55 ZAC 79.28 ETC 256.75 CLP 89.95

PLANETOCENTRIC CONIC

C3 9.828 VHL 3.135 DLA 40.93 RAL 156.59 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.811 DPA -1.77 RAP 170.60 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.12	8 16 51	4020.92	-32.77	176.29	18.66	63.97	9 23 52	3420.9	-35.97	167.82
120.88	15 8 13	2740.22	-32.76	78.52	18.66	63.95	15 53 53	2140.2	-35.96	70.05
59.12	8 16 51	4020.92	-32.77	176.29	18.66	63.97	9 23 52	3420.9	-35.97	167.82
120.88	15 8 13	2740.22	-32.76	78.52	18.66	63.95	15 53 53	2140.2	-35.96	70.05
59.12	8 16 51	4020.92	-32.77	176.29	18.66	63.97	9 23 52	3420.9	-35.97	167.82
120.88	15 8 13	2740.22	-32.76	78.52	18.66	63.95	15 53 53	2140.2	-35.96	70.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0748 TRA .0499 TC3-5.3606 BAU .7342 SGT 3894.8 SGR 1259.0 SG3 3367.1 ST 1967.2 SR 645.5 SS 3360.0
RDE .3447 RRA .1891 RC3-1.5781 FAU .63238 RRT .9418 RRF .9782 RTF .9555 CRT .9809 CRS -.9992 CST -.9754
FDE 7.3325 FRA 4.5134 FC-55.7081 BSP 13784 SGB 4093.2 R23 .2036 R13 .9622 LSA 3928.7 MSA 376.3 SSA 17.2
BDE 1.1287 BRA .1956 BC3 5.5881 FSP 11269 SG1 4073.2 SG2 404.7 THA 17.11 EL1 2066.9 EL2 119.6 ALF 17.90

LAUNCH DATE NOV 22 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 671.950 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.915 GAL -.00 AZL 87.41 HCA 203.62 SMA 186.06 ECC .20600 INC 2.5858 V1 30.159
RP 219.62 LAP -1.04 LOP 263.33 VP 22.255 GAP -5.81 AZP 92.37 TAL 359.99 TAP 203.61 RCA 147.73 APO 224.39 V2 25.027
RC 273.529 GL 28.41 GP -6.59 ZAL 83.82 ZAP 88.00 ETS 178.78 ZAE 121.10 ETE 182.06 ZAC 79.41 ETC 256.84 CLP 87.99

PLANETOCENTRIC CONIC

C3 9.743 VHL 3.121 DLA 40.43 RAL 156.81 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 2.816 DPA -1.14 RAP 169.97 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.84	8 20 57	4010.25	-32.45	175.20	18.55	64.43	9 27 48	3410.2	-35.60	166.74
120.16	15 5 54	2747.46	-32.44	78.96	18.54	64.41	15 51 42	2147.5	-35.59	70.49
59.84	8 20 57	4010.25	-32.45	175.20	18.55	64.43	9 27 48	3410.2	-35.60	166.74
120.16	15 5 54	2747.46	-32.44	78.96	18.54	64.41	15 51 42	2147.5	-35.59	70.49
59.84	8 20 57	4010.25	-32.45	175.20	18.55	64.43	9 27 48	3410.2	-35.60	166.74
120.16	15 5 54	2747.46	-32.44	78.96	18.54	64.41	15 51 42	2147.5	-35.59	70.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1323 TRA .0805 TC3-6.1665 BAU .8202 SGT 4379.1 SGR 1101.1 SG3 3051.8 ST 2082.4 SR 600.5 SS 3111.9
RDE .3170 RRA .2027 RC3-1.2763 FAU .55481 RRT .9066 RRF .9678 RTF .9455 CRT .9761 CRS -.9984 CST -.9650
FDE 6.6535 FRA 5.1002 FC-49.2993 BSP 14579 SGB 4515.4 R23 .2401 R13 .9513 LSA 3764.5 MSA 457.7 SSA 17.6
BDE 1.1758 BRA .2181 BC3 6.2972 FSP 13455 SG1 4492.7 SG2 452.8 THA 12.98 EL1 2163.7 EL2 125.7 ALF 15.78

LAUNCH DATE NOV 22 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 676.038 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.915 GAL -.04 AZL 87.45 HCA 204.74 SMA 186.06 ECC .20598 INC 2.5466 V1 30.159
RP 219.25 LAP -1.07 LOP 264.45 VP 22.300 GAP -6.00 AZP 92.31 TAL 359.77 TAP 204.52 RCA 147.73 APO 224.38 V2 25.067
RC 274.906 GL 28.06 GP -6.30 ZAL 84.19 ZAP 86.07 ETS 178.60 ZAE 118.94 ETE 181.64 ZAC 79.53 ETC 256.93 CLP 86.05

PLANETOCENTRIC CONIC

C3 9.666 VHL 3.109 DLA 39.95 RAL 157.08 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 2.824 DPA -.54 RAP 169.34 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.55	8 25 15	3999.65	-32.14	174.12	18.51	64.87	9 31 55	3399.7	-35.23	165.67
119.45	15 3 47	2754.94	-32.13	79.41	18.50	64.85	15 49 42	2154.9	-35.22	70.96
60.55	8 25 15	3999.65	-32.14	174.12	18.51	64.87	9 31 55	3399.7	-35.23	165.67
119.45	15 3 47	2754.94	-32.13	79.41	18.50	64.85	15 49 42	2154.9	-35.22	70.96
60.55	8 25 15	3999.65	-32.14	174.12	18.51	64.87	9 31 55	3399.7	-35.23	165.67
119.45	15 3 47	2754.94	-32.13	79.41	18.50	64.85	15 49 42	2154.9	-35.22	70.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1671 TRA .1377 TC3-6.4838 BAU .8561 SGT 4581.5 SGR 1117.2 SG3 3259.2 ST 2156.6 SR 606.1 SS 3210.2
RDE .3211 RRA .1775 RC3-1.3606 FAU .60792 RRT .9427 RRF .9669 RTF .9686 CRT .9860 CRS -.9988 CST -.9796
FDE 6.9010 FRA 4.4614 FC-54.4467 BSP 15927 SGB 4715.8 R23 .1438 R13 .9713 LSA 3897.7 MSA 361.6 SSA 19.0
BDE 1.2105 BRA .2247 BC3 6.6250 FSP 11460 SG1 4701.8 SG2 363.3 THA 13.03 EL1 2238.0 EL2 97.3 ALF 15.52

LAUNCH DATE NOV 22 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 680.134 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.915 GAL -.08 AZL 87.49 HCA 205.87 SMA 186.06 ECC .20598 INC 2.5103 V1 30.159
RP 218.89 LAP -1.10 LOP 265.58 VP 22.346 GAP -6.20 AZP 92.26 TAL 359.54 TAP 205.41 RCA 147.73 APO 224.38 V2 25.108
RC 276.266 GL 27.74 GP -6.03 ZAL 84.59 ZAP 84.16 ETS 178.44 ZAE 116.80 ETE 181.27 ZAC 79.63 ETC 257.02 CLP 84.13

PLANETOCENTRIC CONIC

C3 9.597 VHL 3.098 DLA 39.48 RAL 157.40 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 2.835 DPA .02 RAP 168.74 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.25	8 29 47	3989.03	-31.83	173.06	18.53	65.28	9 36 16	3389.0	-34.87	164.61
118.75	15 1 49	2762.71	-31.82	79.90	18.53	65.27	15 47 52	2162.7	-34.86	71.46
61.25	8 29 47	3989.03	-31.83	173.06	18.53	65.28	9 36 16	3389.0	-34.87	164.61
118.75	15 1 49	2762.71	-31.82	79.90	18.53	65.27	15 47 52	2162.7	-34.86	71.46
61.25	8 29 47	3989.03	-31.83	173.06	18.53	65.28	9 36 16	3389.0	-34.87	164.61
118.75	15 1 49	2762.71	-31.82	79.90	18.53	65.27	15 47 52	2162.7	-34.86	71.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2140 TRA .1891 TC3-6.9992 BAU .9127 SGT 4904.3 SGR 1066.4 SG3 3226.7 ST 2253.2 SR 595.7 SS 3187.0
RDE .3144 RRA .1771 RC3-1.2698 FAU .59786 RRT .9388 RRF .9604 RTF .9722 CRT .9879 CRS -.9984 CST -.9807
FDE 6.7835 FRA 4.5844 FC-53.9334 BSP 17211 SGB 5018.9 R23 .1242 R13 .9741 LSA 3931.7 MSA 361.7 SSA 19.7
BDE 1.2541 BRA .2591 BC3 7.1135 FSP 11519 SG1 5006.0 SG2 359.9 THA 11.60 EL1 2328.9 EL2 89.5 ALF 14.66

LAUNCH DATE NOV 22 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 684.244 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.915	GAL	-.12	AZL	87.52	HCA	207.01	SMA	186.06	ECC	.20600	INC	2.4770
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.392	GAP	-6.39	AZP	92.21	TAL	359.30	TAP	206.30	RCA	147.73	APO	224.39
RC	277.609	GL	27.43	GP	-5.77	ZAL	85.02	ZAP	82.28	ETS	178.30	ZAE	114.68	ETE	180.94	ZAC	79.72	ETC	257.11

V1 30.159 V2 25.148 CLP 82.24

PLANETOCENTRIC CONIC

C3	9.534	VHL	3.088	DLA	39.02	RAL	157.76	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	2.850	DPA	.56	RAP	168.15

ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.94	8 34 30	3978.37	-31.52	172.00	18.61	65.69	9 40 49	3378.4	-34.51	163.56
118.06	14 59 58	2770.80	-31.51	80.41	18.61	65.67	15 46 9	2170.8	-34.50	71.98
61.94	8 34 30	3978.37	-31.52	172.00	18.61	65.69	9 40 49	3378.4	-34.51	163.56
118.06	14 59 58	2770.80	-31.51	80.41	18.61	65.67	15 46 9	2170.8	-34.50	71.98
61.94	8 34 30	3978.37	-31.52	172.00	18.61	65.69	9 40 49	3378.4	-34.51	163.56
118.06	14 59 58	2770.80	-31.51	80.41	18.61	65.67	15 46 9	2170.8	-34.50	71.98

DIFFERENTIAL CORRECTIONS

TDE	1.2511	TRA	.2349	TC3	-7.5246	BAU	.9715
RDE	.3023	RRA	.1724	RC3	-1.2118	FAU	.59833
FDE	6.4435	FRA	4.5434	FC	-54.3313	BSP	18252
BDE	1.2871	BRA	.2914	BC3	7.6215	FSP	11171

MID-COURSE EXECUTION ACCURACY

SGT	5224.6	SGR	1021.8	SG3	3217.1		
RRT	.9385	RRF	.9536	RTF	.9754		
SGB	5323.6	R23	.0988	R13	.9767		
SG1	5312.3	SG2	346.9	THA	10.45		

ORBIT DETERMINATION ACCURACY

ST	2331.8	SR	574.8	SS	3060.9		
CRT	.9894	CRS	-.9979	CST	-.9812		
LSA	3873.9	MSA	359.6	SSA	20.8		
EL1	2400.2	EL2	81.1	ALF	13.72		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 688.359 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.916	GAL	-.16	AZL	87.55	HCA	208.14	SMA	186.07	ECC	.20605	INC	2.4458
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.437	GAP	-6.57	AZP	92.16	TAL	359.04	TAP	207.18	RCA	147.73	APO	224.41
RC	278.933	GL	27.15	GP	-5.53	ZAL	85.48	ZAP	80.42	ETS	178.17	ZAE	112.58	ETE	180.65	ZAC	79.81	ETC	257.19

V1 30.159 V2 25.188 CLP 80.37

PLANETOCENTRIC CONIC

C3	9.477	VHL	3.079	DLA	38.57	RAL	158.16	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	2.867	DPA	1.08	RAP	167.59

ECC 1.1560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.64	8 39 29	3967.53	-31.21	170.93	18.75	66.08	9 45 36	3367.5	-34.15	162.51
117.36	14 58 12	2779.30	-31.19	80.95	18.74	66.06	15 44 31	2179.3	-34.14	72.53
62.64	8 39 29	3967.53	-31.21	170.93	18.75	66.08	9 45 36	3367.5	-34.15	162.51
117.36	14 58 12	2779.30	-31.19	80.95	18.74	66.06	15 44 31	2179.3	-34.14	72.53
62.64	8 39 29	3967.53	-31.21	170.93	18.75	66.08	9 45 36	3367.5	-34.15	162.51
117.36	14 58 12	2779.30	-31.19	80.95	18.74	66.06	15 44 31	2179.3	-34.14	72.53

DIFFERENTIAL CORRECTIONS

TDE	1.2850	TRA	.2836	TC3	-8.0562	BAU	1.0309
RDE	.2923	RRA	.1717	RC3	-1.1400	FAU	.59171
FDE	6.1348	FRA	4.6321	FC	-54.0507	BSP	19334
BDE	1.3179	BRA	.3316	BC3	8.1365	FSP	10986

MID-COURSE EXECUTION ACCURACY

SGT	5548.0	SGR	977.7	SG3	3185.6		
RRT	.9327	RRF	.9454	RTF	.9769		
SGB	5633.5	R23	.0851	R13	.9778		
SG1	5622.7	SG2	348.0	THA	9.37		

ORBIT DETERMINATION ACCURACY

ST	2404.8	SR	558.1	SS	2954.8		
CRT	.9903	CRS	-.9971	CST	-.9804		
LSA	3832.6	MSA	369.1	SSA	21.8		
EL1	2467.6	EL2	75.5	ALF	12.96		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 692.483 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.916	GAL	-.21	AZL	87.58	HCA	209.28	SMA	186.08	ECC	.20612	INC	2.4168
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.483	GAP	-6.76	AZP	92.11	TAL	358.76	TAP	208.05	RCA	147.73	APO	224.44
RC	280.240	GL	26.88	GP	-5.31	ZAL	85.97	ZAP	78.59	ETS	178.05	ZAE	110.50	ETE	180.39	ZAC	79.89	ETC	257.28

V1 30.159 V2 25.228 CLP 78.54

PLANETOCENTRIC CONIC

C3	9.426	VHL	3.070	DLA	38.12	RAL	158.61	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	2.887	DPA	1.56	RAP	167.05

ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.34	8 44 41	3956.54	-30.89	169.86	18.94	66.46	9 50 37	3356.5	-33.79	161.45
116.66	14 56 31	2788.19	-30.88	81.53	18.93	66.45	15 42 59	2188.2	-33.78	73.11
63.34	8 44 41	3956.54	-30.89	169.86	18.94	66.46	9 50 37	3356.5	-33.79	161.45
116.66	14 56 31	2788.19	-30.88	81.53	18.93	66.45	15 42 59	2188.2	-33.78	73.11
63.34	8 44 41	3956.54	-30.89	169.86	18.94	66.46	9 50 37	3356.5	-33.79	161.45
116.66	14 56 31	2788.19	-30.88	81.53	18.93	66.45	15 42 59	2188.2	-33.78	73.11

DIFFERENTIAL CORRECTIONS

TDE	1.3163	TRA	.3350	TC3	-8.5856	BAU	1.0904
RDE	.2849	RRA	.1693	RC3	-1.0725	FAU	.58503
FDE	5.8806	FRA	4.6441	FC	-53.7299	BSP	20407
BDE	1.3468	BRA	.3754	BC3	8.6523	FSP	10759

MID-COURSE EXECUTION ACCURACY

SGT	5870.2	SGR	936.9	SG3	3151.3		
RRT	.9268	RRF	.9361	RTF	.9792		
SGB	5944.5	R23	.0676	R13	.9798		
SG1	5934.3	SG2	348.0	THA	8.44		

ORBIT DETERMINATION ACCURACY

ST	2473.0	SR	545.6	SS	2869.4		
CRT	.9917	CRS	-.9963	CST	-.9808		
LSA	3809.4	MSA	367.4	SSA	22.7		
EL1	2531.5	EL2	68.5	ALF	12.35		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 696.614 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.917	GAL	-.26	AZL	87.61	HCA	210.43	SMA	186.10	ECC	.20621	INC	2.3899
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.529	GAP	-6.93	AZP	92.06	TAL	358.47	TAP	208.90	RCA	147.72	APO	224.48
RC	281.529	GL	26.63	GP	-5.09	ZAL	86.49	ZAP	76.80	ETS	177.94	ZAE	108.46	ETE	180.17	ZAC	79.97	ETC	257.36

V1 30.159 V2 25.268 CLP 76.74

PLANETOCENTRIC CONIC

C3	9.381	VHL	3.063	DLA	37.67	RAL	159.08	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	2.910	DPA	2.02	RAP	166.54

ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.05	8 50 9	3945.26	-30.57	168.78	19.17	66.84	9 55 54	3345.3	-33.42	160.38
115.95	14 54 52	2797.57	-30.56	82.14	19.17	66.82	15 41 30	2197.6	-33.41	73.74
64.05	8 50 9	3945.26	-30.57	168.78	19.17	66.84	9 55 54	3345.3	-33.42	160.38
115.95	14 54 52	2797.57	-30.56	82.14	19.17	66.82	15 41 30	2197.6	-33.41	73.74
64.05	8 50 9	3945.26	-30.57	168.78	19.17	66.84	9 55 54	3345.3	-33.42	160.38
115.95	14 54 52	2797.57	-30.56	82.14	19.17	66.82	15 41 30	2197.6	-33.41	73.74

DIFFERENTIAL CORRECTIONS

TDE	1.3453	TRA	.3909	TC3	-9.1006	BAU	1.1482
RDE	.2770	RRA	.1675	RC3	-.9985	FAU	.57376
FDE	5.5761	FRA	4.6644	FC	-52.9506	BSP	21507
BDE	1.3736	BRA	.4253	BC3	9.1552	FSP	10515

MID-COURSE EXECUTION ACCURACY

SGT	6185.8	SGR	894.1	SG3	3094.0		
RRT	.9185	RRF	.9248	RTF	.9808		
SGB	6250.1	R23	.0532	R13	.9812		
SG1	6240.3	SG2	350.5	THA	7.59		

ORBIT DETERMINATION ACCURACY

ST	2537.5	SR	532.0	SS	2762.0		
CRT	.9929	CRS	-.9952	CST	-.9805		
LSA	3770.1	MSA	369.4	SSA	23.6		
EL1	2591.9	EL2	62.2	ALF	11.77		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 700.753 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.919	GAL	-.31	AZL	87.64	HCA	211.58	SMA	186.12	ECC	.20633	INC	2.3647
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.575	GAP	-7.11	AZP	92.01	TAL	358.17	TAP	209.75	RCA	147.72	APO	224.53
RC	282.801	GL	26.38	GP	-4.89	ZAL	87.05	ZAP	75.04	ETS	177.85	ZAE	106.45	ETE	179.97	ZAC	80.04	ETC	257.43

V1	30.159	V2	25.307	CLP	74.98														

PLANETOCENTRIC CONIC

C3	9.340	VHL	3.056	DLA	37.21	RAL	159.60	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	2.935	DPA	2.45	RAP	166.07
ECC	1.1537																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.78	8 55 54	3933.57	-30.25	167.66	19.45	67.20	10 1 28	3333.6	-33.05	159.28
115.22	14 53 13	2807.58	-30.24	82.79	19.45	67.19	15 40 0	2207.6	-33.04	74.41
64.78	8 55 54	3933.57	-30.25	167.66	19.45	67.20	10 1 28	3333.6	-33.05	159.28
115.22	14 53 13	2807.58	-30.24	82.79	19.45	67.19	15 40 0	2207.6	-33.04	74.41
64.78	8 55 54	3933.57	-30.25	167.66	19.45	67.20	10 1 28	3333.6	-33.05	159.28
115.22	14 53 13	2807.58	-30.24	82.79	19.45	67.19	15 40 0	2207.6	-33.04	74.41

DIFFERENTIAL CORRECTIONS

TDE	1.3722	TRA	.4507	TC3	-9.6058	BAU	1.2051
RDE	.2710	RRA	.1665	RC3	-.9281	FAU	.56218
FDE	5.3132	FRA	4.7063	FC	-52.1068	BSP	22619
BDE	1.3987	BRA	.4804	BC3	9.6505	FSP	10371

MID-COURSE EXECUTION ACCURACY

SGT	6497.4	SGR	856.5	SG3	3038.0		
RRT	.9081	RRF	.9122	RTF	.9821		
SGB	6553.7	R23	.0420	R13	.9824		
SG1	6544.0	SG2	356.1	THA	6.85		

ORBIT DETERMINATION ACCURACY

ST	2598.0	SR	521.8	SS	2674.2
CRT	.9940	CRS	-.9939	CST	-.9801
LSA	3746.3	MSA	371.4	SSA	24.4
EL1	2649.3	EL2	56.2	ALF	11.29

LAUNCH DATE NOV 22 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 704.899 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.920	GAL	-.37	AZL	87.66	HCA	212.73	SMA	186.15	ECC	.20647	INC	2.3408
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.621	GAP	-7.28	AZP	91.97	TAL	357.85	TAP	210.58	RCA	147.72	APO	224.58
RC	284.057	GL	26.15	GP	-4.70	ZAL	87.63	ZAP	73.32	ETS	177.76	ZAE	104.47	ETE	179.79	ZAC	80.11	ETC	257.51

V1	30.159	V2	25.346	CLP	73.26														

PLANETOCENTRIC CONIC

C3	9.305	VHL	3.050	DLA	36.76	RAL	160.15	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	2.964	DPA	2.85	RAP	165.62
ECC	1.1531																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.52	9 1 59	3921.39	-29.91	166.52	19.78	67.57	10 7 21	3321.4	-32.68	158.14
114.48	14 51 31	2818.28	-29.90	83.50	19.78	67.55	15 38 29	2218.3	-32.67	75.13
65.52	9 1 59	3921.39	-29.91	166.52	19.78	67.57	10 7 21	3321.4	-32.68	158.14
114.48	14 51 31	2818.28	-29.90	83.50	19.78	67.55	15 38 29	2218.3	-32.67	75.13
65.52	9 1 59	3921.39	-29.91	166.52	19.78	67.57	10 7 21	3321.4	-32.68	158.14
114.48	14 51 31	2818.28	-29.90	83.50	19.78	67.55	15 38 29	2218.3	-32.67	75.13

DIFFERENTIAL CORRECTIONS

TDE	1.3941	TRA	.5116	TC	-10.1084	BAU	1.2621
RDE	.2655	RRA	.1655	RC3	-.8633	FAU	.55139
FDE	5.0424	FRA	4.7368	FC	-51.3008	BSP	23684
BDE	1.4191	BRA	.5377	BC3	10.1452	FSP	10155

MID-COURSE EXECUTION ACCURACY

SGT	6806.4	SGR	822.5	SG3	2983.7		
RRT	.8965	RRF	.8983	RTF	.9833		
SGB	6855.9	R23	.0320	R13	.9835		
SG1	6846.4	SG2	362.2	THA	6.20		

ORBIT DETERMINATION ACCURACY

ST	2649.6	SR	512.3	SS	2582.0
CRT	.9950	CRS	-.9922	CST	-.9796
LSA	3716.1	MSA	373.6	SSA	25.3
EL1	2698.2	EL2	50.5	ALF	10.89

LAUNCH DATE NOV 22 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 709.053 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.922	GAL	-.42	AZL	87.68	HCA	213.89	SMA	186.18	ECC	.20663	INC	2.3183
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.667	GAP	-7.45	AZP	91.92	TAL	357.52	TAP	211.41	RCA	147.71	APO	224.65
RC	285.296	GL	25.93	GP	-4.52	ZAL	88.25	ZAP	71.63	ETS	177.69	ZAE	102.53	ETE	179.63	ZAC	80.18	ETC	257.58

V1	30.159	V2	25.385	CLP	71.57														

PLANETOCENTRIC CONIC

C3	9.275	VHL	3.045	DLA	36.30	RAL	160.73	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	2.994	DPA	3.23	RAP	165.21
ECC	1.1526																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.28	9 8 22	3908.75	-29.58	165.34	20.15	67.93	10 13 31	3308.8	-32.29	156.98
113.72	14 49 47	2829.65	-29.57	84.26	20.15	67.92	15 36 57	2229.7	-32.29	75.90
66.28	9 8 22	3908.75	-29.58	165.34	20.15	67.93	10 13 31	3308.8	-32.29	156.98
113.72	14 49 47	2829.65	-29.57	84.26	20.15	67.92	15 36 57	2229.7	-32.29	75.90
66.28	9 8 22	3908.75	-29.58	165.34	20.15	67.93	10 13 31	3308.8	-32.29	156.98
113.72	14 49 47	2829.65	-29.57	84.26	20.15	67.92	15 36 57	2229.7	-32.29	75.90

DIFFERENTIAL CORRECTIONS

TDE	1.4118	TRA	.5759	TC	-10.6013	BAU	1.3183
RDE	.2603	RRA	.1646	RC3	-.7998	FAU	.53959
FDE	4.7595	FRA	4.7647	FC	-50.3668	BSP	24718
BDE	1.4356	BRA	.5990	BC3	10.6314	FSP	9908

MID-COURSE EXECUTION ACCURACY

SGT	7110.4	SGR	790.5	SG3	2923.6		
RRT	.8830	RRF	.8825	RTF	.9843		
SGB	7154.2	R23	.0233	R13	.9845		
SG1	7144.6	SG2	369.2	THA	5.62		

ORBIT DETERMINATION ACCURACY

ST	2693.6	SR	503.3	SS	2483.5
CRT	.9958	CRS	-.9899	CST	-.9787
LSA	3678.8	MSA	376.8	SSA	26.1
EL1	2739.8	EL2	45.0	ALF	10.54

LAUNCH DATE NOV 22 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 713.215 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.924	GAL	-.48	AZL	87.70	HCA	215.05	SMA	186.21	ECC	.20681	INC	2.2972
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.712	GAP	-7.61	AZP	91.88	TAL	357.17	TAP	212.22	RCA	147.70	APO	224.72
RC	286.520	GL	25.72	GP	-4.34	ZAL	88.89	ZAP	69.99	ETS	177.62	ZAE	100.63	ETE	179.49	ZAC	80.25	ETC	257.64

V1	30.159	V2	25.423	CLP	69.93														

PLANETOCENTRIC CONIC

C3	9.250	VHL	3.041	DLA	35.83	RAL	161.35	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	3.027	DPA	3.58	RAP	164.83
ECC	1.1522																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.07	9 15 9	3895.36	-29.23	164.11	20.56	68.29	10 20 4	3295.4	-31.90	155.77
112.93	14 47 56	2841.99	-29.22	85.08	20.56	68.27	15 35 18	2242.0	-31.89	76.74
67.07	9 15 9	3895.36	-29.23	164.11	20.56	68.29	10 20 4	3295.4	-31.90	155.77
112.93	14 47 56	2841.99	-29.22	85.08	20.56	68.27	15 35 18	2242.0	-31.89	76.74
67.07	9 15 9	3895.36	-29.23	164.11	20.56	68.29	10 20 4	3295.4	-31.90	155.77
112.93	14 47 56	2841.99	-29.22	85.08	20.56	68.27	15 35 18	2242.0	-31.89	76.74

DIFFERENTIAL CORRECTIONS

TDE	1.4259	TRA	.6436	TC	-11.0801	BAU	1.3732
RDE	.2559	RRA	.1641	RC3	-.7378	FAU	.52695
FDE	4.4875	FRA	4.7949	FC	-49.3210	BSP	25744
BDE	1.4486	BRA	.6842	BC3	11.1047	FSP	9671

MID-COURSE EXECUTION ACCURACY

SGT	7407.8	SGR	761.0	SG3	2859.8		
RRT	.8674	RRF	.8649	RTF	.9852		
SGB	7446.7	R23	.0164	R13	.9853		
SG1	7437.2	SG2	377.2	THA	5.11		

ORBIT DETERMINATION ACCURACY

ST	2730.9	SR	495.6	SS	2389.4
CRT	.9966	CRS	-.9872	CST	-.9777
LSA	3642.4	MSA	380.1	SSA	26.9
EL1	2775.2	EL2	40.0	ALF	10.26

LAUNCH DATE NOV 22 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 717.384 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.926 GAL -.55 AZL 87.72 HCA 216.21 SMA 186.25 ECC .20702 INC 2.2771 V1 30.159
RP 215.71 LAP -1.34 LOP 275.92 VP 22.758 GAP -7.77 AZP 91.84 TAL 356.81 TAP 213.02 RCA 147.69 APO 224.81 V2 25.461
RC 287.729 GL 25.51 GP -4.18 ZAL 89.56 ZAP 68.38 ETS 177.56 ZAE 98.76 ETE 179.36 ZAC 80.33 ETC 257.70 CLP 68.32

PLANETOCENTRIC CONIC

C3 9.229 VHL 3.038 DLA 35.36 RAL 162.00 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.062 DPA 3.91 RAP 164.49 ECC 1.1519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.88	9 22 18	3881.27	-28.87	162.83	21.02	68.64	10 26 59	3281.3	-31.50	154.50
112.12	14 45 57	2855.22	-28.86	85.97	21.01	68.63	15 33 32	2255.2	-31.49	77.65
67.88	9 22 18	3881.27	-28.87	162.83	21.02	68.64	10 26 59	3281.3	-31.50	154.50
112.12	14 45 57	2855.22	-28.86	85.97	21.01	68.63	15 33 32	2255.2	-31.49	77.65
67.88	9 22 18	3881.27	-28.87	162.83	21.02	68.64	10 26 59	3281.3	-31.50	154.50
112.12	14 45 57	2855.22	-28.86	85.97	21.01	68.63	15 33 32	2255.2	-31.49	77.65

DIFFERENTIAL CORRECTIONS
TDE 1.4371 TRA .7154 TC-11.5434 BAU 1.4268
RDE .2521 RRA .1638 RC3 -.6775 FAU .51359
FDE 4.2214 FRA 4.8283 FC-48.1767 BSP 26765
BDE 1.4590 BRA .7339 BC311.5633 FSP 9431

MID-COURSE EXECUTION ACCURACY
SGT 7699.0 SGR 734.1 SG3 2792.9
RRT .8496 RRF .8455 RTF .9859
SGB 7734.0 R23 .0108 R13 .9859
SG1 7724.3 SG2 385.9 THA 4.64

ORBIT DETERMINATION ACCURACY
ST 2763.4 SR 489.0 SS 2297.2
CRT .9973 CRS -.9838 CST -.9764
LSA 3606.1 MSA 384.3 SSA 27.6
EL1 2806.1 EL2 35.5 ALF 10.01

LAUNCH DATE NOV 22 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 721.559 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.928 GAL -.61 AZL 87.74 HCA 217.38 SMA 186.29 ECC .20724 INC 2.2580 V1 30.159
RP 215.38 LAP -1.37 LOP 277.08 VP 22.803 GAP -7.93 AZP 91.79 TAL 356.44 TAP 213.81 RCA 147.68 APO 224.90 V2 25.498
RC 288.924 GL 25.30 GP -4.03 ZAL 90.27 ZAP 66.81 ETS 177.50 ZAE 96.93 ETE 179.25 ZAC 80.40 ETC 257.76 CLP 66.75

PLANETOCENTRIC CONIC

C3 9.214 VHL 3.035 DLA 34.88 RAL 162.67 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.100 DPA 4.21 RAP 164.18 ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.73	9 29 50	3866.37	-28.51	161.49	21.50	69.00	10 34 17	3266.4	-31.09	153.18
111.27	14 43 48	2869.48	-28.50	86.94	21.50	68.99	15 31 38	2269.5	-31.09	78.63
68.73	9 29 50	3866.37	-28.51	161.49	21.50	69.00	10 34 17	3266.4	-31.09	153.18
111.27	14 43 48	2869.48	-28.50	86.94	21.50	68.99	15 31 38	2269.5	-31.09	78.63
68.73	9 29 50	3866.37	-28.51	161.49	21.50	69.00	10 34 17	3266.4	-31.09	153.18
111.27	14 43 48	2869.48	-28.50	86.94	21.50	68.99	15 31 38	2269.5	-31.09	78.63

DIFFERENTIAL CORRECTIONS
TDE 1.4420 TRA .7895 TC-11.9972 BAU 1.4798
RDE .2484 RRA .1634 RC3 -.6204 FAU .50050
FDE 3.9408 FRA 4.8500 FC-47.0259 BSP 27741
BDE 1.4633 BRA .8062 BC312.0133 FSP 9186

MID-COURSE EXECUTION ACCURACY
SGT 7984.8 SGR 709.3 SG3 2725.2
RRT .8303 RRF .8240 RTF .9865
SGB 8016.2 R23 .0053 R13 .9865
SG1 8006.5 SG2 394.3 THA 4.23

ORBIT DETERMINATION ACCURACY
ST 2784.5 SR 482.5 SS 2196.7
CRT .9977 CRS -.9794 CST -.9746
LSA 3558.0 MSA 389.4 SSA 28.3
EL1 2825.8 EL2 31.9 ALF 9.81

LAUNCH DATE NOV 22 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 725.742 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.931 GAL -.68 AZL 87.76 HCA 218.55 SMA 186.34 ECC .20750 INC 2.2400 V1 30.159
RP 215.05 LAP -1.40 LOP 278.26 VP 22.849 GAP -8.09 AZP 91.75 TAL 356.05 TAP 214.59 RCA 147.67 APO 225.00 V2 25.535
RC 290.105 GL 25.10 GP -3.88 ZAL 91.00 ZAP 65.29 ETS 177.45 ZAE 95.14 ETE 179.16 ZAC 80.47 ETC 257.81 CLP 65.23

PLANETOCENTRIC CONIC

C3 9.204 VHL 3.034 DLA 34.39 RAL 163.38 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.139 DPA 4.48 RAP 163.91 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.62	9 37 52	3850.35	-28.13	160.06	22.03	69.35	10 42 3	3250.3	-30.67	151.77
110.38	14 41 24	2885.08	-28.12	88.00	22.02	69.34	15 29 29	2285.1	-30.67	79.71
69.62	9 37 52	3850.35	-28.13	160.06	22.03	69.35	10 42 3	3250.3	-30.67	151.77
110.38	14 41 24	2885.08	-28.12	88.00	22.02	69.34	15 29 29	2285.1	-30.67	79.71
69.62	9 37 52	3850.35	-28.13	160.06	22.03	69.35	10 42 3	3250.3	-30.67	151.77
110.38	14 41 24	2885.08	-28.12	88.00	22.02	69.34	15 29 29	2285.1	-30.67	79.71

DIFFERENTIAL CORRECTIONS
TDE 1.4456 TRA .8680 TC-12.4324 BAU 1.5314
RDE .2457 RRA .1631 RC3 -.5644 FAU .48659
FDE 3.6829 FRA 4.8676 FC-45.7682 BSP 28711
BDE 1.4663 BRA .8832 BC312.4452 FSP 8919

MID-COURSE EXECUTION ACCURACY
SGT 8264.6 SGR 687.0 SG3 2654.1
RRT .8087 RRF .8007 RTF .9871
SGB 8293.1 R23 .0008 R13 .9871
SG1 8283.3 SG2 403.1 THA 3.86

ORBIT DETERMINATION ACCURACY
ST 2803.4 SR 477.4 SS 2105.3
CRT .9980 CRS -.9743 CST -.9729
LSA 3516.2 MSA 393.3 SSA 29.0
EL1 2843.6 EL2 29.7 ALF 9.65

LAUNCH DATE NOV 22 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 729.931 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.934 GAL -.75 AZL 87.78 HCA 219.72 SMA 186.39 ECC .20777 INC 2.2227 V1 30.159
RP 214.72 LAP -1.42 LOP 279.43 VP 22.894 GAP -8.24 AZP 91.71 TAL 355.64 TAP 215.36 RCA 147.66 APO 225.11 V2 25.572
RC 291.272 GL 24.90 GP -3.74 ZAL 91.77 ZAP 63.80 ETS 177.41 ZAE 93.38 ETE 179.07 ZAC 80.55 ETC 257.85 CLP 63.74

PLANETOCENTRIC CONIC

C3 9.200 VHL 3.033 DLA 33.89 RAL 164.11 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.181 DPA 4.73 RAP 163.68 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.56	9 46 27	3833.04	-27.74	158.55	22.59	69.71	10 50 20	3233.0	-30.24	150.28
109.44	14 38 41	2902.20	-27.73	89.17	22.59	69.70	15 27 3	2302.2	-30.23	80.90
70.56	9 46 27	3833.04	-27.74	158.55	22.59	69.71	10 50 20	3233.0	-30.24	150.28
109.44	14 38 41	2902.20	-27.73	89.17	22.59	69.70	15 27 3	2302.2	-30.23	80.90
110.00	15 16 19	2787.30	-30.24	81.18	23.55	73.25	16 2 46	2187.3	-32.23	72.54
110.00	14 7 59	2995.94	-25.29	95.37	21.48	66.19	14 57 55	2395.9	-28.28	87.48

DIFFERENTIAL CORRECTIONS
TDE 1.4439 TRA .9498 TC-12.8483 BAU 1.5815
RDE .2432 RRA .1631 RC3 -.5097 FAU .47205
FDE 3.4259 FRA 4.8871 FC-44.4224 BSP 29659
BDE 1.4642 BRA .9637 BC312.8584 FSP 8670

MID-COURSE EXECUTION ACCURACY
SGT 8535.6 SGR 666.7 SG3 2580.0
RRT .7847 RRF .7752 RTF .9876
SGB 8561.6 R23 -.0025 R13 .9875
SG1 8551.7 SG2 412.5 THA 3.52

ORBIT DETERMINATION ACCURACY
ST 2813.3 SR 472.9 SS 2013.4
CRT .9980 CRS -.9678 CST -.9706
LSA 3468.8 MSA 398.6 SSA 29.6
EL1 2852.6 EL2 29.7 ALF 9.52

LAUNCH DATE NOV 22 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 734.128 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.937 GAL -.82 AZL 87.79 HCA 220.90 SMA 186.44 ECC .20807 INC 2.2062 V1 30.159
RP 214.40 LAP -1.44 LOP 280.61 VP 22.938 GAP -8.39 AZP 91.67 TAL 355.22 TAP 216.12 RCA 147.65 APO 225.23 V2 25.608
RC 292.426 GL 24.71 GP -3.60 ZAL 92.56 ZAP 62.35 ETS 177.37 ZAE 91.66 ETE 179.00 ZAC 80.63 ETC 257.89 CLP 62.29

PLANETOCENTRIC CONIC

C3 9.201 VHL 3.033 DLA 33.37 RAL 164.87 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.225 DPA 4.96 RAP 163.49 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.55	9 55 36	3814.27	-27.34	156.93	23.19	70.07	10 59 11	3214.3	-29.80	148.67
108.45	14 35 35	2921.01	-27.33	90.47	23.18	70.05	15 24 16	2321.0	-29.79	82.22
71.55	9 55 36	3814.27	-27.34	156.93	23.19	70.07	10 59 11	3214.3	-29.80	148.67
108.45	14 35 35	2921.01	-27.33	90.47	23.18	70.05	15 24 16	2321.0	-29.79	82.22
110.00	15 41 25	2719.25	-31.47	76.26	24.64	75.92	16 26 44	2119.2	-33.09	67.41
110.00	13 48 57	3064.03	-23.34	99.71	21.33	64.29	14 40 1	2464.0	-26.60	92.06

DIFFERENTIAL CORRECTIONS
TDE 1.4376 TRA 1.0352 TC-13.2521 BAU 1.6310
RDE .2412 RRA .1630 RC3 -.4582 FAU .45799
FDE 3.1728 FRA 4.9010 FC-43.0951 BSP 30560
BDE 1.4577 BRA 1.0480 BC313.2600 FSP 8407

MID-COURSE EXECUTION ACCURACY
SGT 8802.7 SGR 648.8 SG3 2507.5
RRT .7592 RRF .7481 RTF .9880
SGB 8826.6 R23 -.0056 R13 .9880
SG1 8816.5 SG2 421.6 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 2815.2 SR 469.0 SS 1922.1
CRT .9976 CRS -.9598 CST -.9680
LSA 3417.0 MSA 404.1 SSA 30.3
EL1 2853.8 EL2 32.2 ALF 9.44

LAUNCH DATE NOV 22 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 738.326 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.940 GAL -.90 AZL 87.81 HCA 222.08 SMA 186.49 ECC .20839 INC 2.1905 V1 30.159
RP 214.08 LAP -1.47 LOP 281.79 VP 22.983 GAP -8.53 AZP 91.63 TAL 354.79 TAP 216.87 RCA 147.63 APO 225.35 V2 25.644
RC 293.566 GL 24.51 GP -3.48 ZAL 93.39 ZAP 60.95 ETS 177.33 ZAE 89.99 ETE 178.93 ZAC 80.71 ETC 257.92 CLP 60.89

PLANETOCENTRIC CONIC

C3 9.207 VHL 3.034 DLA 32.85 RAL 165.66 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.270 DPA 5.17 RAP 163.33 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.61	10 5 27	3793.75	-26.92	155.18	23.82	70.43	11 8 41	3193.8	-29.34	146.94
107.39	14 32 2	2941.81	-26.91	91.90	23.81	70.41	15 21 4	2341.8	-29.33	83.67
72.61	10 5 27	3793.75	-26.92	155.18	23.82	70.43	11 8 41	3193.8	-29.34	146.94
107.39	14 32 2	2941.81	-26.91	91.90	23.81	70.41	15 21 4	2341.8	-29.33	83.67
110.00	16 0 25	2669.90	-32.23	72.62	25.55	77.95	16 44 55	2069.9	-33.56	63.64
110.00	13 36 15	3113.65	-21.84	102.78	21.42	63.03	14 28 9	2513.7	-25.28	95.31

DIFFERENTIAL CORRECTIONS
TDE 1.4480 TRA 1.1451 TC-13.5532 BAU 1.6690
RDE .2411 RRA .1646 RC3 -.4007 FAU .43904
FDE 3.0092 FRA 4.9980 FC-41.2825 BSP 31963
BDE 1.4680 BRA 1.1568 BC313.5592 FSP 8340

MID-COURSE EXECUTION ACCURACY
SGT 9041.6 SGR 635.0 SG3 2422.5
RRT .7310 RRF .7209 RTF .9882
SGB 9063.9 R23 -.0046 R13 .9882
SG1 9053.5 SG2 432.8 THA 2.95

ORBIT DETERMINATION ACCURACY
ST 2851.9 SR 468.7 SS 1878.6
CRT .9968 CRS -.9520 CST -.9663
LSA 3422.4 MSA 410.4 SSA 30.5
EL1 2889.9 EL2 36.8 ALF 9.30

LAUNCH DATE NOV 22 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 742.537 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.943 GAL -.98 AZL 87.82 HCA 223.26 SMA 186.55 ECC .20874 INC 2.1754 V1 30.159
RP 213.77 LAP -1.49 LOP 282.97 VP 23.027 GAP -8.68 AZP 91.58 TAL 354.34 TAP 217.60 RCA 147.61 APO 225.49 V2 25.679
RC 294.693 GL 24.32 GP -3.36 ZAL 94.24 ZAP 59.58 ETS 177.30 ZAE 88.34 ETE 178.87 ZAC 80.79 ETC 257.95 CLP 59.52

PLANETOCENTRIC CONIC

C3 9.229 VHL 3.036 DLA 32.31 RAL 166.47 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.317 DPA 5.35 RAP 163.21 ECC 1.1517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.74	10 16 4	3771.10	-26.50	153.27	24.48	70.79	11 18 55	3171.1	-28.87	145.06
106.26	14 27 53	2965.00	-26.49	93.51	24.48	70.77	15 17 18	2365.0	-28.86	85.30
73.74	10 16 4	3771.10	-26.50	153.27	24.48	70.79	11 18 55	3171.1	-28.87	145.06
106.26	14 27 53	2965.00	-26.49	93.51	24.48	70.77	15 17 18	2365.0	-28.86	85.30
110.00	16 16 46	2628.68	-32.78	69.52	26.38	79.70	17 0 35	2028.7	-33.85	60.45
110.00	13 26 21	3155.41	-20.53	105.31	21.64	62.05	14 18 56	2555.4	-24.10	97.99

DIFFERENTIAL CORRECTIONS
TDE 1.4262 TRA 1.2305 TC-13.9464 BAU 1.7196
RDE .2392 RRA .1639 RC3 -.3561 FAU .42663
FDE 2.7337 FRA 4.9649 FC-40.0594 BSP 32651
BDE 1.4461 BRA 1.2413 BC313.9509 FSP 8002

MID-COURSE EXECUTION ACCURACY
SGT 9301.7 SGR 620.1 SG3 2352.4
RRT .7025 RRF .6899 RTF .9886
SGB 9322.4 R23 -.0087 R13 .9886
SG1 9311.9 SG2 440.8 THA 2.69

ORBIT DETERMINATION ACCURACY
ST 2826.0 SR 464.6 SS 1771.6
CRT .9954 CRS -.9397 CST -.9623
LSA 3341.6 MSA 416.5 SSA 31.1
EL1 2863.6 EL2 43.9 ALF 9.30

LAUNCH DATE NOV 22 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 746.753 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.947 GAL -1.06 AZL 87.84 HCA 224.45 SMA 186.61 ECC .20911 INC 2.1609 V1 30.159
RP 213.46 LAP -1.51 LOP 284.16 VP 23.070 GAP -8.82 AZP 91.54 TAL 353.88 TAP 218.33 RCA 147.59 APO 225.63 V2 25.714
RC 295.805 GL 24.12 GP -3.24 ZAL 95.11 ZAP 58.25 ETS 177.27 ZAE 86.74 ETE 178.82 ZAC 80.87 ETC 257.97 CLP 58.19

PLANETOCENTRIC CONIC

C3 9.239 VHL 3.040 DLA 31.77 RAL 167.30 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.367 DPA 5.51 RAP 163.12 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.97	10 27 38	3745.76	-26.05	151.18	25.18	71.15	11 30 4	3145.8	-28.38	142.98
105.03	14 22 58	2991.14	-26.04	95.33	25.17	71.14	15 12 49	2391.1	-28.37	87.14
74.97	10 27 38	3745.76	-26.05	151.18	25.18	71.15	11 30 4	3145.8	-28.38	142.98
105.03	14 22 58	2991.14	-26.04	95.33	25.17	71.14	15 12 49	2391.1	-28.37	87.14
110.00	16 31 40	2592.09	-33.19	66.75	27.19	81.30	17 14 52	1992.1	-34.03	57.61
110.00	13 18 6	3192.82	-19.32	107.54	21.96	61.24	14 11 19	2592.8	-23.01	100.34

DIFFERENTIAL CORRECTIONS
TDE 1.4024 TRA 1.3218 TC-14.3103 BAU 1.7680
RDE .2380 RRA .1636 RC3 -.3120 FAU .41349
FDE 2.4772 FRA 4.9440 FC-38.7456 BSP 33373
BDE 1.4224 BRA 1.3319 BC314.3137 FSP 7698

MID-COURSE EXECUTION ACCURACY
SGT 9552.8 SGR 607.3 SG3 2280.6
RRT .6721 RRF .6575 RTF .9890
SGB 9572.1 R23 -.0118 R13 .9889
SG1 9561.6 SG2 449.3 THA 2.45

ORBIT DETERMINATION ACCURACY
ST 2798.0 SR 461.6 SS 1673.9
CRT .9933 CRS -.9247 CST -.9576
LSA 3265.4 MSA 424.2 SSA 31.7
EL1 2835.4 EL2 52.7 ALF 9.31

LAUNCH DATE NOV 22 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 750.975 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.950 GAL -1.14 AZL 87.85 HCA 225.64 SMA 186.67 ECC .20950 INC 2.1470 V1 30.159
RP 213.16 LAP -1.53 LOP 285.35 VP 23.114 GAP -8.96 AZP 91.50 TAL 353.40 TAP 219.04 RCA 147.56 APO 225.78 V2 25.748
RC 296.904 GL 23.92 GP -3.13 ZAL 96.02 ZAP 56.95 ETS 177.24 ZAE 85.17 ETE 178.77 ZAC 80.96 ETC 257.99 CLP 56.90

PLANETOCENTRIC CONIC

C3 9.265 VHL 3.044 DLA 31.20 RAL 168.16 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.417 DPA 5.65 RAP 163.07 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.31	10 40 23	3716.98	-25.60	148.83	25.90	71.52	11 42 20	3117.0	-27.88	140.66
103.69	14 17 2	3021.00	-25.59	97.42	25.90	71.50	15 7 23	2421.0	-27.87	89.25
76.31	10 40 23	3716.98	-25.60	148.83	25.90	71.52	11 42 20	3117.0	-27.88	140.66
103.69	14 17 2	3021.00	-25.59	97.42	25.90	71.50	15 7 23	2421.0	-27.87	89.25
110.00	16 45 36	2558.58	-33.50	64.18	27.98	82.79	17 28 14	1958.6	-34.14	55.00
110.00	13 11 0	3227.41	-18.18	109.56	22.35	60.54	14 4 47	2627.4	-21.96	102.47

DIFFERENTIAL CORRECTIONS
TDE 1.3762 TRA 1.4202 TC-14.6489 BAU 1.8148
RDE .2372 RRA .1636 RC3 -.2694 FAU .40020
FDE 2.2339 FRA 4.9337 FC-37.3959 BSP 34112
BDE 1.3964 BRA 1.4296 BC314.6514 FSP 7415

MID-COURSE EXECUTION ACCURACY
SGT 9798.2 SGR 596.6 SG3 2209.3
RRT .6406 RRF .6241 RTF .9892
SGB 9816.4 R23 -.0143 R13 .9892
SG1 9805.7 SG2 457.8 THA 2.24

ORBIT DETERMINATION ACCURACY
ST 2767.9 SR 459.4 SS 1583.4
CRT .9903 CRS -.9063 CST -.9519
LSA 3192.2 MSA 433.8 SSA 32.1
EL1 2805.0 EL2 63.0 ALF 9.34

LAUNCH DATE NOV 22 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 755.203 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.954 GAL -1.23 AZL 87.87 HCA 226.84 SMA 186.74 ECC .20992 INC 2.1336 V1 30.159
RP 212.87 LAP -1.56 LOP 286.55 VP 23.157 GAP -9.09 AZP 91.46 TAL 352.91 TAP 219.75 RCA 147.54 APO 225.94 V2 25.782
RC 297.989 GL 23.72 GP -3.03 ZAL 96.96 ZAP 55.70 ETS 177.21 ZAE 83.63 ETE 178.73 ZAC 81.05 ETC 258.00 CLP 55.64

PLANETOCENTRIC CONIC

C3 9.298 VHL 3.049 DLA 30.63 RAL 169.04 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.470 DPA 5.77 RAP 163.06 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.82	10 54 40	3683.61	-25.13	146.15	26.66	71.89	11 56 3	3083.6	-27.37	138.00
102.18	14 9 45	3055.75	-25.12	99.86	26.66	71.87	15 0 41	2455.7	-27.36	91.71
77.82	10 54 40	3683.61	-25.13	146.15	26.66	71.89	11 56 3	3083.6	-27.37	138.00
102.18	14 9 45	3055.75	-25.12	99.86	26.66	71.87	15 0 41	2455.7	-27.36	91.71
110.00	16 58 51	2527.29	-33.75	61.77	28.76	84.19	17 40 59	1927.3	-34.18	52.56
110.00	13 4 44	3260.07	-17.07	111.45	22.81	59.93	13 59 4	2660.1	-20.94	104.46

DIFFERENTIAL CORRECTIONS
TDE 1.3478 TRA 1.5240 TC-14.9552 BAU 1.8591
RDE .2370 RRA .1637 RC3 -.2279 FAU .38658
FDE 2.0114 FRA 4.9232 FC-35.9963 BSP 34894
BDE 1.3685 BRA 1.5328 BC314.9570 FSP 7161

MID-COURSE EXECUTION ACCURACY
SGT10033.4 SGR 587.7 SG3 2137.0
RRT .6080 RRF .5901 RTF .9895
SGB10050.6 R23 -.0162 R13 .9895
SG110039.8 SG2 466.3 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 2736.1 SR 458.1 SS 1502.6
CRT .9862 CRS -.8849 CST -.9460
LSA 3123.5 MSA 442.7 SSA 32.5
EL1 2773.1 EL2 74.7 ALF 9.38

LAUNCH DATE NOV 22 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 759.436 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.958 GAL -1.32 AZL 87.88 HCA 228.04 SMA 186.81 ECC .21037 INC 2.1206 V1 30.159
RP 212.57 LAP -1.58 LOP 287.75 VP 23.199 GAP -9.23 AZP 91.42 TAL 352.40 TAP 220.44 RCA 147.51 APO 226.11 V2 25.815
RC 299.061 GL 23.52 GP -2.93 ZAL 97.92 ZAP 54.48 ETS 177.19 ZAE 82.13 ETE 178.70 ZAC 81.14 ETC 258.00 CLP 54.42

PLANETOCENTRIC CONIC

C3 9.338 VHL 3.056 DLA 30.04 RAL 169.93 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.524 DPA 5.87 RAP 163.08 ECC 1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.54	11 11 3	3643.70	-24.64	142.99	27.45	72.26	12 11 47	3043.7	-26.83	134.87
100.46	14 0 31	3097.33	-24.63	102.79	27.45	72.25	14 52 8	2497.3	-26.83	94.67
79.54	11 11 3	3643.70	-24.64	142.99	27.45	72.26	12 11 47	3043.7	-26.83	134.87
100.46	14 0 31	3097.33	-24.63	102.79	27.45	72.25	14 52 8	2497.3	-26.83	94.67
110.00	17 11 37	2497.69	-33.93	59.48	29.54	85.54	17 53 14	1897.7	-34.17	50.24
110.00	12 59 8	3291.34	-16.00	113.24	23.32	59.38	13 53 59	2691.3	-19.94	106.34

DIFFERENTIAL CORRECTIONS
TDE 1.3145 TRA 1.6318 TC-15.2422 BAU 1.9029
RDE .2371 RRA .1638 RC3 -.1882 FAU .37311
FDE 1.7924 FRA 4.9127 FC-34.5927 BSP 35620
BDE 1.3357 BRA 1.6400 BC315.2434 FSP 6895

MID-COURSE EXECUTION ACCURACY
SGT10263.6 SGR 580.3 SG3 2065.4
RRT .5744 RRF .5551 RTF .9897
SGB10279.9 R23 -.0178 R13 .9897
SG110269.0 SG2 474.8 THA 1.86

ORBIT DETERMINATION ACCURACY
ST 2697.7 SR 457.1 SS 1424.4
CRT .9808 CRS -.8585 CST -.9386
LSA 3050.9 MSA 453.8 SSA 32.8
EL1 2734.7 EL2 87.9 ALF 9.45

LAUNCH DATE NOV 22 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 763.674 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 32.962 GAL -1.41 AZL 87.89 HCA 229.24 SMA 186.88 ECC .21085 INC 2.1082 V1 30.159
RP 212.29 LAP -1.60 LOP 288.95 VP 23.241 GAP -9.36 AZP 91.38 TAL 351.88 TAP 221.12 RCA 147.48 APO 226.28 V2 25.847
RC 300.120 GL 23.31 GP -2.84 ZAL 98.91 ZAP 53.29 ETS 177.16 ZAE 80.67 ETE 178.67 ZAC 81.24 ETC 258.00 CLP 53.24

PLANETOCENTRIC CONIC

C3 9.385 VHL 3.064 DLA 29.43 RAL 170.85 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.580 DPA 5.95 RAP 163.13 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.63	11 30 47	3593.31	-24.14	139.08	28.27	72.64	12 30 40	2993.3	-26.29	130.98
98.37	13 48 6	3149.72	-24.13	106.50	28.27	72.62	14 40 35	2549.7	-26.28	98.40
100.00	14 44 56	2967.75	-27.07	93.91	29.16	76.81	15 34 23	2367.7	-28.62	85.45
100.00	13 16 38	3250.51	-21.26	112.88	27.17	68.48	14 10 48	2650.5	-24.00	105.15
110.00	17 23 59	2469.41	-34.05	57.28	30.32	86.83	18 5 9	1869.4	-34.12	48.04
110.00	12 54 4	3321.61	-14.94	114.95	23.88	58.89	13 49 25	2721.6	-18.95	108.13

DIFFERENTIAL CORRECTIONS
TDE 1.2790 TRA 1.7465 TC-15.4957 BAU 1.9444
RDE .2377 RRA .1641 RC3 -.1498 FAU .35951
FDE 1.5898 FRA 4.9055 FC-33.1616 BSP 36380
BDE 1.3009 BRA 1.7542 BC315.4964 FSP 6651

MID-COURSE EXECUTION ACCURACY
SGT10484.8 SGR 574.6 SG3 1994.0
RRT .5405 RRF .5202 RTF .9899
SGB10500.5 R23 -.0190 R13 .9899
SG110489.4 SG2 483.2 THA 1.70

ORBIT DETERMINATION ACCURACY
ST 2658.8 SR 456.9 SS 1355.1
CRT .9738 CRS -.8279 CST -.9306
LSA 2982.7 MSA 465.2 SSA 33.0
EL1 2695.8 EL2 102.4 ALF 9.51

LAUNCH DATE NOV 22 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 767.917 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.967	GAL	-1.51	AZL	87.90	HCA	230.44	SMA	186.95	ECC	.21135	INC	2.0961
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.283	GAP	-9.49	AZP	91.34	TAL	351.35	TAP	221.79	RCA	147.44	APO	226.46
RC	301.167	GL	23.10	GP	-2.75	ZAL	99.92	ZAP	52.14	ETS	177.14	ZAE	79.24	ETE	178.64	ZAC	81.34	ETC	258.00

V1	30.159	V2	25.879	CLP	52.09														

PLANETOCENTRIC CONIC

C3	9.441	VHL	3.073	DLA	28.81	RAL	171.78	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.637	DPA	6.01	RAP	163.22

ECC	1.1554	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
84.46	11 57 10	3521.55	-23.62	133.61	29.12	73.01	12 55 51	2921.6	-25.73	125.53									
95.54	13 29 9	3223.79	-23.61	111.79	29.12	73.00	14 22 53	2623.8	-25.72	103.71									
100.00	15 11 59	2893.30	-28.12	88.62	30.35	79.41	16 0 13	2293.3	-29.29	80.02									
100.00	12 57 1	3327.28	-19.27	117.71	27.41	66.70	13 52 28	2727.3	-22.26	110.18									
110.00	17 36 3	2442.21	-34.14	55.16	31.12	88.09	18 16 46	1842.2	-34.02	45.92									
110.00	12 49 26	3351.13	-13.89	116.60	24.50	58.45	13 45 17	2751.1	-17.97	109.85									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2390	TRA	1.8649	TC-15.7273	BAU	1.9852	SGT10700.5	SGR	570.0	SG3	1923.1	ST	2615.2	SR	457.0	SS	1289.8		
RDE	.2385	RRA	.1643	RC3 -.1131	FAU	.34608	RRT	.5061	RRF	.4848	RTF	.9900	CRT	.9648	CRS	-.7915	CST	-.9215	
FDE	1.3937	FRA	4.8919	FC-31.7335	BSP	37130	SGB10715.7	R23	-.0200	R13	.9900	LSA	2912.5	NSA	477.7	SSA	33.2		
BDE	1.2618	BRA	1.8721	BC315.7277	FSP	6418	SG110704.4	SG2	491.4	THA	1.55	EL1	2652.2	EL2	118.4	ALF	9.59		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 772.165 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.971	GAL	-1.61	AZL	87.92	HCA	231.65	SMA	187.03	ECC	.21188	INC	2.0844
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.324	GAP	-9.62	AZP	91.29	TAL	350.80	TAP	222.45	RCA	147.40	APO	226.65
RC	302.203	GL	22.88	GP	-2.66	ZAL	100.96	ZAP	51.03	ETS	177.12	ZAE	77.84	ETE	178.62	ZAC	81.44	ETC	257.99

V1	30.159	V2	25.911	CLP	50.98														

PLANETOCENTRIC CONIC

C3	9.506	VHL	3.083	DLA	28.17	RAL	172.73	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.695	DPA	6.05	RAP	163.34

ECC	1.1564	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	13 11 54	3293.06	-24.68	117.19	30.48	75.65	14 6 47	2693.1	-26.41	108.95									
90.00	12 22 0	3454.97	-21.52	128.00	29.45	71.13	13 19 35	2855.0	-23.89	120.13									
100.00	15 33 13	2837.43	-28.75	84.59	31.40	81.44	16 20 30	2237.4	-29.63	75.90									
100.00	12 43 22	3385.83	-17.65	121.30	27.82	65.48	13 39 47	2785.8	-20.82	113.93									
110.00	17 47 53	2415.91	-34.18	53.11	31.92	89.30	18 28 9	1815.9	-33.90	43.87									
110.00	12 45 11	3380.10	-12.86	118.20	25.15	58.05	13 41 31	2780.1	-16.99	111.52									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1954	TRA	1.9885	TC-15.9361	BAU	2.0253	SGT10912.1	SGR	566.6	SG3	1854.7	ST	2569.7	SR	457.5	SS	1230.3		
RDE	.2397	RRA	.1645	RC3 -.0785	FAU	.33318	RRT	.4721	RRF	.4497	RTF	.9902	CRT	.9535	CRS	-.7488	CST	-.9112	
FDE	1.2059	FRA	4.8764	FC-30.3432	BSP	37860	SGB10926.8	R23	-.0213	R13	.9902	LSA	2843.1	NSA	491.5	SSA	33.3		
BDE	1.2192	BRA	1.9953	BC315.9363	FSP	6191	SG110915.4	SG2	499.3	THA	1.41	EL1	2606.5	EL2	135.9	ALF	9.66		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 776.418 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.975	GAL	-1.71	AZL	87.93	HCA	232.86	SMA	187.11	ECC	.21244	INC	2.0731
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.364	GAP	-9.75	AZP	91.25	TAL	350.23	TAP	223.09	RCA	147.36	APO	226.85
RC	303.228	GL	22.66	GP	-2.58	ZAL	102.03	ZAP	49.94	ETS	177.10	ZAE	76.47	ETE	178.60	ZAC	81.55	ETC	257.98

V1	30.159	V2	25.941	CLP	49.89														

PLANETOCENTRIC CONIC

C3	9.580	VHL	3.095	DLA	27.52	RAL	173.70	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.755	DPA	6.08	RAP	163.49

ECC	1.1577	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	13 49 34	3184.05	-26.30	109.62	31.90	79.11	14 42 38	2584.0	-27.54	101.17									
90.00	11 52 1	3567.01	-18.88	135.16	29.57	68.50	12 51 28	2967.0	-21.64	127.57									
100.00	15 51 45	2790.17	-29.18	81.14	32.41	83.20	16 38 15	2190.2	-29.81	72.40									
100.00	12 32 31	3436.12	-16.21	124.34	28.35	64.53	13 29 47	2836.1	-19.50	117.09									
110.00	17 59 30	2390.38	-34.18	51.11	32.73	90.48	18 39 21	1790.4	-33.74	41.90									
110.00	12 41 15	3408.68	-11.82	119.77	25.86	57.69	13 38 4	2808.7	-16.00	113.16									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1474	TRA	2.1169	TC-16.1167	BAU	2.0642	SGT11116.3	SGR	564.4	SG3	1786.7	ST	2521.6	SR	458.4	SS	1177.9		
RDE	.2413	RRA	.1647	RC3 -.0453	FAU	.32031	RRT	.4380	RRF	.4149	RTF	.9903	CRT	.9393	CRS	-.7000	CST	-.9001	
FDE	1.0286	FRA	4.8606	FC-28.9458	BSP	38554	SGB11130.6	R23	-.0220	R13	.9903	LSA	2774.7	NSA	506.0	SSA	33.4		
BDE	1.1725	BRA	2.1233	BC316.1168	FSP	5960	SG111119.1	SG2	507.2	THA	1.28	EL1	2558.2	EL2	155.1	ALF	9.73		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 780.674 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.980	GAL	-1.81	AZL	87.94	HCA	234.07	SMA	187.19	ECC	.21302	INC	2.0621
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.404	GAP	-9.87	AZP	91.21	TAL	349.65	TAP	223.73	RCA	147.31	APO	227.06
RC	304.242	GL	22.43	GP	-2.50	ZAL	103.12	ZAP	48.89	ETS	177.08	ZAE	75.13	ETE	178.59	ZAC	81.66	ETC	257.96

V1	30.159	V2	25.971	CLP	48.84														

PLANETOCENTRIC CONIC

C3	9.663	VHL	3.109	DLA	26.86	RAL	174.68	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.817	DPA	6.08	RAP	163.67

ECC	1.1590	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	14 14 21	3116.69	-27.08	104.85	33.05	81.38	15 6 18	2516.7	-27.99	96.30									
90.00	11 35 3	3637.78	-17.06	139.55	30.00	67.05	12 35 40	3037.8	-20.02	132.13									
100.00	16 8 41	2748.11	-29.48	78.05	33.38	84.80	16 54 29	2148.1	-29.89	69.27									
100.00	12 23 24	3481.60	-14.86	127.04	28.95	63.76	13 21 25	2881.6	-18.26	119.90									
110.00	18 10 58	2365.49	-34.15	49.17	33.55	91.63	18 50 23	1765.5	-33.55	39.98									
110.00	12 37 36	3436.98	-10.79	121.31	26.60	57.37	13 34 53	2837.0	-15.01	114.75									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1035	TRA	2.2584	TC-16.2398	BAU	2.0980	SGT11307.1	SGR	563.6	SG3	1717.6	ST	2487.5	SR	460.1	SS	1139.4		
RDE	.2434	RRA	.1651	RC3 -.0127	FAU	.30673	RRT	.4054	RRF	.3823	RTF	.9903	CRT	.9224	CRS	-.6497	CST	-.8907	
FDE	.8763	FRA	4.8579	FC-27.4791	BSP	39442	SGB11321.1	R23	-.0220	R13	.9903	LSA	2725.1	NSA	519.8	SSA	33.3		
BDE	1.1300	BRA	2.2644	BC316.2398	FSP	5780	SG111309.4	SG2	515.1	THA	1.16	EL1	2523.6	EL2	175.2	ALF	9.73		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 784.936 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.985	GAL	-1.92	AZL	87.95	HCA	235.29	SMA	187.27	ECC	.21365	INC	2.0514	V1	30.159
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.443	GAP	-10.00	AZP	91.17	TAL	349.06	TAP	224.35	RCA	147.26	APO	227.28	V2	26.001
RC	305.247	GL	22.20	GP	-2.43	ZAL	104.22	ZAP	47.87	ETS	177.06	ZAE	73.82	ETE	178.57	ZAC	81.77	ETC	257.93	CLP	47.82

PLANETOCENTRIC CONIC

C3	9.757	VHL	3.124	DLA	26.18	RAL	175.67	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.880	DPA	6.08	RAP	163.88	ECC	1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 1	3062.62	-27.57	100.96	34.13	83.27	15 26 4	2462.6	-28.22	92.36
90.00	11 22 16	3695.67	-15.48	143.08	30.57	65.99	12 23 52	3095.7	-18.60	135.78
100.00	16 24 30	2709.66	-29.68	75.21	34.35	86.29	17 9 40	2109.7	-29.88	66.41
100.00	12 15 28	3523.87	-13.57	129.52	29.62	63.11	13 14 12	2923.9	-17.07	122.47
110.00	18 22 15	2341.23	-34.09	47.28	34.39	92.75	19 1 17	1741.2	-33.33	38.12
110.00	12 34 13	3465.06	-9.75	122.82	27.38	57.07	13 31 58	2865.1	-14.02	116.32

DIFFERENTIAL CORRECTIONS

TDE	1.0390	TRA	2.3882	TC-16.4033	BAU	2.1398	
RDE	.2453	RRA	.1650	RC3 .0158	FAU	.29556	
FDE	.6941	FRA	4.8149	FC-26.2240	BSP	39932	
BDE	1.0676	BRA	2.3939	BC316.4033	FSP	5528	

MID-COURSE EXECUTION ACCURACY

SGT11509.8	SGR	562.4	SG3	1654.9			
RRT	.3712	RRF	.3462	RTF	.9905		
SGB11523.5	R23	-.0238	R13	.9904			
SG111511.7	SG2	522.1	THA	1.04			

ORBIT DETERMINATION ACCURACY

ST	2423.1	SR	461.2	SS	1090.3		
CRT	.8999	CRS	-.5809	CST	-.8756		
LSA	2642.3	MSA	538.6	SSA	33.2		
EL1	2458.6	EL2	198.3	ALF	9.78		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 789.202 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.990	GAL	-2.03	AZL	87.96	HCA	236.51	SMA	187.36	ECC	.21430	INC	2.0410	V1	30.159
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.482	GAP	-10.12	AZP	91.13	TAL	348.45	TAP	224.96	RCA	147.21	APO	227.51	V2	26.029
RC	306.243	GL	21.96	GP	-2.36	ZAL	105.36	ZAP	46.87	ETS	177.05	ZAE	72.54	ETE	178.56	ZAC	81.88	ETC	257.91	CLP	46.83

PLANETOCENTRIC CONIC

C3	9.862	VHL	3.140	DLA	25.49	RAL	176.67	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	3.944	DPA	6.05	RAP	164.12	ECC	1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 30	3015.69	-27.90	97.57	35.17	84.94	15 43 45	2415.7	-28.31	88.93
90.00	11 11 48	3746.82	-14.04	146.14	31.22	65.16	12 14 15	3146.8	-17.28	138.96
100.00	16 39 32	2673.82	-29.81	72.56	35.31	87.68	17 24 6	2073.8	-29.81	63.75
100.00	12 8 27	3563.93	-12.32	131.84	30.35	62.55	13 7 50	2963.9	-15.91	124.88
110.00	18 33 26	2317.48	-33.99	45.43	35.24	93.84	19 12 3	1717.5	-33.09	36.31
110.00	12 31 2	3493.03	-8.71	124.32	28.20	56.81	13 29 15	2893.0	-13.02	117.87

DIFFERENTIAL CORRECTIONS

TDE	.9782	TRA	2.5312	TC-16.5071	BAU	2.1764	
RDE	.2478	RRA	.1650	RC3 .0439	FAU	.28359	
FDE	.5377	FRA	4.7880	FC-24.8948	BSP	40575	
BDE	1.0091	BRA	2.5365	BC316.5071	FSP	5318	

MID-COURSE EXECUTION ACCURACY

SGT11698.2	SGR	562.5	SG3	1591.0			
RRT	.3385	RRF	.3128	RTF	.9905		
SGB11711.7	R23	-.0246	R13	.9905			
SG111699.7	SG2	529.2	THA	.93			

ORBIT DETERMINATION ACCURACY

ST	2374.3	SR	463.1	SS	1056.5		
CRT	.8733	CRS	-.5111	CST	-.8630		
LSA	2580.2	MSA	556.5	SSA	33.0		
EL1	2408.8	EL2	222.3	ALF	9.75		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 793.471 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	32.995	GAL	-2.14	AZL	87.97	HCA	237.73	SMA	187.44	ECC	.21498	INC	2.0308	V1	30.159
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.520	GAP	-10.24	AZP	91.08	TAL	347.83	TAP	225.56	RCA	147.15	APO	227.74	V2	26.057
RC	307.229	GL	21.71	GP	-2.29	ZAL	106.51	ZAP	45.91	ETS	177.03	ZAE	71.29	ETE	178.56	ZAC	82.00	ETC	257.88	CLP	45.86

PLANETOCENTRIC CONIC

C3	9.978	VHL	3.159	DLA	24.78	RAL	177.68	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	4.010	DPA	6.01	RAP	164.38	ECC	1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 33	2973.42	-28.11	94.50	36.19	86.47	16 0 6	2373.4	-28.31	85.84
90.00	11 2 49	3793.76	-12.68	148.92	31.94	64.47	12 6 3	3193.8	-16.02	141.83
100.00	16 53 57	2640.05	-29.88	70.05	36.27	89.00	17 37 57	2040.1	-29.70	61.25
100.00	12 2 7	3602.36	-11.11	134.04	31.13	62.07	13 2 9	3002.4	-14.76	127.16
110.00	18 44 29	2294.23	-33.87	43.62	36.11	94.90	19 22 43	1694.2	-32.82	34.54
110.00	12 28 4	3520.95	-7.67	125.81	29.06	56.59	13 26 45	2920.9	-12.01	119.41

DIFFERENTIAL CORRECTIONS

TDE	.9140	TRA	2.6795	TC-16.5863	BAU	2.2126	
RDE	.2507	RRA	.1650	RC3 .0702	FAU	.27205	
FDE	.3912	FRA	4.7591	FC-23.6036	BSP	41208	
BDE	.9477	BRA	2.6846	BC316.5864	FSP	5114	

MID-COURSE EXECUTION ACCURACY

SGT11883.0	SGR	563.4	SG3	1529.2			
RRT	.3067	RRF	.2803	RTF	.9905		
SGB11896.3	R23	-.0254	R13	.9905			
SG111884.2	SG2	536.1	THA	.83			

ORBIT DETERMINATION ACCURACY

ST	2329.4	SR	465.3	SS	1030.0		
CRT	.8416	CRS	-.4367	CST	-.8516		
LSA	2524.3	MSA	574.6	SSA	32.8		
EL1	2362.4	EL2	247.8	ALF	9.65		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 797.743 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.000	GAL	-2.26	AZL	87.98	HCA	238.96	SMA	187.53	ECC	.21570	INC	2.0210	V1	30.159
RP	210.22	LAP	-1.73	LOP	298.67	VP	23.557	GAP	-10.36	AZP	91.04	TAL	347.19	TAP	226.15	RCA	147.08	APO	227.98	V2	26.085
RC	308.206	GL	21.46	GP	-2.22	ZAL	107.68	ZAP	44.97	ETS	177.01	ZAE	70.06	ETE	178.55	ZAC	82.12	ETC	257.84	CLP	44.93

PLANETOCENTRIC CONIC

C3	10.107	VHL	3.179	DLA	24.06	RAL	178.70	RAD	6567.4	VEL	11.467	PTH	1.99	VHP	4.077	DPA	5.96	RAP	164.68	ECC	1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 35	2934.49	-28.24	91.66	37.21	87.89	16 15 29	2334.5	-28.24	82.99
90.00	10 54 56	3837.80	-11.38	151.49	32.72	63.89	11 58 54	3237.8	-14.80	144.48
100.00	17 7 51	2607.95	-29.89	67.66	37.24	90.25	17 51 19	2007.9	-29.54	58.88
100.00	11 56 21	3639.56	-9.91	136.16	31.95	61.65	12 57 0	3039.6	-13.63	129.34
110.00	18 55 25	2271.44	-33.73	41.86	37.00	95.94	19 33 17	1671.4	-32.54	32.83
110.00	12 25 16	3548.84	-6.62	127.29	29.96	56.39	13 24 25	2948.8	-10.99	120.93

DIFFERENTIAL CORRECTIONS

TDE	.8462	TRA	2.8334	TC-16.6338	BAU	2.2476	
RDE	.2539	RRA	.1649	RC3 .0951	FAU	.26067	
FDE	.2525	FRA	4.7256	FC-22.3283	BSP	41844	
BDE	.8835	BRA	2.8382	BC316.6341	FSP	4916	

MID-COURSE EXECUTION ACCURACY

SGT12060.5	SGR	564.7	SG3	1468.2			
RRT	.2758	RRF	.2486	RTF	.9905		
SGB12073.7	R23	-.0262	R13	.9905			
SG112061.5	SG2	542.8	THA	.74			

ORBIT DETERMINATION ACCURACY

ST	2289.4	SR	467.8	SS	1009.8		
CRT	.8039	CRS	-.3584	CST	-.8416		
LSA	2475.4	MSA	592.7	SSA	32.4		
EL1	2320.6	EL2	274.5	ALF	9.46		

LAUNCH DATE NOV 22 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 802.018 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.005 GAL -2.38 AZL 87.99 HCA 240.19 SMA 187.62 ECC .21645 INC 2.0112 V1 30.159
RP 209.99 LAP -1.75 LOP 299.90 VP 23.594 GAP -10.48 AZP 91.00 TAL 346.54 TAP 226.73 RCA 147.01 APO 228.24 V2 26.151
RC 309.174 GL 21.19 GP -2.16 ZAL 108.87 ZAP 44.06 ETS 176.99 ZAE 68.86 ETE 178.54 ZAC 82.24 ETC 257.80 CLP 44.02

PLANETOCENTRIC CONIC

C3 10.248 VHL 3.201 DLA 23.32 RAL 179.73 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.145 DPA 5.89 RAP 165.00 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 51	2898.10	-28.31	89.00	38.23	89.22	16 30 9	2298.1	-28.12	80.34
90.00	10 47 52	3879.75	-10.11	153.92	33.56	63.41	11 52 32	3279.8	-13.60	146.98
100.00	17 21 22	2577.25	-29.86	65.38	38.22	91.45	18 4 19	1977.2	-29.34	56.61
100.00	11 51 3	3675.84	-8.73	138.21	32.83	61.30	12 52 18	3075.8	-12.50	131.44
110.00	19 6 15	2249.09	-33.55	40.14	37.90	96.94	19 43 45	1649.1	-32.23	31.16
110.00	12 22 39	3576.76	-5.57	128.76	30.89	56.22	13 22 15	2976.8	-9.97	122.44

DIFFERENTIAL CORRECTIONS
TDE .7738 TRA 2.9927 TC-16.6605 BAU 2.2827
RDE .2574 RRA .1648 RC3 .1183 FAU .24972
FDE .1206 FRA 4.6917 FC-21.0953 BSP 42444
BDE .8155 BRA 2.9972 BC316.6609 FSP 4724

MID-COURSE EXECUTION ACCURACY
SGT12236.2 SGR 566.6 SG3 1409.4
RRT .2456 RRF .2178 RTF .9905
SGB12249.3 R23 -.0268 R13 .9905
SG112237.0 SG2 549.2 THA .65

ORBIT DETERMINATION ACCURACY
ST 2254.5 SR 470.6 SS 996.2
CRT .7595 CRS -.2772 CST -.8339
LSA 2433.6 MSA 610.8 SSA 32.0
EL1 2283.1 EL2 302.3 ALF 9.17

LAUNCH DATE NOV 22 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 806.296 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.010 GAL -2.51 AZL 88.00 HCA 241.42 SMA 187.72 ECC .21724 INC 2.0018 V1 30.159
RP 209.77 LAP -1.76 LOP 301.13 VP 23.630 GAP -10.60 AZP 90.96 TAL 345.87 TAP 227.29 RCA 146.94 APO 228.50 V2 26.137
RC 310.132 GL 20.93 GP -2.10 ZAL 110.07 ZAP 43.18 ETS 176.98 ZAE 67.68 ETE 178.54 ZAC 82.37 ETC 257.76 CLP 43.14

PLANETOCENTRIC CONIC

C3 10.403 VHL 3.225 DLA 22.58 RAL 180.77 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.215 DPA 5.80 RAP 165.34 ECC 1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 31	2863.75	-28.31	86.48	39.25	90.48	16 44 15	2263.7	-27.95	77.84
90.00	10 41 28	3920.15	-8.87	156.24	34.44	63.00	11 46 48	3320.2	-12.42	149.36
100.00	17 34 32	2547.76	-29.79	63.19	39.20	92.60	18 16 59	1947.8	-29.11	54.45
100.00	11 46 9	3711.38	-7.57	140.20	33.74	61.00	12 48 0	3111.4	-11.38	133.48
110.00	19 17 0	2227.17	-33.36	38.46	38.82	97.92	19 54 7	1627.2	-31.91	29.53
110.00	12 20 10	3604.73	-4.51	130.23	31.86	56.08	13 20 15	3004.7	-8.93	123.94

DIFFERENTIAL CORRECTIONS
TDE .6987 TRA 3.1583 TC-16.6544 BAU 2.3164
RDE .2613 RRA .1645 RC3 .1400 FAU .23897
FDE -.0024 FRA 4.6548 FC-19.8860 BSP 43054
BDE .7459 BRA 3.1626 BC316.6550 FSP 4540

MID-COURSE EXECUTION ACCURACY
SGT12404.9 SGR 568.9 SG3 1351.7
RRT .2165 RRF .1880 RTF .9905
SGB12418.0 R23 -.0276 R13 .9905
SG112405.5 SG2 555.4 THA .57

ORBIT DETERMINATION ACCURACY
ST 2228.6 SR 473.7 SS 988.3
CRT .7087 CRS -.1960 CST -.8293
LSA 2402.7 MSA 627.7 SSA 31.6
EL1 2254.3 EL2 330.4 ALF 8.76

LAUNCH DATE NOV 22 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 810.576 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.016 GAL -2.64 AZL 88.01 HCA 242.65 SMA 187.81 ECC .21807 INC 1.9926 V1 30.159
RP 209.55 LAP -1.77 LOP 302.37 VP 23.665 GAP -10.72 AZP 90.92 TAL 345.19 TAP 227.84 RCA 146.85 APO 228.77 V2 26.162
RC 311.080 GL 20.65 GP -2.05 ZAL 111.30 ZAP 42.32 ETS 176.96 ZAE 66.53 ETE 178.54 ZAC 82.50 ETC 257.72 CLP 42.28

PLANETOCENTRIC CONIC

C3 10.573 VHL 3.252 DLA 21.82 RAL 181.81 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.286 DPA 5.70 RAP 165.71 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 42	2831.09	-28.27	84.10	40.28	91.68	16 57 53	2231.1	-27.74	75.47
90.00	10 35 36	3959.36	-7.65	158.48	35.37	62.65	11 41 35	3359.4	-11.26	151.65
100.00	17 47 23	2519.33	-29.68	61.08	40.20	93.71	18 29 22	1919.3	-28.85	52.38
100.00	11 41 35	3746.35	-6.41	142.15	34.69	60.74	12 44 2	3146.4	-10.26	135.48
110.00	19 27 39	2205.67	-33.15	36.81	39.75	98.87	20 4 24	1605.7	-31.57	27.94
110.00	12 17 49	3632.78	-3.44	131.70	32.86	55.97	13 18 22	3032.8	-7.88	125.43

DIFFERENTIAL CORRECTIONS
TDE .6189 TRA 3.3289 TC-16.6235 BAU 2.3499
RDE .2655 RRA .1641 RC3 .1602 FAU .22854
FDE -.1177 FRA 4.6157 FC-18.7129 BSP 43646
BDE .6735 BRA 3.3330 BC316.6242 FSP 4359

MID-COURSE EXECUTION ACCURACY
SGT12569.2 SGR 571.6 SG3 1295.7
RRT .1882 RRF .1592 RTF .9904
SGB12582.2 R23 -.0281 R13 .9904
SG112569.6 SG2 561.4 THA .49

ORBIT DETERMINATION ACCURACY
ST 2210.8 SR 477.1 SS 985.6
CRT .6507 CRS -.1161 CST -.8283
LSA 2381.7 MSA 642.8 SSA 31.1
EL1 2233.1 EL2 358.7 ALF 8.21

LAUNCH DATE NOV 22 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 814.858 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.021 GAL -2.77 AZL 88.02 HCA 243.89 SMA 187.91 ECC .21894 INC 1.9835 V1 30.159
RP 209.34 LAP -1.78 LOP 303.61 VP 23.699 GAP -10.84 AZP 90.87 TAL 344.50 TAP 228.38 RCA 146.77 APO 229.05 V2 26.186
RC 312.019 GL 20.37 GP -1.99 ZAL 112.53 ZAP 41.48 ETS 176.94 ZAE 65.40 ETE 178.54 ZAC 82.63 ETC 257.67 CLP 41.44

PLANETOCENTRIC CONIC

C3 10.758 VHL 3.280 DLA 21.05 RAL 182.85 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 4.358 DPA 5.59 RAP 166.10 ECC 1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 27	2799.88	-28.19	81.82	41.31	92.82	17 11 7	2199.9	-27.50	73.22
90.00	10 30 11	3997.62	-6.45	160.65	36.34	62.37	11 36 48	3397.6	-10.10	153.87
100.00	17 59 59	2491.86	-29.54	59.05	41.21	94.77	18 41 31	1891.9	-28.57	50.39
100.00	11 37 20	3780.88	-5.25	144.06	35.68	60.53	12 40 21	3180.9	-9.14	137.43
110.00	19 38 12	2184.59	-32.92	35.21	40.71	99.79	20 14 36	1584.6	-31.21	26.40
110.00	12 15 37	3660.91	-2.37	133.17	33.89	55.89	13 16 38	3060.9	-6.83	126.93

DIFFERENTIAL CORRECTIONS
TDE .5364 TRA 3.5061 TC-16.5666 BAU 2.3829
RDE .2701 RRA .1636 RC3 .1788 FAU .21844
FDE -.2251 FRA 4.5731 FC-17.5781 BSP 44214
BDE .6005 BRA 3.5099 BC316.5676 FSP 4185

MID-COURSE EXECUTION ACCURACY
SGT12729.9 SGR 574.6 SG3 1241.3
RRT .1609 RRF .1313 RTF .9904
SGB12742.9 R23 -.0288 R13 .9904
SG112730.3 SG2 567.1 THA .42

ORBIT DETERMINATION ACCURACY
ST 2204.6 SR 480.7 SS 986.9
CRT .5867 CRS -.0391 CST -.8308
LSA 2373.7 MSA 655.6 SSA 30.6
EL1 2223.1 EL2 386.0 ALF 7.52

LAUNCH DATE NOV 22 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 819.142 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.027 GAL -2.90 AZL 88.03 HCA 245.13 SMA 188.01 ECC .21985 INC 1.9746 V1 30.159
RP 209.14 LAP -1.79 LOP 304.84 VP 23.733 GAP -10.96 AZP 90.83 TAL 343.78 TAP 228.91 RCA 146.67 APO 229.34 V2 26.209
RC 312.950 GL 20.08 GP -1.94 ZAL 113.78 ZAP 40.67 ETS 176.92 ZAE 64.29 ETE 178.54 ZAC 82.77 ETC 257.62 CLP 40.63

PLANETOCENTRIC CONIC

C3 10.960 VHL 3.311 DLA 20.28 RAL 183.90 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 4.432 DPA 5.47 RAP 166.51 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 51	2769.95	-28.07	79.63	42.37	93.90	17 24 1	2169.9	-27.23	71.07
90.00	10 25 9	4035.15	-5.26	162.76	37.35	62.14	11 32 24	3435.2	-8.95	156.02
100.00	18 12 20	2465.28	-29.38	57.09	42.24	95.79	18 53 25	1865.3	-28.27	48.47
100.00	11 33 21	3815.05	-4.11	145.95	36.72	60.37	12 36 56	3215.1	-8.02	139.35
110.00	19 48 39	2163.93	-32.67	33.65	41.68	100.68	20 24 43	1563.9	-30.85	24.90
110.00	12 13 31	3689.16	-1.29	134.65	34.96	55.84	13 15 0	3089.2	-5.76	128.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4508 TRA 3.6900 TC-16.4798 BAU 2.4148 SGT12884.9 SGR 577.9 SG3 1188.2 ST 2210.8 SR 484.6 SS 992.1
RDE .2751 RRA .1630 RC3 .1960 FAU .20853 RRT .1347 RRF .1044 RTF .9902 CRT .5176 CRS .0347 CST -.8360
FDE -.3260 FRA 4.5300 FC-16.4726 BSP 44803 SGB12897.8 R23 -.0295 R13 .9902 LSA 2379.4 MSA 666.4 SSA 30.0
BDE .5281 BRA 3.6936 BC316.4810 FSP 4018 SG112885.1 SG2 572.6 THA .35 EL1 2225.5 EL2 411.9 ALF 6.70

LAUNCH DATE NOV 22 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 823.426 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.033 GAL -3.04 AZL 88.03 HCA 246.37 SMA 188.11 ECC .22079 INC 1.9659 V1 30.159
RP 208.94 LAP -1.80 LOP 306.09 VP 23.766 GAP -11.08 AZP 90.79 TAL 343.06 TAP 229.43 RCA 146.57 APO 229.64 V2 26.232
RC 313.871 GL 19.78 GP -1.89 ZAL 115.04 ZAP 39.88 ETS 176.90 ZAE 63.21 ETE 178.54 ZAC 82.90 ETC 257.57 CLP 39.84

PLANETOCENTRIC CONIC

C3 11.178 VHL 3.343 DLA 19.49 RAL 184.95 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 4.507 DPA 5.33 RAP 166.95 ECC 1.1840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 55	2741.15	-27.92	77.54	43.43	94.94	17 36 36	2141.1	-26.94	69.01
90.00	10 20 27	4072.08	-4.08	164.84	38.40	61.95	11 28 19	3472.1	-7.80	158.13
100.00	18 24 28	2439.51	-29.19	55.20	43.28	96.76	19 5 7	1839.5	-27.94	46.62
100.00	11 29 36	3848.95	-2.96	147.82	37.78	60.24	12 33 45	3249.0	-6.90	141.24
110.00	19 59 1	2143.70	-32.40	32.13	42.68	101.54	20 34 44	1543.7	-30.47	23.45
110.00	12 11 32	3717.52	-.20	136.13	36.06	55.82	13 13 30	3117.5	-4.69	129.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3619 TRA 3.8797 TC-16.3703 BAU 2.4467 SGT13036.6 SGR 581.3 SG3 1136.8 ST 2229.2 SR 488.6 SS 999.6
RDE .2804 RRA .1622 RC3 .2116 FAU .19896 RRT .1094 RRF .0785 RTF .9901 CRT .4442 CRS .1036 CST -.8440
FDE -.4190 FRA 4.4836 FC-15.4090 BSP 45376 SGB13049.6 R23 -.0302 R13 .9901 LSA 2398.4 MSA 673.8 SSA 29.5
BDE .4578 BRA 3.8831 BC316.3717 FSP 3856 SG113036.8 SG2 577.8 THA .28 EL1 2240.1 EL2 435.6 ALF 5.78

LAUNCH DATE NOV 22 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 827.712 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.038 GAL -3.18 AZL 88.04 HCA 247.61 SMA 188.21 ECC .22179 INC 1.9573 V1 30.159
RP 208.76 LAP -1.81 LOP 307.33 VP 23.798 GAP -11.20 AZP 90.75 TAL 342.32 TAP 229.93 RCA 146.47 APO 229.95 V2 26.254
RC 314.784 GL 19.48 GP -1.85 ZAL 116.31 ZAP 39.11 ETS 176.89 ZAE 62.14 ETE 178.54 ZAC 83.05 ETC 257.51 CLP 39.08

PLANETOCENTRIC CONIC

C3 11.416 VHL 3.379 DLA 18.69 RAL 186.00 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 4.583 DPA 5.19 RAP 167.41 ECC 1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 43	2713.38	-27.74	75.53	44.51	95.94	17 48 56	2113.4	-26.63	67.04
90.00	10 16 3	4108.54	-2.91	166.88	39.49	61.82	11 24 31	3508.5	-6.66	160.20
100.00	18 36 23	2414.52	-28.97	53.38	44.34	97.70	19 16 38	1814.5	-27.60	44.84
100.00	11 26 3	3882.63	-1.82	149.67	38.89	60.16	12 30 46	3282.6	-5.78	143.12
110.00	20 9 17	2123.90	-32.12	30.66	43.69	102.38	20 44 41	1523.9	-30.08	22.04
110.00	12 9 39	3746.01	.89	137.61	37.19	55.83	13 12 5	3146.0	-3.60	131.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2685 TRA 4.0754 TC-16.2387 BAU 2.4785 SGT13185.2 SGR 584.9 SG3 1087.0 ST 2259.8 SR 492.9 SS 1009.1
RDE .2861 RRA .1613 RC3 .2258 FAU .18975 RRT .0847 RRF .0532 RTF .9900 CRT .3672 CRS .1687 CST -.8539
FDE -.5065 FRA 4.4336 FC-14.3901 BSP 45919 SGB13198.2 R23 -.0309 R13 .9899 LSA 2430.4 MSA 678.1 SSA 28.9
BDE .3923 BRA 4.0786 BC316.2403 FSP 3700 SG113185.3 SG2 582.7 THA .22 EL1 2267.3 EL2 456.9 ALF 4.77

LAUNCH DATE NOV 22 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 831.998 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.044 GAL -3.33 AZL 88.05 HCA 248.86 SMA 188.31 ECC .22282 INC 1.9488 V1 30.159
RP 208.58 LAP -1.82 LOP 308.57 VP 23.829 GAP -11.32 AZP 90.70 TAL 341.56 TAP 230.42 RCA 146.35 APO 230.27 V2 26.274
RC 315.690 GL 19.17 GP -1.80 ZAL 117.59 ZAP 38.37 ETS 176.87 ZAE 61.10 ETE 178.54 ZAC 83.19 ETC 257.46 CLP 38.33

PLANETOCENTRIC CONIC

C3 11.672 VHL 3.416 DLA 17.89 RAL 187.05 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 4.661 DPA 5.03 RAP 167.88 ECC 1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 14	2686.59	-27.53	73.59	45.60	96.88	18 1 1	2086.6	-26.30	65.15
90.00	10 11 54	4144.59	-1.75	168.89	40.62	61.73	11 20 59	3544.6	-5.52	162.23
100.00	18 48 7	2390.28	-28.74	51.61	45.42	98.60	19 27 58	1790.3	-27.25	43.13
100.00	11 22 42	3916.13	-.69	151.51	40.03	60.11	12 27 59	3316.1	-4.66	144.97
110.00	20 19 27	2104.55	-31.83	29.22	44.73	103.18	20 54 31	1504.6	-29.69	20.67
110.00	12 7 52	3774.63	1.98	139.11	38.36	55.87	13 10 47	3174.6	-2.51	132.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1731 TRA 4.2781 TC-16.0804 BAU 2.5096 SGT13328.6 SGR 588.6 SG3 1038.5 ST 2304.0 SR 497.3 SS 1019.5
RDE .2922 RRA .1602 RC3 .2386 FAU .18070 RRT .0610 RRF .0289 RTF .9897 CRT .2899 CRS .2280 CST -.8648
FDE -.5864 FRA 4.3818 FC-13.4027 BSP 46473 SGB13341.6 R23 -.0317 R13 .9897 LSA 2476.4 MSA 679.5 SSA 28.3
BDE .3396 BRA 4.2811 BC316.0822 FSP 3547 SG113328.6 SG2 587.5 THA .15 EL1 2308.7 EL2 475.0 ALF 3.74

LAUNCH DATE NOV 22 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 836.283 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.050 GAL -3.48 AZL 88.06 HCA 250.10 SMA 188.42 ECC .22391 INC 1.9405 V1 30.159
RP 208.40 LAP -1.82 LOP 309.82 VP 23.859 GAP -11.44 AZP 90.66 TAL 340.79 TAP 230.89 RCA 146.23 APO 230.61 V2 26.294
RC 316.588 GL 18.85 GP -1.76 ZAL 118.87 ZAP 37.64 ETS 176.85 ZAE 60.07 ETE 178.54 ZAC 83.34 ETC 257.40 CLP 37.61

PLANETOCENTRIC CONIC

C3 11.949 VHL 3.457 DLA 17.09 RAL 188.10 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 4.740 DPA 4.85 RAP 168.38 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 32	2660.70	-27.31	71.73	46.71	97.79	18 12 52	2060.7	-25.95	63.33
90.00	10 8 0	4180.33	-.60	170.88	41.78	61.69	11 17 40	3580.3	-4.38	164.24
100.00	18 59 40	2366.76	-28.49	49.91	46.51	99.47	19 39 7	1766.8	-26.88	41.47
100.00	11 19 32	3949.50	.44	153.34	41.20	60.11	12 25 22	3349.5	-3.54	146.81
110.00	20 29 31	2085.66	-31.53	27.83	45.78	103.95	21 4 17	1485.7	-29.29	19.34
110.00	12 6 11	3803.37	3.08	140.61	39.55	55.94	13 9 34	3203.4	-1.41	134.40

DIFFERENTIAL CORRECTIONS
TDE .0750 TRA 4.4879 TC-15.8976 BAU 2.5400
RDE .2987 RRA .1589 RC3 .2501 FAU .17194
FDE -.6587 FRA 4.3277 FC-12.4569 BSP 47033
BDE .3080 BRA 4.4908 BC315.8996 FSP 3400

MID-COURSE EXECUTION ACCURACY
SGT13467.7 SGR 592.3 SG3 991.4
RRT .0383 RRF .0056 RTF .9895
SGB13480.7 R23 -.0324 R13 .9895
SG113467.7 SG2 591.9 THA .10

ORBIT DETERMINATION ACCURACY
ST 2361.1 SR 501.9 SS 1030.2
CRT .2133 CRS .2818 CST -.8765
LSA 2535.3 MSA 677.8 SSA 27.6
EL1 2363.6 EL2 489.9 ALF 2.71

LAUNCH DATE NOV 22 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 840.568 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.056 GAL -3.63 AZL 88.07 HCA 251.35 SMA 188.52 ECC .22504 INC 1.9323 V1 30.159
RP 208.24 LAP -1.83 LOP 311.07 VP 23.889 GAP -11.56 AZP 90.62 TAL 340.00 TAP 231.36 RCA 146.10 APO 230.95 V2 26.314
RC 317.480 GL 18.53 GP -1.72 ZAL 120.16 ZAP 36.94 ETS 176.83 ZAE 59.07 ETE 178.54 ZAC 83.49 ETC 257.34 CLP 36.90

PLANETOCENTRIC CONIC

C3 12.249 VHL 3.500 DLA 16.27 RAL 189.15 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 4.821 DPA 4.67 RAP 168.90 ECC 1.2016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 35	2635.67	-27.07	69.94	47.84	98.66	18 24 31	2035.7	-25.59	61.58
90.00	10 4 18	4215.80	.55	172.86	42.98	61.69	11 14 34	3615.8	-3.24	166.23
100.00	19 11 3	2343.95	-28.22	48.27	47.62	100.29	19 50 7	1743.9	-26.51	39.88
100.00	11 16 31	3982.75	1.57	155.16	42.41	60.15	12 22 54	3382.8	-2.41	148.64
110.00	20 39 30	2067.23	-31.22	26.49	46.86	104.69	21 13 57	1467.2	-28.89	18.06
110.00	12 4 34	3832.24	4.18	142.12	40.78	56.04	13 8 26	3232.2	-.31	135.91

DIFFERENTIAL CORRECTIONS
TDE -.0265 TRA 4.7041 TC-15.6947 BAU 2.5704
RDE .3056 RRA .1574 RC3 .2601 FAU .16346
FDE -.7257 FRA 4.2705 FC-11.5535 BSP 47583
BDE .3067 BRA 4.7068 BC315.6969 FSP 3259

MID-COURSE EXECUTION ACCURACY
SGT13603.3 SGR 596.2 SG3 945.9
RRT .0162 RRF -.0171 RTF .9892
SGB13616.4 R23 -.0332 R13 .9892
SG113603.3 SG2 596.1 THA .04

ORBIT DETERMINATION ACCURACY
ST 2429.7 SR 506.7 SS 1040.8
CRT .1383 CRS .3314 CST -.8878
LSA 2605.4 MSA 673.9 SSA 27.0
EL1 2430.7 EL2 501.6 ALF 1.73

LAUNCH DATE NOV 22 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 844.852 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.062 GAL -3.79 AZL 88.08 HCA 252.60 SMA 188.63 ECC .22623 INC 1.9242 V1 30.159
RP 208.08 LAP -1.84 LOP 312.32 VP 23.917 GAP -11.68 AZP 90.58 TAL 339.20 TAP 231.81 RCA 145.96 APO 231.30 V2 26.332
RC 318.367 GL 18.21 GP -1.68 ZAL 121.45 ZAP 36.25 ETS 176.81 ZAE 58.08 ETE 178.55 ZAC 83.64 ETC 257.28 CLP 36.22

PLANETOCENTRIC CONIC

C3 12.571 VHL 3.546 DLA 15.46 RAL 190.20 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 4.903 DPA 4.48 RAP 169.43 ECC 1.2069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 26	2611.47	-26.81	68.22	48.99	99.48	18 35 58	2011.5	-25.22	59.91
90.00	10 0 47	4251.03	1.69	174.83	44.21	61.73	11 11 38	3651.0	-2.11	168.20
100.00	19 22 15	2321.82	-27.94	46.68	48.76	101.08	20 0 57	1721.8	-26.13	38.35
100.00	11 13 39	4015.92	2.69	156.98	43.65	60.22	12 20 35	3415.9	-1.29	150.46
110.00	20 49 22	2049.28	-30.90	25.18	47.96	105.40	21 23 31	1449.3	-28.48	16.82
110.00	12 3 3	3861.23	5.28	143.64	42.04	56.18	13 7 24	3261.2	.80	137.42

DIFFERENTIAL CORRECTIONS
TDE -.1307 TRA 4.9278 TC-15.4722 BAU 2.6006
RDE .3128 RRA .1557 RC3 .2689 FAU .15524
FDE -.7869 FRA 4.2113 FC-10.6909 BSP 48107
BDE .3390 BRA 4.9302 BC315.4745 FSP 3122

MID-COURSE EXECUTION ACCURACY
SGT13736.1 SGR 600.0 SG3 901.8
RRT -.0051 RRF -.0392 RTF .9889
SGB13749.2 R23 .0341 R13 -.9889
SG113736.1 SG2 600.0 THA 179.99

ORBIT DETERMINATION ACCURACY
ST 2509.3 SR 511.6 SS 1050.9
CRT .0666 CRS .3768 CST -.8985
LSA 2686.2 MSA 668.4 SSA 26.4
EL1 2509.6 EL2 510.4 ALF .81

LAUNCH DATE NOV 22 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 849.135 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.068 GAL -3.96 AZL 88.08 HCA 253.86 SMA 188.74 ECC .22746 INC 1.9162 V1 30.159
RP 207.93 LAP -1.84 LOP 313.58 VP 23.945 GAP -11.80 AZP 90.53 TAL 338.39 TAP 232.25 RCA 145.81 APO 231.67 V2 26.349
RC 319.247 GL 17.87 GP -1.64 ZAL 122.75 ZAP 35.58 ETS 176.79 ZAE 57.11 ETE 178.55 ZAC 83.80 ETC 257.22 CLP 35.55

PLANETOCENTRIC CONIC

C3 12.917 VHL 3.594 DLA 14.64 RAL 191.24 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 4.986 DPA 4.28 RAP 169.98 ECC 1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 5	2588.08	-26.53	66.56	50.15	100.27	18 47 13	1988.1	-24.84	58.30
90.00	9 57 27	4286.09	2.81	176.78	45.48	61.81	11 8 53	3686.1	-.98	170.16
100.00	19 33 18	2300.39	-27.65	45.15	49.91	101.83	20 11 38	1700.4	-25.74	36.87
100.00	11 10 56	4049.02	3.81	158.80	44.93	60.33	12 18 25	3449.0	-.17	152.28
110.00	20 59 8	2031.83	-30.58	23.93	49.07	106.08	21 32 59	1431.8	-28.07	15.63
110.00	12 1 35	3890.34	6.38	145.18	43.34	56.35	13 6 26	3290.3	1.91	138.94

DIFFERENTIAL CORRECTIONS
TDE -.2387 TRA 5.1575 TC-15.2318 BAU 2.6309
RDE .3205 RRA .1537 RC3 .2764 FAU .14728
FDE -.8418 FRA 4.1481 FC3-9.8706 BSP 48624
BDE .3996 BRA 5.1598 BC315.2343 FSP 2986

MID-COURSE EXECUTION ACCURACY
SGT13865.0 SGR 603.9 SG3 859.0
RRT -.0259 RRF -.0606 RTF .9885
SGB13878.1 R23 .0350 R13 -.9886
SG113865.0 SG2 603.7 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 2598.4 SR 516.6 SS 1059.6
CRT -.0020 CRS .4180 CST -.9087
LSA 2775.6 MSA 660.9 SSA 25.5
EL1 2598.4 EL2 516.6 ALF 179.98

LAUNCH DATE NOV 22 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 853.415 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.075 GAL -4.12 AZL 88.09 HCA 255.11 SMA 188.85 ECC .22876 INC 1.9083 V1 30.159
RP 207.79 LAP -1.84 LOP 314.83 VP 23.971 GAP -11.93 AZP 90.49 TAL 337.56 TAP 232.67 RCA 145.65 APO 232.05 V2 26.366
RC 320.122 GL 17.54 GP -1.60 ZAL 124.04 ZAP 34.93 ETS 176.77 ZAE 56.16 ETE 178.55 ZAC 83.96 ETC 257.15 CLP 34.90

PLANETOCENTRIC CONIC

C3 13.290 VHL 3.646 DLA 13.82 RAL 192.28 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 5.071 DPA 4.06 RAP 170.55 ECC 1.2187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 32	2565.48	-26.25	64.97	51.33	101.02	18 58 18	1965.5	-24.46	56.75
90.00	9 54 17	4320.98	3.93	178.74	46.78	61.94	11 6 18	3721.0	.15	172.10
100.00	19 44 11	2279.63	-27.35	43.68	51.08	102.55	20 22 10	1679.6	-25.35	35.46
100.00	11 8 20	4082.06	4.92	160.63	46.24	60.48	12 16 22	3482.1	.95	154.09
110.00	21 8 47	2014.90	-30.25	22.72	50.21	106.73	21 42 22	1414.9	-27.66	14.48
110.00	12 0 13	3919.56	7.48	146.73	44.66	56.55	13 5 32	3319.6	3.03	140.47

DIFFERENTIAL CORRECTIONS
TDE -.3485 TRA 5.3954 TC-14.9725 BAU 2.6608
RDE .3286 RRA .1515 RC3 .2826 FAU .13954
FDE -.8915 FRA 4.0823 FC3-9.0900 BSP 49137
BDE .4790 BRA 5.3976 BC314.9752 FSP 2856

MID-COURSE EXECUTION ACCURACY
SGT13990.5 SGR 607.7 SG3 817.6
RRT -.0460 RRF -.0815 RTF .9881
SGB14003.7 R23 .0361 R13 -.9881
SG113990.5 SG2 607.1 THA 179.89

ORBIT DETERMINATION ACCURACY
ST 2696.4 SR 521.7 SS 1067.0
CRT -.0655 CRS .4557 CST -.9175
LSA 2873.0 MSA 653.0 SSA 25.2
EL1 2696.6 EL2 520.5 ALF 179.25

LAUNCH DATE NOV 22 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 857.692 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.081 GAL -4.29 AZL 88.10 HCA 256.37 SMA 188.96 ECC .23010 INC 1.9005 V1 30.159
RP 207.66 LAP -1.85 LOP 316.09 VP 23.997 GAP -12.05 AZP 90.45 TAL 336.71 TAP 233.08 RCA 145.48 APO 232.44 V2 26.381
RC 320.992 GL 17.20 GP -1.57 ZAL 125.34 ZAP 34.30 ETS 176.74 ZAE 55.23 ETE 178.56 ZAC 84.12 ETC 257.09 CLP 34.27

PLANETOCENTRIC CONIC

C3 13.690 VHL 3.700 DLA 13.00 RAL 193.31 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 5.157 DPA 3.84 RAP 171.13 ECC 1.2253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 48	2543.66	-25.96	63.44	52.54	101.74	19 9 12	1943.7	-24.08	55.27
90.00	9 51 15	4355.73	5.04	180.69	48.12	62.10	11 3 51	3755.7	1.27	174.04
100.00	19 54 54	2259.56	-27.05	42.27	52.27	103.24	20 32 33	1659.6	-24.96	34.09
100.00	11 5 51	4115.06	6.03	162.46	47.58	60.67	12 14 26	3515.1	2.07	155.90
110.00	21 18 20	1998.49	-29.92	21.55	51.37	107.35	21 51 38	1398.5	-27.26	13.37
110.00	11 58 54	3948.89	8.58	148.29	46.02	56.78	13 4 43	3348.9	4.15	142.00

DIFFERENTIAL CORRECTIONS
TDE -.4615 TRA 5.6396 TC-14.7002 BAU 2.6911
RDE .3371 RRA .1491 RC3 .2877 FAU .13208
FDE -.9354 FRA 4.0137 FC3-8.3525 BSP 49636
BDE .5715 BRA 5.6416 BC314.7031 FSP 2729

MID-COURSE EXECUTION ACCURACY
SGT14113.2 SGR 611.5 SG3 777.6
RRT -.0656 RRF -.1019 RTF .9877
SGB14126.4 R23 .0371 R13 -.9877
SG114113.2 SG2 610.2 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 2801.3 SR 526.8 SS 1072.5
CRT -.1247 CRS .4899 CST -.9256
LSA 2976.5 MSA 644.1 SSA 24.6
EL1 2802.1 EL2 522.6 ALF 178.61

LAUNCH DATE NOV 22 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 861.966 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.087 GAL -4.47 AZL 88.11 HCA 257.63 SMA 189.08 ECC .23151 INC 1.8927 V1 30.159
RP 207.54 LAP -1.85 LOP 317.35 VP 24.022 GAP -12.18 AZP 90.41 TAL 335.85 TAP 233.48 RCA 145.30 APO 232.85 V2 26.396
RC 321.856 GL 16.86 GP -1.54 ZAL 126.63 ZAP 33.68 ETS 176.72 ZAE 54.31 ETE 178.56 ZAC 84.29 ETC 257.03 CLP 33.65

PLANETOCENTRIC CONIC

C3 14.120 VHL 3.758 DLA 12.19 RAL 194.34 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 5.245 DPA 3.61 RAP 171.74 ECC 1.2324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 54	2522.59	-25.66	61.97	53.76	102.41	19 19 56	1922.6	-23.69	53.85
90.00	9 48 21	4390.35	6.14	182.64	49.49	62.30	11 1 32	3790.3	2.39	175.97
100.00	20 5 28	2240.17	-26.74	40.91	53.48	103.89	20 42 48	1640.2	-24.56	32.79
100.00	11 3 28	4148.01	7.12	164.29	48.95	60.89	12 12 36	3548.0	3.19	157.71
110.00	21 27 46	1982.61	-29.60	20.43	52.55	107.94	22 0 49	1382.6	-26.86	12.31
110.00	11 57 39	3978.32	9.67	149.87	47.41	57.05	13 3 57	3378.3	5.26	143.55

DIFFERENTIAL CORRECTIONS
TDE -.5762 TRA 5.8923 TC-14.4104 BAU 2.7208
RDE .3460 RRA .1463 RC3 .2917 FAU .12483
FDE -.9740 FRA 3.9426 FC3-7.6538 BSP 50140
BDE .6721 BRA 5.8941 BC314.4134 FSP 2606

MID-COURSE EXECUTION ACCURACY
SGT14231.7 SGR 615.2 SG3 738.8
RRT -.0844 RRF -.1217 RTF .9871
SGB14245.0 R23 .0384 R13 -.9871
SG114231.8 SG2 613.0 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 2912.2 SR 532.0 SS 1076.1
CRT -.1786 CRS .5210 CST -.9324
LSA 3085.1 MSA 635.2 SSA 24.1
EL1 2913.8 EL2 523.2 ALF 178.07

LAUNCH DATE NOV 22 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 866.236 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.094 GAL -4.65 AZL 88.11 HCA 258.88 SMA 189.19 ECC .23298 INC 1.8851 V1 30.159
RP 207.42 LAP -1.85 LOP 318.61 VP 24.046 GAP -12.31 AZP 90.36 TAL 334.98 TAP 233.86 RCA 145.11 APO 233.27 V2 26.409
RC 322.714 GL 16.51 GP -1.50 ZAL 127.92 ZAP 33.08 ETS 176.70 ZAE 53.40 ETE 178.56 ZAC 84.46 ETC 256.96 CLP 33.05

PLANETOCENTRIC CONIC

C3 14.580 VHL 3.818 DLA 11.37 RAL 195.36 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 5.334 DPA 3.37 RAP 172.35 ECC 1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 48	2502.29	-25.35	60.56	55.00	103.06	19 30 30	1902.3	-23.30	52.49
90.00	9 45 36	4424.85	7.23	184.59	50.89	62.55	10 59 20	3824.9	3.50	177.90
100.00	20 15 53	2221.45	-26.43	39.61	54.71	104.51	20 52 54	1621.5	-24.17	31.53
100.00	11 1 12	4180.92	8.21	166.13	50.36	61.16	12 10 53	3580.9	4.30	159.52
110.00	21 37 6	1967.29	-29.27	19.36	53.75	108.50	22 9 53	1367.3	-26.47	11.30
110.00	11 56 28	4007.84	10.76	151.46	48.82	57.36	13 3 16	3407.8	6.38	145.10

DIFFERENTIAL CORRECTIONS
TDE -.6945 TRA 6.1524 TC-14.1101 BAU 2.7510
RDE .3553 RRA .1433 RC3 .2946 FAU .11782
FDE-1.0081 FRA 3.8682 FC3-6.9956 BSP 50614
BDE .7802 BRA 6.1541 BC314.1132 FSP 2487

MID-COURSE EXECUTION ACCURACY
SGT14348.3 SGR 618.9 SG3 701.3
RRT -.1030 RRF -.1413 RTF .9866
SGB14361.6 R23 .0397 R13 -.9866
SG114348.4 SG2 615.6 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 3028.4 SR 537.3 SS 1077.8
CRT -.2286 CRS .5497 CST -.9384
LSA 3198.3 MSA 626.0 SSA 23.5
EL1 3030.9 EL2 522.6 ALF 177.61

LAUNCH DATE NOV 22 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 870.501 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.100 GAL -4.84 AZL 88.12 HCA 260.15 SMA 189.31 ECC .23451 INC 1.8774 V1 30.159
RP 207.31 LAP -1.85 LOP 319.87 VP 24.069 GAP -12.44 AZP 90.32 TAL 334.09 TAP 234.24 RCA 144.91 APO 233.70 V2 26.422
RC 323.566 GL 16.16 GP -1.47 ZAL 129.20 ZAP 32.50 ETS 176.68 ZAE 52.52 ETE 178.57 ZAC 84.63 ETC 256.90 CLP 32.47

PLANETOCENTRIC CONIC

C3 15.074 VHL 3.882 DLA 10.56 RAL 196.37 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 5.425 DPA 3.12 RAP 172.98 ECC 1.2481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 32	2482.73	-25.04	59.21	56.26	103.67	19 40 55	1882.7	-22.92	51.18
90.00	9 42 57	4459.26	8.31	186.55	52.33	62.83	10 57 16	3859.3	4.60	179.83
100.00	20 26 8	2203.42	-26.11	38.36	55.95	105.09	21 2 52	1603.4	-23.78	30.33
100.00	10 59 2	4213.79	9.28	167.98	51.80	61.46	12 9 15	3613.8	5.40	161.34
110.00	21 46 19	1952.54	-28.95	18.33	54.97	109.03	22 18 51	1352.5	-26.08	10.32
110.00	11 55 21	4037.44	11.84	153.07	50.28	57.70	13 2 38	3437.4	7.49	146.67

DIFFERENTIAL CORRECTIONS
TDE -.8162 TRA 6.4187 TC-13.8028 BAU 2.7822
RDE .3651 RRA .1400 RC3 .2966 FAU .11106
FDE-1.0377 FRA 3.7903 FC3-6.3786 BSP 51061
BDE .8941 BRA 6.4202 BC313.8060 FSP 2369

MID-COURSE EXECUTION ACCURACY
SGT14462.5 SGR 622.5 SG3 665.1
RRT -.1212 RRF -.1606 RTF .9859
SGB14475.9 R23 .0412 R13 -.9859
SG114462.7 SG2 617.9 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 3148.0 SR 542.5 SS 1077.2
CRT -.2746 CRS .5763 CST -.9436
LSA 3314.2 MSA 616.8 SSA 23.0
EL1 3151.6 EL2 521.1 ALF 177.21

LAUNCH DATE NOV 22 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 874.761 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.107 GAL -5.03 AZL 88.13 HCA 261.41 SMA 189.43 ECC .23611 INC 1.8698 V1 30.159
RP 207.21 LAP -1.85 LOP 321.13 VP 24.090 GAP -12.57 AZP 90.28 TAL 333.19 TAP 234.59 RCA 144.70 APO 234.15 V2 26.434
RC 324.413 GL 15.81 GP -1.44 ZAL 130.48 ZAP 31.93 ETS 176.65 ZAE 51.64 ETE 178.57 ZAC 84.80 ETC 256.84 CLP 31.90

PLANETOCENTRIC CONIC

C3 15.602 VHL 3.950 DLA 9.75 RAL 197.38 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 5.518 DPA 2.86 RAP 173.63 ECC 1.2568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 6	2463.91	-24.73	57.92	57.54	104.24	19 51 10	1863.9	-22.53	49.94
90.00	9 40 24	4493.56	9.37	188.51	53.80	63.16	10 55 18	3893.6	5.69	181.76
100.00	20 36 15	2186.08	-25.80	37.17	57.22	105.65	21 12 41	1586.1	-23.40	29.19
100.00	10 56 57	4246.62	10.34	169.84	53.28	61.80	12 7 43	3646.6	6.49	163.16
110.00	21 55 25	1938.36	-28.63	17.35	56.21	109.53	22 27 43	1338.4	-25.70	9.40
110.00	11 54 16	4067.11	12.91	154.70	51.76	58.07	13 2 4	3467.1	8.60	148.25

DIFFERENTIAL CORRECTIONS
TDE -.9390 TRA 6.6941 TC-13.4818 BAU 2.8127
RDE .3753 RRA .1364 RC3 .2975 FAU .10448
FDE-1.0614 FRA 3.7098 FC3-5.7976 BSP 51526
BDE 1.0113 BRA 6.6955 BC313.4851 FSP 2256

MID-COURSE EXECUTION ACCURACY
SGT14572.5 SGR 626.1 SG3 630.0
RRT -.1389 RRF -.1793 RTF .9852
SGB14585.9 R23 .0427 R13 -.9852
SG114572.7 SG2 620.0 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 3270.2 SR 547.8 SS 1073.8
CRT -.3158 CRS .6002 CST -.9481
LSA 3431.8 MSA 607.8 SSA 22.5
EL1 3274.9 EL2 519.0 ALF 176.89

LAUNCH DATE NOV 22 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 879.015 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.113 GAL -5.22 AZL 88.14 HCA 262.67 SMA 189.54 ECC .23778 INC 1.8623 V1 30.159
RP 207.12 LAP -1.85 LOP 322.40 VP 24.111 GAP -12.70 AZP 90.24 TAL 332.27 TAP 234.94 RCA 144.47 APO 234.61 V2 26.444
RC 325.253 GL 15.46 GP -1.42 ZAL 131.75 ZAP 31.37 ETS 176.63 ZAE 50.79 ETE 178.57 ZAC 84.98 ETC 256.77 CLP 31.35

PLANETOCENTRIC CONIC

C3 16.167 VHL 4.021 DLA 8.94 RAL 198.38 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 5.612 DPA 2.59 RAP 174.29 ECC 1.2661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 31	2445.84	-24.43	56.68	58.84	104.79	20 1 16	1845.8	-22.16	48.74
90.00	9 37 58	4527.77	10.41	190.48	55.30	63.52	10 53 26	3927.8	6.77	183.69
100.00	20 46 13	2169.42	-25.49	36.03	58.51	106.17	21 22 22	1569.4	-23.03	28.09
100.00	10 54 57	4279.43	11.39	171.71	54.79	62.18	12 6 16	3679.4	7.58	164.99
110.00	22 4 24	1924.77	-28.32	16.41	57.48	110.00	22 36 28	1324.8	-25.33	8.51
110.00	11 53 16	4096.84	13.98	156.34	53.28	58.48	13 1 32	3496.8	9.71	149.85

DIFFERENTIAL CORRECTIONS
TDE-1.0652 TRA 6.9776 TC-13.1549 BAU 2.8439
RDE .3860 RRA .1325 RC3 .2977 FAU .09812
FDE-1.0817 FRA 3.6264 FC3-5.2541 BSP 51966
BDE 1.1330 BRA 6.9789 BC313.1583 FSP 2145

MID-COURSE EXECUTION ACCURACY
SGT14680.7 SGR 629.5 SG3 596.1
RRT -.1362 RRF -.1979 RTF .9843
SGB14694.2 R23 .0444 R13 -.9843
SG114681.1 SG2 621.8 THA 179.62

ORBIT DETERMINATION ACCURACY
ST 3394.5 SR 553.0 SS 1068.4
CRT -.3537 CRS .6226 CST -.9518
LSA 3551.2 MSA 599.2 SSA 22.0
EL1 3400.3 EL2 516.4 ALF 176.62

LAUNCH DATE NOV 22 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 883.263 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.120 GAL -5.42 AZL 88.15 HCA 263.94 SMA 189.66 ECC .23953 INC 1.8548 V1 30.159
RP 207.04 LAP -1.84 LOP 323.66 VP 24.131 GAP -12.84 AZP 90.20 TAL 331.33 TAP 235.27 RCA 144.23 APO 235.09 V2 26.454
RC 326.088 GL 15.11 GP -1.39 ZAL 133.01 ZAP 30.84 ETS 176.61 ZAE 49.94 ETE 178.57 ZAC 85.16 ETC 256.71 CLP 30.81

PLANETOCENTRIC CONIC

C3 16.771 VHL 4.095 DLA 8.15 RAL 199.37 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 5.709 DPA 2.32 RAP 174.96 ECC 1.2760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 45	2428.50	-24.12	55.50	60.15	105.30	20 11 14	1828.5	-21.79	47.61
90.00	9 35 38	4561.89	11.44	192.46	56.83	63.92	10 51 40	3961.9	7.84	185.63
100.00	20 56 2	2153.45	-25.18	34.94	59.82	106.66	21 31 55	1553.4	-22.66	27.05
100.00	10 53 2	4312.18	12.43	173.59	56.33	62.59	12 4 54	3712.2	8.66	166.83
110.00	22 13 16	1911.77	-28.01	15.53	58.76	110.45	22 45 7	1311.8	-24.97	7.67
110.00	11 52 18	4126.62	15.03	158.01	54.82	58.93	13 1 5	3526.6	10.80	151.45

DIFFERENTIAL CORRECTIONS
TDE-1.1938 TRA 7.2686 TC-12.8225 BAU 2.8757
RDE .3970 RRA .1282 RC3 .2970 FAU .09196
FDE-1.0978 FRA 3.5392 FC3-4.7470 BSP 52375
BDE 1.2580 BRA 7.2697 BC312.8260 FSP 2036

MID-COURSE EXECUTION ACCURACY
SGT14785.9 SGR 632.9 SG3 563.2
RRT -.1732 RRF -.2164 RTF .9834
SGB14799.4 R23 .0464 R13 -.9834
SG114786.3 SG2 623.3 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3519.5 SR 558.2 SS 1060.7
CRT -.3882 CRS .6435 CST -.9548
LSA 3670.7 MSA 591.0 SSA 21.6
EL1 3526.3 EL2 513.4 ALF 176.40

LAUNCH DATE NOV 22 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 887.502 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.127 GAL -5.63 AZL 88.15 HCA 265.20 SMA 189.78 ECC .24134 INC 1.8473 V1 30.159
RP 206.96 LAP -1.84 LOP 324.93 VP 24.150 GAP -12.98 AZP 90.15 TAL 330.38 TAP 235.58 RCA 143.98 APO 235.59 V2 26.463
RC 326.917 GL 14.75 GP -1.36 ZAL 134.27 ZAP 30.31 ETS 176.58 ZAE 49.11 ETE 178.58 ZAC 85.34 ETC 256.65 CLP 30.28

PLANETOCENTRIC CONIC

C3 17.416 VHL 4.173 DLA 7.36 RAL 200.35 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 5.807 DPA 2.03 RAP 175.65 ECC 1.2866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 50	2411.89	-23.82	54.38	61.49	105.79	20 21 2	1811.9	-21.42	46.53
90.00	9 33 23	4595.93	12.45	194.45	58.40	64.36	10 49 59	3995.9	8.90	187.57
100.00	21 5 42	2138.16	-24.88	33.90	61.14	107.13	21 41 21	1538.2	-22.30	26.06
100.00	10 51 12	4344.89	13.44	175.48	57.90	63.05	12 3 37	3744.9	9.72	168.67
110.00	22 22 1	1899.37	-27.71	14.69	60.06	110.86	22 53 40	1299.4	-24.62	6.88
110.00	11 51 23	4156.45	16.07	159.69	56.41	59.42	13 0 40	3556.4	11.89	153.08

DIFFERENTIAL CORRECTIONS
TDE-1.3257 TRA 7.5669 TC-12.4885 BAU 2.9086
RDE .4085 RRA .1235 RC3 .2955 FAU .08603
FDE-1.1096 FRA 3.4487 FC3-4.2762 BSP 52746
BDE 1.3872 BRA 7.5680 BC312.4920 FSP 1930

MID-COURSE EXECUTION ACCURACY
SGT14889.3 SGR 636.1 SG3 531.6
RRT -.1901 RRF -.2347 RTF .9823
SGB14902.8 R23 .0485 R13 -.9823
SG114889.7 SG2 624.5 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 3644.9 SR 563.3 SS 1050.4
CRT -.4198 CRS .6629 CST -.9575
LSA 3790.2 MSA 582.9 SSA 21.1
EL1 3652.7 EL2 510.1 ALF 176.21

LAUNCH DATE NOV 22 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 891.733 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.134 GAL -5.84 AZL 88.16 HCA 266.47 SMA 189.91 ECC .24324 INC 1.8399 V1 30.159
RP 206.89 LAP -1.84 LOP 326.20 VP 24.168 GAP -13.13 AZP 90.11 TAL 329.42 TAP 235.89 RCA 143.71 APO 236.10 V2 26.471
RC 327.742 GL 14.40 GP -1.34 ZAL 135.51 ZAP 29.80 ETS 176.56 ZAE 48.29 ETE 178.58 ZAC 85.53 ETC 256.59 CLP 29.77

PLANETOCENTRIC CONIC

C3 18.106 VHL 4.255 DLA 6.57 RAL 201.32 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 5.906 DPA 1.74 RAP 176.35 ECC 1.2980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 46	2396.01	-23.52	53.31	62.84	106.24	20 30 42	1796.0	-21.07	45.50
90.00	9 31 14	4629.87	13.44	196.45	60.00	64.84	10 48 23	4029.9	9.94	189.52
100.00	21 15 14	2123.56	-24.58	32.92	62.49	107.57	21 50 38	1523.6	-21.95	25.11
100.00	10 49 26	4377.56	14.44	177.40	59.50	63.54	12 2 24	3777.6	10.77	170.53
110.00	22 30 39	1887.58	-27.42	13.89	61.37	111.25	23 2 6	1287.6	-24.29	6.13
110.00	11 50 31	4186.30	17.10	161.40	58.02	59.94	13 0 18	3586.3	12.97	154.72

DIFFERENTIAL CORRECTIONS
TDE-1.4594 TRA 7.8747 TC-12.1488 BAU 2.9416
RDE .4205 RRA .1185 RC3 .2934 FAU .08024
FDE-1.1172 FRA 3.3555 FC3-3.8366 BSP 53126
BDE 1.5188 BRA 7.8756 BC312.1524 FSP 1827

MID-COURSE EXECUTION ACCURACY
SGT14989.4 SGR 639.3 SG3 500.9
RRT -.2065 RRF -.2526 RTF .9811
SGB15003.0 R23 .0507 R13 -.9811
SG114989.9 SG2 625.5 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 3769.8 SR 568.3 SS 1037.6
CRT -.4484 CRS .6808 CST -.9596
LSA 3908.9 MSA 575.3 SSA 20.7
EL1 3778.5 EL2 506.8 ALF 176.06

LAUNCH DATE NOV 22 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 895.955 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.141 GAL -6.06 AZL 88.17 HCA 267.73 SMA 190.03 ECC .24522 INC 1.8325 V1 30.159
RP 206.84 LAP -1.83 LOP 327.46 VP 24.185 GAP -13.27 AZP 90.07 TAL 328.44 TAP 236.17 RCA 143.43 APO 236.63 V2 26.477
RC 328.562 GL 14.05 GP -1.31 ZAL 136.74 ZAP 29.31 ETS 176.53 ZAE 47.49 ETE 178.58 ZAC 85.72 ETC 256.53 CLP 29.28

PLANETOCENTRIC CONIC

C3 18.842 VHL 4.341 DLA 5.80 RAL 202.29 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 6.008 DPA 1.44 RAP 177.06 ECC 1.3101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 32	2380.86	-23.23	52.30	64.22	106.67	20 40 13	1780.9	-20.72	44.52
90.00	9 29 9	4663.72	14.41	198.46	61.63	65.36	10 46 53	4063.7	10.97	191.47
100.00	21 24 38	2109.64	-24.29	31.99	63.85	107.98	21 59 47	1509.6	-21.61	24.22
100.00	10 47 45	4410.17	15.42	179.32	61.14	64.07	12 1 15	3810.2	11.81	172.39
110.00	22 39 9	1876.40	-27.15	13.14	62.71	111.62	23 10 26	1276.4	-23.97	5.42
110.00	11 49 42	4216.18	18.11	163.13	59.67	60.50	12 59 59	3616.2	14.04	156.37

DIFFERENTIAL CORRECTIONS
TDE-1.5959 TRA 8.1907 TC-11.8091 BAU 2.9757
RDE .4329 RRA .1131 RC3 .2907 FAU .07466
FDE-1.1213 FRA 3.2585 FC3-3.4303 BSP 53470
BDE 1.6536 BRA 8.1915 BC311.8127 FSP 1725

MID-COURSE EXECUTION ACCURACY
SGT15087.5 SGR 642.4 SG3 471.2
RRT -.2228 RRF -.2706 RTF .9798
SGB15101.1 R23 .0533 R13 -.9798
SG115088.1 SG2 626.2 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 3893.6 SR 573.2 SS 1022.6
CRT -.4746 CRS .6978 CST -.9613
LSA 4026.3 MSA 568.0 SSA 20.3
EL1 3903.2 EL2 503.3 ALF 175.94

LAUNCH DATE NOV 22 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 900.166 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.147 GAL -6.28 AZL 88.17 HCA 269.00 SMA 190.15 ECC .24728 INC 1.8251 V1 30.159
RP 206.79 LAP -1.82 LOP 328.73 VP 24.200 GAP -13.43 AZP 90.03 TAL 327.45 TAP 236.45 RCA 143.13 APO 237.18 V2 26.483
RC 329.378 GL 13.70 GP -1.29 ZAL 137.96 ZAP 28.82 ETS 176.51 ZAE 46.70 ETE 178.58 ZAC 85.91 ETC 256.47 CLP 28.80

PLANETOCENTRIC CONIC

C3 19.629 VHL 4.430 DLA 5.03 RAL 203.24 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 6.112 DPA 1.14 RAP 177.78 ECC 1.3230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 10	2366.42	-22.94	51.34	65.61	107.07	20 49 36	1766.4	-20.39	43.59
90.00	9 27 9	4697.48	15.36	200.48	63.30	65.92	10 45 26	4097.5	11.98	193.44
100.00	21 33 53	2096.41	-24.01	31.11	65.23	108.36	22 8 49	1496.4	-21.28	23.37
100.00	10 46 7	4442.72	16.38	181.26	62.81	64.64	12 0 10	3842.7	12.83	174.27
110.00	22 47 33	1865.83	-26.88	12.43	64.07	111.96	23 18 39	1265.8	-23.66	4.75
110.00	11 48 56	4246.06	19.10	164.87	61.35	61.10	12 59 42	3646.1	15.10	158.04

DIFFERENTIAL CORRECTIONS
TDE-1.7343 TRA 8.5157 TC-11.4681 BAU 3.0104
RDE .4457 RRA .1074 RC3 .2873 FAU .06923
FDE-1.1217 FRA 3.1586 FC3-3.0533 BSP 53795
BDE 1.7907 BRA 8.5164 BC311.4717 FSP 1626

MID-COURSE EXECUTION ACCURACY
SGT15182.6 SGR 645.3 SG3 442.6
RRT -.2387 RRF -.2884 RTF .9782
SGB15196.4 R23 .0561 R13 -.9783
SG115183.4 SG2 626.6 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 4015.4 SR 577.9 SS 1005.3
CRT -.4983 CRS .7137 CST -.9626
LSA 4141.6 MSA 561.2 SSA 19.9
EL1 4025.9 EL2 499.8 ALF 175.83

LAUNCH DATE NOV 22 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 904.365 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.154 GAL -6.51 AZL 88.18 HCA 270.27 SMA 190.28 ECC .24943 INC 1.8176 V1 30.159
RP 206.75 LAP -1.82 LOP 330.00 VP 24.215 GAP -13.58 AZP 89.99 TAL 326.44 TAP 236.71 RCA 142.82 APO 237.74 V2 26.488
RC 330.190 GL 13.35 GP -1.27 ZAL 139.17 ZAP 28.35 ETS 176.48 ZAE 45.92 ETE 178.58 ZAC 86.10 ETC 256.42 CLP 28.33

PLANETOCENTRIC CONIC

C3 20.467 VHL 4.524 DLA 4.27 RAL 204.19 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 6.218 DPA .83 RAP 178.52 ECC 1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 39	2352.68	-22.66	50.42	67.01	107.45	20 58 52	1752.7	-20.06	42.72
90.00	9 25 13	4731.14	16.29	202.52	65.00	66.51	10 44 4	4131.1	12.97	195.41
100.00	21 43 0	2083.85	-23.74	30.27	66.63	108.72	22 17 44	1483.8	-20.96	22.57
100.00	10 44 34	4475.21	17.32	183.22	64.51	65.25	11 59 9	3875.2	13.84	176.16
110.00	22 55 50	1855.87	-26.62	11.77	65.44	112.28	23 26 46	1255.9	-23.37	4.13
110.00	11 48 12	4275.95	20.07	166.65	63.06	61.73	12 59 28	3675.9	16.14	159.73

DIFFERENTIAL CORRECTIONS
TDE-1.8762 TRA 8.8484 TC-11.1297 BAU 3.0464
RDE .4589 RRA .1012 RC3 .2835 FAU .06397
FDE-1.1184 FRA 3.0550 FC3-2.7058 BSP 54084
BDE 1.9316 BRA 8.8490 BC311.1333 FSP 1529

MID-COURSE EXECUTION ACCURACY
SGT15275.4 SGR 648.2 SG3 414.8
RRT -.2546 RRF -.3062 RTF .9765
SGB15289.2 R23 .0591 R13 -.9765
SG115276.3 SG2 626.8 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 4135.5 SR 582.6 SS 985.6
CRT -.5203 CRS .7288 CST -.9636
LSA 4255.1 MSA 554.5 SSA 19.5
EL1 4146.8 EL2 496.1 ALF 175.75

LAUNCH DATE NOV 22 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 908.553 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.161 GAL -6.75 AZL 88.19 HCA 271.54 SMA 190.41 ECC .25168 INC 1.8102 V1 30.159
RP 206.71 LAP -1.81 LOP 331.27 VP 24.229 GAP -13.74 AZP 89.95 TAL 325.42 TAP 236.95 RCA 142.48 APO 238.33 V2 26.492
RC 331.000 GL 13.01 GP -1.25 ZAL 140.37 ZAP 27.90 ETS 176.46 ZAE 45.16 ETE 178.58 ZAC 86.30 ETC 256.36 CLP 27.87

PLANETOCENTRIC CONIC

C3 21.362 VHL 4.622 DLA 3.53 RAL 205.13 RAD 6567.9 VEL 11.947 PTH 2.13 VHP 6.325 DPA .51 RAP 179.26 ECC 1.3516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 59	2339.65	-22.39	49.56	68.44	107.80	21 7 59	1739.7	-19.75	41.89
90.00	9 23 22	4764.70	17.18	204.58	66.72	67.14	10 42 47	4164.7	13.94	197.40
100.00	21 51 58	2071.96	-23.48	29.49	68.05	109.05	22 26 30	1472.0	-20.66	21.82
100.00	10 43 4	4507.62	18.23	185.19	66.25	65.89	11 58 11	3907.6	14.82	178.06
110.00	23 4 0	1846.53	-26.38	11.15	66.83	112.57	23 34 47	1246.5	-23.09	3.54
110.00	11 47 31	4305.82	21.03	168.44	64.81	62.41	12 59 17	3705.8	17.17	161.44

DIFFERENTIAL CORRECTIONS
TDE-2.0220 TRA 9.1897 TC-10.7941 BAU 3.0838
RDE .4727 RRA .0946 RC3 .2793 FAU .05889
FDE-1.1126 FRA 2.9478 FC3-2.3865 BSP 54325
BDE 2.0765 BRA 9.1902 BC310.7977 FSP 1434

MID-COURSE EXECUTION ACCURACY
SGT15365.9 SGR 651.0 SG3 388.1
RRT -.2703 RRF -.3241 RTF .9745
SGB15379.7 R23 .0626 R13 -.9745
SG115367.0 SG2 626.7 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4254.1 SR 587.0 SS 964.3
CRT -.5407 CRS .7434 CST -.9643
LSA 4367.0 MSA 548.1 SSA 19.1
EL1 4266.0 EL2 492.4 ALF 175.67

LAUNCH DATE NOV 22 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 912.727 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.168 GAL -6.99 AZL 88.20 HCA 272.81 SMA 190.53 ECC .25402 INC 1.8027 V1 30.159
RP 206.69 LAP -1.80 LOP 332.54 VP 24.241 GAP -13.90 AZP 89.91 TAL 324.38 TAP 237.19 RCA 142.13 APO 238.93 V2 26.494
RC 331.806 GL 12.66 GP -1.23 ZAL 141.55 ZAP 27.45 ETS 176.43 ZAE 44.41 ETE 178.58 ZAC 86.50 ETC 256.31 CLP 27.43

PLANETOCENTRIC CONIC

C3 22.317 VHL 4.724 DLA 2.79 RAL 206.06 RAD 6567.9 VEL 11.987 PTH 2.14 VHP 6.436 DPA .18 RAP 180.02 ECC 1.3673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 11	2327.31	-22.14	48.75	69.88	108.12	21 16 58	1727.3	-19.45	41.11
90.00	9 21 35	4798.16	18.06	206.64	68.48	67.81	10 41 33	4198.2	14.89	199.40
100.00	22 0 49	2060.74	-23.23	28.75	69.48	109.37	22 35 10	1460.7	-20.37	21.11
100.00	10 41 37	4539.97	19.12	187.19	68.01	66.57	11 57 17	3940.0	15.79	179.98
110.00	23 12 3	1837.79	-26.15	10.58	68.24	112.84	23 42 41	1237.8	-22.83	3.00
110.00	11 46 52	4335.68	21.96	170.26	66.59	63.12	12 59 8	3735.7	18.18	163.17

DIFFERENTIAL CORRECTIONS
TDE-2.1684 TRA 9.5412 TC-10.4606 BAU 3.1220
RDE .4868 RRA .0875 RC3 .2746 FAU .05394
FDE-1.1024 FRA 2.8375 FC3-2.0926 BSP 54570
BDE 2.2224 BRA 9.5416 BC310.4642 FSP 1342

MID-COURSE EXECUTION ACCURACY
SGT15454.0 SGR 653.6 SG3 362.1
RRT -.2857 RRF -.3417 RTF .9722
SGB15467.8 R23 .0663 R13 -.9723
SG115455.2 SG2 626.3 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4368.7 SR 591.3 SS 940.3
CRT -.5591 CRS .7569 CST -.9647
LSA 4474.9 MSA 542.1 SSA 18.8
EL1 4381.3 EL2 488.9 ALF 175.62

LAUNCH DATE NOV 22 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 916.885 EARTH TO MARS

RL 147.73 LAL -.00 LOL 59.73 VL 33.175 GAL -7.24 AZL 88.20 HCA 274.08 SMA 190.66 ECC .25646 INC 1.7953 V1 30.159
RP 206.68 LAP -1.79 LOP 333.81 VP 24.253 GAP -14.07 AZP 89.87 TAL 323.33 TAP 237.40 RCA 141.76 APO 239.56 V2 26.496
RC 332.609 GL 12.32 GP -1.21 ZAL 142.72 ZAP 27.02 ETS 176.41 ZAE 43.67 ETE 178.58 ZAC 86.70 ETC 256.26 CLP 27.00

PLANETOCENTRIC CONIC

C3 23.334 VHL 4.831 DLA 2.07 RAL 206.98 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 6.548 DPA -.15 RAP 180.79 ECC 1.3840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 14	2315.65	-21.89	47.99	71.34	108.43	21 25 50	1715.7	-19.17	40.37
90.00	9 19 51	4831.52	18.90	208.73	70.27	68.52	10 40 23	4231.5	15.82	201.41
100.00	22 9 32	2050.17	-22.99	28.05	70.93	109.65	22 43 43	1450.2	-20.10	20.45
100.00	10 40 14	4572.23	19.98	189.20	69.81	67.29	11 56 26	3972.2	16.73	181.91
110.00	23 20 0	1829.66	-25.94	10.05	69.66	113.09	23 50 29	1229.7	-22.58	2.49
110.00	11 46 16	4365.51	22.86	172.10	68.40	63.87	12 59 2	3765.5	19.16	164.92

DIFFERENTIAL CORRECTIONS
TDE-2.3173 TRA 9.9023 TC-10.1299 BAU 3.1612
RDE .5014 RRA .0800 RC3 .2696 FAU .04911
FDE-1.0892 FRA 2.7237 FC3-1.8221 BSP 54778
BDE 2.3709 BRA 9.9027 BC310.1335 FSP 1252

MID-COURSE EXECUTION ACCURACY
SGT15539.1 SGR 656.2 SG3 337.1
RRT -.3009 RRF -.3593 RTF .9695
SGB15552.9 R23 .0704 R13 -.9696
SG115540.3 SG2 625.7 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4480.3 SR 595.4 SS 914.4
CRT -.5759 CRS .7700 CST -.9647
LSA 4579.9 MSA 536.3 SSA 18.4
EL1 4493.5 EL2 485.3 ALF 175.57

LAUNCH DATE NOV 22 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 921.028 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.183	GAL	-7.50	AZL	88.21	HCA	275.35	SMA	190.79	ECC	.25901	INC	1.7878
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.263	GAP	-14.25	AZP	89.83	TAL	322.26	TAP	237.61	RCA	141.38	APO	240.21
RC	333.409	GL	11.99	GP	-1.19	ZAL	143.88	ZAP	26.60	ETS	176.38	ZAE	42.94	ETE	178.57	ZAC	86.90	ETC	256.21

V1 30.159 V2 26.497 CLP 26.58

PLANETOCENTRIC CONIC

C3	24.419	VHL	4.942	DLA	1.35	RAL	207.89	RAD	6568.0	VEL	12.075	PTH	2.16	VHP	6.663	DPA	-.49	RAP	181.57

ECC 1.4019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 9	2304.66	-21.65	47.27	72.81	108.71	21 34 34	1704.7	-18.89	39.68
90.00	9 18 11	4864.76	19.72	210.82	72.09	69.26	10 39 16	4264.8	16.72	203.43
100.00	22 18 8	2040.25	-22.76	27.41	72.39	109.92	22 52 8	1440.3	-19.84	19.83
100.00	10 38 54	4604.40	20.81	191.22	71.64	68.05	11 55 39	4004.4	17.65	183.86
110.00	23 27 49	1822.12	-25.73	9.55	71.10	113.32	23 58 11	1222.1	-22.35	2.03
110.00	11 45 42	4395.30	23.74	173.96	70.25	64.66	12 58 58	3795.3	20.13	166.68

DIFFERENTIAL CORRECTIONS

TDE	-2.4692	TRA	10.2730	TC3	-9.8051	BAU	3.2022	SGT	15622.4	SGR	658.6	SG3	312.8	ST	4588.8	SR	599.3
RDE	.5164	RRA	.0721	RC3	.2644	FAU	.04443	RRT	-.3159	RRF	-.3771	RTF	.9664	CRT	-.5915	CRS	.7828
FDE	-1.0732	FRA	2.6063	FC3	-1.5753	BSP	54947	SGB	15636.3	R23	.0751	R13	-.9665	LSA	4681.9	MSA	530.8
BDE	2.5226	BRA	10.2733	BC3	9.8087	FSP	1164	SG1	15623.8	SG2	624.8	THA	179.24	EL1	4602.6	EL2	481.8

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

SS 886.7 CST -.9644 ASA 18.1 ALF 175.53

LAUNCH DATE NOV 22 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 925.154 EARTH TO MARS

RL	147.73	LAL	-.00	LOL	59.73	VL	33.190	GAL	-7.76	AZL	88.22	HCA	276.61	SMA	190.92	ECC	.26166	INC	1.7803
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.273	GAP	-14.43	AZP	89.79	TAL	321.18	TAP	237.79	RCA	140.97	APO	240.88
RC	334.204	GL	11.66	GP	-1.17	ZAL	145.02	ZAP	26.19	ETS	176.36	ZAE	42.22	ETE	178.57	ZAC	87.10	ETC	256.16

V1 30.159 V2 26.497 CLP 26.17

PLANETOCENTRIC CONIC

C3	25.576	VHL	5.057	DLA	.65	RAL	208.79	RAD	6568.0	VEL	12.122	PTH	2.17	VHP	6.780	DPA	-.83	RAP	182.36

ECC 1.4209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 57	2294.33	-21.42	46.60	74.30	108.98	21 43 11	1694.3	-18.63	39.03
90.00	9 16 35	4897.89	20.50	212.94	73.94	70.03	10 38 13	4297.9	17.60	205.47
100.00	22 26 36	2030.97	-22.54	26.80	73.87	110.17	23 0 27	1431.0	-19.59	19.25
100.00	10 37 38	4636.48	21.62	193.27	73.50	68.83	11 54 54	4036.5	18.55	185.82
110.00	23 35 32	1815.17	-25.55	9.10	72.55	113.53	24 5 47	1215.2	-22.14	1.60
110.00	11 45 11	4425.04	24.60	175.85	72.13	65.48	12 58 56	3825.0	21.08	168.47

DIFFERENTIAL CORRECTIONS

TDE	-2.6236	TRA	10.6535	TC3	-9.4860	BAU	3.2447	SGT	15703.2	SGR	660.9	SG3	289.4	ST	4693.7	SR	603.0
RDE	.5319	RRA	.0636	RC3	.2588	FAU	.03988	RRT	-.3308	RRF	-.3947	RTF	.9627	CRT	-.6059	CRS	.7950
FDE	-1.0538	FRA	2.4854	FC3	-1.3498	BSP	55095	SGB	15717.1	R23	.0803	R13	-.9628	LSA	4780.5	MSA	525.4
BDE	2.6770	BRA	10.6537	BC3	9.4896	FSP	1079	SG1	15704.8	SG2	623.7	THA	179.20	EL1	4708.1	EL2	478.3

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

SS 857.1 CST -.9639 ASA 17.8 ALF 175.50

LAUNCH DATE NOV 23 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 417.600 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	35.152	GAL	-4.11	AZL	88.52	HCA	131.82	SMA	236.43	ECC	.38111	INC	1.4845
RP	244.11	LAP	1.11	LOP	192.57	VP	22.935	GAP	22.33	AZP	90.99	TAL	345.03	TAP	116.85	RCA	146.32	APO	326.54
RC	133.550	GL	9.62	GP	1.03	ZAL	113.79	ZAP	173.03	ETS	170.21	ZAE	153.90	ETE	.11	ZAC	89.94	ETC	256.03

V1	30.164	V2	22.475	CLP	173.11														

PLANETOCENTRIC CONIC

C3	29.516	VHL	5.433	DLA	10.86	RAL	179.18	RAD	6568.2	VEL	12.284	PTH	2.21	VHP	10.155	DPA	-.15	RAP	186.14
ECC	1.4858																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 36	2653.36	-27.24	71.21	51.17	98.05	18 28 49	2053.4	-25.85	62.82
90.00	8 32 53	4610.16	12.87	195.28	45.12	64.56	9 49 43	4010.2	9.34	188.38
100.00	19 11 23	2373.50	-28.56	50.39	50.94	99.22	19 50 56	1773.5	-26.99	41.94
100.00	9 48 48	4365.25	14.07	176.67	44.51	63.35	11 1 33	3765.2	10.38	169.83
110.00	20 31 55	2121.43	-32.08	30.47	50.16	102.48	21 7 17	1521.4	-30.03	21.86
110.00	10 44 44	4190.09	17.23	161.62	42.75	60.01	11 54 34	3590.1	13.11	154.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7510	TRA	-1.9955	TC3	.9861	BAU	.3896	SGT	2523.3	SGR	519.3	SG3	221.1	ST	1020.5	SR	478.5	SS	467.5
RDE	-.4500	RRA	-.1893	RC3	-.0511	FAU	.06617	RRT	.0002	RRF	-.0158	RTF	-.8583	CRT	-.6895	CRS	-.4860	CST	.9653
FDE	-.2991	FRA	1.3186	FC3	-1.9408	BSP	8473	SGB	2576.2	R23	-.0156	R13	-.8583	LSA	1165.1	MSA	361.4	SSA	32.3
BDE	.8755	BRA	2.0044	BC3	.9874	FSP	610	SG1	2523.3	SG2	519.3	THA	.00	EL1	1078.4	EL2	328.0	ALF	160.17

LAUNCH DATE NOV 23 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 419.900 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	35.048	GAL	-3.94	AZL	88.53	HCA	132.73	SMA	233.39	ECC	.37266	INC	1.4738
RP	243.87	LAP	1.08	LOP	193.48	VP	22.798	GAP	21.73	AZP	91.00	TAL	345.43	TAP	118.16	RCA	146.42	APO	320.37
RC	135.719	GL	9.77	GP	1.07	ZAL	113.08	ZAP	172.52	ETS	170.49	ZAE	153.79	ETE	.33	ZAC	90.06	ETC	256.01

V1	30.164	V2	22.498	CLP	172.60														

PLANETOCENTRIC CONIC

C3	28.083	VHL	5.299	DLA	11.27	RAL	178.59	RAD	6568.1	VEL	12.225	PTH	2.20	VHP	9.922	DPA	-.28	RAP	186.52
ECC	1.4622																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 49	2654.71	-27.25	71.30	49.82	98.00	18 23 4	2054.7	-25.87	62.91
90.00	8 33 57	4583.94	12.10	193.74	43.74	64.20	9 50 21	3983.9	8.53	186.88
100.00	19 5 50	2374.07	-28.57	50.44	49.60	99.20	19 45 24	1774.1	-27.00	41.99
100.00	9 49 37	4339.81	13.29	175.19	43.13	62.98	11 1 57	3739.8	9.56	168.38
110.00	20 26 56	2120.32	-32.07	30.39	48.82	102.53	21 2 16	1520.3	-30.01	21.78
110.00	10 45 1	4166.33	16.41	160.25	41.36	59.59	11 54 28	3566.3	12.25	153.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7301	TRA	-1.9652	TC3	1.0690	BAU	.4018	SGT	2569.2	SGR	512.8	SG3	232.4	ST	1023.1	SR	472.4	SS	469.1
RDE	-.4334	RRA	-.1826	RC3	-.0512	FAU	.06821	RRT	.0037	RRF	-.0200	RTF	-.8632	CRT	-.6841	CRS	-.4694	CST	.9623
FDE	-.2920	FRA	1.3362	FC3	-2.1026	BSP	8637	SGB	2619.9	R23	-.0167	R13	-.8632	LSA	1165.2	MSA	362.1	SSA	32.7
BDE	.8490	BRA	1.9737	BC3	1.0702	FSP	646	SG1	2569.2	SG2	512.8	THA	.04	EL1	1078.4	EL2	326.9	ALF	160.62

LAUNCH DATE NOV 23 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 422.305 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.949	GAL	-3.77	AZL	88.54	HCA	133.64	SMA	230.56	ECC	.36457	INC	1.4628
RP	243.63	LAP	1.06	LOP	194.39	VP	22.669	GAP	21.14	AZP	91.01	TAL	345.84	TAP	119.48	RCA	146.51	APO	314.62
RC	137.915	GL	9.91	GP	1.11	ZAL	112.36	ZAP	172.00	ETS	170.74	ZAE	153.73	ETE	.56	ZAC	90.19	ETC	255.99

V1	30.164	V2	22.522	CLP	172.08														

PLANETOCENTRIC CONIC

C3	26.744	VHL	5.171	DLA	11.69	RAL	177.98	RAD	6568.1	VEL	12.170	PTH	2.18	VHP	9.694	DPA	-.41	RAP	186.90
ECC	1.4401																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 54	2656.58	-27.27	71.44	48.48	97.94	18 17 10	2056.6	-25.89	63.04
90.00	8 35 0	4557.76	11.32	192.22	42.36	63.87	9 50 58	3957.8	7.71	185.39
100.00	19 0 10	2375.13	-28.58	50.51	48.26	99.16	19 39 45	1775.1	-27.02	42.06
100.00	9 50 26	4314.44	12.50	173.72	41.76	62.62	11 2 20	3714.4	8.73	166.95
110.00	20 21 48	2119.65	-32.06	30.34	47.48	102.55	20 57 8	1519.7	-30.00	21.74
110.00	10 45 16	4142.68	15.59	158.91	39.98	59.19	11 54 19	3542.7	11.39	152.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7081	TRA	-1.9346	TC3	1.1556	BAU	.4136	SGT	2614.3	SGR	506.1	SG3	244.2	ST	1023.7	SR	466.1	SS	470.0
RDE	-.4172	RRA	-.1762	RC3	-.0510	FAU	.07033	RRT	.0080	RRF	-.0250	RTF	-.8679	CRT	-.6778	CRS	-.4509	CST	.9589
FDE	-.2837	FRA	1.3536	FC3	-2.2768	BSP	8821	SGB	2662.9	R23	-.0177	R13	-.8679	LSA	1163.3	MSA	363.0	SSA	33.2
BDE	.8219	BRA	1.9426	BC3	1.1567	FSP	684	SG1	2614.3	SG2	506.1	THA	.09	EL1	1076.6	EL2	325.8	ALF	161.05

LAUNCH DATE NOV 23 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 424.806 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.853	GAL	-3.60	AZL	88.55	HCA	134.55	SMA	227.92	ECC	.35683	INC	1.4515
RP	243.38	LAP	1.03	LOP	195.30	VP	22.546	GAP	20.56	AZP	91.02	TAL	346.25	TAP	120.81	RCA	146.59	APO	309.25
RC	140.134	GL	10.05	GP	1.15	ZAL	111.61	ZAP	171.48	ETS	170.94	ZAE	153.71	ETE	.79	ZAC	90.31	ETC	255.98

V1	30.164	V2	22.547	CLP	171.55														

PLANETOCENTRIC CONIC

C3	25.492	VHL	5.049	DLA	12.11	RAL	177.35	RAD	6568.0	VEL	12.119	PTH	2.17	VHP	9.472	DPA	-.53	RAP	187.27
ECC	1.4195																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 49	2658.94	-27.29	71.61	47.14	97.85	18 11 8	2058.9	-25.92	63.21
90.00	8 36 2	4531.67	10.53	190.70	41.00	63.56	9 51 34	3931.7	6.90	183.91
100.00	18 54 21	2376.66	-28.60	50.63	46.92	99.10	19 33 57	1776.7	-27.04	42.17
100.00	9 51 12	4289.18	11.70	172.27	40.39	62.30	11 2 41	3689.2	7.90	165.54
110.00	20 16 33	2119.42	-32.05	30.32	46.15	102.56	20 51 53	1519.4	-29.99	21.72
110.00	10 45 29	4119.19	14.77	157.59	38.61	58.82	11 54 8	3519.2	10.53	151.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6863	TRA	-1.9031	TC3	1.2470	BAU	.4253	SGT	2659.2	SGR	499.2	SG3	256.6	ST	1023.3	SR	459.6	SS	470.3
RDE	-.4016	RRA	-.1700	RC3	-.0504	FAU	.07258	RRT	.0127	RRF	-.0303	RTF	-.8723	CRT	-.6715	CRS	-.4313	CST	.9551
FDE	-.2746	FRA	1.3700	FC3	-2.4648	BSP	8989	SGB	2705.6	R23	-.0189	R13	-.8723	LSA	1160.2	MSA	363.8	SSA	33.6
BDE	.7952	BRA	1.9107	BC3	1.2480	FSP	724	SG1	2659.2	SG2	499.2	THA	.14	EL1	1073.8	EL2	324.5	ALF	161.46

LAUNCH DATE NOV 23 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 427.396 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.762	GAL	-3.44	AZL	88.56	HCA	135.47	SMA	225.46	ECC	.34943	INC	1.4397	V1	30.164
RP	243.12	LAP	1.01	LOP	196.22	VP	22.430	GAP	19.97	AZP	91.03	TAL	346.67	TAP	122.14	RCA	146.68	APO	304.24	V2	22.572
RC	142.373	GL	10.18	GP	1.19	ZAL	110.85	ZAP	170.94	ETS	171.12	ZAE	153.74	ETE	1.03	ZAC	90.44	ETC	255.97	CLP	171.02

PLANETOCENTRIC CONIC

C3	24.321	VHL	4.932	DLA	12.54	RAL	176.69	RAD	6568.0	VEL	12.071	PTH	2.16	VHP	9.255	DPA	-.65	RAP	187.64	ECC	1.4003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 35	2661.81	-27.32	71.81	45.79	97.75	18 4 57	2061.8	-25.96	63.41
90.00	8 37 3	4505.64	9.74	189.20	39.64	63.28	9 52 9	3905.6	6.07	182.44
100.00	18 48 23	2378.67	-28.62	50.77	45.58	99.03	19 28 2	1778.7	-27.07	42.31
100.00	9 51 57	4264.02	10.90	170.83	39.03	61.99	11 3 1	3664.0	7.07	164.13
110.00	20 11 10	2119.61	-32.06	30.34	44.82	102.56	20 46 30	1519.6	-30.00	21.73
110.00	10 45 39	4095.83	13.94	156.29	37.25	58.47	11 53 54	3495.8	9.67	149.79

DIFFERENTIAL CORRECTIONS

TDE	.6762	TRA	-1.8590	TC3	1.3623	BAU	.4432
RDE	-.3867	RRA	-.1643	RC3	-.0498	FAU	.07479
FDE	-.2617	FRA	1.3887	FC3	-2.6624	BSP	8864
BDE	.7790	BRA	1.8662	BC3	1.3632	FSP	772

MID-COURSE EXECUTION ACCURACY

SGT	2705.2	SGR	492.5	SG3	269.4		
RRT	.0104	RRF	-.0376	RTF	-.8803		
SGB	2749.6	R23	-.0282	R13	-.8803		
SG1	2705.2	SG2	492.5	THA	.11		

ORBIT DETERMINATION ACCURACY

ST	1029.3	SR	453.1	SS	469.4		
CRT	-.6735	CRS	-.4047	CST	.9454		
LSA	1162.2	MSA	364.9	SSA	33.4		
EL1	1078.2	EL2	319.8	ALF	161.83		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 430.065 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.674	GAL	-3.28	AZL	88.57	HCA	136.39	SMA	223.15	ECC	.34236	INC	1.4276	V1	30.164
RP	242.87	LAP	.98	LOP	197.14	VP	22.320	GAP	19.39	AZP	91.03	TAL	347.09	TAP	123.48	RCA	146.75	APO	299.55	V2	22.598
RC	144.629	GL	10.31	GP	1.24	ZAL	110.07	ZAP	170.40	ETS	171.27	ZAE	153.80	ETE	1.27	ZAC	90.57	ETC	255.95	CLP	170.48

PLANETOCENTRIC CONIC

C3	23.228	VHL	4.820	DLA	12.97	RAL	176.02	RAD	6567.9	VEL	12.025	PTH	2.15	VHP	9.044	DPA	-.77	RAP	188.00	ECC	1.3823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 15	2665.10	-27.35	72.05	44.46	97.64	17 58 41	2065.1	-26.01	63.64
90.00	8 38 2	4479.85	8.94	187.72	38.30	63.02	9 52 41	3879.8	5.26	180.99
100.00	18 42 19	2381.09	-28.64	50.95	44.24	98.94	19 22 0	1781.1	-27.11	42.48
100.00	9 52 39	4239.10	10.10	169.41	37.69	61.72	11 3 18	3639.1	6.24	162.74
110.00	20 5 42	2120.18	-32.07	30.38	43.49	102.53	20 41 2	1520.2	-30.01	21.77
110.00	10 45 45	4072.77	13.12	155.01	35.90	58.15	11 53 38	3472.8	8.81	148.56

DIFFERENTIAL CORRECTIONS

TDE	.6475	TRA	-1.8331	TC3	1.4515	BAU	.4510
RDE	-.3721	RRA	-.1586	RC3	-.0480	FAU	.07733
FDE	-.2523	FRA	1.4028	FC3	-2.8822	BSP	9184
BDE	.7468	BRA	1.8399	BC3	1.4523	FSP	813

MID-COURSE EXECUTION ACCURACY

SGT	2747.9	SGR	485.0	SG3	283.1		
RRT	.0205	RRF	-.0439	RTF	-.8824		
SGB	2790.3	R23	-.0252	R13	-.8824		
SG1	2747.9	SG2	484.9	THA	.21		

ORBIT DETERMINATION ACCURACY

ST	1021.9	SR	446.1	SS	469.1		
CRT	-.6616	CRS	-.3846	CST	.9433		
LSA	1152.6	MSA	365.8	SSA	34.2		
EL1	1068.1	EL2	320.1	ALF	162.25		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 432.810 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.590	GAL	-3.13	AZL	88.59	HCA	137.31	SMA	220.99	ECC	.33559	INC	1.4149	V1	30.164
RP	242.60	LAP	.96	LOP	198.06	VP	22.216	GAP	18.82	AZP	91.04	TAL	347.52	TAP	124.83	RCA	146.83	APO	295.15	V2	22.624
RC	146.900	GL	10.43	GP	1.29	ZAL	109.28	ZAP	169.85	ETS	171.39	ZAE	153.91	ETE	1.52	ZAC	90.70	ETC	255.94	CLP	169.93

PLANETOCENTRIC CONIC

C3	22.207	VHL	4.712	DLA	13.39	RAL	175.33	RAD	6567.9	VEL	11.983	PTH	2.14	VHP	8.837	DPA	-.88	RAP	188.36	ECC	1.3655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 48	2668.84	-27.38	72.32	43.12	97.51	17 52 17	2068.8	-26.06	63.90
90.00	8 38 58	4454.24	8.15	186.26	36.97	62.79	9 53 12	3854.2	4.44	179.55
100.00	18 36 9	2383.93	-28.67	51.15	42.91	98.84	19 15 52	1783.9	-27.15	42.68
100.00	9 53 18	4214.39	9.30	168.01	36.35	61.46	11 3 33	3614.4	5.42	161.37
110.00	20 0 8	2121.14	-32.08	30.45	42.17	102.49	20 35 29	1521.1	-30.03	21.84
110.00	10 45 49	4049.94	12.29	153.75	34.57	57.85	11 53 19	3449.9	7.96	147.34

DIFFERENTIAL CORRECTIONS

TDE	.6212	TRA	-1.8042	TC3	1.5497	BAU	.4603
RDE	-.3579	RRA	-.1532	RC3	-.0458	FAU	.07996
FDE	-.2406	FRA	1.4171	FC3	-3.1174	BSP	9433
BDE	.7169	BRA	1.8107	BC3	1.5504	FSP	858

MID-COURSE EXECUTION ACCURACY

SGT	2790.8	SGR	477.4	SG3	297.5		
RRT	.0299	RRF	-.0516	RTF	-.8852		
SGB	2831.3	R23	-.0243	R13	-.8853		
SG1	2790.8	SG2	477.2	THA	.30		

ORBIT DETERMINATION ACCURACY

ST	1014.9	SR	439.0	SS	468.0		
CRT	-.6507	CRS	-.3603	CST	.9393		
LSA	1142.7	MSA	367.1	SSA	34.9		
EL1	1058.6	EL2	319.6	ALF	162.65		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 435.624 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	34.510	GAL	-2.97	AZL	88.60	HCA	138.23	SMA	218.97	ECC	.32912	INC	1.4018	V1	30.164
RP	242.34	LAP	.93	LOP	198.98	VP	22.118	GAP	18.25	AZP	91.05	TAL	347.95	TAP	126.18	RCA	146.90	APO	291.03	V2	22.651
RC	149.184	GL	10.54	GP	1.34	ZAL	108.47	ZAP	169.29	ETS	171.49	ZAE	154.06	ETE	1.78	ZAC	90.83	ETC	255.93	CLP	169.37

PLANETOCENTRIC CONIC

C3	21.252	VHL	4.610	DLA	13.82	RAL	174.62	RAD	6567.9	VEL	11.943	PTH	2.13	VHP	8.635	DPA	-.98	RAP	188.71	ECC	1.3498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 13	2673.00	-27.42	72.62	41.79	97.36	17 45 46	2073.0	-26.12	64.19
90.00	8 39 52	4428.86	7.36	184.82	35.64	62.58	9 53 41	3828.9	3.63	178.12
100.00	18 29 51	2387.16	-28.71	51.39	41.58	98.72	19 9 38	1787.2	-27.20	42.91
100.00	9 53 55	4189.93	8.50	166.63	35.03	61.23	11 3 45	3589.9	4.60	160.02
110.00	19 54 27	2122.45	-32.10	30.55	40.85	102.44	20 29 50	1522.4	-30.05	21.93
110.00	10 45 49	4027.41	11.47	152.52	33.24	57.58	11 52 56	3427.4	7.12	146.14

DIFFERENTIAL CORRECTIONS

TDE	.5975	TRA	-1.7731	TC3	1.6560	BAU	.4707
RDE	-.3444	RRA	-.1480	RC3	-.0430	FAU	.08272
FDE	-.2280	FRA	1.4312	FC3	-3.3698	BSP	9617
BDE	.6896	BRA	1.7792	BC3	1.6566	FSP	906

MID-COURSE EXECUTION ACCURACY

SGT	2834.2	SGR	469.7	SG3	312.6		
RRT	.0387	RRF	-.0603	RTF	-.8886		
SGB	2872.8	R23	-.0250	R13	-.8886		
SG1	2834.2	SG2	469.4	THA	.38		

ORBIT DETERMINATION ACCURACY

ST	1008.5	SR	431.8	SS	466.5		
CRT	-.6412	CRS	-.3340	CST	.9338		
LSA	1133.2	MSA	368.4	SSA	35.5		
EL1	1049.8	EL2	318.3	ALF	163.04		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 438.501 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.433 GAL -2.83 AZL 88.61 HCA 139.15 SMA 217.07 ECC .32294 INC 1.3882 V1 30.164
RP 242.06 LAP .91 LOP 199.90 VP 22.026 GAP 17.68 AZP 91.05 TAL 348.39 TAP 127.54 RCA 146.97 APO 287.17 V2 22.678
RC 151.478 GL 10.64 GP 1.40 ZAL 107.64 ZAP 168.71 ETS 171.58 ZAE 154.25 ETE 2.05 ZAC 90.96 ETC 255.92 CLP 168.80

PLANETOCENTRIC CONIC

C3 20.359 VHL 4.512 DLA 14.24 RAL 173.89 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 8.438 DPA -1.08 RAP 189.05 ECC 1.3351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 33	2677.53	-27.46	72.94	40.46	97.20	17 39 10	2077.5	-26.18	64.51
90.00	8 40 43	4403.76	6.57	183.40	34.33	62.39	9 54 7	3803.8	2.82	176.72
100.00	18 23 28	2390.75	-28.74	51.65	40.26	98.59	19 3 19	1790.8	-27.26	43.16
100.00	9 54 29	4165.77	7.71	165.28	33.71	61.03	11 3 55	3565.8	3.79	158.69
110.00	19 48 42	2124.08	-32.12	30.67	39.53	102.37	20 24 6	1524.1	-30.09	22.05
110.00	10 45 45	4005.20	10.66	151.32	31.93	57.33	11 52 30	3405.2	6.28	144.97

DIFFERENTIAL CORRECTIONS
TDE .5733 TRA-1.7395 TC3 1.7668 BAU .4810
RDE -.3313 RRA -.1431 RC3 -.0396 FAU .08558
FDE -.2132 FRA 1.4442 FC3-3.6390 BSP 9804
BDE .6621 BRA 1.7453 BC3 1.7673 FSP 958

MID-COURSE EXECUTION ACCURACY
SGT 2874.9 SGR 461.9 SG3 328.3
RRT .0483 RRF -.0704 RTF -.8921
SGB 2911.8 R23 -.0263 R13 -.8921
SG1 2875.0 SG2 461.4 THA .46

ORBIT DETERMINATION ACCURACY
ST 999.8 SR 424.4 SS 464.1
CRT -.6312 CRS -.3037 CST .9268
LSA 1121.1 MSA 370.0 SSA 36.0
EL1 1039.0 EL2 316.8 ALF 163.42

LAUNCH DATE NOV 23 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 441.439 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.359 GAL -2.68 AZL 88.63 HCA 140.08 SMA 215.28 ECC .31703 INC 1.3741 V1 30.164
RP 241.79 LAP .88 LOP 200.83 VP 21.939 GAP 17.12 AZP 91.05 TAL 348.83 TAP 128.91 RCA 147.03 APO 283.53 V2 22.706
RC 153.781 GL 10.74 GP 1.46 ZAL 106.81 ZAP 168.13 ETS 171.64 ZAE 154.47 ETE 2.33 ZAC 91.09 ETC 255.91 CLP 168.22

PLANETOCENTRIC CONIC

C3 19.525 VHL 4.419 DLA 14.66 RAL 173.14 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 8.246 DPA -1.17 RAP 189.39 ECC 1.3213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 47	2682.41	-27.50	73.29	39.14	97.03	17 32 29	2082.4	-26.24	64.85
90.00	8 41 31	4378.98	5.78	182.00	33.03	62.23	9 54 30	3779.0	2.02	175.34
100.00	18 17 0	2394.66	-28.78	51.93	38.94	98.44	18 56 55	1794.7	-27.32	43.44
100.00	9 54 59	4141.95	6.92	163.95	32.41	60.85	11 4 1	3542.0	2.98	157.38
110.00	19 42 52	2126.01	-32.15	30.81	38.22	102.29	20 18 18	1526.0	-30.13	22.19
110.00	10 45 36	3983.37	9.86	150.14	30.62	57.10	11 52 0	3383.4	5.45	143.81

DIFFERENTIAL CORRECTIONS
TDE .5503 TRA-1.7061 TC3 1.8829 BAU .4916
RDE -.3187 RRA -.1385 RC3 -.0353 FAU .08858
FDE -.1975 FRA 1.4575 FC3-3.9278 BSP 9947
BDE .6359 BRA 1.7117 BC3 1.8832 FSP 1011

MID-COURSE EXECUTION ACCURACY
SGT 2916.7 SGR 454.1 SG3 344.9
RRT .0587 RRF -.0820 RTF -.8956
SGB 2951.8 R23 -.0281 R13 -.8956
SG1 2916.8 SG2 453.3 THA .54

ORBIT DETERMINATION ACCURACY
ST 991.1 SR 416.9 SS 461.6
CRT -.6212 CRS -.2711 CST .9186
LSA 1108.8 MSA 371.9 SSA 36.4
EL1 1028.0 EL2 315.0 ALF 163.79

LAUNCH DATE NOV 23 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 444.431 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.289 GAL -2.54 AZL 88.64 HCA 141.01 SMA 213.60 ECC .31138 INC 1.3594 V1 30.164
RP 241.51 LAP .86 LOP 201.76 VP 21.857 GAP 16.56 AZP 91.06 TAL 349.27 TAP 130.28 RCA 147.09 APO 280.11 V2 22.734
RC 156.092 GL 10.82 GP 1.52 ZAL 105.96 ZAP 167.54 ETS 171.69 ZAE 154.73 ETE 2.63 ZAC 91.23 ETC 255.90 CLP 167.63

PLANETOCENTRIC CONIC

C3 18.746 VHL 4.330 DLA 15.08 RAL 172.38 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 8.058 DPA -1.25 RAP 189.73 ECC 1.3085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 57	2687.58	-27.54	73.67	37.82	96.85	17 25 44	2087.6	-26.31	65.22
90.00	8 42 15	4354.58	5.01	180.62	31.74	62.09	9 54 49	3754.6	1.24	173.97
100.00	18 10 28	2398.85	-28.82	52.24	37.62	98.29	18 50 27	1798.9	-27.38	43.73
100.00	9 55 24	4118.53	6.14	162.65	31.11	60.69	11 4 3	3518.5	2.19	156.09
110.00	19 36 59	2128.20	-32.18	30.98	36.92	102.20	20 12 27	1528.2	-30.17	22.34
110.00	10 45 24	3961.95	9.06	148.99	29.33	56.90	11 51 26	3362.0	4.64	142.69

DIFFERENTIAL CORRECTIONS
TDE .5267 TRA-1.6721 TC3 2.0007 BAU .5015
RDE -.3065 RRA -.1341 RC3 -.0302 FAU .09171
FDE -.1802 FRA 1.4699 FC3-4.2353 BSP 10115
BDE .6094 BRA 1.6775 BC3 2.0009 FSP 1069

MID-COURSE EXECUTION ACCURACY
SGT 2956.2 SGR 446.1 SG3 362.1
RRT .0707 RRF -.0951 RTF -.8989
SGB 2989.6 R23 -.0301 R13 -.8989
SG1 2956.3 SG2 444.9 THA .63

ORBIT DETERMINATION ACCURACY
ST 980.4 SR 409.3 SS 458.8
CRT -.6101 CRS -.2354 CST .9093
LSA 1094.5 MSA 374.1 SSA 36.9
EL1 1015.2 EL2 313.2 ALF 164.16

LAUNCH DATE NOV 23 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 447.476 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.221 GAL -2.41 AZL 88.66 HCA 141.94 SMA 212.02 ECC .30597 INC 1.3439 V1 30.164
RP 241.22 LAP .83 LOP 202.69 VP 21.781 GAP 16.01 AZP 91.06 TAL 349.71 TAP 131.65 RCA 147.15 APO 276.89 V2 22.762
RC 158.408 GL 10.89 GP 1.58 ZAL 105.10 ZAP 166.93 ETS 171.73 ZAE 155.03 ETE 2.95 ZAC 91.36 ETC 255.89 CLP 167.03

PLANETOCENTRIC CONIC

C3 18.016 VHL 4.245 DLA 15.49 RAL 171.59 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 7.874 DPA -1.33 RAP 190.05 ECC 1.2965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 2	2693.03	-27.59	74.06	36.50	96.66	17 18 55	2093.0	-26.38	65.60
90.00	8 42 54	4330.54	4.24	179.27	30.45	61.98	9 55 5	3730.5	.46	172.63
100.00	18 3 52	2403.31	-28.87	52.56	36.31	98.12	18 43 55	1803.3	-27.44	44.05
100.00	9 55 45	4095.49	5.37	161.37	29.83	60.55	11 4 1	3495.5	1.41	154.83
110.00	19 31 1	2130.63	-32.22	31.16	35.62	102.10	20 6 32	1530.6	-30.22	22.52
110.00	10 45 6	3940.94	8.28	147.86	28.04	56.72	11 50 47	3340.9	3.84	141.59

DIFFERENTIAL CORRECTIONS
TDE .5196 TRA-1.6221 TC3 2.1587 BAU .5200
RDE -.2950 RRA -.1302 RC3 -.0246 FAU .09497
FDE -.1610 FRA 1.4821 FC3-4.5637 BSP 9882
BDE .5975 BRA 1.6273 BC3 2.1588 FSP 1131

MID-COURSE EXECUTION ACCURACY
SGT 3002.1 SGR 438.5 SG3 380.2
RRT .0736 RRF -.1095 RTF -.9059
SGB 3034.0 R23 -.0415 R13 -.9060
SG1 3002.3 SG2 437.3 THA .63

ORBIT DETERMINATION ACCURACY
ST 979.6 SR 402.0 SS 455.6
CRT -.6147 CRS -.1951 CST .8891
LSA 1088.6 MSA 377.4 SSA 36.3
EL1 1013.5 EL2 306.5 ALF 164.38

LAUNCH DATE NOV 23 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 450.568 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.156 GAL -2.27 AZL 88.67 HCA 142.87 SMA 210.53 ECC .30081 INC 1.3280 V1 30.164
RP 240.93 LAP .80 LOP 203.62 VP 21.710 GAP 15.47 AZP 91.06 TAL 350.15 TAP 133.02 RCA 147.20 APO 273.86 V2 22.791
RC 160.729 GL 10.95 GP 1.65 ZAL 104.24 ZAP 166.31 ETS 171.75 ZAE 155.36 ETE 3.28 ZAC 91.50 ETC 255.88 CLP 166.41

PLANETOCENTRIC CONIC

C3 17.337 VHL 4.164 DLA 15.89 RAL 170.80 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 7.695 DPA -1.39 RAP 190.37 ECC 1.2853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 7	2698.60	-27.63	74.46	35.19	96.46	17 12 6	2098.6	-26.45	65.99
90.00	8 43 29	4307.10	3.49	177.96	29.18	61.88	9 55 16	3707.1	-.30	171.33
100.00	17 57 16	2407.88	-28.91	52.89	35.01	97.95	18 37 24	1807.9	-27.51	44.37
100.00	9 56 1	4073.06	4.62	160.13	28.56	60.43	11 3 54	3473.1	.65	153.59
110.00	19 25 4	2133.17	-32.25	31.35	34.32	101.99	20 0 37	1533.2	-30.27	22.70
110.00	10 44 42	3920.53	7.52	146.78	26.77	56.55	11 50 3	3320.5	3.06	140.52

DIFFERENTIAL CORRECTIONS
TDE .4823 TRA-1.6019 TC3 2.2518 BAU .5219
RDE -.2835 RRA -.1261 RC3 -.0168 FAU .09850
FDE -.1427 FRA 1.4918 FC3-4.9186 BSP 10364
BDE .5594 BRA 1.6069 BC3 2.2519 FSP 1193

MID-COURSE EXECUTION ACCURACY
SGT 3034.7 SGR 430.1 SG3 399.4
RRT .0983 RRF -.1263 RTF -.9055
SGB 3065.0 R23 -.0357 R13 -.9055
SG1 3035.0 SG2 427.9 THA .81

ORBIT DETERMINATION ACCURACY
ST 957.3 SR 393.9 SS 452.7
CRT -.5881 CRS -.1566 CST .8860
LSA 1063.6 MSA 379.1 SSA 37.7
EL1 988.0 EL2 308.6 ALF 164.89

LAUNCH DATE NOV 23 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 453.705 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.094 GAL -2.14 AZL 88.69 HCA 143.81 SMA 209.13 ECC .29588 INC 1.3111 V1 30.164
RP 240.64 LAP .77 LOP 204.56 VP 21.643 GAP 14.93 AZP 91.06 TAL 350.59 TAP 134.40 RCA 147.25 APO 271.00 V2 22.821
RC 163.052 GL 11.00 GP 1.73 ZAL 103.36 ZAP 165.68 ETS 171.76 ZAE 155.72 ETE 3.64 ZAC 91.64 ETC 255.87 CLP 165.79

PLANETOCENTRIC CONIC

C3 16.701 VHL 4.087 DLA 16.28 RAL 169.99 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 7.519 DPA -1.45 RAP 190.68 ECC 1.2749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 10	2704.32	-27.67	74.87	33.88	96.26	17 5 14	2104.3	-26.52	66.40
90.00	8 43 57	4284.16	2.75	176.68	27.92	61.81	9 55 21	3684.2	-1.04	170.05
100.00	17 50 38	2412.59	-28.95	53.24	33.71	97.77	18 30 50	1812.6	-27.58	44.70
100.00	9 56 10	4051.13	3.88	158.92	27.30	60.34	11 3 41	3451.1	-.10	152.39
110.00	19 19 5	2135.85	-32.29	31.55	33.03	101.88	19 54 41	1535.9	-30.32	22.89
110.00	10 44 13	3900.63	6.77	145.72	25.51	56.41	11 49 13	3300.6	2.31	139.48

DIFFERENTIAL CORRECTIONS
TDE .4580 TRA-1.5687 TC3 2.3752 BAU .5303
RDE -.2726 RRA -.1224 RC3 -.0083 FAU .10215
FDE -.1227 FRA 1.5011 FC3-5.2953 BSP 10533
BDE .5330 BRA 1.5735 BC3 2.3752 FSP 1258

MID-COURSE EXECUTION ACCURACY
SGT 3070.9 SGR 422.0 SG3 419.5
RRT .1165 RRF -.1449 RTF -.9079
SGB 3099.8 R23 -.0374 R13 -.9080
SG1 3071.3 SG2 419.1 THA .93

ORBIT DETERMINATION ACCURACY
ST 942.4 SR 386.0 SS 449.7
CRT -.5734 CRS -.1142 CST .8740
LSA 1045.1 MSA 381.7 SSA 38.2
EL1 971.1 EL2 306.9 ALF 165.28

LAUNCH DATE NOV 23 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 456.884 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 34.035 GAL -2.02 AZL 88.71 HCA 144.75 SMA 207.80 ECC .29116 INC 1.2933 V1 30.164
RP 240.34 LAP .75 LOP 205.49 VP 21.581 GAP 14.39 AZP 91.06 TAL 351.04 TAP 135.78 RCA 147.30 APO 268.31 V2 22.851
RC 165.375 GL 11.03 GP 1.81 ZAL 102.48 ZAP 165.04 ETS 171.76 ZAE 156.12 ETE 4.02 ZAC 91.79 ETC 255.87 CLP 165.15

PLANETOCENTRIC CONIC

C3 16.107 VHL 4.013 DLA 16.66 RAL 169.16 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 7.348 DPA -1.50 RAP 190.99 ECC 1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 13	2710.11	-27.72	75.29	32.58	96.05	16 58 23	2110.1	-26.59	66.81
90.00	8 44 19	4261.82	2.03	175.43	26.67	61.75	9 55 20	3661.8	-1.76	168.80
100.00	17 44 0	2417.36	-29.00	53.58	32.41	97.60	18 24 17	1817.4	-27.64	45.04
100.00	9 56 13	4029.80	3.16	157.75	26.04	60.26	11 3 23	3429.8	-.82	151.22
110.00	19 13 5	2138.60	-32.33	31.75	31.75	101.76	19 48 44	1538.6	-30.37	23.08
110.00	10 43 37	3881.33	6.04	144.70	24.26	56.29	11 48 18	3281.3	1.57	138.47

DIFFERENTIAL CORRECTIONS
TDE .4354 TRA-1.5341 TC3 2.5044 BAU .5393
RDE -.2622 RRA -.1189 RC3 .0016 FAU .10600
FDE -.1012 FRA 1.5097 FC3-5.6973 BSP 10673
BDE .5082 BRA 1.5387 BC3 2.5044 FSP 1328

MID-COURSE EXECUTION ACCURACY
SGT 3107.0 SGR 414.1 SG3 440.5
RRT .1360 RRF -.1659 RTF -.9106
SGB 3134.5 R23 -.0402 R13 -.9107
SG1 3107.5 SG2 410.2 THA 1.06

ORBIT DETERMINATION ACCURACY
ST 927.5 SR 378.0 SS 446.7
CRT -.5594 CRS -.0683 CST .8594
LSA 1026.3 MSA 384.8 SSA 38.6
EL1 954.2 EL2 304.6 ALF 165.66

LAUNCH DATE NOV 23 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 460.104 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.978 GAL -1.90 AZL 88.73 HCA 145.69 SMA 206.55 ECC .28666 INC 1.2749 V1 30.164
RP 240.04 LAP .72 LOP 206.43 VP 21.524 GAP 13.86 AZP 91.05 TAL 351.48 TAP 137.17 RCA 147.34 APO 265.76 V2 22.881
RC 167.697 GL 11.05 GP 1.90 ZAL 101.60 ZAP 164.38 ETS 171.75 ZAE 156.56 ETE 4.44 ZAC 91.94 ETC 255.86 CLP 164.50

PLANETOCENTRIC CONIC

C3 15.552 VHL 3.944 DLA 17.03 RAL 168.32 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 7.180 DPA -1.54 RAP 191.29 ECC 1.2559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 17	2715.90	-27.76	75.71	31.29	95.85	16 51 33	2115.9	-26.66	67.22
90.00	8 44 33	4240.13	1.33	174.22	25.43	61.71	9 55 13	3640.1	-2.46	167.59
100.00	17 37 22	2422.13	-29.04	53.93	31.12	97.42	18 17 45	1822.1	-27.71	45.38
100.00	9 56 8	4009.13	2.46	156.61	24.80	60.20	11 2 57	3409.1	-1.52	150.09
110.00	19 7 7	2141.37	-32.37	31.96	30.47	101.64	19 42 48	1541.4	-30.43	23.28
110.00	10 42 53	3862.66	5.33	143.72	23.02	56.19	11 47 16	3262.7	.85	137.50

DIFFERENTIAL CORRECTIONS
TDE .4181 TRA-1.4934 TC3 2.6485 BAU .5507
RDE -.2521 RRA -.1157 RC3 .0127 FAU .11002
FDE -.0788 FRA 1.5168 FC3-6.1243 BSP 10686
BDE .4882 BRA 1.4979 BC3 2.6485 FSP 1403

MID-COURSE EXECUTION ACCURACY
SGT 3143.5 SGR 406.5 SG3 462.5
RRT .1545 RRF -.1892 RTF -.9145
SGB 3169.7 R23 -.0461 R13 -.9146
SG1 3144.2 SG2 401.5 THA 1.16

ORBIT DETERMINATION ACCURACY
ST 914.5 SR 370.1 SS 444.0
CRT -.5512 CRS -.0204 CST .8393
LSA 1008.9 MSA 388.6 SSA 38.7
EL1 939.7 EL2 300.5 ALF 165.96

LAUNCH DATE NOV 23 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 463.359 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.924 GAL -1.78 AZL 88.74 HCA 146.63 SMA 205.37 ECC .28236 INC 1.2554 V1 30.164
RP 239.73 LAP .69 LOP 207.37 VP 21.470 GAP 13.34 AZP 91.05 TAL 351.92 TAP 138.55 RCA 147.38 APO 263.36 V2 22.912
RC 170.016 GL 11.05 GP 1.99 ZAL 100.72 ZAP 163.71 ETS 171.72 ZAE 157.02 ETE 4.89 ZAC 92.09 ETC 255.85 CLP 163.83

PLANETOCENTRIC CONIC

C3 15.034 VHL 3.877 DLA 17.38 RAL 167.47 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 7.017 DPA -1.58 RAP 191.57 ECC 1.2474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 25	2721.55	-27.79	76.12	30.00	95.64	16 44 46	2121.5	-26.72	67.62
90.00	8 44 38	4219.25	.66	173.05	24.20	61.69	9 54 57	3619.2	-3.13	166.42
100.00	17 30 49	2426.78	-29.08	54.27	29.83	97.24	18 11 16	1826.8	-27.77	45.71
100.00	9 55 55	3989.24	1.79	155.52	23.57	60.16	11 2 24	3389.2	-2.19	149.00
110.00	19 1 11	2144.05	-32.40	32.16	29.19	101.53	19 36 55	1544.0	-30.48	23.47
110.00	10 42 2	3844.74	4.65	142.78	21.79	56.10	11 46 7	3244.7	.17	136.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3906 TRA-1.4649 TC3 2.7654 BAU .5558 SGT 3174.4 SGR 398.8 SG3 485.7 ST 894.6 SR 361.9 SS 441.9
RDE -.2424 RRA -.1126 RC3 .0259 FAU .11423 RRT .1832 RRF -.2163 RTF -.9157 CRT -.5283 CRS .0305 CST .8258
FDE -.0550 FRA 1.5242 FC3-6.5781 BSP 10954 SGB 3199.3 R23 -.0467 R13 -.9158 LSA 985.7 MSA 391.7 SSA 39.4
BDE .4597 BRA 1.4692 BC3 2.7655 FSP 1481 SG1 3175.2 SG2 392.0 THA 1.34 EL1 917.3 EL2 299.7 ALF 166.46

LAUNCH DATE NOV 23 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 466.650 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.871 GAL -1.66 AZL 88.77 HCA 147.57 SMA 204.25 ECC .27825 INC 1.2348 V1 30.164
RP 239.42 LAP .66 LOP 208.32 VP 21.421 GAP 12.82 AZP 91.04 TAL 352.36 TAP 139.93 RCA 147.42 APO 261.09 V2 22.943
RC 172.331 GL 11.03 GP 2.09 ZAL 99.83 ZAP 163.02 ETS 171.68 ZAE 157.52 ETE 5.39 ZAC 92.24 ETC 255.85 CLP 163.15

PLANETOCENTRIC CONIC

C3 14.549 VHL 3.814 DLA 17.71 RAL 166.61 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 6.857 DPA -1.59 RAP 191.86 ECC 1.2394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 37	2727.02	-27.83	76.52	28.71	95.45	16 38 4	2127.0	-26.78	68.01
90.00	8 44 33	4199.17	.01	171.93	22.98	61.68	9 54 32	3599.2	-3.77	165.30
100.00	17 24 20	2431.27	-29.12	54.60	28.55	97.07	18 4 51	1831.3	-27.83	46.03
100.00	9 55 32	3970.15	1.14	154.47	22.34	60.13	11 1 42	3370.1	-2.84	147.95
110.00	18 55 19	2146.61	-32.44	32.35	27.92	101.42	19 31 5	1546.6	-30.53	23.66
110.00	10 41 2	3827.57	4.00	141.88	20.56	56.02	11 44 50	3227.6	-.49	135.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3699 TRA-1.4285 TC3 2.8980 BAU .5637 SGT 3204.7 SGR 391.7 SG3 509.9 ST 877.4 SR 353.8 SS 439.7
RDE -.2330 RRA -.1098 RC3 .0407 FAU .11867 RRT .2105 RRF -.2458 RTF -.9181 CRT -.5132 CRS .0810 CST .8066
FDE -.0313 FRA 1.5282 FC3-7.0616 BSP 11063 SGB 3228.6 R23 -.0509 R13 -.9182 LSA 964.7 MSA 395.2 SSA 39.8
BDE .4372 BRA 1.4327 BC3 2.8983 FSP 1562 SG1 3205.8 SG2 382.8 THA 1.50 EL1 898.4 EL2 296.6 ALF 166.85

LAUNCH DATE NOV 23 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 469.975 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.822 GAL -1.55 AZL 88.79 HCA 148.52 SMA 203.20 ECC .27433 INC 1.2133 V1 30.164
RP 239.11 LAP .63 LOP 209.27 VP 21.377 GAP 12.31 AZP 91.03 TAL 352.79 TAP 141.31 RCA 147.45 APO 258.94 V2 22.975
RC 174.639 GL 10.99 GP 2.19 ZAL 98.95 ZAP 162.32 ETS 171.63 ZAE 158.05 ETE 5.93 ZAC 92.40 ETC 255.84 CLP 162.45

PLANETOCENTRIC CONIC

C3 14.096 VHL 3.754 DLA 18.03 RAL 165.74 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 6.701 DPA -1.60 RAP 192.13 ECC 1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 56	2732.19	-27.86	76.89	27.43	95.26	16 31 28	2132.2	-26.84	68.37
90.00	8 44 17	4180.00	-.61	170.87	21.76	61.69	9 53 57	3580.0	-4.39	164.22
100.00	17 17 56	2435.48	-29.15	54.91	27.28	96.92	17 58 32	1835.5	-27.89	46.33
100.00	9 54 58	3951.94	.53	153.47	21.13	60.11	11 0 50	3351.9	-3.45	146.95
110.00	18 49 31	2148.97	-32.47	32.53	26.66	101.32	19 25 20	1549.0	-30.57	23.83
110.00	10 39 53	3811.22	3.38	141.02	19.35	55.96	11 43 24	3211.2	-1.11	134.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3500 TRA-1.3938 TC3 3.0301 BAU .5711 SGT 3235.0 SGR 385.1 SG3 535.3 ST 860.3 SR 345.7 SS 438.6
RDE -.2240 RRA -.1072 RC3 .0575 FAU .12329 RRT .2412 RRF -.2789 RTF -.9203 CRT -.4971 CRS .1336 CST .7857
FDE -.0064 FRA 1.5330 FC3-7.5721 BSP 11157 SGB 3257.9 R23 -.0556 R13 -.9205 LSA 944.0 MSA 399.2 SSA 40.1
BDE .4155 BRA 1.3979 BC3 3.0306 FSP 1647 SG1 3236.4 SG2 373.6 THA 1.67 EL1 879.5 EL2 293.4 ALF 167.26

LAUNCH DATE NOV 23 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 473.330 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.774 GAL -1.44 AZL 88.81 HCA 149.47 SMA 202.20 ECC .27059 INC 1.1902 V1 30.164
RP 238.79 LAP .60 LOP 210.21 VP 21.336 GAP 11.80 AZP 91.03 TAL 353.23 TAP 142.69 RCA 147.49 APO 256.91 V2 23.007
RC 176.939 GL 10.93 GP 2.31 ZAL 98.06 ZAP 161.60 ETS 171.57 ZAE 158.61 ETE 6.53 ZAC 92.56 ETC 255.84 CLP 161.74

PLANETOCENTRIC CONIC

C3 13.673 VHL 3.698 DLA 18.32 RAL 164.86 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 6.548 DPA -1.60 RAP 192.39 ECC 1.2250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 23	2736.97	-27.89	77.24	26.16	95.09	16 25 0	2137.0	-26.89	68.71
90.00	8 43 49	4161.85	-1.19	169.85	20.55	61.71	9 53 11	3561.8	-4.97	163.21
100.00	17 11 41	2439.34	-29.18	55.19	26.01	96.77	17 52 20	1839.3	-27.94	46.61
100.00	9 54 12	3934.71	-.06	152.53	19.92	60.11	10 59 47	3334.7	-4.03	146.00
110.00	18 43 49	2151.05	-32.50	32.69	25.40	101.23	19 19 40	1551.1	-30.61	23.98
110.00	10 38 33	3795.76	2.79	140.21	18.14	55.92	11 41 49	3195.8	-1.70	134.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3314 TRA-1.3563 TC3 3.1666 BAU .5790 SGT 3263.3 SGR 379.2 SG3 562.0 ST 842.5 SR 337.6 SS 437.4
RDE -.2154 RRA -.1048 RC3 .0766 FAU .12820 RRT .2748 RRF -.3155 RTF -.9228 CRT -.4822 CRS .1863 CST .7625
FDE .0189 FRA 1.5344 FC3-8.1171 BSP 11213 SGB 3285.2 R23 -.0611 R13 -.9230 LSA 922.4 MSA 403.2 SSA 40.2
BDE .3952 BRA 1.3604 BC3 3.1675 FSP 1735 SG1 3265.0 SG2 364.5 THA 1.85 EL1 860.1 EL2 289.7 ALF 167.64

LAUNCH DATE NOV 23 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 476.716 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.728 GAL -1.34 AZL 88.83 HCA 150.42 SMA 201.25 ECC .26702 INC 1.1659 V1 30.164
RP 238.47 LAP .58 LOP 211.17 VP 21.298 GAP 11.30 AZP 91.01 TAL 353.65 TAP 144.08 RCA 147.51 APO 254.99 V2 23.040
RC 179.231 GL 10.85 GP 2.43 ZAL 97.18 ZAP 160.86 ETS 171.50 ZAE 159.21 ETE 7.20 ZAC 92.73 ETC 255.83 CLP 161.01

PLANETOCENTRIC CONIC

C3 13.277 VHL 3.644 DLA 18.59 RAL 163.97 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 6.399 DPA -1.58 RAP 192.64 ECC 1.2185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 0	2741.24	-27.92	77.55	24.89	94.94	16 18 41	2141.2	-26.94	69.02
90.00	8 43 6	4144.78	-1.74	168.90	19.35	61.73	9 52 11	3544.8	-5.51	162.25
100.00	17 5 34	2442.73	-29.21	55.44	24.74	96.64	17 46 17	1842.7	-27.98	46.85
100.00	9 53 13	3918.52	-.61	151.64	18.72	60.11	10 58 31	3318.5	-4.58	145.10
110.00	18 38 15	2152.78	-32.52	32.81	24.13	101.16	19 14 7	1552.8	-30.64	24.10
110.00	10 37 2	3781.24	2.23	139.45	16.94	55.88	11 40 3	3181.2	-2.26	133.25

DIFFERENTIAL CORRECTIONS
TDE .3192 TRA-1.3138 TC3 3.3233 BAU .5901
RDE -.2071 RRA -.1027 RC3 .0980 FAU .13342
FDE .0444 FRA 1.5346 FC3-8.7001 BSP 11134
BDE .3805 BRA 1.3178 BC3 3.3247 FSP 1829

MID-COURSE EXECUTION ACCURACY
SGT 3296.6 SGR 374.4 SG3 590.3
RRT .3086 RRF -.3555 RTF -.9265
SGB 3317.8 R23 -.0696 R13 -.9268
SG1 3298.7 SG2 355.9 THA 2.03

ORBIT DETERMINATION ACCURACY
ST 827.5 SR 329.6 SS 436.8
CRT -.4761 CRS .2388 CST .7312
LSA 903.0 MSA 408.9 SSA 39.9
EL1 844.2 EL2 284.1 ALF 167.87

LAUNCH DATE NOV 23 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 480.128 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.684 GAL -1.23 AZL 88.86 HCA 151.38 SMA 200.36 ECC .26362 INC 1.1401 V1 30.164
RP 238.14 LAP .55 LOP 212.12 VP 21.265 GAP 10.81 AZP 91.00 TAL 354.08 TAP 145.45 RCA 147.54 APO 253.18 V2 23.073
RC 181.513 GL 10.75 GP 2.56 ZAL 96.31 ZAP 160.10 ETS 171.42 ZAE 159.82 ETE 7.95 ZAC 92.90 ETC 255.83 CLP 160.26

PLANETOCENTRIC CONIC

C3 12.907 VHL 3.593 DLA 18.83 RAL 163.07 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 6.253 DPA -1.54 RAP 192.89 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 52	2744.80	-27.94	77.81	23.62	94.81	16 12 37	2144.8	-26.98	69.27
90.00	8 42 7	4129.02	-2.25	168.02	18.16	61.77	9 50 56	3529.0	-6.01	161.36
100.00	16 59 41	2445.48	-29.23	55.64	23.48	96.54	17 40 27	1845.5	-28.02	47.05
100.00	9 51 59	3903.58	-1.11	150.82	17.53	60.13	10 57 2	3303.6	-5.08	144.28
110.00	18 32 51	2153.99	-32.54	32.91	22.88	101.11	19 8 45	1554.0	-30.67	24.19
110.00	10 35 18	3767.83	1.72	138.75	15.75	55.85	11 38 6	3167.8	-2.77	132.55

DIFFERENTIAL CORRECTIONS
TDE .2902 TRA-1.2894 TC3 3.4150 BAU .5896
RDE -.1990 RRA -.1006 RC3 .1225 FAU .13862
FDE .0729 FRA 1.5365 FC3-9.2981 BSP 11505
BDE .3518 BRA 1.2933 BC3 3.4172 FSP 1936

MID-COURSE EXECUTION ACCURACY
SGT 3309.9 SGR 370.4 SG3 619.1
RRT .3569 RRF -.4009 RTF -.9260
SGB 3330.6 R23 -.0714 R13 -.9264
SG1 3312.6 SG2 345.7 THA 2.31

ORBIT DETERMINATION ACCURACY
ST 802.7 SR 321.4 SS 437.9
CRT -.4399 CRS .2954 CST .7180
LSA 876.7 MSA 411.3 SSA 40.9
EL1 816.8 EL2 283.6 ALF 168.62

LAUNCH DATE NOV 23 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 483.568 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.643 GAL -1.14 AZL 88.89 HCA 152.33 SMA 199.51 ECC .26037 INC 1.1123 V1 30.164
RP 237.81 LAP .52 LOP 213.08 VP 21.235 GAP 10.32 AZP 90.99 TAL 354.50 TAP 146.83 RCA 147.56 APO 251.46 V2 23.106
RC 183.786 GL 10.62 GP 2.70 ZAL 95.45 ZAP 159.33 ETS 171.32 ZAE 160.47 ETE 8.79 ZAC 93.09 ETC 255.82 CLP 159.50

PLANETOCENTRIC CONIC

C3 12.561 VHL 3.544 DLA 19.05 RAL 162.17 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 6.111 DPA -1.49 RAP 193.12 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 58	2747.60	-27.95	78.01	22.36	94.71	16 6 46	2147.6	-27.01	69.47
90.00	8 40 50	4114.57	-2.72	167.21	16.97	61.80	9 49 24	3514.6	-6.47	160.54
100.00	16 54 1	2447.54	-29.25	55.79	22.22	96.46	17 34 49	1847.5	-28.05	47.20
100.00	9 50 28	3889.86	-1.58	150.06	16.34	60.15	10 55 18	3289.9	-5.54	143.52
110.00	18 27 38	2154.67	-32.55	32.96	21.62	101.08	19 3 32	1554.7	-30.68	24.24
110.00	10 33 21	3755.49	1.25	138.11	14.57	55.84	11 35 56	3155.5	-3.24	131.90

DIFFERENTIAL CORRECTIONS
TDE .2713 TRA-1.2540 TC3 3.5373 BAU .5945
RDE -.1912 RRA -.0988 RC3 .1499 FAU .14421
FDE .1003 FRA 1.5332 FC3-9.9395 BSP 11555
BDE .3319 BRA 1.2579 BC3 3.5405 FSP 2037

MID-COURSE EXECUTION ACCURACY
SGT 3328.5 SGR 368.0 SG3 649.7
RRT .4027 RRF -.4488 RTF -.9277
SGB 3348.8 R23 -.0780 R13 -.9280
SG1 3331.8 SG2 336.5 THA 2.58

ORBIT DETERMINATION ACCURACY
ST 782.3 SR 313.3 SS 438.5
CRT -.4193 CRS .3484 CST .6940
LSA 853.4 MSA 415.2 SSA 41.2
EL1 794.9 EL2 279.9 ALF 169.10

LAUNCH DATE NOV 23 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 487.033 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.603 GAL -1.04 AZL 88.92 HCA 153.29 SMA 198.71 ECC .25727 INC 1.0829 V1 30.164
RP 237.48 LAP .49 LOP 214.04 VP 21.208 GAP 9.84 AZP 90.97 TAL 354.91 TAP 148.20 RCA 147.59 APO 249.83 V2 23.140
RC 186.049 GL 10.46 GP 2.86 ZAL 94.59 ZAP 158.53 ETS 171.21 ZAE 161.14 ETE 9.74 ZAC 93.28 ETC 255.82 CLP 158.72

PLANETOCENTRIC CONIC

C3 12.237 VHL 3.498 DLA 19.23 RAL 161.27 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 5.972 DPA -1.42 RAP 193.35 ECC 1.2014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 22	2749.45	-27.96	78.14	21.10	94.64	16 1 12	2149.5	-27.03	69.60
90.00	8 39 12	4101.60	-3.13	166.49	15.78	61.84	9 47 34	3501.6	-6.88	159.81
100.00	16 48 37	2448.76	-29.26	55.88	20.96	96.41	17 29 26	1848.8	-28.06	47.28
100.00	9 48 39	3877.53	-2.00	149.39	15.15	60.17	10 53 16	3277.5	-5.95	142.83
110.00	18 22 37	2154.68	-32.55	32.96	20.37	101.08	18 58 32	1554.7	-30.68	24.24
110.00	10 31 8	3744.36	.82	137.53	13.39	55.83	11 33 33	3144.4	-3.66	131.32

DIFFERENTIAL CORRECTIONS
TDE .2559 TRA-1.2178 TC3 3.6632 BAU .6000
RDE -.1837 RRA -.0972 RC3 .1808 FAU .15015
FDE .1253 FRA 1.5280 FC-10.6233 BSP 11649
BDE .3150 BRA 1.2217 BC3 3.6677 FSP 2149

MID-COURSE EXECUTION ACCURACY
SGT 3347.6 SGR 367.4 SG3 682.0
RRT .4506 RRF -.4996 RTF -.9295
SGB 3367.7 R23 -.0859 R13 -.9299
SG1 3351.8 SG2 327.6 THA 2.86

ORBIT DETERMINATION ACCURACY
ST 763.7 SR 305.2 SS 439.0
CRT -.4024 CRS .3959 CST .6695
LSA 832.1 MSA 418.4 SSA 41.3
EL1 775.0 EL2 275.3 ALF 169.53

LAUNCH DATE NOV 23 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 490.522 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.564 GAL -.95 AZL 88.95 HCA 154.25 SMA 197.95 ECC .25432 INC 1.0513 V1 30.164
RP 237.15 LAP .46 LOP 215.00 VP 21.185 GAP 9.37 AZP 90.95 TAL 355.31 TAP 149.57 RCA 147.61 APO 248.29 V2 23.174
RC 188.300 GL 10.27 GP 3.03 ZAL 93.74 ZAP 157.71 ETS 171.09 ZAE 161.84 ETE 10.82 ZAC 93.48 ETC 255.81 CLP 157.91

PLANETOCENTRIC CONIC

C3 11.933 VHL 3.454 DLA 19.38 RAL 160.36 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 5.836 DPA -1.33 RAP 193.56 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 7	2750.22	-27.97	78.20	19.84	94.62	15 55 57	2150.2	-27.04	69.66
90.00	8 37 12	4090.22	-3.50	165.85	14.60	61.88	9 45 23	3490.2	-7.23	159.16
100.00	16 43 32	2448.99	-29.26	55.90	19.70	96.41	17 24 21	1849.0	-28.07	47.30
100.00	9 46 29	3866.69	-2.36	148.79	13.97	60.19	10 50 55	3266.7	-6.31	142.23
110.00	18 17 51	2153.92	-32.54	32.90	19.11	101.11	18 53 44	1553.9	-30.66	24.18
110.00	10 28 39	3734.52	.45	137.01	12.21	55.82	11 30 54	3134.5	-4.04	130.80

DIFFERENTIAL CORRECTIONS
TDE .2471 TRA-1.1780 TC3 3.8048 BAU .6080
RDE -.1765 RRA -.0957 RC3 .2155 FAU .15647
FDE .1473 FRA 1.5200 FC-11.3519 BSP 11551
BDE .3036 BRA 1.1819 BC3 3.8109 FSP 2259

MID-COURSE EXECUTION ACCURACY
SGT 3371.6 SGR 369.0 SG3 716.2
RRT .4984 RRF -.5522 RTF -.9321
SGB 3391.7 R23 -.0962 R13 -.9326
SG1 3376.6 SG2 319.5 THA 3.15

ORBIT DETERMINATION ACCURACY
ST 748.5 SR 297.1 SS 439.0
CRT -.3968 CRS .4372 CST .6393
LSA 813.2 MSA 422.1 SSA 41.1
EL1 759.1 EL2 268.9 ALF 169.75

LAUNCH DATE NOV 23 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 494.034 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.528 GAL -.86 AZL 88.98 HCA 155.22 SMA 197.23 ECC .25150 INC 1.0174 V1 30.164
RP 236.81 LAP .43 LOP 215.96 VP 21.165 GAP 8.90 AZP 90.92 TAL 355.71 TAP 150.93 RCA 147.62 APO 246.83 V2 23.209
RC 190.540 GL 10.04 GP 3.21 ZAL 92.91 ZAP 156.87 ETS 170.95 ZAE 162.56 ETE 12.05 ZAC 93.69 ETC 255.81 CLP 157.09

PLANETOCENTRIC CONIC

C3 11.649 VHL 3.413 DLA 19.49 RAL 159.45 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.703 DPA -1.22 RAP 193.77 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 17	2749.65	-27.97	78.16	18.59	94.64	15 51 6	2149.7	-27.03	69.62
90.00	8 34 47	4080.68	-3.80	165.32	13.41	61.92	9 42 48	3480.7	-7.53	158.62
100.00	16 38 49	2448.02	-29.25	55.83	18.44	96.44	17 19 37	1848.0	-28.05	47.23
100.00	9 43 56	3857.55	-2.67	148.29	12.79	60.22	10 48 13	3257.5	-6.62	141.72
110.00	18 13 22	2152.22	-32.51	32.77	17.85	101.18	18 49 14	1552.2	-30.63	24.06
110.00	10 25 52	3726.11	.13	136.58	11.04	55.82	11 27 58	3126.1	-4.36	130.36

DIFFERENTIAL CORRECTIONS
TDE .2262 TRA-1.1496 TC3 3.8920 BAU .6074
RDE -.1695 RRA -.0945 RC3 .2544 FAU .16275
FDE .1742 FRA 1.5138 FC-12.0953 BSP 11789
BDE .2826 BRA 1.1535 BC3 3.9003 FSP 2389

MID-COURSE EXECUTION ACCURACY
SGT 3375.4 SGR 373.4 SG3 750.8
RRT .5537 RRF -.6073 RTF -.9321
SGB 3396.0 R23 -.1043 R13 -.9327
SG1 3381.8 SG2 310.3 THA 3.53

ORBIT DETERMINATION ACCURACY
ST 726.4 SR 289.0 SS 441.0
CRT -.3650 CRS .4846 CST .6235
LSA 790.4 MSA 423.3 SSA 41.7
EL1 735.2 EL2 265.8 ALF 170.48

LAUNCH DATE NOV 23 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 497.567 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.493 GAL -.78 AZL 89.02 HCA 156.19 SMA 196.54 ECC .24882 INC .9809 V1 30.164
RP 236.46 LAP .40 LOP 216.93 VP 21.148 GAP 8.44 AZP 90.90 TAL 356.10 TAP 152.29 RCA 147.64 APO 245.45 V2 23.244
RC 192.768 GL 9.78 GP 3.42 ZAL 92.09 ZAP 156.01 ETS 170.79 ZAE 163.30 ETE 13.48 ZAC 93.91 ETC 255.80 CLP 156.24

PLANETOCENTRIC CONIC

C3 11.382 VHL 3.374 DLA 19.56 RAL 158.54 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 5.574 DPA -1.09 RAP 193.96 ECC 1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 53	2747.63	-27.95	78.01	17.33	94.71	15 46 40	2147.6	-27.01	69.47
90.00	8 31 53	4073.07	-4.05	164.89	12.23	61.95	9 39 46	3473.1	-7.77	158.19
100.00	16 34 30	2445.75	-29.24	55.66	17.18	96.53	17 15 16	1845.8	-28.02	47.07
100.00	9 40 57	3850.18	-2.92	147.88	11.61	60.24	10 45 8	3250.2	-6.86	141.31
110.00	18 9 11	2149.49	-32.48	32.57	16.59	101.30	18 45 1	1549.5	-30.58	23.86
110.00	10 22 45	3719.21	-.14	136.22	9.87	55.82	11 24 44	3119.2	-4.62	130.00

DIFFERENTIAL CORRECTIONS
TDE .2124 TRA-1.1169 TC3 3.9931 BAU .6093
RDE -.1627 RRA -.0935 RC3 .2980 FAU .16936
FDE .1977 FRA 1.5052 FC-12.8816 BSP 11847
BDE .2676 BRA 1.1208 BC3 4.0042 FSP 2519

MID-COURSE EXECUTION ACCURACY
SGT 3382.5 SGR 381.0 SG3 787.2
RRT .6062 RRF -.6618 RTF -.9331
SGB 3403.9 R23 -.1152 R13 -.9338
SG1 3390.4 SG2 302.3 THA 3.94

ORBIT DETERMINATION ACCURACY
ST 708.0 SR 281.0 SS 442.2
CRT -.3452 CRS .5251 CST .6021
LSA 770.4 MSA 425.0 SSA 41.9
EL1 715.7 EL2 260.9 ALF 170.99

LAUNCH DATE NOV 23 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 501.122 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.460 GAL -.69 AZL 89.06 HCA 157.16 SMA 195.89 ECC .24627 INC .9413 V1 30.164
RP 236.12 LAP .37 LOP 217.90 VP 21.134 GAP 7.99 AZP 90.87 TAL 356.49 TAP 153.65 RCA 147.65 APO 244.14 V2 23.279
RC 194.983 GL 9.48 GP 3.64 ZAL 91.28 ZAP 155.12 ETS 170.62 ZAE 164.06 ETE 15.14 ZAC 94.15 ETC 255.80 CLP 155.37

PLANETOCENTRIC CONIC

C3 11.132 VHL 3.336 DLA 19.58 RAL 157.62 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 5.448 DPA -.93 RAP 194.14 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 59	2743.93	-27.93	77.74	16.07	94.84	15 42 43	2143.9	-26.97	69.21
90.00	8 28 28	4067.58	-4.22	164.58	11.04	61.97	9 36 16	3467.6	-7.94	157.88
100.00	16 30 37	2441.97	-29.21	55.38	15.92	96.67	17 11 19	1842.0	-27.98	46.80
100.00	9 37 31	3844.77	-3.10	147.59	10.42	60.25	10 41 36	3244.8	-7.04	141.01
110.00	18 5 22	2145.56	-32.43	32.27	15.32	101.47	18 41 7	1545.6	-30.51	23.58
110.00	10 19 16	3713.95	-.34	135.94	8.70	55.82	11 21 10	3113.9	-4.82	129.72

DIFFERENTIAL CORRECTIONS
TDE .2012 TRA-1.0823 TC3 4.1020 BAU .6127
RDE -.1561 RRA -.0926 RC3 .3474 FAU .17650
FDE .2174 FRA 1.4916 FC-13.7264 BSP 11810
BDE .2546 BRA 1.0863 BC3 4.1167 FSP 2645

MID-COURSE EXECUTION ACCURACY
SGT 3391.7 SGR 392.5 SG3 826.1
RRT .6572 RRF -.7147 RTF -.9345
SGB 3414.3 R23 -.1272 R13 -.9354
SG1 3401.5 SG2 295.0 THA 4.38

ORBIT DETERMINATION ACCURACY
ST 690.2 SR 272.9 SS 441.6
CRT -.3296 CRS .5597 CST .5811
LSA 750.6 MSA 425.1 SSA 42.0
EL1 696.9 EL2 255.1 ALF 171.42

LAUNCH DATE NOV 23 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 504.698 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.428	GAL	-.62	AZL	89.10	HCA	158.13	SMA	195.28	ECC	.24384	INC	.8975	V1	30.164
RP	235.77	LAP	.33	LOP	218.88	VP	21.123	GAP	7.54	AZP	90.83	TAL	356.86	TAP	154.99	RCA	147.66	APO	242.90	V2	23.315
RC	197.185	GL	9.13	GP	3.88	ZAL	90.49	ZAP	154.21	ETS	170.43	ZAE	164.83	ETE	17.08	ZAC	94.41	ETC	255.79	CLP	154.48

PLANETOCENTRIC CONIC

C3	10.897	VHL	3.301	DLA	19.55	RAL	156.70	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	5.325	DPA	-.74	RAP	194.32	ECC	1.1793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 39	2738.32	-27.90	77.34	14.80	95.04	15 39 17	2138.3	-26.91	68.81
90.00	8 24 28	4064.43	-4.33	164.41	9.85	61.99	9 32 13	3464.4	-8.04	157.70
100.00	16 27 15	2436.47	-29.16	54.98	14.65	96.88	17 7 52	1836.5	-27.90	46.40
100.00	9 33 33	3841.51	-3.21	147.41	9.24	60.27	10 37 35	3241.5	-7.15	140.83
110.00	18 1 56	2140.26	-32.35	31.88	14.04	101.69	18 37 36	1540.3	-30.40	23.20
110.00	10 15 22	3710.48	-.47	135.76	7.53	55.82	11 17 12	3110.5	-4.95	129.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1945	TRA	-1.0450	TC3	4.2001	BAU	.6147	SGT	3392.4	SGR	408.2	SG3	866.6	ST	674.1	SR	264.3	SS	435.9
RDE	-.1494	RRA	-.0917	RC3	.4032	FAU	.18398	RRT	.7046	RRF	-.7640	RTF	-.9355	CRT	-.3235	CRS	.5820	CST	.5625
FDE	.2274	FRA	1.4681	FC	-14.6167	BSP	11838	SGB	3416.9	R23	-.1410	R13	-.9366	LSA	731.4	MSA	421.3	SSA	42.5
BDE	.2453	BRA	1.0491	BC3	4.2194	FSP	2782	SG1	3404.6	SG2	288.6	THA	4.88	EL1	680.3	EL2	247.8	ALF	171.66

LAUNCH DATE NOV 23 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 508.292 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.397	GAL	-.54	AZL	89.15	HCA	159.11	SMA	194.70	ECC	.24153	INC	.8508	V1	30.164
RP	235.42	LAP	.30	LOP	219.85	VP	21.115	GAP	7.10	AZP	90.79	TAL	357.23	TAP	156.34	RCA	147.67	APO	241.72	V2	23.351
RC	199.372	GL	8.73	GP	4.15	ZAL	89.71	ZAP	153.26	ETS	170.21	ZAE	165.61	ETE	19.37	ZAC	94.68	ETC	255.79	CLP	153.56

PLANETOCENTRIC CONIC

C3	10.676	VHL	3.267	DLA	19.46	RAL	155.78	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	5.206	DPA	-.52	RAP	194.48	ECC	1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 56	2730.55	-27.85	76.77	13.52	95.32	15 36 27	2130.6	-26.82	68.26
90.00	8 19 50	4063.84	-4.34	164.37	8.65	61.99	9 27 34	3463.8	-8.06	157.66
100.00	16 24 27	2429.02	-29.10	54.44	13.37	97.16	17 4 56	1829.0	-27.80	45.87
100.00	9 29 1	3840.60	-3.25	147.36	8.05	60.27	10 33 1	3240.6	-7.18	140.78
110.00	17 58 56	2133.41	-32.26	31.37	12.75	101.98	18 34 29	1533.4	-30.27	22.71
110.00	10 11 1	3708.98	-.53	135.68	6.35	55.82	11 12 50	3109.0	-5.01	129.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1848	TRA	-1.0154	TC3	4.2782	BAU	.6142	SGT	3389.3	SGR	429.3	SG3	908.0	ST	658.0	SR	256.1	SS	434.1
RDE	-.1431	RRA	-.0913	RC3	.4654	FAU	.19146	RRT	.7490	RRF	-.8095	RTF	-.9359	CRT	-.3064	CRS	.6094	CST	.5475
FDE	.2421	FRA	1.4545	FC	-15.5259	BSP	11870	SGB	3416.3	R23	-.1562	R13	-.9372	LSA	714.0	MSA	418.7	SSA	42.8
BDE	.2337	BRA	1.0195	BC3	4.3034	FSP	2934	SG1	3404.6	SG2	283.1	THA	5.46	EL1	663.4	EL2	241.8	ALF	172.15

LAUNCH DATE NOV 23 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 511.905 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.368	GAL	-.47	AZL	89.20	HCA	160.09	SMA	194.14	ECC	.23933	INC	.7987	V1	30.164
RP	235.06	LAP	.27	LOP	220.83	VP	21.109	GAP	6.66	AZP	90.75	TAL	357.58	TAP	157.67	RCA	147.68	APO	240.61	V2	23.387
RC	201.544	GL	8.27	GP	4.45	ZAL	88.96	ZAP	152.29	ETS	169.98	ZAE	166.38	ETE	22.08	ZAC	94.98	ETC	255.78	CLP	152.62

PLANETOCENTRIC CONIC

C3	10.469	VHL	3.236	DLA	19.31	RAL	154.85	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	5.090	DPA	-.26	RAP	194.64	ECC	1.1723

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 55	2720.37	-27.79	76.03	12.24	95.69	15 34 15	2120.4	-26.71	67.53
90.00	8 14 29	4066.05	-4.27	164.50	7.44	61.98	9 22 15	3466.1	-7.99	157.79
100.00	16 22 15	2419.39	-29.02	53.73	12.07	97.52	17 2 34	1819.4	-27.67	45.19
100.00	9 23 49	3842.27	-3.19	147.45	6.84	60.26	10 27 52	3242.3	-7.12	140.87
110.00	17 56 25	2124.79	-32.13	30.72	11.44	102.34	18 31 49	1524.8	-30.10	22.10
110.00	10 6 9	3709.63	-.50	135.72	5.17	55.82	11 7 59	3109.6	-4.98	129.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1807	TRA	-.9816	TC3	4.3622	BAU	.6151	SGT	3385.7	SGR	456.1	SG3	952.2	ST	644.1	SR	247.2	SS	425.0
RDE	-.1364	RRA	-.0909	RC3	.5366	FAU	.19960	RRT	.7880	RRF	-.8495	RTF	-.9367	CRT	-.3026	CRS	.6212	CST	.5360
FDE	.2429	FRA	1.4281	FC	-16.5067	BSP	11869	SGB	3416.3	R23	-.1727	R13	-.9382	LSA	697.2	MSA	410.7	SSA	43.4
BDE	.2264	BRA	.9858	BC3	4.3951	FSP	3084	SG1	3404.8	SG2	279.2	THA	6.10	EL1	649.1	EL2	233.8	ALF	172.38

LAUNCH DATE NOV 23 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 515.536 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.341	GAL	-.40	AZL	89.26	HCA	161.07	SMA	193.62	ECC	.23724	INC	.7415	V1	30.164
RP	234.71	LAP	.24	LOP	221.81	VP	21.106	GAP	6.23	AZP	90.70	TAL	357.93	TAP	159.00	RCA	147.69	APO	239.55	V2	23.424
RC	203.699	GL	7.74	GP	4.78	ZAL	88.22	ZAP	151.29	ETS	169.71	ZAE	167.14	ETE	25.32	ZAC	95.31	ETC	255.77	CLP	151.65

PLANETOCENTRIC CONIC

C3	10.273	VHL	3.205	DLA	19.08	RAL	153.92	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	4.976	DPA	.03	RAP	194.79	ECC	1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 39	2707.47	-27.70	75.10	10.93	96.15	15 32 46	2107.5	-26.56	66.62
90.00	8 8 20	4071.35	-4.10	164.80	6.22	61.96	9 16 11	3471.4	-7.82	158.09
100.00	16 20 44	2407.28	-28.90	52.85	10.76	97.97	17 0 51	1807.3	-27.50	44.33
100.00	9 17 55	3846.77	-3.04	147.70	5.63	60.25	10 22 2	3246.8	-6.98	141.12
110.00	17 54 25	2114.16	-31.98	29.94	10.11	102.78	18 29 39	1514.2	-29.89	21.35
110.00	10 0 43	3712.66	-.39	135.87	3.98	55.82	11 2 36	3112.7	-4.87	129.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1739	TRA	-.9507	TC3	4.4309	BAU	.6144	SGT	3376.1	SGR	489.7	SG3	997.8	ST	628.5	SR	238.3	SS	416.5
RDE	-.1300	RRA	-.0907	RC3	.6169	FAU	.20790	RRT	.8223	RRF	-.8838	RTF	-.9371	CRT	-.2903	CRS	.6349	CST	.5293
FDE	.2446	FRA	1.4027	FC	-17.5202	BSP	11909	SGB	3411.4	R23	-.1899	R13	-.9390	LSA	679.7	MSA	401.6	SSA	44.2
BDE	.2171	BRA	.9550	BC3	4.4736	FSP	3250	SG1	3400.2	SG2	276.7	THA	6.85	EL1	632.8	EL2	226.5	ALF	172.79

LAUNCH DATE NOV 23 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 519.184 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.314	GAL	-.33	AZL	89.32	HCA	162.06	SMA	193.12	ECC	.23525	INC	.6780
RP	234.35	LAP	.21	LOP	222.80	VP	21.105	GAP	5.81	AZP	90.65	TAL	358.27	TAP	160.32	RCA	147.69	APO	238.56
RC	205.837	GL	7.14	GP	5.15	ZAL	87.50	ZAP	150.25	ETS	169.42	ZAE	167.86	ETE	29.20	ZAC	95.67	ETC	255.76

V1	30.164	V2	23.461	CLP	150.66														

PLANETOCENTRIC CONIC

C3	10.089	VHL	3.176	DLA	18.78	RAL	152.99	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.867	DPA	.38	RAP	194.93
ECC	1.1660																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 12	2691.52	-27.57	73.95	9.60	96.71	15 32 4	2091.5	-26.36	65.49
90.00	8 1 18	4080.06	-3.82	165.28	4.98	61.92	9 9 18	3480.1	-7.55	158.59
100.00	16 19 58	2392.39	-28.76	51.77	9.42	98.52	16 59 50	1792.4	-27.28	43.27
100.00	9 11 13	3854.43	-2.78	148.12	4.40	60.23	10 15 28	3254.4	-6.72	141.55
110.00	17 53 1	2101.24	-31.78	28.98	8.75	103.31	18 28 3	1501.2	-29.62	20.44
110.00	9 54 39	3718.34	-.17	136.17	2.78	55.82	10 56 38	3118.3	-4.65	129.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1776	TRA	-.9217	TC3	4.4718	BAU	.6107	SGT	3355.1	SGR	530.0	SG3	1043.7	ST	622.5	SR	228.0	SS	399.7
RDE	-.1228	RRA	-.0907	RC3	.7073	FAU	.21620	RRT	.8486	RRF	-.9118	RTF	-.9364	CRT	-.2998	CRS	.6214	CST	.5321
FDE	.2231	FRA	1.3740	FC-	18.5519	BSP	11878	SGB	3396.7	R23	-.2112	R13	-.9388	LSA	669.9	MSA	385.1	SSA	45.4
BDE	.2160	BRA	.9261	BC3	4.5274	FSP	3415	SG1	3385.3	SG2	277.8	THA	7.69	EL1	626.7	EL2	216.0	ALF	172.88

LAUNCH DATE NOV 23 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 522.848 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.289	GAL	-.27	AZL	89.39	HCA	163.05	SMA	192.65	ECC	.23336	INC	.6080
RP	233.98	LAP	.18	LOP	223.79	VP	21.107	GAP	5.39	AZP	90.58	TAL	358.59	TAP	161.64	RCA	147.70	APO	237.61
RC	207.958	GL	6.44	GP	5.57	ZAL	86.80	ZAP	149.18	ETS	169.09	ZAE	168.53	ETE	33.85	ZAC	96.07	ETC	255.75

V1	30.164	V2	23.498	CLP	149.63														

PLANETOCENTRIC CONIC

C3	9.916	VHL	3.149	DLA	18.38	RAL	152.04	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	4.760	DPA	.77	RAP	195.07
ECC	1.1632																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 40	2672.15	-27.41	72.56	8.24	97.39	15 32 12	2072.1	-26.11	64.13
90.00	7 53 18	4092.53	-3.42	165.98	3.73	61.87	9 1 30	3492.5	-7.16	159.29
100.00	16 20 1	2374.33	-28.57	50.46	8.05	99.19	16 59 36	1774.3	-27.00	42.00
100.00	9 3 38	3865.58	-2.40	148.73	3.16	60.20	10 8 3	3265.6	-6.35	142.17
110.00	17 52 17	2085.70	-31.53	27.84	7.35	103.95	18 27 2	1485.7	-29.29	19.35
110.00	9 47 52	3726.98	.16	136.62	1.56	55.82	10 49 59	3127.0	-4.33	130.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1761	TRA	-.8848	TC3	4.5300	BAU	.6101	SGT	3334.6	SGR	579.5	SG3	1092.8	ST	607.4	SR	217.5	SS	381.1
RDE	-.1157	RRA	-.0904	RC3	.8119	FAU	.22523	RRT	.8721	RRF	-.9347	RTF	-.9373	CRT	-.3006	CRS	.6123	CST	.5364
FDE	.2035	FRA	1.3280	FC-	19.6640	BSP	11920	SGB	3384.5	R23	-.2279	R13	-.9402	LSA	651.8	MSA	366.6	SSA	46.9
BDE	.2107	BRA	.8894	BC3	4.6021	FSP	3603	SG1	3372.9	SG2	280.4	THA	8.68	EL1	611.4	EL2	206.1	ALF	173.07

LAUNCH DATE NOV 23 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 526.529 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.265	GAL	-.21	AZL	89.47	HCA	164.04	SMA	192.21	ECC	.23156	INC	.5275
RP	233.62	LAP	.15	LOP	224.78	VP	21.111	GAP	4.99	AZP	90.51	TAL	358.90	TAP	162.94	RCA	147.70	APO	236.72
RC	210.060	GL	5.64	GP	6.04	ZAL	86.12	ZAP	148.06	ETS	168.71	ZAE	169.11	ETE	39.39	ZAC	96.51	ETC	255.74

V1	30.164	V2	23.536	CLP	148.58														

PLANETOCENTRIC CONIC

C3	9.753	VHL	3.123	DLA	17.86	RAL	151.09	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	4.657	DPA	1.23	RAP	195.21
ECC	1.1605																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 9	2648.88	-27.20	70.89	6.85	98.20	15 33 18	2048.9	-25.78	62.50
90.00	7 44 11	4109.25	-2.89	166.92	2.45	61.82	8 52 40	3509.3	-6.63	160.24
100.00	16 21 0	2352.67	-28.32	48.89	6.64	99.98	17 0 13	1752.7	-26.66	40.49
100.00	8 55 1	3880.70	-1.89	149.56	1.89	60.16	9 59 42	3280.7	-5.85	143.01
110.00	17 52 16	2067.12	-31.22	26.48	5.92	104.70	18 26 43	1467.1	-28.88	18.05
110.00	9 40 14	3739.01	.62	137.25	.33	55.82	10 42 33	3139.0	-3.87	131.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1842	TRA	-.8540	TC3	4.5779	BAU	.6092	SGT	3316.7	SGR	639.1	SG3	1144.8	ST	604.6	SR	204.6	SS	356.0
RDE	-.1074	RRA	-.0903	RC3	.9326	FAU	.23475	RRT	.8896	RRF	-.9527	RTF	-.9372	CRT	-.3178	CRS	.5607	CST	.5677
FDE	.1547	FRA	1.2820	FC-	20.8366	BSP	11834	SGB	3377.7	R23	-.2466	R13	-.9409	LSA	646.6	MSA	337.0	SSA	49.5
BDE	.2133	BRA	.8588	BC3	4.6720	FSP	3773	SG1	3365.4	SG2	287.7	THA	9.80	EL1	608.5	EL2	192.7	ALF	173.18

LAUNCH DATE NOV 23 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 530.225 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.242	GAL	-.15	AZL	89.56	HCA	165.03	SMA	191.79	ECC	.22986	INC	.4380
RP	233.25	LAP	.11	LOP	225.77	VP	21.118	GAP	4.58	AZP	90.42	TAL	359.21	TAP	164.24	RCA	147.70	APO	235.87
RC	212.144	GL	4.72	GP	6.58	ZAL	85.47	ZAP	146.90	ETS	168.29	ZAE	169.55	ETE	45.88	ZAC	97.02	ETC	255.73

V1	30.164	V2	23.574	CLP	147.49														

PLANETOCENTRIC CONIC

C3	9.601	VHL	3.099	DLA	17.22	RAL	150.11	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	4.558	DPA	1.76	RAP	195.35
ECC	1.1580																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 44	2621.18	-26.91	68.91	5.40	99.15	15 35 25	2021.2	-25.37	60.58
90.00	7 33 50	4130.76	-2.20	168.12	1.14	61.76	8 42 40	3530.8	-5.95	161.45
100.00	16 22 59	2326.87	-28.01	47.04	5.18	100.90	17 1 46	1726.9	-26.22	38.70
100.00	8 45 15	3900.30	-1.23	150.64	.60	60.13	9 50 15	3300.3	-5.19	144.10
110.00	17 53 4	2045.02	-30.82	24.88	4.42	105.57	18 27 9	1445.0	-28.38	16.53
110.00	9 31 39	3754.92	1.23	138.08	359.07	55.84	10 34 14	3154.9	-3.26	131.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1886	TRA	-.8200	TC3	4.5826	BAU	.6040	SGT	3272.1	SGR	708.6	SG3	1194.7	ST	596.4	SR	190.5	SS	330.7
RDE	-.0985	RRA	-.0900	RC3	1.0687	FAU	.24379	RRT	.9030	RRF	-.9663	RTF	-.9366	CRT	-.3252	CRS	.4924	CST	.6164
FDE	.0996	FRA	1.2224	FC-	21.9820	BSP	11822	SGB	3348.0	R23	-.2638	R13	-.9414	LSA	637.9	MSA	302.6	SSA	53.1
BDE	.2128	BRA	.8249	BC3	4.7056	FSP	3966	SG1	3334.6	SG2	298.7	THA	11.16	EL1	599.9	EL2	179.1	ALF	173.49

LAUNCH DATE NOV 23 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 533.936 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.220	GAL	-.09	AZL	89.66	HCA	166.03	SMA	191.39	ECC	.22824	INC	.3330	V1	30.164
RP	232.88	LAP	.08	LOP	226.77	VP	21.126	GAP	4.19	AZP	90.33	TAL	359.50	TAP	165.53	RCA	147.70	APO	235.07	V2	23.612
RC	214.210	GL	3.64	GP	7.20	ZAL	84.84	ZAP	145.70	ETS	167.82	ZAE	169.81	ETE	53.31	ZAC	97.60	ETC	255.71	CLP	146.37

PLANETOCENTRIC CONIC

C3	9.461	VHL	3.076	DLA	16.42	RAL	149.11	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	4.463	DPA	2.37	RAP	195.50	ECC	1.1557		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 32	2588.39	-26.54	66.58	3.89	100.26	15 38 41	1988.4	-24.85	58.32
90.00	7 22 3	4157.75	-1.33	169.62	359.81	61.71	8 31 20	3557.8	-5.10	162.98
100.00	16 26 7	2296.28	-27.59	44.86	3.66	101.98	17 4 23	1696.3	-25.66	36.59
100.00	8 34 9	3925.09	-.38	152.00	359.29	60.11	9 39 34	3325.1	-4.36	145.47
110.00	17 54 49	2018.79	-30.33	22.99	2.87	106.58	18 28 27	1418.8	-27.76	14.74
110.00	9 21 57	3775.35	2.01	139.14	357.79	55.87	10 24 52	3175.3	-2.48	132.94

DIFFERENTIAL CORRECTIONS

TDE	.2022	TRA	-.7973	TC3	4.5140	BAU	.5914
RDE	-.0873	RRA	-.0904	RC3	1.2210	FAU	.25195
FDE	.0065	FRA	1.1734	FC-23	.0559	BSP	11840
BDE	.2203	BRA	.8024	BC3	4.6762	FSP	4167

MID-COURSE EXECUTION ACCURACY

SGT	3201.6	SGR	788.3	SG3	1241.1
RRT	.9099	RRF	-.9763	RTF	-.9330
SGB	3297.2	R23	-.2864	R13	-.9395
SG1	3281.7	SG2	319.1	THA	12.75

ORBIT DETERMINATION ACCURACY

ST	603.8	SR	172.4	SS	310.5
CRT	-.3353	CRS	.3428	CST	.7165
LSA	649.6	MSA	255.6	SSA	59.1
EL1	606.8	EL2	161.6	ALF	174.11

LAUNCH DATE NOV 23 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 537.662 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.200	GAL	-.04	AZL	89.78	HCA	167.03	SMA	191.01	ECC	.22671	INC	.2139	V1	30.164		
RP	232.51	LAP	.05	LOP	227.77	VP	21.137	GAP	3.80	AZP	90.21	TAL	359.78	TAP	166.81	RCA	147.71	APO	234.31	V2	23.650		
RC	216.258	GL	2.37	GP	7.92	ZAL	84.24	ZAP	144.44	ETS	167.27	ZAE	169.83	ETE	61.46	ZAC	98.27	ETC	255.69	CLP	145.22		

PLANETOCENTRIC CONIC

C3	9.332	VHL	3.055	DLA	15.43	RAL	148.08	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	4.372	DPA	3.09	RAP	195.65	ECC	1.1536		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 45	2549.66	-26.04	63.86	2.31	101.54	15 43 15	1949.7	-24.18	55.68
90.00	7 8 36	4191.15	-.25	171.49	358.44	61.68	8 18 27	3591.1	-4.03	164.85
100.00	16 30 33	2260.07	-27.06	42.31	2.06	103.22	17 8 13	1660.1	-24.97	34.13
100.00	8 21 29	3955.97	.66	153.69	357.93	60.11	9 27 25	3356.0	-3.32	147.17
110.00	17 57 36	1987.66	-29.70	20.79	1.23	107.75	18 30 44	1387.7	-26.99	12.65
110.00	9 10 55	3801.14	2.99	140.49	356.48	55.93	10 14 16	3201.1	-1.50	134.29

DIFFERENTIAL CORRECTIONS

TDE	.2267	TRA	-.7726	TC3	4.4256	BAU	.5790
RDE	-.0729	RRA	-.0907	RC3	1.3962	FAU	.25993
FDE	-.1284	FRA	1.1122	FC-24	.1133	BSP	11740
BDE	.2382	BRA	.7779	BC3	4.6406	FSP	4354

MID-COURSE EXECUTION ACCURACY

SGT	3122.8	SGR	881.8	SG3	1286.7
RRT	.9129	RRF	-.9836	RTF	-.9287
SGB	3244.9	R23	-.3063	R13	-.9377
SG1	3226.1	SG2	348.4	THA	14.63

ORBIT DETERMINATION ACCURACY

ST	625.1	SR	148.9	SS	310.3
CRT	-.3461	CRS	.1043	CST	.8393
LSA	681.7	MSA	199.4	SSA	68.6
EL1	627.3	EL2	139.2	ALF	175.04

LAUNCH DATE NOV 23 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 541.404 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.180	GAL	.01	AZL	89.92	HCA	168.04	SMA	190.65	ECC	.22525	INC	.0682	V1	30.164		
RP	232.14	LAP	.02	LOP	228.78	VP	21.149	GAP	3.42	AZP	90.08	TAL	.04	TAP	168.08	RCA	147.71	APO	233.59	V2	23.689		
RC	218.287	GL	.87	GP	8.76	ZAL	83.66	ZAP	143.12	ETS	166.64	ZAE	169.54	ETE	69.92	ZAC	99.04	ETC	255.66	CLP	144.03		

PLANETOCENTRIC CONIC

C3	9.219	VHL	3.036	DLA	14.21	RAL	147.00	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	4.286	DPA	3.93	RAP	195.83	ECC	1.1517		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 33	2503.88	-25.38	60.67	.64	103.01	15 49 17	1903.9	-23.33	52.59
90.00	6 53 12	4232.18	1.08	173.77	357.04	61.70	8 3 44	3632.2	-2.71	167.15
100.00	16 36 27	2217.16	-26.35	39.31	.37	104.65	17 13 24	1617.2	-24.08	31.25
100.00	8 6 59	3994.12	1.96	155.78	356.55	60.17	9 13 33	3394.1	-2.03	149.26
110.00	18 1 38	1950.63	-28.91	18.20	359.50	109.10	18 34 9	1350.6	-26.03	10.20
110.00	8 58 17	3833.42	4.22	142.18	355.14	56.05	10 2 10	3233.4	-.26	135.97

DIFFERENTIAL CORRECTIONS

TDE	.3197	TRA	-.7730	TC3	4.7380	BAU	.6185
RDE	-.0455	RRA	-.0932	RC3	1.6546	FAU	.27695
FDE	-.4476	FRA	1.0791	FC-26	.0079	BSP	6954
BDE	.3230	BRA	.7786	BC3	5.0186	FSP	3659

MID-COURSE EXECUTION ACCURACY

SGT	3302.5	SGR	1024.6	SG3	1378.5
RRT	.9197	RRF	-.9896	RTF	-.9321
SGB	3457.8	R23	-.3066	R13	-.9425
SG1	3436.1	SG2	386.7	THA	16.14

ORBIT DETERMINATION ACCURACY

ST	758.5	SR	106.1	SS	427.9
CRT	-.3066	CRS	-.1958	CST	.9528
LSA	863.9	MSA	126.5	SSA	85.9
EL1	759.2	EL2	100.9	ALF	177.50

LAUNCH DATE NOV 23 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 545.156 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.161	GAL	.05	AZL	90.08	HCA	169.04	SMA	190.31	ECC	.22387	INC	.0833	V1	30.164		
RP	231.76	LAP	-.02	LOP	229.78	VP	21.164	GAP	3.04	AZP	89.92	TAL	.30	TAP	169.34	RCA	147.70	APO	232.92	V2	23.728		
RC	220.299	GL	-.92	GP	9.76	ZAL	83.12	ZAP	141.72	ETS	165.91	ZAE	168.89	ETE	78.15	ZAC	99.97	ETC	255.62	CLP	142.80		

PLANETOCENTRIC CONIC

C3	9.125	VHL	3.021	DLA	12.70	RAL	145.86	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	4.206	DPA	4.93	RAP	196.04	ECC	1.1502		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 13	2449.58	-24.49	56.94	358.85	104.68	15 57 3	1849.6	-22.24	48.99
90.00	6 35 25	4282.52	2.70	176.58	355.60	61.80	7 46 48	3682.5	-1.09	169.96
100.00	16 44 7	2166.12	-25.43	35.80	358.57	106.27	17 20 13	1566.1	-22.95	27.88
100.00	7 50 13	4041.21	3.55	158.37	355.13	60.30	8 57 34	3441.2	-.43	151.85
110.00	18 7 8	1906.37	-27.88	15.16	357.65	110.63	18 38 54	1306.4	-24.82	7.33
110.00	8 43 41	3873.72	5.75	144.30	353.77	56.25	9 48 15	3273.7	1.28	138.07

DIFFERENTIAL CORRECTIONS

TDE	.2825	TRA	-.6559	TC3	4.5545	BAU	.6017
RDE	-.0315	RRA	-.0787	RC3	1.8930	FAU	.28350
FDE	-.5120	FRA	.7894	FC-26	.8963	BSP	11119
BDE	.2843	BRA	.6606	BC3	4.9322	FSP	4651

MID-COURSE EXECUTION ACCURACY

SGT	3079.8	SGR	1155.4	SG3	1412.7
RRT	.9302	RRF	-.9931	RTF	-.9371
SGB	3289.4	R23	-.2896	R13	-.9506
SG1	3265.0	SG2	400.0	THA	19.54

ORBIT DETERMINATION ACCURACY

ST	663.6	SR	82.8	SS	428.8
CRT	-.2119	CRS	-.2067	CST	.9408
LSA	780.6	MSA	123.6	SSA	80.9
EL1	663.8	EL2	80.9	ALF	178.46

LAUNCH DATE NOV 23 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 548.924 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.143 GAL .10 AZL 90.28 HCA 170.05 SMA 189.99 ECC .22257 INC .2799 V1 30.164
RP 231.38 LAP -.05 LOP 230.79 VP 21.180 GAP 2.67 AZP 89.72 TAL .54 TAP 170.59 RCA 147.70 APO 232.28 V2 23.768
RC 222.292 GL -3.10 GP 10.95 ZAL 82.60 ZAP 140.23 ETS 165.04 ZAE 167.85 ETE 85.66 ZAC 101.08 ETC 255.57 CLP 141.52

PLANETOCENTRIC CONIC

C3 9.060 VHL 3.010 DLA 10.81 RAL 144.63 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 4.132 DPA 6.13 RAP 196.31 ECC 1.1491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 8	2384.82	-23.30	52.56	356.94	106.56	16 6 52	1784.8	-20.81	44.78
90.00	6 14 42	4344.51	4.69	180.06	354.14	62.04	7 27 7	3744.5	.91	173.41
100.00	16 53 52	2105.04	-24.20	31.68	356.64	108.11	17 28 57	1505.0	-21.49	23.93
100.00	7 30 38	4099.51	5.51	161.59	353.69	60.57	8 38 58	3499.5	1.55	155.05
110.00	18 14 22	1853.14	-26.55	11.59	355.68	112.36	18 45 16	1253.1	-23.29	3.95
110.00	8 26 38	3924.18	7.65	146.97	352.37	56.58	9 32 2	3324.2	3.20	140.71

DIFFERENTIAL CORRECTIONS
TDE .3329 TRA -.6331 TC3 4.5222 BAU .6093
RDE .0034 RRA -.0751 RC3 2.2036 FAU .29364
FDE -.8256 FRA .6760 FC-28.0593 BSP 10794
BDE .3329 BRA .6375 BC3 5.0306 FSP 4774

MID-COURSE EXECUTION ACCURACY
SGT 3052.5 SGR 1334.6 SG3 1470.1
RRT .9314 RRF -.9957 RTF -.9355
SGB 3331.5 R23 -.2882 R13 -.9533
SG1 3301.1 SG2 449.3 THA 22.60

ORBIT DETERMINATION ACCURACY
ST 737.4 SR 59.4 SS 606.0
CRT .5348 CRS .4712 CST .9444
LSA 942.1 MSA 156.5 SSA 49.7
EL1 738.1 EL2 50.2 ALF 2.48

LAUNCH DATE NOV 23 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 552.704 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.127 GAL .14 AZL 90.52 HCA 171.07 SMA 189.69 ECC .22133 INC .5240 V1 30.164
RP 231.01 LAP -.08 LOP 231.81 VP 21.198 GAP 2.31 AZP 89.48 TAL .77 TAP 171.83 RCA 147.70 APO 231.67 V2 23.807
RC 224.266 GL -5.78 GP 12.41 ZAL 82.14 ZAP 138.62 ETS 164.02 ZAE 166.38 ETE 92.06 ZAC 102.43 ETC 255.50 CLP 140.21

PLANETOCENTRIC CONIC

C3 9.038 VHL 3.006 DLA 8.43 RAL 143.28 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 4.067 DPA 7.58 RAP 196.64 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 51	2306.68	-21.69	47.40	354.90	108.66	16 19 18	1706.7	-18.94	39.81
90.00	5 50 13	4421.70	7.13	184.41	352.68	62.52	7 3 55	3821.7	3.40	177.72
100.00	17 6 17	2031.14	-22.54	26.81	354.57	110.17	17 40 8	1431.1	-19.59	19.26
100.00	7 7 29	4172.47	7.93	165.66	352.25	61.08	8 17 1	3572.5	4.01	159.06
110.00	18 23 51	1788.41	-24.81	7.37	353.56	114.31	18 53 40	1188.4	-21.31	359.96
110.00	8 6 24	3987.97	10.03	150.39	350.98	57.15	9 12 52	3388.0	5.63	144.06

DIFFERENTIAL CORRECTIONS
TDE .3715 TRA -.6240 TC3 4.3986 BAU .6151
RDE .0494 RRA -.0714 RC3 2.5626 FAU .30185
FDE-1.1833 FRA .5640 FC-28.9146 BSP 11120
BDE .3748 BRA .6281 BC3 5.0906 FSP 4999

MID-COURSE EXECUTION ACCURACY
SGT 2990.2 SGR 1549.8 SG3 1517.6
RRT .9294 RRF -.9973 RTF -.9307
SGB 3367.9 R23 -.2864 R13 -.9554
SG1 3328.5 SG2 513.9 THA 26.40

ORBIT DETERMINATION ACCURACY
ST 798.5 SR 112.6 SS 821.5
CRT .9467 CRS .9483 CST .9405
LSA 1133.7 MSA 197.5 SSA 30.7
EL1 805.6 EL2 36.0 ALF 7.62

LAUNCH DATE NOV 23 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 556.495 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.111 GAL .18 AZL 90.83 HCA 172.08 SMA 189.40 ECC .22017 INC .8270 V1 30.164
RP 230.62 LAP -.11 LOP 232.82 VP 21.218 GAP 1.95 AZP 89.18 TAL .98 TAP 173.06 RCA 147.70 APO 231.10 V2 23.847
RC 226.222 GL -9.14 GP 14.23 ZAL 81.74 ZAP 136.86 ETS 162.78 ZAE 164.41 ETE 97.21 ZAC 104.12 ETC 255.40 CLP 138.84

PLANETOCENTRIC CONIC

C3 9.087 VHL 3.015 DLA 5.39 RAL 141.76 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 4.015 DPA 9.37 RAP 197.10 ECC 1.1496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 14	2211.14	-19.48	41.26	352.71	110.96	16 35 5	1611.1	-16.46	33.89
90.00	5 20 43	4519.34	10.16	189.99	351.27	63.42	6 36 3	3919.3	6.51	183.21
100.00	17 22 7	1940.56	-20.30	21.02	352.37	112.42	17 54 28	1340.6	-17.09	13.70
100.00	6 39 31	4265.16	10.94	170.89	350.86	62.01	7 50 36	3665.2	7.11	164.19
110.00	18 36 12	1708.72	-22.48	2.35	351.31	116.46	19 4 41	1108.7	-18.74	355.21
110.00	7 41 56	4069.76	13.01	154.84	349.64	58.11	8 49 45	3469.8	8.70	148.39

DIFFERENTIAL CORRECTIONS
TDE .4200 TRA -.5913 TC3 4.2503 BAU .6317
RDE .1187 RRA -.0563 RC3 2.9957 FAU .30968
FDE-1.6617 FRA .3427 FC-29.5028 BSP 11366
BDE .4364 BRA .5940 BC3 5.1999 FSP 5135

MID-COURSE EXECUTION ACCURACY
SGT 2911.7 SGR 1823.3 SG3 1561.9
RRT .9285 RRF -.9984 RTF -.9279
SGB 3435.4 R23 -.2705 R13 -.9611
SG1 3385.8 SG2 582.1 THA 31.20

ORBIT DETERMINATION ACCURACY
ST 870.5 SR 234.3 SS 1113.2
CRT .9571 CRS .9948 CST .9409
LSA 1412.7 MSA 236.0 SSA 18.7
EL1 899.0 EL2 65.7 ALF 14.53

LAUNCH DATE NOV 23 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 560.299 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.096 GAL .21 AZL 91.22 HCA 173.10 SMA 189.13 ECC .21906 INC 1.2256 V1 30.164
RP 230.24 LAP -.15 LOP 233.85 VP 21.240 GAP 1.60 AZP 88.78 TAL 1.18 TAP 174.28 RCA 147.70 APO 230.56 V2 23.887
RC 228.159 GL -13.44 GP 16.54 ZAL 81.43 ZAP 134.88 ETS 161.27 ZAE 161.86 ETE 101.11 ZAC 106.28 ETC 255.25 CLP 137.40

PLANETOCENTRIC CONIC

C3 9.263 VHL 3.044 DLA 1.46 RAL 139.99 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.981 DPA 11.63 RAP 197.72 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 39	2092.02	-16.42	33.87	350.44	113.40	16 55 31	1492.0	-13.11	26.75
90.00	4 44 11	4645.89	13.90	197.40	350.04	65.08	6 1 36	4045.9	10.43	190.44
100.00	17 42 40	1827.46	-17.21	14.04	350.07	114.82	18 13 8	1227.5	-13.72	6.99
100.00	6 4 51	4385.68	14.69	177.87	349.66	63.67	7 17 56	3785.7	11.03	170.99
110.00	18 52 28	1608.84	-19.33	356.33	348.95	118.76	19 19 17	1008.8	-15.34	349.48
110.00	7 11 32	4176.91	16.78	160.86	348.49	59.77	8 21 9	3576.9	12.64	154.20

DIFFERENTIAL CORRECTIONS
TDE .4844 TRA -.5644 TC3 3.9987 BAU .6558
RDE .2238 RRA -.0360 RC3 3.4725 FAU .31280
FDE-2.2618 FRA .1147 FC-29.2347 BSP 11935
BDE .5336 BRA .5656 BC3 5.2960 FSP 5304

MID-COURSE EXECUTION ACCURACY
SGT 2808.2 SGR 2156.3 SG3 1581.0
RRT .9250 RRF -.9991 RTF -.9229
SGB 3540.6 R23 -.2480 R13 -.9678
SG1 3478.2 SG2 661.6 THA 36.94

ORBIT DETERMINATION ACCURACY
ST 968.8 SR 426.5 SS 1476.1
CRT .9566 CRS .9992 CST .9482
LSA 1797.4 MSA 261.6 SSA 11.9
EL1 1052.3 EL2 114.4 ALF 23.13

LAUNCH DATE NOV 23 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 564.115 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.081 GAL .25 AZL 91.76 HCA 174.13 SMA 188.88 ECC .21802 INC 1.7589 V1 30.164
RP 229.86 LAP -.18 LOP 234.87 VP 21.263 GAP 1.25 AZP 88.25 TAL 1.37 TAP 175.50 RCA 147.70 APO 230.06 V2 23.927
RC 230.076 GL -19.05 GP 19.56 ZAL 81.27 ZAP 132.57 ETS 159.40 ZAE 158.54 ETE 103.82 ZAC 109.12 ETC 255.02 CLP 135.88

PLANETOCENTRIC CONIC

C3 9.681 VHL 3.111 DLA -3.74 RAL 137.85 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.976 DPA 14.57 RAP 198.60 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 41	1939.39	-12.08	24.76	348.22	115.81	17 23 0	1339.4	-8.51	17.90
90.00	3 57 1	4815.79	18.51	207.74	349.28	68.18	5 17 17	4215.8	15.38	200.46
100.00	18 10 16	1682.64	-12.88	5.47	347.82	117.21	18 38 19	1082.6	-9.13	358.69
100.00	5 20 6	4547.77	19.33	187.67	348.92	66.74	6 35 54	3947.8	16.02	180.44
110.00	19 14 30	1481.57	-15.00	349.00	346.60	121.08	19 39 12	881.6	-10.77	342.45
110.00	6 32 22	4321.61	21.52	169.40	347.81	62.78	7 44 24	3721.6	17.70	162.35

DIFFERENTIAL CORRECTIONS
TDE .5816 TRA -.5301 TC3 3.6634 BAU .7026
RDE .4041 RRA .0073 RC3 4.0067 FAU .31297
FDE-3.1060 FRA -.2249 FC-27.9887 BSP 12548
BDE .7082 BRA .5302 BC3 5.4290 FSP 5285

MID-COURSE EXECUTION ACCURACY
SGT 2702.1 SGR 2602.0 SG3 1584.3
RRT .9199 RRF -.9995 RTF -.9168
SGB 3751.2 R23 -.2144 R13 -.9762
SG1 3675.5 SG2 750.1 THA 43.83

ORBIT DETERMINATION ACCURACY
ST 1112.6 SR 747.9 SS 1973.5
CRT .9625 CRS .9998 CST .9583
LSA 2369.1 MSA 281.7 SSA 7.4
EL1 1329.8 EL2 169.7 ALF 33.52

LAUNCH DATE NOV 23 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 567.942 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.068 GAL .28 AZL 92.52 HCA 175.15 SMA 188.64 ECC .21704 INC 2.5195 V1 30.164
RP 229.47 LAP -.21 LOP 235.90 VP 21.287 GAP .91 AZP 87.49 TAL 1.55 TAP 176.70 RCA 147.70 APO 229.58 V2 23.968
RC 231.973 GL -26.52 GP 23.65 ZAL 81.35 ZAP 129.72 ETS 157.08 ZAE 154.16 ETE 105.49 ZAC 112.95 ETC 254.63 CLP 134.24

PLANETOCENTRIC CONIC

C3 10.608 VHL 3.257 DLA -10.71 RAL 135.10 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 4.024 DPA 18.50 RAP 199.90 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 55	1735.00	-5.78	13.05	346.49	117.77	18 2 50	1135.0	-2.02	6.39
90.00	2 51 54	5056.80	23.83	223.39	349.61	74.24	4 16 11	4456.8	21.44	215.54
100.00	18 49 55	1489.82	-6.65	354.55	346.02	119.21	19 14 45	889.8	-2.71	347.98
100.00	4 18 35	4777.21	24.78	202.52	349.30	72.72	5 38 12	4177.2	22.18	194.69
110.00	19 46 2	1314.09	-8.92	339.83	344.64	123.14	20 7 56	714.1	-4.50	333.53
110.00	5 38 58	4525.70	27.28	182.45	348.33	68.55	6 54 23	3925.7	24.12	174.71

DIFFERENTIAL CORRECTIONS
TDE .7268 TRA -.4902 TC3 3.1832 BAU .7823
RDE .7246 RRA .0910 RC3 4.5050 FAU .30564
FDE-4.2174 FRA -.6712 FC-24.9431 BSP 13656
BDE 1.0263 BRA .4986 BC3 5.5162 FSP 5109

MID-COURSE EXECUTION ACCURACY
SGT 2589.4 SGR 3203.6 SG3 1546.7
RRT .9128 RRF -.9997 RTF -.9087
SGB 4119.2 R23 -.1720 R13 -.9848
SG1 4032.6 SG2 840.2 THA 51.61

ORBIT DETERMINATION ACCURACY
ST 1306.9 SR 1278.6 SS 2587.8
CRT .9709 CRS .9999 CST .9684
LSA 3154.6 MSA 296.0 SSA 4.7
EL1 1815.0 EL2 220.6 ALF 44.35

LAUNCH DATE NOV 23 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 571.778 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.055 GAL .30 AZL 93.69 HCA 176.18 SMA 188.41 ECC .21611 INC 3.6936 V1 30.164
RP 229.09 LAP -.25 LOP 236.93 VP 21.313 GAP .58 AZP 86.31 TAL 1.71 TAP 177.89 RCA 147.69 APO 229.13 V2 24.009
RC 233.848 GL -36.59 GP 29.37 ZAL 81.86 ZAP 125.97 ETS 154.25 ZAE 148.16 ETE 106.33 ZAC 118.32 ETC 253.92 CLP 132.37

PLANETOCENTRIC CONIC

C3 12.763 VHL 3.573 DLA -20.12 RAL 131.34 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 4.179 DPA 23.96 RAP 201.92 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 51	1429.53	4.03	355.97	346.67	118.05	19 11 40	829.5	7.75	349.26
90.00	1 7 59	5439.47	28.17	250.45	352.21	87.02	2 38 38	4839.5	27.46	241.85
100.00	19 56 14	1208.82	2.83	339.08	346.01	119.77	20 16 23	608.8	6.77	332.51
100.00	2 42 17	5135.41	29.54	227.97	352.11	85.21	4 7 52	4535.4	28.57	219.30
110.00	20 36 46	1081.83	-.12	327.61	344.17	124.18	20 54 48	481.8	4.37	321.40
110.00	4 18 14	4835.18	32.99	204.66	351.60	80.50	5 38 50	4235.2	31.33	195.83

DIFFERENTIAL CORRECTIONS
TDE .9402 TRA -.4413 TC3 2.4934 BAU .9114
RDE 1.3231 RRA .2564 RC3 4.7236 FAU .28295
FDE-5.5208 FRA-1.2092 FC-19.1928 BSP 15734
BDE 1.6232 BRA .5104 BC3 5.3413 FSP 4730

MID-COURSE EXECUTION ACCURACY
SGT 2452.7 SGR 4010.7 SG3 1421.6
RRT .9030 RRF -.9998 RTF -.8976
SGB 4701.2 R23 -.1269 R13 -.9918
SG1 4611.0 SG2 916.8 THA 59.77

ORBIT DETERMINATION ACCURACY
ST 1525.7 SR 2128.5 SS 3208.4
CRT .9778 CRS 1.0000 CST .9762
LSA 4130.2 MSA 305.7 SSA 3.0
EL1 2605.8 EL2 260.9 ALF 54.56

LAUNCH DATE NOV 23 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 575.624 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.043 GAL .33 AZL 95.74 HCA 177.21 SMA 188.20 ECC .21524 INC 5.7347 V1 30.164
RP 228.70 LAP -.28 LOP 237.96 VP 21.341 GAP .25 AZP 84.27 TAL 1.87 TAP 179.07 RCA 147.69 APO 228.71 V2 24.049
RC 235.703 GL -50.07 GP 37.64 ZAL 83.05 ZAP 120.58 ETS 151.11 ZAE 139.64 ETE 106.83 ZAC 126.01 ETC 252.49 CLP 129.97

PLANETOCENTRIC CONIC

C3 18.550 VHL 4.307 DLA -32.61 RAL 125.63 RAD 6567.8 VEL 11.829 PTH 2.10 VHP 4.597 DPA 31.79 RAP 205.20 ECC 1.3053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.10	19 22 53	1291.23	22.93	355.32	354.23	113.85	19 44 24	691.2	25.95	347.60
106.90	23 43 27	5745.99	22.94	271.39	354.23	113.84	25 19 13	5146.0	25.97	263.67
73.10	19 22 53	1291.23	22.93	355.32	354.23	113.85	19 44 24	691.2	25.95	347.60
106.90	23 43 27	5745.99	22.94	271.39	354.23	113.84	25 19 13	5146.0	25.97	263.67
110.00	22 44 38	639.46	16.27	303.84	350.60	120.49	22 55 18	39.5	20.19	296.91
110.00	1 24 48	5445.76	29.95	251.16	357.17	107.30	2 55 33	4845.8	32.02	242.56

DIFFERENTIAL CORRECTIONS
TDE 1.3029 TRA -.3596 TC3 1.6186 BAU 1.1453
RDE 2.6018 RRA .6655 RC3 4.3255 FAU .23835
FDE-6.7927 FRA-1.8871 FC-11.1238 BSP 17690
BDE 2.9098 BRA .7564 BC3 4.6184 FSP 3612

MID-COURSE EXECUTION ACCURACY
SGT 2295.8 SGR 5193.0 SG3 1166.7
RRT .8889 RRF -.9998 RTF -.8815
SGB 5677.8 R23 -.0865 R13 -.9962
SG1 5593.2 SG2 976.6 THA 67.84

ORBIT DETERMINATION ACCURACY
ST 1742.1 SR 3477.3 SS 3608.1
CRT .9822 CRS 1.0000 CST .9807
LSA 5295.7 MSA 316.7 SSA 2.0
EL1 3878.2 EL2 293.4 ALF 63.64

LAUNCH DATE NOV 23 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 579.465 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.032 GAL .36 AZL 100.17 HCA 178.23 SMA 188.00 ECC .21442 INC10.1639 V1 30.164
RP 228.31 LAP -.31 LOP 239.00 VP 21.369 GAP -.07 AZP 79.84 TAL 2.02 TAP 180.25 RCA 147.69 APO 228.31 V2 24.090
RC 237.537 GL -67.53 GP 49.42 ZAL 85.12 ZAP 112.37 ETS 149.19 ZAE 127.50 ETE 108.57 ZAC 136.62 ETC 249.37 CLP 125.81

PLANETOCENTRIC CONIC

C3 39.796 VHL 6.308 DLA -48.23 RAL 115.19 RAD 6568.5 VEL 12.695 PTH 2.31 VHP 5.842 DPA 42.99 RAP 210.64 ECC 1.6549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.17	16 47 10	1805.12	24.29	39.39	1.41	133.05	17 17 15	1205.1	29.60	33.09
130.83	0 59 46	5609.06	24.30	261.01	1.42	133.04	2 33 15	5009.1	29.61	254.71
49.17	16 47 10	1805.12	24.29	39.39	1.41	133.05	17 17 15	1205.1	29.60	33.09
130.83	0 59 46	5609.06	24.30	261.01	1.42	133.04	2 33 15	5009.1	29.61	254.71
49.17	16 47 10	1805.12	24.29	39.39	1.41	133.05	17 17 15	1205.1	29.60	33.09
130.83	0 59 46	5609.06	24.30	261.01	1.42	133.04	2 33 15	5009.1	29.61	254.71

DIFFERENTIAL CORRECTIONS
TDE 1.8923 TRA -.2830 TC3 .6230 BAU 1.5457
RDE 5.5738 RRA 1.7019 RC3 2.8377 FAU .14872
FDE-6.4114 FRA-2.1307 FC3-3.2353 BSP 21434
BDE 5.8862 BRA 1.7252 BC3 2.9053 FSP 2014

MID-COURSE EXECUTION ACCURACY
SGT 1928.9 SGR 6620.5 SG3 663.7
RRT .8316 RRF -.9996 RTF -.8163
SGB 6895.7 R23 -.0647 R13 -.9978
SG1 6816.8 SG2 1040.5 THA 76.05

ORBIT DETERMINATION ACCURACY
ST 1722.7 SR 5111.2 SS 2972.4
CRT .9793 CRS .9999 CST .9768
LSA 6149.0 MSA 341.9 SSA 1.7
EL1 5383.5 EL2 331.4 ALF 71.66

LAUNCH DATE NOV 23 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 599.045 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.985 GAL .41 AZL 82.23 HCA 183.53 SMA 187.18 ECC .21101 INC 7.7694 V1 30.164
RP 226.36 LAP -.48 LOP 244.24 VP 21.531 GAP -1.57 AZP 97.76 TAL 2.35 TAP 185.88 RCA 147.68 APO 226.68 V2 24.297
RC 246.398 GL 59.94 GP -34.56 ZAL 83.69 ZAP 115.10 ETS 197.23 ZAE 140.80 ETE 232.16 ZAC 55.25 ETC 252.98 CLP 121.00

PLANETOCENTRIC CONIC

C3 26.555 VHL 5.153 DLA 68.00 RAL 185.71 RAD 6568.1 VEL 12.163 PTH 2.18 VHP 3.946 DPA -31.90 RAP 169.15 ECC 1.4370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
19.65	10 53 14	4285.84	-50.86	229.54	113.20	27.98	12 4 40	3685.8	-57.74	222.93
19.65	5 34 59	4694.22	-25.22	241.83	47.42	19.11	6 53 13	4094.2	-32.75	239.15
25.18	8 25 57	4475.36	-36.94	230.50	78.03	27.95	9 40 33	3875.4	-43.90	225.72
154.82	18 43 34	2735.46	-36.93	82.92	78.01	27.95	19 29 10	2135.5	-43.89	78.15
25.18	8 25 57	4475.36	-36.94	230.50	78.03	27.95	9 40 33	3875.4	-43.90	225.72
154.82	18 43 34	2735.46	-36.93	82.92	78.01	27.95	19 29 10	2135.5	-43.89	78.15

DIFFERENTIAL CORRECTIONS
TDE .5244 TRA -.3325 TC3 .4137 BAU 1.1207
RDE 2.1851 RRA 1.1477 RC3-3.1296 FAU .33975
FDE 7.7223 FRA 3.8863 FC-11.0763 BSP 17621
BDE 2.2471 BRA 1.1949 BC3 3.1569 FSP 5189

MID-COURSE EXECUTION ACCURACY
SGT 1223.0 SGR 5283.1 SG3 1586.3
RRT -.5139 RRF .9998 RTF -.5007
SGB 5422.8 R23 -.0394 R13 .9991
SG1 5321.8 SG2 1041.5 THA 97.06

ORBIT DETERMINATION ACCURACY
ST 654.1 SR 2637.4 SS 3158.1
CRT .6451 CRS -.9999 CST -.6565
LSA 4136.8 MSA 494.3 SSA 2.4
EL1 2672.2 EL2 493.3 ALF 80.59

LAUNCH DATE NOV 23 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 602.967 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.977 GAL .42 AZL 83.61 HCA 184.59 SMA 187.05 ECC .21046 INC 6.3931 V1 30.164
RP 225.97 LAP -.51 LOP 245.30 VP 21.566 GAP -1.85 AZP 96.37 TAL 2.39 TAP 186.98 RCA 147.68 APO 226.42 V2 24.339
RC 248.110 GL 53.97 GP -28.63 ZAL 82.78 ZAP 115.75 ETS 193.78 ZAE 144.53 ETE 225.20 ZAC 60.91 ETC 254.03 CLP 119.67

PLANETOCENTRIC CONIC

C3 20.616 VHL 4.540 DLA 63.81 RAL 175.27 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 3.603 DPA -26.59 RAP 172.17 ECC 1.3393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.09	7 55 28	4396.79	-39.06	222.19	61.75	34.64	9 8 45	3796.8	-45.47	216.13
149.91	17 50 46	2690.49	-39.05	80.07	61.73	34.64	18 35 37	2090.5	-45.46	74.01
30.09	7 55 28	4396.79	-39.06	222.19	61.75	34.64	9 8 45	3796.8	-45.47	216.13
149.91	17 50 46	2690.49	-39.05	80.07	61.73	34.64	18 35 37	2090.5	-45.46	74.01
30.09	7 55 28	4396.79	-39.06	222.19	61.75	34.64	9 8 45	3796.8	-45.47	216.13
149.91	17 50 46	2690.49	-39.05	80.07	61.73	34.64	18 35 37	2090.5	-45.46	74.01

DIFFERENTIAL CORRECTIONS
TDE .4025 TRA -.3455 TC3 .4330 BAU .9155
RDE 1.9099 RRA .8538 RC3-3.2934 FAU .39557
FDE 9.4817 FRA 4.0873 FC-16.6118 BSP 15657
BDE 1.9518 BRA .9210 BC3 3.3217 FSP 6585

MID-COURSE EXECUTION ACCURACY
SGT 1178.2 SGR 4550.8 SG3 1945.9
RRT -.4407 RRF .9998 RTF -.4295
SGB 4700.9 R23 -.0400 R13 .9990
SG1 4582.0 SG2 1050.4 THA 96.87

ORBIT DETERMINATION ACCURACY
ST 588.1 SR 2520.5 SS 3884.0
CRT .6787 CRS-1.0000 CST -.6859
LSA 4647.7 MSA 428.0 SSA 2.7
EL1 2552.8 EL2 426.5 ALF 80.74

LAUNCH DATE NOV 23 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 606.903 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.970 GAL .42 AZL 84.47 HCA 185.65 SMA 186.93 ECC .20995 INC 5.5286 V1 30.164
RP 225.58 LAP -.54 LOP 246.37 VP 21.603 GAP -2.13 AZP 95.50 TAL 2.43 TAP 188.08 RCA 147.68 APO 226.17 V2 24.381
RC 249.803 GL 49.48 GP -24.40 ZAL 82.12 ZAP 115.39 ETS 191.01 ZAE 146.26 ETE 218.43 ZAC 64.90 ETC 254.63 CLP 118.09

PLANETOCENTRIC CONIC

C3 17.457 VHL 4.178 DLA 60.28 RAL 169.29 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 3.402 DPA -22.62 RAP 173.85 ECC 1.2873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.27	7 41 46	4340.09	-39.64	215.19	51.08	40.07	8 54 6	3740.1	-45.55	208.25
145.73	17 16 48	2668.80	-39.64	78.00	51.06	40.07	18 1 17	2068.8	-45.54	71.07
34.27	7 41 46	4340.09	-39.64	215.19	51.08	40.07	8 54 6	3740.1	-45.55	208.25
145.73	17 16 48	2668.80	-39.64	78.00	51.06	40.07	18 1 17	2068.8	-45.54	71.07
34.27	7 41 46	4340.09	-39.64	215.19	51.08	40.07	8 54 6	3740.1	-45.55	208.25
145.73	17 16 48	2668.80	-39.64	78.00	51.06	40.07	18 1 17	2068.8	-45.54	71.07

DIFFERENTIAL CORRECTIONS
TDE .3865 TRA -.3390 TC3 .3557 BAU .7742
RDE 1.5867 RRA .6725 RC3-3.2983 FAU .43568
FDE10.1149 FRA 4.1379 FC-21.6070 BSP 13919
BDE 1.6331 BRA .7531 BC3 3.3174 FSP 7623

MID-COURSE EXECUTION ACCURACY
SGT 1117.5 SGR 3973.9 SG3 2201.8
RRT -.3176 RRF .9997 RTF -.3072
SGB 4128.0 R23 -.0362 R13 .9991
SG1 3990.9 SG2 1055.1 THA 95.49

ORBIT DETERMINATION ACCURACY
ST 600.2 SR 2247.9 SS 4203.6
CRT .7380 CRS-1.0000 CST -.7436
LSA 4787.8 MSA 400.7 SSA 3.2
EL1 2292.5 EL2 397.1 ALF 78.50

LAUNCH DATE NOV 23 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 610.850 EARTH TO MARS

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RL  147.71 LAL   -.00 LOL  60.74 VL  32.964 GAL    .42 AZL  85.07 HCA 186.72 SMA 186.82 ECC .20948 INC 4.9338 V1  30.164
RP  225.19 LAP   -.58 LOP 247.43 VP  21.640 GAP  -2.41 AZP  94.90 TAL   2.44 TAP 189.16 RCA 147.68 APO 225.95 V2  24.423
RC 251.477 GL   45.98 GP  -21.26 ZAL  81.63 ZAP 114.45 ETS 188.81 ZAE 146.72 ETE 212.35 ZAC  67.81 ETC 255.00 CLP 116.37
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PLANETOCENTRIC CONIC

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C3  15.540 VHL  3.942 DLA  57.40 RAL 165.48 RAD 6567.6 VEL 11.701 PTH   2.06 VHP  3.269 DPA -19.54 RAP 174.79 ECC 1.2557
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.74	7 35 33	4296.36	-39.54	209.47	43.62	44.32	8 47 9	3696.4	-45.01	201.99
142.26	16 52 38	2659.32	-39.53	76.65	43.61	44.31	17 36 57	2059.3	-45.00	69.16
37.74	7 35 33	4296.36	-39.54	209.47	43.62	44.32	8 47 9	3696.4	-45.01	201.99
142.26	16 52 38	2659.32	-39.53	76.65	43.61	44.31	17 36 57	2059.3	-45.00	69.16
37.74	7 35 33	4296.36	-39.54	209.47	43.62	44.32	8 47 9	3696.4	-45.01	201.99
142.26	16 52 38	2659.32	-39.53	76.65	43.61	44.31	17 36 57	2059.3	-45.00	69.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .4113 TRA -.3205 TC3  .2189 BAU  .6795    SGT 1065.2 SGR 3519.5 SG3 2392.1    ST   651.7 SR  1964.4 SS  4288.5
RDE 1.3169 RRA  .5378 RC3-3.2632 FAU .47181    RRT -.1478 RRF  .9996 RTF -.1385   CRT  .8053 CRS-1.0000 CST -.8098
FDE10.1972 FRA 4.0166 FC-26.2851 BSP  12113    SGB 3677.2 R23 -.0240 R13  .9993   LSA 4746.6 MSA  380.9 SSA    3.9
BDE 1.3796 BRA  .6261 BC3 3.2705 FSP   8193    SG1 3523.4 SG2 1052.3 THA  92.81   EL1 2035.8 EL2  372.8 ALF  74.51
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LAUNCH DATE NOV 23 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 614.807 EARTH TO MARS

```
RL  147.71 LAL   -.00 LOL  60.74 VL  32.958 GAL    .42 AZL  85.50 HCA 187.79 SMA 186.71 ECC .20904 INC 4.5004 V1  30.164
RP  224.80 LAP   -.61 LOP 248.50 VP  21.678 GAP  -2.67 AZP  94.46 TAL   2.44 TAP 190.23 RCA 147.68 APO 225.74 V2  24.465
RC 253.132 GL   43.21 GP  -18.85 ZAL  81.27 ZAP 113.17 ETS 187.06 ZAE 146.35 ETE 207.13 ZAC  69.99 ETC 255.26 CLP 114.57
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PLANETOCENTRIC CONIC

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C3  14.268 VHL  3.777 DLA  55.03 RAL 162.87 RAD 6567.6 VEL 11.647 PTH   2.04 VHP  3.171 DPA -17.08 RAP 175.26 ECC 1.2348
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.63	7 33 3	4261.09	-39.14	204.81	38.18	47.65	8 44 4	3661.1	-44.25	196.97
139.37	16 34 19	2656.45	-39.13	75.81	38.17	47.64	17 18 36	2056.5	-44.24	67.97
40.63	7 33 3	4261.09	-39.14	204.81	38.18	47.65	8 44 4	3661.1	-44.25	196.97
139.37	16 34 19	2656.45	-39.13	75.81	38.17	47.64	17 18 36	2056.5	-44.24	67.97
40.63	7 33 3	4261.09	-39.14	204.81	38.18	47.65	8 44 4	3661.1	-44.25	196.97
139.37	16 34 19	2656.45	-39.13	75.81	38.17	47.64	17 18 36	2056.5	-44.24	67.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .4503 TRA -.3058 TC3 -.0019 BAU  .6025    SGT 1058.9 SGR 3166.6 SG3 2546.8    ST   724.8 SR  1739.8 SS  4314.7
RDE 1.1211 RRA  .4538 RC3-3.1585 FAU .49801    RRT  .0576 RRF  .9994 RTF  .0662   CRT  .8517 CRS-1.0000 CST -.8553
FDE10.1613 FRA 3.9664 FC-30.2178 BSP  10877    SGB 3339.0 R23 -.0014 R13  .9994   LSA 4693.6 MSA  373.0 SSA    4.6
BDE 1.2082 BRA  .5472 BC3 3.1585 FSP   8751    SG1 3167.3 SG2 1056.9 THA  88.76   EL1 1850.6 EL2  357.1 ALF  69.67
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LAUNCH DATE NOV 23 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 618.775 EARTH TO MARS

```
RL  147.71 LAL   -.00 LOL  60.74 VL  32.952 GAL    .42 AZL  85.83 HCA 188.86 SMA 186.62 ECC .20863 INC 4.1698 V1  30.164
RP  224.41 LAP   -.64 LOP 249.58 VP  21.717 GAP  -2.94 AZP  94.12 TAL   2.42 TAP 191.28 RCA 147.68 APO 225.55 V2  24.506
RC 254.766 GL   40.95 GP  -16.95 ZAL  81.01 ZAP 111.68 ETS 185.65 ZAE 145.42 ETE 202.76 ZAC  71.67 ETC 255.46 CLP 112.71
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PLANETOCENTRIC CONIC

```
C3  13.368 VHL  3.656 DLA  53.05 RAL 161.00 RAD 6567.5 VEL 11.608 PTH   2.03 VHP  3.097 DPA -15.04 RAP 175.42 ECC 1.2200
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.06	7 32 36	4231.60	-38.63	200.93	34.07	50.30	8 43 8	3631.6	-43.44	192.87
136.94	16 19 49	2657.39	-38.62	75.34	34.06	50.29	17 4 6	2057.4	-43.43	67.28
43.06	7 32 36	4231.60	-38.63	200.93	34.07	50.30	8 43 8	3631.6	-43.44	192.87
136.94	16 19 49	2657.39	-38.62	75.34	34.06	50.29	17 4 6	2057.4	-43.43	67.28
43.06	7 32 36	4231.60	-38.63	200.93	34.07	50.30	8 43 8	3631.6	-43.44	192.87
136.94	16 19 49	2657.39	-38.62	75.34	34.06	50.29	17 4 6	2057.4	-43.43	67.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE  .4987 TRA -.2874 TC3 -.2620 BAU  .5467    SGT 1099.5 SGR 2884.3 SG3 2677.6    ST   813.2 SR  1552.8 SS  4286.6
RDE  .9705 RRA  .3911 RC3-3.0475 FAU .52166    RRT  .2685 RRF  .9992 RTF  .2758   CRT  .8871 CRS-1.0000 CST -.8901
FDE10.0261 FRA 3.8978 FC-33.7837 BSP   9866    SGB 3086.7 R23  .0350 R13  .9986   LSA 4616.6 MSA  366.6 SSA    5.4
BDE 1.0912 BRA  .4853 BC3 3.0588 FSP   9171    SG1 2901.7 SG2 1052.7 THA  83.27   EL1 1719.8 EL2  338.9 ALF  64.00
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LAUNCH DATE NOV 23 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 622.752 EARTH TO MARS

```
RL  147.71 LAL   -.00 LOL  60.74 VL  32.947 GAL    .41 AZL  86.09 HCA 189.94 SMA 186.53 ECC .20826 INC 3.9098 V1  30.164
RP  224.02 LAP   -.67 LOP 250.65 VP  21.757 GAP  -3.20 AZP  93.85 TAL   2.39 TAP 192.33 RCA 147.68 APO 225.38 V2  24.548
RC 256.380 GL   39.08 GP  -15.41 ZAL  80.83 ZAP 110.04 ETS 184.49 ZAE 144.13 ETE 199.12 ZAC  72.99 ETC 255.62 CLP 110.82
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PLANETOCENTRIC CONIC

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C3  12.700 VHL  3.564 DLA  51.39 RAL 159.61 RAD 6567.5 VEL 11.580 PTH   2.03 VHP  3.037 DPA -13.31 RAP 175.37 ECC 1.2090
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.14	7 33 22	4206.33	-38.08	197.67	30.90	52.44	8 43 29	3606.3	-42.65	189.46
134.86	16 7 59	2660.55	-38.07	75.11	30.89	52.43	16 52 19	2060.6	-42.64	66.91
45.14	7 33 22	4206.33	-38.08	197.67	30.90	52.44	8 43 29	3606.3	-42.65	189.46
134.86	16 7 59	2660.55	-38.07	75.11	30.89	52.43	16 52 19	2060.6	-42.64	66.91
45.14	7 33 22	4206.33	-38.08	197.67	30.90	52.44	8 43 29	3606.3	-42.65	189.46
134.86	16 7 59	2660.55	-38.07	75.11	30.89	52.43	16 52 19	2060.6	-42.64	66.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE  .5524 TRA -.2660 TC3 -.5750 BAU  .5044    SGT 1194.3 SGR 2647.3 SG3 2785.0    ST   911.7 SR  1404.9 SS  4250.5
RDE  .8569 RRA  .3460 RC3-2.9145 FAU .53955    RRT  .4631 RRF  .9988 RTF  .4690   CRT  .9130 CRS-1.0000 CST -.9155
FDE 9.8912 FRA 3.8589 FC-36.7813 BSP   9165    SGB 2904.2 R23  .0859 R13  .9951   LSA 4554.3 MSA  361.2 SSA    6.2
BDE 1.0195 BRA  .4364 BC3 2.9707 FSP   9561    SG1 2714.5 SG2 1032.3 THA  76.16   EL1 1644.4 EL2  317.7 ALF  58.02
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LAUNCH DATE NOV 23 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 626.740 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.943 GAL .40 AZL 86.30 HCA 191.02 SMA 186.45 ECC .20792 INC 3.6995 V1 30.164
RP 223.63 LAP -.71 LOP 251.74 VP 21.797 GAP -3.45 AZP 93.63 TAL 2.35 TAP 193.37 RCA 147.68 APO 225.22 V2 24.590
RC 257.974 GL 37.51 GP -14.13 ZAL 80.72 ZAP 108.30 ETS 183.52 ZAE 142.57 ETE 196.11 ZAC 74.05 ETC 255.75 CLP 108.89

PLANETOCENTRIC CONIC

C3 12.184 VHL 3.491 DLA 49.97 RAL 158.57 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 2.988 DPA -11.81 RAP 175.18 ECC 1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.94	7 34 54	4184.19	-37.53	194.87	28.39	54.20	8 44 38	3584.2	-41.90	186.57
133.06	15 58 6	2665.04	-37.52	75.06	28.38	54.19	16 42 31	2065.0	-41.89	66.76
46.94	7 34 54	4184.19	-37.53	194.87	28.39	54.20	8 44 38	3584.2	-41.90	186.57
133.06	15 58 6	2665.04	-37.52	75.06	28.38	54.19	16 42 31	2065.0	-41.89	66.76
46.94	7 34 54	4184.19	-37.53	194.87	28.39	54.20	8 44 38	3584.2	-41.90	186.57
133.06	15 58 6	2665.04	-37.52	75.06	28.38	54.19	16 42 31	2065.0	-41.89	66.76

DIFFERENTIAL CORRECTIONS
TDE .6091 TRA -.2425 TC3 -.9150 BAU .4781
RDE .7666 RRA .3105 RC3-2.7886 FAU .55608
FDE 9.7318 FRA 3.8164 FC-39.5119 BSP 8747
BDE .9792 BRA .3940 BC3 2.9349 FSP 9953

MID-COURSE EXECUTION ACCURACY
SGT 1338.1 SGR 2449.8 SG3 2879.7
RRT .6136 RRF .9984 RTF .6180
SGB 2791.4 R23 .1436 R13 .9880
SG1 2609.2 SG2 992.1 THA 68.15

ORBIT DETERMINATION ACCURACY
ST 1017.1 SR 1282.0 SS 4198.0
CRT .9319 CRS-1.0000 CST -.9339
LSA 4491.6 MSA 355.9 SSA 7.1
EL1 1609.9 EL2 293.7 ALF 52.03

LAUNCH DATE NOV 23 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 630.737 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.939 GAL .39 AZL 86.47 HCA 192.10 SMA 186.38 ECC .20762 INC 3.5258 V1 30.164
RP 223.24 LAP -.74 LOP 252.82 VP 21.838 GAP -3.70 AZP 93.45 TAL 2.29 TAP 194.39 RCA 147.69 APO 225.08 V2 24.632
RC 259.547 GL 36.18 GP -13.06 ZAL 80.67 ZAP 106.49 ETS 182.71 ZAE 140.84 ETE 193.61 ZAC 74.91 ETC 255.87 CLP 106.94

PLANETOCENTRIC CONIC

C3 11.774 VHL 3.431 DLA 48.73 RAL 157.77 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 2.948 DPA -10.48 RAP 174.86 ECC 1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.52	7 36 56	4164.52	-37.01	192.44	26.38	55.68	8 46 20	3564.5	-41.20	184.07
131.48	15 49 45	2670.30	-37.00	75.13	26.37	55.67	16 34 15	2070.3	-41.19	66.76
48.52	7 36 56	4164.52	-37.01	192.44	26.38	55.68	8 46 20	3564.5	-41.20	184.07
131.48	15 49 45	2670.30	-37.00	75.13	26.37	55.67	16 34 15	2070.3	-41.19	66.76
48.52	7 36 56	4164.52	-37.01	192.44	26.38	55.68	8 46 20	3564.5	-41.20	184.07
131.48	15 49 45	2670.30	-37.00	75.13	26.37	55.67	16 34 15	2070.3	-41.19	66.76

DIFFERENTIAL CORRECTIONS
TDE .6666 TRA -.2213 TC3-1.2822 BAU .4659
RDE .6943 RRA .2847 RC3-2.6678 FAU .57092
FDE 9.5682 FRA 3.8124 FC-41.9779 BSP 8528
BDE .9625 BRA .3606 BC3 2.9599 FSP 10223

MID-COURSE EXECUTION ACCURACY
SGT 1525.5 SGR 2283.7 SG3 2965.8
RRT .7170 RRF .9978 RTF .7205
SGB 2746.3 R23 .1984 R13 .9779
SG1 2580.0 SG2 941.3 THA 60.02

ORBIT DETERMINATION ACCURACY
ST 1126.0 SR 1180.5 SS 4141.2
CRT .9445 CRS-1.0000 CST -.9460
LSA 4436.8 MSA 354.8 SSA 8.0
EL1 1608.7 EL2 271.5 ALF 46.43

LAUNCH DATE NOV 23 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 634.744 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.935 GAL .38 AZL 86.62 HCA 193.19 SMA 186.32 ECC .20734 INC 3.3796 V1 30.164
RP 222.85 LAP -.77 LOP 253.91 VP 21.880 GAP -3.94 AZP 93.29 TAL 2.21 TAP 195.40 RCA 147.69 APO 224.95 V2 24.674
RC 261.100 GL 35.04 GP -12.14 ZAL 80.66 ZAP 104.62 ETS 182.02 ZAE 138.97 ETE 191.52 ZAC 75.61 ETC 255.98 CLP 104.96

PLANETOCENTRIC CONIC

C3 11.440 VHL 3.382 DLA 47.65 RAL 157.17 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 2.914 DPA -9.29 RAP 174.46 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.93	7 39 20	4146.78	-36.51	190.28	24.76	56.94	8 48 26	3546.8	-40.56	181.87
130.07	15 42 34	2676.04	-36.50	75.28	24.75	56.93	16 27 10	2076.0	-40.55	66.87
49.93	7 39 20	4146.78	-36.51	190.28	24.76	56.94	8 48 26	3546.8	-40.56	181.87
130.07	15 42 34	2676.04	-36.50	75.28	24.75	56.93	16 27 10	2076.0	-40.55	66.87
49.93	7 39 20	4146.78	-36.51	190.28	24.76	56.94	8 48 26	3546.8	-40.56	181.87
130.07	15 42 34	2676.04	-36.50	75.28	24.75	56.93	16 27 10	2076.0	-40.55	66.87

DIFFERENTIAL CORRECTIONS
TDE .7263 TRA -.1992 TC3-1.6895 BAU .4673
RDE .6328 RRA .2639 RC3-2.5457 FAU .58288
FDE 9.3637 FRA 3.8135 FC-44.1089 BSP 8546
BDE .9633 BRA .3307 BC3 3.0553 FSP 10464

MID-COURSE EXECUTION ACCURACY
SGT 1752.4 SGR 2134.3 SG3 3034.9
RRT .7900 RRF .9971 RTF .7930
SGB 2761.5 R23 .2431 R13 .9670
SG1 2619.0 SG2 875.6 THA 52.05

ORBIT DETERMINATION ACCURACY
ST 1239.9 SR 1091.5 SS 4065.4
CRT .9537 CRS-1.0000 CST -.9547
LSA 4373.8 MSA 355.2 SSA 8.9
EL1 1632.9 EL2 249.4 ALF 41.18

LAUNCH DATE NOV 23 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 638.760 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.932 GAL .36 AZL 86.74 HCA 194.29 SMA 186.26 ECC .20709 INC 3.2554 V1 30.164
RP 222.47 LAP -.80 LOP 255.01 VP 21.922 GAP -4.17 AZP 93.16 TAL 2.12 TAP 196.40 RCA 147.69 APO 224.83 V2 24.716
RC 262.633 GL 34.04 GP -11.35 ZAL 80.71 ZAP 102.72 ETS 181.42 ZAE 137.01 ETE 189.76 ZAC 76.19 ETC 256.08 CLP 102.98

PLANETOCENTRIC CONIC

C3 11.162 VHL 3.341 DLA 46.69 RAL 156.73 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 2.887 DPA -8.19 RAP 174.00 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.19	7 41 59	4130.58	-36.04	188.36	23.43	58.03	8 50 50	3530.6	-39.96	179.92
128.81	15 36 22	2682.05	-36.03	75.49	23.42	58.02	16 21 4	2082.1	-39.95	67.04
51.19	7 41 59	4130.58	-36.04	188.36	23.43	58.03	8 50 50	3530.6	-39.96	179.92
128.81	15 36 22	2682.05	-36.03	75.49	23.42	58.02	16 21 4	2082.1	-39.95	67.04
51.19	7 41 59	4130.58	-36.04	188.36	23.43	58.03	8 50 50	3530.6	-39.96	179.92
128.81	15 36 22	2682.05	-36.03	75.49	23.42	58.02	16 21 4	2082.1	-39.95	67.04

DIFFERENTIAL CORRECTIONS
TDE .7836 TRA -.1735 TC3-2.1140 BAU .4802
RDE .5854 RRA .2472 RC3-2.4258 FAU .59248
FDE 9.2182 FRA 3.8241 FC-45.9516 BSP 8823
BDE .9781 BRA .3020 BC3 3.2177 FSP 10662

MID-COURSE EXECUTION ACCURACY
SGT 1997.4 SGR 2004.3 SG3 3096.1
RRT .8420 RRF .9962 RTF .8449
SGB 2829.6 R23 .2681 R13 .9595
SG1 2715.5 SG2 795.4 THA 45.12

ORBIT DETERMINATION ACCURACY
ST 1350.8 SR 1022.0 SS 4014.0
CRT .9612 CRS -.9999 CST -.9619
LSA 4342.5 MSA 352.5 SSA 9.8
EL1 1678.6 EL2 226.8 ALF 36.81

LAUNCH DATE NOV 23 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 642.785 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.929 GAL .34 AZL 86.85 HCA 195.38 SMA 186.21 ECC .20687 INC 3.1477 V1 30.164
RP 222.08 LAP -.83 LOP 256.10 VP 21.965 GAP -4.41 AZP 93.04 TAL 2.01 TAP 197.40 RCA 147.69 APO 224.73 V2 24.758
RC 264.145 GL 33.16 GP -10.64 ZAL 80.79 ZAP 100.79 ETS 180.90 ZAE 134.98 ETE 188.28 ZAC 76.68 ETC 256.18 CLP 100.98

PLANETOCENTRIC CONIC

C3 10.927 VHL 3.306 DLA 45.82 RAL 156.41 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 2.865 DPA -7.19 RAP 173.49 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.34	7 44 54	4115.59	-35.60	186.61	22.35	58.99	8 53 29	3515.6	-39.40	178.15
127.66	15 30 56	2688.29	-35.59	75.74	22.34	58.98	16 15 44	2088.3	-39.39	67.28
52.34	7 44 54	4115.59	-35.60	186.61	22.35	58.99	8 53 29	3515.6	-39.40	178.15
127.66	15 30 56	2688.29	-35.59	75.74	22.34	58.98	16 15 44	2088.3	-39.39	67.28
52.34	7 44 54	4115.59	-35.60	186.61	22.35	58.99	8 53 29	3515.6	-39.40	178.15
127.66	15 30 56	2688.29	-35.59	75.74	22.34	58.98	16 15 44	2088.3	-39.39	67.28

DIFFERENTIAL CORRECTIONS
TDE .8405 TRA -.1481 TC3-2.5654 BAU .5046
RDE .5432 RRA .2324 RC3-2.3133 FAU .60107
FDE 9.0240 FRA 3.8173 FC-47.6211 BSP 9250
BDE 1.0007 BRA .2755 BC3 3.4544 FSP 10832

MID-COURSE EXECUTION ACCURACY
SGT 2265.9 SGR 1886.6 SG3 3146.2
RRT .8778 RRF .9951 RTF .8809
SGB 2948.5 R23 .2783 R13 .9555
SG1 2860.3 SG2 715.9 THA 39.07

ORBIT DETERMINATION ACCURACY
ST 1461.9 SR 958.4 SS 3941.9
CRT .9669 CRS -.9999 CST -.9672
LSA 4297.8 MSA 350.4 SSA 10.8
EL1 1735.8 EL2 205.9 ALF 32.89

LAUNCH DATE NOV 23 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 646.820 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.926 GAL .32 AZL 86.95 HCA 196.48 SMA 186.17 ECC .20668 INC 3.0544 V1 30.164
RP 221.70 LAP -.87 LOP 257.20 VP 22.008 GAP -4.63 AZP 92.93 TAL 1.89 TAP 198.38 RCA 147.69 APO 224.65 V2 24.799
RC 265.639 GL 32.39 GP -10.02 ZAL 80.92 ZAP 98.83 ETS 180.45 ZAE 132.90 ETE 187.02 ZAC 77.10 ETC 256.27 CLP 98.97

PLANETOCENTRIC CONIC

C3 10.725 VHL 3.275 DLA 45.04 RAL 156.20 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 2.847 DPA -6.25 RAP 172.93 ECC 1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.39	7 47 59	4101.61	-35.18	185.01	21.46	59.84	8 56 21	3501.6	-38.88	176.54
126.61	15 26 10	2694.64	-35.17	76.02	21.46	59.82	16 11 5	2094.6	-38.87	67.55
53.39	7 47 59	4101.61	-35.18	185.01	21.46	59.84	8 56 21	3501.6	-38.88	176.54
126.61	15 26 10	2694.64	-35.17	76.02	21.46	59.82	16 11 5	2094.6	-38.87	67.55
53.39	7 47 59	4101.61	-35.18	185.01	21.46	59.84	8 56 21	3501.6	-38.88	176.54
126.61	15 26 10	2694.64	-35.17	76.02	21.46	59.82	16 11 5	2094.6	-38.87	67.55

DIFFERENTIAL CORRECTIONS
TDE .9015 TRA -.1181 TC3-3.0189 BAU .5358
RDE .5077 RRA .2219 RC3-2.2020 FAU .60715
FDE 8.8379 FRA 3.8551 FC-49.0099 BSP 9935
BDE 1.0346 BRA .2514 BC3 3.7367 FSP 10988

MID-COURSE EXECUTION ACCURACY
SGT 2546.2 SGR 1780.7 SG3 3187.0
RRT .9026 RRF .9938 RTF .9058
SGB 3107.1 R23 .2776 R13 .9544
SG1 3040.0 SG2 642.2 THA 33.98

ORBIT DETERMINATION ACCURACY
ST 1580.8 SR 904.5 SS 3875.6
CRT .9716 CRS -.9999 CST -.9714
LSA 4267.8 MSA 349.7 SSA 11.7
EL1 1811.6 EL2 186.8 ALF 29.41

LAUNCH DATE NOV 23 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 650.863 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.924 GAL .30 AZL 87.03 HCA 197.59 SMA 186.13 ECC .20651 INC 2.9714 V1 30.164
RP 221.32 LAP -.90 LOP 258.31 VP 22.052 GAP -4.86 AZP 92.83 TAL 1.76 TAP 199.34 RCA 147.69 APO 224.57 V2 24.841
RC 267.114 GL 31.70 GP -9.47 ZAL 81.09 ZAP 96.87 ETS 180.05 ZAE 130.78 ETE 185.94 ZAC 77.45 ETC 256.37 CLP 96.97

PLANETOCENTRIC CONIC

C3 10.549 VHL 3.248 DLA 44.31 RAL 156.08 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 2.834 DPA -5.37 RAP 172.36 ECC 1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.37	7 51 16	4088.41	-34.79	183.53	20.75	60.60	8 59 25	3488.4	-38.39	175.04
125.63	15 21 56	2701.13	-34.77	76.34	20.74	60.58	16 6 57	2101.1	-38.38	67.86
54.37	7 51 16	4088.41	-34.79	183.53	20.75	60.60	8 59 25	3488.4	-38.39	175.04
125.63	15 21 56	2701.13	-34.77	76.34	20.74	60.58	16 6 57	2101.1	-38.38	67.86
54.37	7 51 16	4088.41	-34.79	183.53	20.75	60.60	8 59 25	3488.4	-38.39	175.04
125.63	15 21 56	2701.13	-34.77	76.34	20.74	60.58	16 6 57	2101.1	-38.38	67.86

DIFFERENTIAL CORRECTIONS
TDE .9557 TRA -.0919 TC3-3.5062 BAU .5763
RDE .4764 RRA .2120 RC3-2.0987 FAU .61274
FDE 8.6249 FRA 3.8694 FC-50.2850 BSP 10635
BDE 1.0679 BRA .2311 BC3 4.0863 FSP 11090

MID-COURSE EXECUTION ACCURACY
SGT 2842.7 SGR 1684.6 SG3 3220.6
RRT .9195 RRF .9922 RTF .9238
SGB 3304.4 R23 .2684 R13 .9556
SG1 3253.4 SG2 578.6 THA 29.62

ORBIT DETERMINATION ACCURACY
ST 1688.7 SR 855.9 SS 3798.5
CRT .9749 CRS -.9999 CST -.9743
LSA 4229.7 MSA 349.7 SSA 12.7
EL1 1885.5 EL2 170.8 ALF 26.53

LAUNCH DATE NOV 23 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 654.916 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.923 GAL .27 AZL 87.10 HCA 198.70 SMA 186.10 ECC .20637 INC 2.8983 V1 30.164
RP 220.94 LAP -.93 LOP 259.42 VP 22.096 GAP -5.07 AZP 92.75 TAL 1.60 TAP 200.30 RCA 147.70 APO 224.51 V2 24.883
RC 268.570 GL 31.09 GP -8.96 ZAL 81.29 ZAP 94.90 ETS 179.70 ZAE 128.64 ETE 185.01 ZAC 77.75 ETC 256.47 CLP 94.96

PLANETOCENTRIC CONIC

C3 10.395 VHL 3.224 DLA 43.65 RAL 156.05 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 2.825 DPA -4.55 RAP 171.76 ECC 1.1711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.28	7 54 43	4075.90	-34.41	182.14	20.17	61.29	9 2 39	3475.9	-37.93	173.65
124.72	15 18 11	2707.68	-34.39	76.68	20.16	61.27	16 3 19	2107.7	-37.92	68.19
55.28	7 54 43	4075.90	-34.41	182.14	20.17	61.29	9 2 39	3475.9	-37.93	173.65
124.72	15 18 11	2707.68	-34.39	76.68	20.16	61.27	16 3 19	2107.7	-37.92	68.19
55.28	7 54 43	4075.90	-34.41	182.14	20.17	61.29	9 2 39	3475.9	-37.93	173.65
124.72	15 18 11	2707.68	-34.39	76.68	20.16	61.27	16 3 19	2107.7	-37.92	68.19

DIFFERENTIAL CORRECTIONS
TDE 1.0117 TRA -.0608 TC3-3.9887 BAU .6203
RDE .4488 RRA .2035 RC3-2.0036 FAU .61796
FDE 8.3985 FRA 3.8854 FC-51.4666 BSP 11492
BDE 1.1068 BRA .2124 BC3 4.4636 FSP 11170

MID-COURSE EXECUTION ACCURACY
SGT 3141.6 SGR 1598.5 SG3 3250.3
RRT .9324 RRF .9903 RTF .9372
SGB 3524.9 R23 .2532 R13 .9582
SG1 3486.2 SG2 520.7 THA 26.00

ORBIT DETERMINATION ACCURACY
ST 1800.1 SR 812.5 SS 3717.5
CRT .9779 CRS -.9998 CST -.9769
LSA 4195.1 MSA 348.4 SSA 13.7
EL1 1968.8 EL2 155.3 ALF 23.97

LAUNCH DATE NOV 23 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 658.977 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.921 GAL .25 AZL 87.17 HCA 199.81 SMA 186.08 ECC .20626 INC 2.8326 V1 30.164
RP 220.56 LAP -.96 LOP 260.53 VP 22.141 GAP -5.29 AZP 92.67 TAL 1.44 TAP 201.25 RCA 147.70 APO 224.46 V2 24.924
RC 270.009 GL 30.53 GP -8.50 ZAL 81.52 ZAP 92.93 ETS 179.39 ZAE 126.49 ETE 184.20 ZAC 78.01 ETC 256.56 CLP 92.97

PLANETOCENTRIC CONIC

C3 10.258 VHL 3.203 DLA 43.02 RAL 156.08 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 2.820 DPA -3.77 RAP 171.15 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.15	7 58 20	4063.92	-34.04	180.83	19.72	61.92	9 6 4	3463.9	-37.49	172.34
123.85	15 14 51	2714.31	-34.03	77.03	19.71	61.91	16 0 6	2114.3	-37.48	68.55
56.15	7 58 20	4063.92	-34.04	180.83	19.72	61.92	9 6 4	3463.9	-37.49	172.34
123.85	15 14 51	2714.31	-34.03	77.03	19.71	61.91	16 0 6	2114.3	-37.48	68.55
56.15	7 58 20	4063.92	-34.04	180.83	19.72	61.92	9 6 4	3463.9	-37.49	172.34
123.85	15 14 51	2714.31	-34.03	77.03	19.71	61.91	16 0 6	2114.3	-37.48	68.55

DIFFERENTIAL CORRECTIONS
TDE 1.0646 TRA -.0286 TC3-4.4983 BAU .6697
RDE .4261 RRA .1964 RC3-1.9011 FAU .61879
FDE 8.1993 FRA 3.9038 FC-52.2238 BSP 12422
BDE 1.1467 BRA .1984 BC3 4.8835 FSP 11192

MID-COURSE EXECUTION ACCURACY
SGT 3454.6 SGR 1514.9 SG3 3262.0
RRT .9415 RRF .9880 RTF .9481
SGB 3772.2 R23 .2325 R13 .9617
SG1 3742.6 SG2 471.4 THA 22.81

ORBIT DETERMINATION ACCURACY
ST 1906.5 SR 776.6 SS 3649.8
CRT .9805 CRS -.9998 CST -.9791
LSA 4176.0 MSA 345.9 SSA 14.7
EL1 2053.7 EL2 141.6 ALF 21.88

LAUNCH DATE NOV 23 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 663.048 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.920 GAL .22 AZL 87.23 HCA 200.93 SMA 186.06 ECC .20617 INC 2.7736 V1 30.164
RP 220.18 LAP -.99 LOP 261.64 VP 22.185 GAP -5.50 AZP 92.59 TAL 1.26 TAP 202.19 RCA 147.70 APO 224.42 V2 24.965
RC 271.430 GL 30.02 GP -8.08 ZAL 81.79 ZAP 90.97 ETS 179.11 ZAE 124.33 ETE 183.51 ZAC 78.23 ETC 256.66 CLP 90.98

PLANETOCENTRIC CONIC

C3 10.136 VHL 3.184 DLA 42.43 RAL 156.18 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 2.819 DPA -3.03 RAP 170.54 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.98	8 2 8	4052.29	-33.69	179.58	19.37	62.51	9 9 40	3452.3	-37.06	171.09
123.02	15 11 50	2721.13	-33.68	77.41	19.36	62.49	15 57 11	2121.1	-37.05	68.93
56.98	8 2 8	4052.29	-33.69	179.58	19.37	62.51	9 9 40	3452.3	-37.06	171.09
123.02	15 11 50	2721.13	-33.68	77.41	19.36	62.49	15 57 11	2121.1	-37.05	68.93
56.98	8 2 8	4052.29	-33.69	179.58	19.37	62.51	9 9 40	3452.3	-37.06	171.09
123.02	15 11 50	2721.13	-33.68	77.41	19.36	62.49	15 57 11	2121.1	-37.05	68.93

DIFFERENTIAL CORRECTIONS
TDE 1.1181 TRA .0060 TC3-5.0116 BAU .7217
RDE .4035 RRA .1907 RC3-1.8027 FAU .61826
FDE 7.9289 FRA 3.9356 FC-52.8088 BSP 13423
BDE 1.1887 BRA .1908 BC3 5.3260 FSP 11268

MID-COURSE EXECUTION ACCURACY
SGT 3772.5 SGR 1435.6 SG3 3263.1
RRT .9473 RRF .9852 RTF .9556
SGB 4036.4 R23 .2120 R13 .9647
SG1 4013.2 SG2 432.2 THA 20.07

ORBIT DETERMINATION ACCURACY
ST 2014.5 SR 740.3 SS 3553.9
CRT .9825 CRS -.9997 CST -.9805
LSA 4137.1 MSA 346.5 SSA 15.7
EL1 2142.2 EL2 129.7 ALF 19.93

LAUNCH DATE NOV 23 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 667.126 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.919 GAL .18 AZL 87.28 HCA 202.05 SMA 186.05 ECC .20610 INC 2.7199 V1 30.164
RP 219.81 LAP -1.02 LOP 262.76 VP 22.230 GAP -5.70 AZP 92.52 TAL 1.07 TAP 203.11 RCA 147.70 APO 224.39 V2 25.006
RC 272.833 GL 29.56 GP -7.69 ZAL 82.10 ZAP 89.02 ETS 178.87 ZAE 122.17 ETE 182.90 ZAC 78.43 ETC 256.75 CLP 89.01

PLANETOCENTRIC CONIC

C3 10.026 VHL 3.166 DLA 41.87 RAL 156.34 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 2.821 DPA -2.33 RAP 169.93 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.77	8 6 6	4041.02	-33.34	178.37	19.12	63.06	9 13 27	3441.0	-36.65	169.90
122.23	15 9 9	2728.05	-33.33	77.80	19.11	63.04	15 54 37	2128.0	-36.65	69.33
57.77	8 6 6	4041.02	-33.34	178.37	19.12	63.06	9 13 27	3441.0	-36.65	169.90
122.23	15 9 9	2728.05	-33.33	77.80	19.11	63.04	15 54 37	2128.0	-36.65	69.33
57.77	8 6 6	4041.02	-33.34	178.37	19.12	63.06	9 13 27	3441.0	-36.65	169.90
122.23	15 9 9	2728.05	-33.33	77.80	19.11	63.04	15 54 37	2128.0	-36.65	69.33

DIFFERENTIAL CORRECTIONS
TDE 1.1662 TRA .0399 TC3-5.5383 BAU .7769
RDE .3850 RRA .1863 RC3-1.7096 FAU .61699
FDE 7.6922 FRA 3.9801 FC-53.2781 BSP 14426
BDE 1.2281 BRA .1906 BC3 5.7961 FSP 11211

MID-COURSE EXECUTION ACCURACY
SGT 4094.2 SGR 1364.8 SG3 3262.2
RRT .9505 RRF .9820 RTF .9615
SGB 4315.7 R23 .1902 R13 .9677
SG1 4296.8 SG2 404.0 THA 17.74

ORBIT DETERMINATION ACCURACY
ST 2113.0 SR 710.6 SS 3474.5
CRT .9841 CRS -.9996 CST -.9815
LSA 4113.5 MSA 347.6 SSA 16.7
EL1 2226.1 EL2 119.8 ALF 18.37

LAUNCH DATE NOV 23 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 671.213 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.919 GAL .15 AZL 87.33 HCA 203.17 SMA 186.04 ECC .20606 INC 2.6711 V1 30.164
RP 219.44 LAP -1.05 LOP 263.89 VP 22.276 GAP -5.90 AZP 92.46 TAL .86 TAP 204.03 RCA 147.70 APO 224.37 V2 25.047
RC 274.220 GL 29.14 GP -7.34 ZAL 82.44 ZAP 87.09 ETS 178.65 ZAE 120.02 ETE 182.36 ZAC 78.61 ETC 256.84 CLP 87.06

PLANETOCENTRIC CONIC

C3 9.927 VHL 3.151 DLA 41.33 RAL 156.55 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 2.827 DPA -1.67 RAP 169.33 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.54	8 10 17	4029.89	-33.01	177.21	18.95	63.57	9 17 26	3429.9	-36.26	168.73
121.46	15 6 40	2735.22	-33.00	78.22	18.94	63.56	15 52 16	2135.2	-36.25	69.75
58.54	8 10 17	4029.89	-33.01	177.21	18.95	63.57	9 17 26	3429.9	-36.26	168.73
121.46	15 6 40	2735.22	-33.00	78.22	18.94	63.56	15 52 16	2135.2	-36.25	69.75
58.54	8 10 17	4029.89	-33.01	177.21	18.95	63.57	9 17 26	3429.9	-36.26	168.73
121.46	15 6 40	2735.22	-33.00	78.22	18.94	63.56	15 52 16	2135.2	-36.25	69.75

DIFFERENTIAL CORRECTIONS
TDE 1.2132 TRA .0766 TC3-6.0601 BAU .8325
RDE .3690 RRA .1839 RC3-1.6220 FAU .61513
FDE 7.4595 FRA 4.0608 FC-53.6477 BSP 15494
BDE 1.2681 BRA .1992 BC3 6.2734 FSP 11124

MID-COURSE EXECUTION ACCURACY
SGT 4414.1 SGR 1301.2 SG3 3259.8
RRT .9516 RRF .9784 RTF .9658
SGB 4601.9 R23 .1700 R13 .9701
SG1 4585.8 SG2 384.8 THA 15.78

ORBIT DETERMINATION ACCURACY
ST 2210.0 SR 684.9 SS 3399.7
CRT .9854 CRS -.9994 CST -.9821
LSA 4097.2 MSA 351.6 SSA 17.6
EL1 2311.0 EL2 111.6 ALF 17.02

LAUNCH DATE NOV 23 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 675.309 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.919	GAL	.11	AZL	87.37	HCA	204.30	SMA	186.04	ECC	.20604	INC	2.6266	V1	30.164
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.321	GAP	-6.10	AZP	92.39	TAL	.63	TAP	204.93	RCA	147.70	APO	224.37	V2	25.088
RC	275.589	GL	28.75	GP	-7.00	ZAL	82.81	ZAP	85.17	ETS	178.45	ZAE	117.88	ETE	181.90	ZAC	78.77	ETC	256.94	CLP	85.13

PLANETOCENTRIC CONIC

C3	9.837	VHL	3.136	DLA	40.80	RAL	156.82	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	2.836	DPA	-1.04	RAP	168.74	ECC	1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.30	8 14 38	4018.92	-32.68	176.07	18.86	64.06	9 21 37	3418.9	-35.86	167.60
120.70	15 4 26	2742.58	-32.66	78.66	18.85	64.04	15 50 8	2142.6	-35.85	70.20
59.30	8 14 38	4018.92	-32.68	176.07	18.86	64.06	9 21 37	3418.9	-35.86	167.60
120.70	15 4 26	2742.58	-32.66	78.66	18.85	64.04	15 50 8	2142.6	-35.85	70.20
59.30	8 14 38	4018.92	-32.68	176.07	18.86	64.06	9 21 37	3418.9	-35.86	167.60
120.70	15 4 26	2742.58	-32.66	78.66	18.85	64.04	15 50 8	2142.6	-35.85	70.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2586	TRA	.1181	TC3	-6.5876	BAU	.8895	SGT	4737.5	SGR	1236.7	SG3	3239.0	ST	2304.2	SR	660.1	SS	3312.5
RDE	.3540	RRA	.1791	RC3	-1.5329	FAU	.61059	RRT	.9530	RRF	.9739	RTF	.9704	CRT	.9871	CRS	-.9993	CST	-.9832
FDE	7.2020	FRA	4.0598	FC	-53.7388	BSP	16586	SGB	4896.2	R23	.1443	R13	.9732	LSA	4073.9	MSA	347.1	SSA	18.6
BDE	1.3075	BRA	.2145	BC3	6.7636	FSP	11056	SG1	4882.7	SG2	363.7	THA	14.05	EL1	2394.8	EL2	101.7	ALF	15.82

LAUNCH DATE NOV 23 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 679.410 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.919	GAL	.07	AZL	87.41	HCA	205.43	SMA	186.04	ECC	.20605	INC	2.5856	V1	30.164
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.367	GAP	-6.29	AZP	92.34	TAL	.39	TAP	205.82	RCA	147.70	APO	224.37	V2	25.128
RC	276.940	GL	28.39	GP	-6.69	ZAL	83.21	ZAP	83.28	ETS	178.28	ZAE	115.76	ETE	181.49	ZAC	78.91	ETC	257.03	CLP	83.23

PLANETOCENTRIC CONIC

C3	9.755	VHL	3.123	DLA	40.30	RAL	157.13	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	2.848	DPA	-.45	RAP	168.17	ECC	1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.04	8 19 13	4007.97	-32.35	174.94	18.84	64.53	9 26 1	3408.0	-35.48	166.49
119.96	15 2 22	2750.22	-32.33	79.13	18.83	64.51	15 48 12	2150.2	-35.47	70.67
60.04	8 19 13	4007.97	-32.35	174.94	18.84	64.53	9 26 1	3408.0	-35.48	166.49
119.96	15 2 22	2750.22	-32.33	79.13	18.83	64.51	15 48 12	2150.2	-35.47	70.67
60.04	8 19 13	4007.97	-32.35	174.94	18.84	64.53	9 26 1	3408.0	-35.48	166.49
119.96	15 2 22	2750.22	-32.33	79.13	18.83	64.51	15 48 12	2150.2	-35.47	70.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3079	TRA	.1677	TC3	-7.0990	BAU	.9444	SGT	5058.0	SGR	1174.5	SG3	3198.4	ST	2406.0	SR	642.4	SS	3259.1
RDE	.3427	RRA	.1792	RC3	-1.4304	FAU	.59915	RRT	.9501	RRF	.9685	RTF	.9731	CRT	.9883	CRS	-.9990	CST	-.9836
FDE	7.0077	FRA	4.1949	FC	-53.1742	BSP	17862	SGB	5192.6	R23	.1260	R13	.9752	LSA	4086.5	MSA	351.5	SSA	19.3
BDE	1.3520	BRA	.2454	BC3	7.2417	FSP	11090	SG1	5180.2	SG2	357.6	THA	12.50	EL1	2488.5	EL2	94.6	ALF	14.80

LAUNCH DATE NOV 23 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 683.523 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.919	GAL	.02	AZL	87.45	HCA	206.56	SMA	186.04	ECC	.20608	INC	2.5476	V1	30.164
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.413	GAP	-6.48	AZP	92.28	TAL	.14	TAP	206.70	RCA	147.71	APO	224.38	V2	25.168
RC	278.273	GL	28.05	GP	-6.40	ZAL	83.64	ZAP	81.41	ETS	178.12	ZAE	113.65	ETE	181.12	ZAC	79.05	ETC	257.11	CLP	81.36

PLANETOCENTRIC CONIC

C3	9.681	VHL	3.111	DLA	39.80	RAL	157.49	RAD	6567.3	VEL	11.449	PTH	1.99	VHP	2.863	DPA	.12	RAP	167.62	ECC	1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.77	8 23 59	3997.06	-32.02	173.84	18.88	64.97	9 30 36	3397.1	-35.10	165.39
119.23	15 0 28	2758.12	-32.01	79.62	18.87	64.96	15 46 26	2158.1	-35.09	71.17
60.77	8 23 59	3997.06	-32.02	173.84	18.88	64.97	9 30 36	3397.1	-35.10	165.39
119.23	15 0 28	2758.12	-32.01	79.62	18.87	64.96	15 46 26	2158.1	-35.09	71.17
60.77	8 23 59	3997.06	-32.02	173.84	18.88	64.97	9 30 36	3397.1	-35.10	165.39
119.23	15 0 28	2758.12	-32.01	79.62	18.87	64.96	15 46 26	2158.1	-35.09	71.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3406	TRA	.2043	TC3	-7.6325	BAU	1.0036	SGT	5375.2	SGR	1113.4	SG3	3169.8	ST	2477.2	SR	608.5	SS	3061.9
RDE	.3237	RRA	.1665	RC3	-1.3683	FAU	.59976	RRT	.9543	RRF	.9625	RTF	.9775	CRT	.9903	CRS	-.9987	CST	-.9853
FDE	6.5230	FRA	3.9070	FC	-53.6350	BSP	18827	SGB	5489.3	R23	.0879	R13	.9786	LSA	3971.4	MSA	330.4	SSA	20.7
BDE	1.3791	BRA	.2636	BC3	7.7542	FSP	10522	SG1	5479.6	SG2	326.4	THA	11.22	EL1	2549.5	EL2	82.2	ALF	13.69

LAUNCH DATE NOV 23 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 687.642 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.920	GAL	-.02	AZL	87.49	HCA	207.70	SMA	186.06	ECC	.20613	INC	2.5125	V1	30.164
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.459	GAP	-6.66	AZP	92.22	TAL	359.87	TAP	207.58	RCA	147.71	APO	224.41	V2	25.208
RC	279.589	GL	27.74	GP	-6.13	ZAL	84.11	ZAP	79.57	ETS	177.98	ZAE	111.57	ETE	180.80	ZAC	79.17	ETC	257.20	CLP	79.51

PLANETOCENTRIC CONIC

C3	9.614	VHL	3.101	DLA	39.32	RAL	157.89	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	2.882	DPA	.65	RAP	167.08	ECC	1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.50	8 28 59	3986.01	-31.69	172.73	18.98	65.40	9 35 25	3386.0	-34.72	164.29
118.50	14 58 39	2766.43	-31.68	80.14	18.97	65.39	15 44 45	2166.4	-34.71	71.70
61.50	8 28 59	3986.01	-31.69	172.73	18.98	65.40	9 35 25	3386.0	-34.72	164.29
118.50	14 58 39	2766.43	-31.68	80.14	18.97	65.39	15 44 45	2166.4	-34.71	71.70
61.50	8 28 59	3986.01	-31.69	172.73	18.98	65.40	9 35 25	3386.0	-34.72	164.29
118.50	14 58 39	2766.43	-31.68	80.14	18.97	65.39	15 44 45	2166.4	-34.71	71.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3766	TRA	.2513	TC3	-8.1616	BAU	1.0613	SGT	5696.2	SGR	1056.5	SG3	3100.4	ST	2554.7	SR	595.4	SS	3010.4
RDE	.3149	RRA	.1735	RC3	-1.2553	FAU	.58010	RRT	.9419	RRF	.9547	RTF	.9770	CRT	.9901	CRS	-.9982	CST	-.9830
FDE	6.3125	FRA	4.2330	FC	-52.2392	BSP	20115	SGB	5793.3	R23	.0922	R13	.9780	LSA	3976.7	MSA	359.2	SSA	21.3
BDE	1.4122	BRA	.3053	BC3	8.2576	FSP	11446	SG1	5782.8	SG2	349.4	THA	9.95	EL1	2621.9	EL2	81.6	ALF	13.01

LAUNCH DATE NOV 23 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 691.771 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.921	GAL	-.07	AZL	87.52	HCA	208.85	SMA	186.07	ECC	.20620	INC	2.4798	V1	30.164
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.505	GAP	-6.84	AZP	92.17	TAL	359.59	TAP	208.44	RCA	147.70	APO	224.44	V2	25.248
RC	280.887	GL	27.44	GP	-5.87	ZAL	84.61	ZAP	77.76	ETS	177.85	ZAE	109.52	ETE	180.52	ZAC	79.28	ETC	257.28	CLP	77.70

PLANETOCENTRIC CONIC

C3	9.553	VHL	3.091	DLA	38.83	RAL	158.33	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	2.903	DPA	1.15	RAP	166.58	ECC	1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.23	8 34 15	3974.75	-31.36	171.61	19.14	65.82	9 40 30	3374.8	-34.34	163.19
117.77	14 56 55	2775.18	-31.35	80.69	19.13	65.81	15 43 10	2175.2	-34.33	72.27
62.23	8 34 15	3974.75	-31.36	171.61	19.14	65.82	9 40 30	3374.8	-34.34	163.19
117.77	14 56 55	2775.18	-31.35	80.69	19.13	65.81	15 43 10	2175.2	-34.33	72.27
62.23	8 34 15	3974.75	-31.36	171.61	19.14	65.82	9 40 30	3374.8	-34.34	163.19
117.77	14 56 55	2775.18	-31.35	80.69	19.13	65.81	15 43 10	2175.2	-34.33	72.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4095	TRA	.3040	TC3	-8.6901	BAU	1.1201	SGT	6017.2	SGR	1018.1	SG3	3082.8	ST	2626.9	SR	586.3	SS	2978.6
RDE	.3089	RRA	.1735	RC3	-1.1867	FAU	.57460	RRT	.9362	RRF	.9474	RTF	.9792	CRT	.9913	CRS	-.9977	CST	-.9834
FDE	6.1638	FRA	4.3336	FC	-52.0744	BSP	20979	SGB	6102.7	R23	.0781	R13	.9800	LSA	3998.4	MSA	358.7	SSA	22.1
BDE	1.4430	BRA	.3500	BC3	8.7708	FSP	10591	SG1	6092.5	SG2	353.3	THA	9.03	EL1	2690.5	EL2	75.4	ALF	12.49

LAUNCH DATE NOV 23 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 695.908 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.922	GAL	-.12	AZL	87.55	HCA	209.99	SMA	186.09	ECC	.20629	INC	2.4494	V1	30.164
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.551	GAP	-7.02	AZP	92.12	TAL	359.29	TAP	209.29	RCA	147.70	APO	224.48	V2	25.287
RC	282.167	GL	27.16	GP	-5.63	ZAL	85.13	ZAP	75.99	ETS	177.74	ZAE	107.50	ETE	180.27	ZAC	79.39	ETC	257.36	CLP	75.92

PLANETOCENTRIC CONIC

C3	9.498	VHL	3.082	DLA	38.35	RAL	158.82	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	2.926	DPA	1.63	RAP	166.10	ECC	1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.97	8 39 46	3963.28	-31.03	170.49	19.35	66.23	9 45 49	3363.3	-33.96	162.08
117.03	14 55 15	2784.38	-31.02	81.28	19.34	66.21	15 41 39	2184.4	-33.95	72.87
62.97	8 39 46	3963.28	-31.03	170.49	19.35	66.23	9 45 49	3363.3	-33.96	162.08
117.03	14 55 15	2784.38	-31.02	81.28	19.34	66.21	15 41 39	2184.4	-33.95	72.87
62.97	8 39 46	3963.28	-31.03	170.49	19.35	66.23	9 45 49	3363.3	-33.96	162.08
117.03	14 55 15	2784.38	-31.02	81.28	19.34	66.21	15 41 39	2184.4	-33.95	72.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4381	TRA	.3571	TC3	-9.2107	BAU	1.1781	SGT	6332.1	SGR	974.3	SG3	3043.8	ST	2691.2	SR	569.4	SS	2869.1
RDE	.2990	RRA	.1717	RC3	-1.1177	FAU	.56734	RRT	.9307	RRF	.9385	RTF	.9808	CRT	.9923	CRS	-.9970	CST	-.9832
FDE	5.8489	FRA	4.3599	FC	-51.7149	BSP	22044	SGB	6406.6	R23	.0623	R13	.9813	LSA	3958.3	MSA	360.4	SSA	23.1
BDE	1.4689	BRA	.3963	BC3	9.2782	FSP	10393	SG1	6396.9	SG2	352.7	THA	8.17	EL1	2749.9	EL2	69.1	ALF	11.87

LAUNCH DATE NOV 23 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 700.052 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.924	GAL	-.17	AZL	87.58	HCA	211.14	SMA	186.12	ECC	.20641	INC	2.4208	V1	30.164
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.596	GAP	-7.19	AZP	92.07	TAL	358.98	TAP	210.13	RCA	147.70	APO	224.54	V2	25.327
RC	283.431	GL	26.90	GP	-5.40	ZAL	85.69	ZAP	74.25	ETS	177.64	ZAE	105.51	ETE	180.05	ZAC	79.50	ETC	257.44	CLP	74.18

PLANETOCENTRIC CONIC

C3	9.448	VHL	3.074	DLA	37.87	RAL	159.34	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	2.953	DPA	2.07	RAP	165.65	ECC	1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.72	8 45 32	3951.53	-30.69	169.35	19.60	66.63	9 51 24	3351.5	-33.57	160.95
116.28	14 53 37	2794.10	-30.68	81.91	19.60	66.61	15 40 11	2194.1	-33.56	73.51
63.72	8 45 32	3951.53	-30.69	169.35	19.60	66.63	9 51 24	3351.5	-33.57	160.95
116.28	14 53 37	2794.10	-30.68	81.91	19.60	66.61	15 40 11	2194.1	-33.56	73.51
63.72	8 45 32	3951.53	-30.69	169.35	19.60	66.63	9 51 24	3351.5	-33.57	160.95
116.28	14 53 37	2794.10	-30.68	81.91	19.60	66.61	15 40 11	2194.1	-33.56	73.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4630	TRA	.4111	TC3	-9.7226	BAU	1.2352	SGT	6641.1	SGR	930.0	SG3	2988.4	ST	2748.5	SR	553.9	SS	2756.3
RDE	.2899	RRA	.1696	RC3	-1.0447	FAU	.55682	RRT	.9231	RRF	.9278	RTF	.9821	CRT	.9932	CRS	-.9960	CST	-.9828
FDE	5.5308	FRA	4.3644	FC	-51.0220	BSP	23080	SGB	6705.9	R23	.0483	R13	.9825	LSA	3915.0	MSA	361.1	SSA	24.0
BDE	1.4915	BRA	.4447	BC3	9.7786	FSP	10149	SG1	6696.5	SG2	354.7	THA	7.39	EL1	2803.0	EL2	63.0	ALF	11.33

LAUNCH DATE NOV 23 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 704.203 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	32.925	GAL	-.23	AZL	87.61	HCA	212.30	SMA	186.15	ECC	.20655	INC	2.3941	V1	30.164
RP	216.57	LAP	-1.28	LOP	273.02	VP	22.642	GAP	-7.36	AZP	92.02	TAL	358.66	TAP	210.96	RCA	147.70	APO	224.60	V2	25.365
RC	284.679	GL	26.65	GP	-5.19	ZAL	86.29	ZAP	72.55	ETS	177.55	ZAE	103.56	ETE	179.85	ZAC	79.60	ETC	257.51	CLP	72.48

PLANETOCENTRIC CONIC

C3	9.404	VHL	3.067	DLA	37.39	RAL	159.89	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	2.982	DPA	2.49	RAP	165.24	ECC	1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.48	8 51 38	3939.29	-30.35	168.18	19.91	67.02	9 57 17	3339.3	-33.18	159.79
115.52	14 51 57	2804.50	-30.34	82.59	19.91	67.01	15 38 41	2204.5	-33.17	74.21
64.48	8 51 38	3939.29	-30.35	168.18	19.91	67.02	9 57 17	3339.3	-33.18	159.79
115.52	14 51 57	2804.50	-30.34	82.59	19.91	67.01	15 38 41	2204.5	-33.17	74.21
64.48	8 51 38	3939.29	-30.35	168.18	19.91	67.02	9 57 17	3339.3	-33.18	159.79
115.52	14 51 57	2804.50	-30.34	82.59	19.91	67.01	15 38 41	2204.5	-33.17	74.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4856	TRA	.4711	TC	-10.2188	BAU	1.2905	SGT	6943.5	SGR	890.4	SG3	2930.0	ST	2801.8	SR	542.2	SS	2665.5
RDE	.2829	RRA	.1692	RC3	-.9717	FAU	.54458	RRT	.9127	RRF	.9158	RTF	.9831	CRT	.9941	CRS	-.9948	CST	-.9822
FDE	5.2573	FRA	4.4207	FC	-50.1339	BSP	24142	SGB	7000.3	R23	.0392	R13	.9834	LSA	3887.8	MSA	364.5	SSA	24.8
BDE	1.5123	BRA	.5005	BC3	10.2649	FSP	9929	SG1	6991.0	SG2	361.3	THA	6.69	EL1	2853.2	EL2	57.5	ALF	10.89

LAUNCH DATE NOV 23 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 708.362 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.927 GAL -.29 AZL 87.63 HCA 213.46 SMA 186.18 ECC .20671 INC 2.3689 V1 30.164
RP 216.22 LAP -1.31 LOP 274.17 VP 22.688 GAP -7.52 AZP 91.98 TAL 358.32 TAP 211.77 RCA 147.69 APO 224.66 V2 25.404
RC 285.910 GL 26.41 GP -4.98 ZAL 86.91 ZAP 70.89 ETS 177.47 ZAE 101.64 ETE 179.67 ZAC 79.69 ETC 257.58 CLP 70.81

PLANETOCENTRIC CONIC

C3 9.365 VHL 3.060 DLA 36.91 RAL 160.48 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.013 DPA 2.88 RAP 164.86 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.26	8 58 3	3926.57	-30.00	166.98	20.26	67.41	10 3 29	3326.6	-32.78	158.60
114.74	14 50 14	2815.61	-29.99	83.32	20.26	67.39	15 37 10	2215.6	-32.77	74.95
65.26	8 58 3	3926.57	-30.00	166.98	20.26	67.41	10 3 29	3326.6	-32.78	158.60
114.74	14 50 14	2815.61	-29.99	83.32	20.26	67.39	15 37 10	2215.6	-32.77	74.95
65.26	8 58 3	3926.57	-30.00	166.98	20.26	67.41	10 3 29	3326.6	-32.78	158.60
114.74	14 50 14	2815.61	-29.99	83.32	20.26	67.39	15 37 10	2215.6	-32.77	74.95

DIFFERENTIAL CORRECTIONS
TDE 1.5031 TRA .5334 TC-10.7104 BAU 1.3458
RDE .2761 RRA .1683 RC3 -.9053 FAU .53356
FDE 4.9641 FRA 4.4507 FC-49.3228 BSP 25194
BDE 1.5282 BRA .5593 BC310.7486 FSP 9735

MID-COURSE EXECUTION ACCURACY
SGT 7242.3 SGR 854.2 SG3 2873.8
RRT .9019 RRF .9025 RTF .9841
SGB 7292.5 R23 .0291 R13 .9843
SG1 7283.3 SG2 366.9 THA 6.09

ORBIT DETERMINATION ACCURACY
ST 2845.7 SR 530.6 SS 2563.5
CRT .9950 CRS -.9932 CST -.9815
LSA 3849.1 MSA 366.8 SSA 25.7
EL1 2894.3 EL2 52.0 ALF 10.51

LAUNCH DATE NOV 23 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 712.528 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.929 GAL -.35 AZL 87.65 HCA 214.62 SMA 186.22 ECC .20689 INC 2.3451 V1 30.164
RP 215.88 LAP -1.33 LOP 275.34 VP 22.734 GAP -7.68 AZP 91.93 TAL 357.96 TAP 212.58 RCA 147.69 APO 224.74 V2 25.442
RC 287.127 GL 26.17 GP -4.79 ZAL 87.56 ZAP 69.26 ETS 177.39 ZAE 99.76 ETE 179.52 ZAC 79.79 ETC 257.64 CLP 69.19

PLANETOCENTRIC CONIC

C3 9.332 VHL 3.055 DLA 36.42 RAL 161.10 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.047 DPA 3.24 RAP 164.51 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.07	9 4 47	3913.33	-29.65	165.74	20.66	67.79	10 10 0	3313.3	-32.38	157.38
113.93	14 48 29	2827.46	-29.63	84.11	20.65	67.78	15 35 36	2227.5	-32.37	75.76
66.07	9 4 47	3913.33	-29.65	165.74	20.66	67.79	10 10 0	3313.3	-32.38	157.38
113.93	14 48 29	2827.46	-29.63	84.11	20.65	67.78	15 35 36	2227.5	-32.37	75.76
66.07	9 4 47	3913.33	-29.65	165.74	20.66	67.79	10 10 0	3313.3	-32.38	157.38
113.93	14 48 29	2827.46	-29.63	84.11	20.65	67.78	15 35 36	2227.5	-32.37	75.76

DIFFERENTIAL CORRECTIONS
TDE 1.5171 TRA .5984 TC-11.1880 BAU 1.3997
RDE .2702 RRA .1677 RC3 -.8371 FAU .52022
FDE 4.6791 FRA 4.4816 FC-48.2619 BSP 26212
BDE 1.5410 BRA .6215 BC311.2193 FSP 9505

MID-COURSE EXECUTION ACCURACY
SGT 7534.3 SGR 819.3 SG3 2807.1
RRT .8883 RRF .8870 RTF .9849
SGB 7578.7 R23 .0217 R13 .9850
SG1 7569.4 SG2 374.5 THA 5.53

ORBIT DETERMINATION ACCURACY
ST 2883.4 SR 520.4 SS 2464.0
CRT .9958 CRS -.9912 CST -.9805
LSA 3810.4 MSA 369.7 SSA 26.5
EL1 2929.6 EL2 46.7 ALF 10.19

LAUNCH DATE NOV 23 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 716.701 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.932 GAL -.41 AZL 87.68 HCA 215.78 SMA 186.26 ECC .20710 INC 2.3226 V1 30.164
RP 215.54 LAP -1.36 LOP 276.50 VP 22.779 GAP -7.84 AZP 91.88 TAL 357.59 TAP 213.38 RCA 147.68 APO 224.83 V2 25.480
RC 288.329 GL 25.95 GP -4.60 ZAL 88.24 ZAP 67.68 ETS 177.33 ZAE 97.91 ETE 179.38 ZAC 79.89 ETC 257.70 CLP 67.60

PLANETOCENTRIC CONIC

C3 9.304 VHL 3.050 DLA 35.93 RAL 161.76 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.083 DPA 3.57 RAP 164.20 ECC 1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.89	9 11 54	3899.36	-29.28	164.45	21.09	68.17	10 16 53	3299.4	-31.97	156.11
113.11	14 46 36	2840.25	-29.27	84.97	21.09	68.16	15 33 56	2240.2	-31.96	76.63
66.89	9 11 54	3899.36	-29.28	164.45	21.09	68.17	10 16 53	3299.4	-31.97	156.11
113.11	14 46 36	2840.25	-29.27	84.97	21.09	68.16	15 33 56	2240.2	-31.96	76.63
66.89	9 11 54	3899.36	-29.28	164.45	21.09	68.17	10 16 53	3299.4	-31.97	156.11
113.11	14 46 36	2840.25	-29.27	84.97	21.09	68.16	15 33 56	2240.2	-31.96	76.63

DIFFERENTIAL CORRECTIONS
TDE 1.5266 TRA .6674 TC-11.6563 BAU 1.4530
RDE .2649 RRA .1676 RC3 -.7722 FAU .50693
FDE 4.3955 FRA 4.5238 FC-47.1717 BSP 27178
BDE 1.5494 BRA .6881 BC311.6819 FSP 9246

MID-COURSE EXECUTION ACCURACY
SGT 7822.0 SGR 787.8 SG3 2740.9
RRT .8728 RRF .8701 RTF .9855
SGB 7861.6 R23 .0160 R13 .9856
SG1 7852.2 SG2 383.0 THA 5.04

ORBIT DETERMINATION ACCURACY
ST 2912.8 SR 511.3 SS 2364.6
CRT .9965 CRS -.9886 CST -.9792
LSA 3767.8 MSA 374.6 SSA 27.3
EL1 2957.1 EL2 41.8 ALF 9.92

LAUNCH DATE NOV 23 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 720.882 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.934 GAL -.48 AZL 87.70 HCA 216.95 SMA 186.30 ECC .20733 INC 2.3013 V1 30.164
RP 215.21 LAP -1.38 LOP 277.67 VP 22.825 GAP -8.00 AZP 91.84 TAL 357.21 TAP 214.16 RCA 147.68 APO 224.92 V2 25.517
RC 289.516 GL 25.73 GP -4.43 ZAL 88.96 ZAP 66.13 ETS 177.27 ZAE 96.10 ETE 179.26 ZAC 79.98 ETC 257.76 CLP 66.06

PLANETOCENTRIC CONIC

C3 9.281 VHL 3.046 DLA 35.43 RAL 162.45 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.121 DPA 3.88 RAP 163.92 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.75	9 19 24	3884.60	-28.90	163.10	21.57	68.55	10 24 9	3284.6	-31.55	154.78
112.25	14 44 34	2854.04	-28.89	85.89	21.56	68.54	15 32 8	2254.0	-31.54	77.57
67.75	9 19 24	3884.60	-28.90	163.10	21.57	68.55	10 24 9	3284.6	-31.55	154.78
112.25	14 44 34	2854.04	-28.89	85.89	21.56	68.54	15 32 8	2254.0	-31.54	77.57
67.75	9 19 24	3884.60	-28.90	163.10	21.57	68.55	10 24 9	3284.6	-31.55	154.78
112.25	14 44 34	2854.04	-28.89	85.89	21.56	68.54	15 32 8	2254.0	-31.54	77.57

DIFFERENTIAL CORRECTIONS
TDE 1.5331 TRA .7402 TC-12.1066 BAU 1.5047
RDE .2604 RRA .1671 RC3 -.7104 FAU .49357
FDE 4.1227 FRA 4.5454 FC-46.0424 BSP 28163
BDE 1.5550 BRA .7588 BC312.1274 FSP 9005

MID-COURSE EXECUTION ACCURACY
SGT 8102.0 SGR 758.9 SG3 2673.0
RRT .8561 RRF .8512 RTF .9862
SGB 8137.5 R23 .0096 R13 .9863
SG1 8128.1 SG2 391.0 THA 4.60

ORBIT DETERMINATION ACCURACY
ST 2936.9 SR 503.3 SS 2267.7
CRT .9972 CRS -.9855 CST -.9780
LSA 3725.4 MSA 377.0 SSA 28.0
EL1 2979.5 EL2 37.1 ALF 9.70

LAUNCH DATE NOV 23 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 725.070 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.937 GAL -.55 AZL 87.72 HCA 218.12 SMA 186.35 ECC .20758 INC 2.2810 V1 30.164
RP 214.88 LAP -1.41 LOP 278.84 VP 22.870 GAP -8.15 AZP 91.79 TAL 356.81 TAP 214.94 RCA 147.67 APO 225.03 V2 25.554
RC 290.691 GL 25.51 GP -4.26 ZAL 89.70 ZAP 64.63 ETS 177.22 ZAE 94.33 ETE 179.15 ZAC 80.08 ETC 257.80 CLP 64.55

PLANETOCENTRIC CONIC

C3 9.263 VHL 3.044 DLA 34.92 RAL 163.16 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.161 DPA 4.16 RAP 163.68 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.65	9 27 23	3868.80	-28.52	161.68	22.08	68.93	10 31 52	3268.8	-31.11	153.38
111.35	14 42 17	2869.10	-28.51	86.91	22.08	68.92	15 30 7	2269.1	-31.11	78.61
68.65	9 27 23	3868.80	-28.52	161.68	22.08	68.93	10 31 52	3268.8	-31.11	153.38
111.35	14 42 17	2869.10	-28.51	86.91	22.08	68.92	15 30 7	2269.1	-31.11	78.61
68.65	9 27 23	3868.80	-28.52	161.68	22.08	68.93	10 31 52	3268.8	-31.11	153.38
111.35	14 42 17	2869.10	-28.51	86.91	22.08	68.92	15 30 7	2269.1	-31.11	78.61

DIFFERENTIAL CORRECTIONS
TDE 1.5348 TRA .8162 TC-12.5425 BAU 1.5553
RDE .2560 RRA .1670 RC3 -.6497 FAU .47952
FDE 3.8403 FRA 4.5728 FC-44.8164 BSP 29100
BDE 1.5560 BRA .8331 BC312.5593 FSP 8739

MID-COURSE EXECUTION ACCURACY
SGT 8375.4 SGR 732.0 SG3 2601.6
RRT .8369 RRF .8303 RTF .9867
SGB 8407.3 R23 .0048 R13 .9867
SG1 8397.8 SG2 399.6 THA 4.19

ORBIT DETERMINATION ACCURACY
ST 2952.3 SR 495.7 SS 2165.1
CRT .9977 CRS -.9814 CST -.9760
LSA 3674.6 MSA 382.5 SSA 28.7
EL1 2993.5 EL2 33.3 ALF 9.51

LAUNCH DATE NOV 23 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 729.264 EARTH TO MARS

RL 147.71 LAL -.00 LOL -60.74 VL 32.940 GAL -.62 AZL 87.74 HCA 219.30 SMA 186.40 ECC .20785 INC 2.2618 V1 30.164
RP 214.56 LAP -1.43 LOP 280.02 VP 22.915 GAP -8.30 AZP 91.75 TAL 356.40 TAP 215.70 RCA 147.66 APO 225.14 V2 25.590
RC 291.851 GL 25.30 GP -4.11 ZAL 90.48 ZAP 63.16 ETS 177.17 ZAE 92.60 ETE 179.05 ZAC 80.17 ETC 257.84 CLP 63.09

PLANETOCENTRIC CONIC

C3 9.251 VHL 3.042 DLA 34.40 RAL 163.91 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.203 DPA 4.42 RAP 163.48 ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.59	9 35 52	3851.87	-28.12	160.18	22.63	69.31	10 40 4	3251.9	-30.67	151.89
110.41	14 39 45	2885.53	-28.11	88.03	22.63	69.29	15 27 51	2285.5	-30.66	79.75
69.59	9 35 52	3851.87	-28.12	160.18	22.63	69.31	10 40 4	3251.9	-30.67	151.89
110.41	14 39 45	2885.53	-28.11	88.03	22.63	69.29	15 27 51	2285.5	-30.66	79.75
69.59	9 35 52	3851.87	-28.12	160.18	22.63	69.31	10 40 4	3251.9	-30.67	151.89
110.41	14 39 45	2885.53	-28.11	88.03	22.63	69.29	15 27 51	2285.5	-30.66	79.75

DIFFERENTIAL CORRECTIONS
TDE 1.5328 TRA .8963 TC-12.9639 BAU 1.6050
RDE .2525 RRA .1670 RC3 -.5920 FAU .46559
FDE 3.5754 FRA 4.5963 FC-43.5720 BSP 30041
BDE 1.5535 BRA .9117 BC312.9774 FSP 8494

MID-COURSE EXECUTION ACCURACY
SGT 8643.7 SGR 708.0 SG3 2530.8
RRT .8159 RRF .8076 RTF .9872
SGB 8672.7 R23 .0006 R13 .9872
SG1 8663.1 SG2 408.4 THA 3.83

ORBIT DETERMINATION ACCURACY
ST 2961.5 SR 489.4 SS 2069.2
CRT .9980 CRS -.9764 CST -.9741
LSA 3625.0 MSA 387.0 SSA 29.4
EL1 3001.5 EL2 30.7 ALF 9.37

LAUNCH DATE NOV 23 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 733.465 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.943 GAL -.69 AZL 87.76 HCA 220.48 SMA 186.45 ECC .20814 INC 2.2434 V1 30.164
RP 214.24 LAP -1.46 LOP 281.20 VP 22.959 GAP -8.45 AZP 91.71 TAL 355.97 TAP 216.45 RCA 147.64 APO 225.26 V2 25.626
RC 292.998 GL 25.09 GP -3.96 ZAL 91.28 ZAP 61.74 ETS 177.13 ZAE 90.90 ETE 178.97 ZAC 80.27 ETC 257.88 CLP 61.66

PLANETOCENTRIC CONIC

C3 9.244 VHL 3.040 DLA 33.88 RAL 164.68 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.247 DPA 4.65 RAP 163.31 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.58	9 44 53	3833.64	-27.71	158.58	23.22	69.69	10 48 47	3233.6	-30.21	150.31
109.42	14 36 54	2903.48	-27.70	89.26	23.22	69.67	15 25 18	2303.5	-30.21	80.99
70.58	9 44 53	3833.64	-27.71	158.58	23.22	69.69	10 48 47	3233.6	-30.21	150.31
109.42	14 36 54	2903.48	-27.70	89.26	23.22	69.67	15 25 18	2303.5	-30.21	80.99
110.00	15 15 12	2786.55	-30.26	81.13	24.20	73.27	16 1 38	2186.5	-32.25	72.48
110.00	14 5 46	2998.58	-25.21	95.54	22.09	66.11	14 55 44	2398.6	-28.22	87.66

DIFFERENTIAL CORRECTIONS
TDE 1.5264 TRA .9797 TC-13.3677 BAU 1.6534
RDE .2494 RRA .1670 RC3 -.5360 FAU .45132
FDE 3.3095 FRA 4.6149 FC-42.2657 BSP 30943
BDE 1.5466 BRA .9938 BC313.3784 FSP 8244

MID-COURSE EXECUTION ACCURACY
SGT 8904.8 SGR 686.1 SG3 2457.7
RRT .7929 RRF .7828 RTF .9875
SGB 8931.2 R23 -.0031 R13 .9875
SG1 8921.4 SG2 417.3 THA 3.50

ORBIT DETERMINATION ACCURACY
ST 2962.7 SR 483.6 SS 1971.1
CRT .9980 CRS -.9699 CST -.9715
LSA 3569.5 MSA 392.9 SSA 30.0
EL1 3001.8 EL2 30.0 ALF 9.25

LAUNCH DATE NOV 23 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 737.668 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.946 GAL -.77 AZL 87.77 HCA 221.66 SMA 186.51 ECC .20846 INC 2.2258 V1 30.164
RP 213.93 LAP -1.48 LOP 282.38 VP 23.004 GAP -8.59 AZP 91.66 TAL 355.53 TAP 217.19 RCA 147.63 APO 225.39 V2 25.662
RC 294.131 GL 24.89 GP -3.82 ZAL 92.12 ZAP 60.35 ETS 177.09 ZAE 89.24 ETE 178.90 ZAC 80.37 ETC 257.91 CLP 60.28

PLANETOCENTRIC CONIC

C3 9.244 VHL 3.040 DLA 33.33 RAL 165.48 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.293 DPA 4.86 RAP 163.18 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.63	9 54 34	3813.73	-27.29	156.86	23.85	70.07	10 58 8	3213.7	-29.75	148.62
108.37	14 33 37	2923.37	-27.28	90.63	23.84	70.05	15 22 20	2323.4	-29.74	82.38
71.63	9 54 34	3813.73	-27.29	156.86	23.85	70.07	10 58 8	3213.7	-29.75	148.62
108.37	14 33 37	2923.37	-27.28	90.63	23.84	70.05	15 22 20	2323.4	-29.74	82.38
110.00	15 41 15	2716.02	-31.53	76.03	25.33	76.05	16 26 31	2116.0	-33.12	67.16
110.00	13 46 7	3069.08	-23.19	100.02	21.94	64.16	14 37 16	2469.1	-26.47	92.40

DIFFERENTIAL CORRECTIONS
TDE 1.5358 TRA 1.0878 TC-13.6747 BAU 1.6909
RDE .2486 RRA .1688 RC3 -.4743 FAU .43274
FDE 3.1442 FRA 4.7199 FC-40.5286 BSP 32288
BDE 1.5558 BRA 1.1008 BC313.6830 FSP 8152

MID-COURSE EXECUTION ACCURACY
SGT 9140.0 SGR 669.1 SG3 2375.3
RRT .7667 RRF .7577 RTF .9877
SGB 9164.5 R23 -.0019 R13 .9877
SG1 9154.5 SG2 428.9 THA 3.22

ORBIT DETERMINATION ACCURACY
ST 2996.9 SR 482.4 SS 1926.6
CRT .9978 CRS -.9636 CST -.9700
LSA 3572.9 MSA 398.7 SSA 30.3
EL1 3035.3 EL2 31.5 ALF 9.12

LAUNCH DATE NOV 23 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 741.884 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.950 GAL -.85 AZL 87.79 HCA 222.85 SMA 186.57 ECC .20880 INC 2.2090 V1 30.164
RP 213.62 LAP -1.50 LOP 283.57 VP 23.048 GAP -8.73 AZP 91.62 TAL 355.08 TAP 217.92 RCA 147.61 APO 225.52 V2 25.697
RC 295.251 GL 24.68 GP -3.68 ZAL 92.98 ZAP 59.00 ETS 177.05 ZAE 87.62 ETE 178.83 ZAC 80.47 ETC 257.94 CLP 58.93

PLANETOCENTRIC CONIC

C3 9.249 VHL 3.041 DLA 32.78 RAL 166.30 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.341 DPA 5.05 RAP 163.08 ECC 1.1522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.75	10 4 57	3791.91	-26.85	155.01	24.50	70.45	11 8 9	3191.9	-29.26	146.78
107.25	14 29 47	2945.42	-26.84	92.15	24.50	70.43	15 18 52	2345.4	-29.26	83.93
72.75	10 4 57	3791.91	-26.85	155.01	24.50	70.45	11 8 9	3191.9	-29.26	146.78
107.25	14 29 47	2945.42	-26.84	92.15	24.50	70.43	15 18 52	2345.4	-29.26	83.93
110.00	16 0 48	2665.28	-32.30	72.27	26.26	78.14	16 45 13	2065.3	-33.59	63.28
110.00	13 33 7	3120.05	-21.64	103.17	22.04	62.87	14 25 7	2520.1	-25.10	95.72

DIFFERENTIAL CORRECTIONS
TDE 1.5133 TRA 1.1717 TC-14.0726 BAU 1.7409
RDE .2458 RRA .1682 RC3 -.4264 FAU .42042
FDE 2.8615 FRA 4.6994 FC-39.3508 BSP 32973
BDE 1.5331 BRA 1.1838 BC314.0791 FSP 7838

MID-COURSE EXECUTION ACCURACY
SGT 9396.4 SGR 651.0 SG3 2306.8
RRT .7405 RRF .7291 RTF .9881
SGB 9418.9 R23 -.0062 R13 .9881
SG1 9408.7 SG2 436.9 THA 2.94

ORBIT DETERMINATION ACCURACY
ST 2968.9 SR 476.7 SS 1815.4
CRT .9971 CRS -.9536 CST -.9662
LSA 3488.9 MSA 405.1 SSA 31.0
EL1 3006.7 EL2 35.9 ALF 9.10

LAUNCH DATE NOV 23 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 746.105 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.953 GAL -.93 AZL 87.81 HCA 224.04 SMA 186.63 ECC .20917 INC 2.1929 V1 30.164
RP 213.31 LAP -1.52 LOP 284.76 VP 23.091 GAP -8.87 AZP 91.58 TAL 354.61 TAP 218.64 RCA 147.59 APO 225.67 V2 25.731
RC 296.356 GL 24.47 GP -3.56 ZAL 93.87 ZAP 57.69 ETS 177.02 ZAE 86.03 ETE 178.77 ZAC 80.57 ETC 257.96 CLP 57.62

PLANETOCENTRIC CONIC

C3 9.261 VHL 3.043 DLA 32.22 RAL 167.15 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.390 DPA 5.21 RAP 163.02 ECC 1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.95	10 16 12	3767.73	-26.40	152.98	25.19	70.83	11 19 0	3167.7	-28.77	144.77
106.05	14 25 18	2970.11	-26.39	93.87	25.19	70.81	15 14 48	2370.1	-28.76	85.66
73.95	10 16 12	3767.73	-26.40	152.98	25.19	70.83	11 19 0	3167.7	-28.77	144.77
106.05	14 25 18	2970.11	-26.39	93.87	25.19	70.81	15 14 48	2370.1	-28.76	85.66
110.00	16 17 40	2622.80	-32.85	69.08	27.12	79.96	17 1 23	2022.8	-33.88	60.00
110.00	13 23 0	3163.03	-20.29	105.77	22.28	61.88	14 15 43	2563.0	-23.88	98.47

DIFFERENTIAL CORRECTIONS
TDE 1.4890 TRA 1.2617 TC-14.4421 BAU 1.7888
RDE .2436 RRA .1679 RC3 -.3793 FAU .40760
FDE 2.5978 FRA 4.6849 FC-38.1023 BSP 33679
BDE 1.5088 BRA 1.2728 BC314.4471 FSP 7534

MID-COURSE EXECUTION ACCURACY
SGT 9644.2 SGR 635.1 SG3 2237.1
RRT .7126 RRF .6989 RTF .9885
SGB 9665.1 R23 -.0099 R13 .9885
SG1 9654.8 SG2 445.1 THA 2.69

ORBIT DETERMINATION ACCURACY
ST 2939.1 SR 472.3 SS 1712.7
CRT .9958 CRS -.9412 CST -.9619
LSA 3409.3 MSA 412.2 SSA 31.6
EL1 2976.5 EL2 42.6 ALF 9.09

LAUNCH DATE NOV 23 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 750.332 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.957 GAL -1.02 AZL 87.82 HCA 225.23 SMA 186.70 ECC .20956 INC 2.1773 V1 30.164
RP 213.01 LAP -1.55 LOP 285.95 VP 23.135 GAP -9.01 AZP 91.53 TAL 354.12 TAP 219.35 RCA 147.57 APO 225.82 V2 25.765
RC 297.448 GL 24.27 GP -3.44 ZAL 94.79 ZAP 56.42 ETS 176.99 ZAE 84.48 ETE 178.72 ZAC 80.67 ETC 257.97 CLP 56.35

PLANETOCENTRIC CONIC

C3 9.280 VHL 3.046 DLA 31.64 RAL 168.02 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.441 DPA 5.35 RAP 163.00 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.26	10 28 33	3740.38	-25.94	150.72	25.92	71.21	11 30 53	3140.4	-28.26	142.54
104.74	14 19 53	2998.24	-25.93	95.82	25.91	71.19	15 9 52	2398.2	-28.25	87.64
75.26	10 28 33	3740.38	-25.94	150.72	25.92	71.21	11 30 53	3140.4	-28.26	142.54
104.74	14 19 53	2998.24	-25.93	95.82	25.91	71.19	15 9 52	2398.2	-28.25	87.64
110.00	16 33 1	2585.13	-33.26	66.22	27.95	81.61	17 16 6	1985.1	-34.06	57.07
110.00	13 14 36	3201.49	-19.04	108.05	22.62	61.06	14 7 57	2601.5	-22.75	100.88

DIFFERENTIAL CORRECTIONS
TDE 1.4624 TRA 1.3586 TC-14.7837 BAU 1.8346
RDE .2421 RRA .1679 RC3 -.3327 FAU .39407
FDE 2.3531 FRA 4.6812 FC-36.7628 BSP 34401
BDE 1.4823 BRA 1.3690 BC314.7874 FSP 7254

MID-COURSE EXECUTION ACCURACY
SGT 9884.5 SGR 621.4 SG3 2165.6
RRT .6825 RRF .6673 RTF .9887
SGB 9904.0 R23 -.0123 R13 .9887
SG1 9893.6 SG2 453.8 THA 2.46

ORBIT DETERMINATION ACCURACY
ST 2906.8 SR 468.9 SS 1619.5
CRT .9939 CRS -.9261 CST -.9568
LSA 3333.8 MSA 420.4 SSA 32.1
EL1 2943.9 EL2 51.2 ALF 9.11

LAUNCH DATE NOV 23 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 754.564 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.961 GAL -1.11 AZL 87.84 HCA 226.43 SMA 186.76 ECC .20998 INC 2.1624 V1 30.164
RP 212.72 LAP -1.57 LOP 287.15 VP 23.177 GAP -9.15 AZP 91.49 TAL 353.62 TAP 220.05 RCA 147.55 APO 225.98 V2 25.798
RC 298.526 GL 24.06 GP -3.32 ZAL 95.74 ZAP 55.18 ETS 176.96 ZAE 82.97 ETE 178.68 ZAC 80.78 ETC 257.98 CLP 55.11

PLANETOCENTRIC CONIC

C3 9.306 VHL 3.050 DLA 31.05 RAL 168.91 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.494 DPA 5.47 RAP 163.01 ECC 1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.70	10 42 11	3709.20	-25.46	148.19	26.67	71.60	11 44 0	3109.2	-27.73	140.03
103.30	14 13 22	3030.49	-25.45	98.08	26.67	71.58	15 3 52	2430.5	-27.72	89.92
76.70	10 42 11	3709.20	-25.46	148.19	26.67	71.60	11 44 0	3109.2	-27.73	140.03
103.30	14 13 22	3030.49	-25.45	98.08	26.67	71.58	15 3 52	2430.5	-27.72	89.92
110.00	16 47 21	2550.65	-33.57	63.57	28.76	83.14	17 29 52	1950.7	-34.15	54.38
110.00	13 7 22	3237.03	-17.85	110.12	23.03	60.35	14 1 19	2637.0	-21.66	103.06

DIFFERENTIAL CORRECTIONS
TDE 1.4330 TRA 1.4607 TC-15.0970 BAU 1.8785
RDE .2412 RRA .1680 RC3 -.2881 FAU .38067
FDE 2.1236 FRA 4.6759 FC-35.4154 BSP 35162
BDE 1.4531 BRA 1.4703 BC315.0998 FSP 7002

MID-COURSE EXECUTION ACCURACY
SGT10116.1 SGR 609.8 SG3 2094.8
RRT .6514 RRF .6346 RTF .9890
SGB10134.5 R23 -.0145 R13 .9890
SG110123.9 SG2 462.3 THA 2.25

ORBIT DETERMINATION ACCURACY
ST 2871.1 SR 466.3 SS 1533.1
CRT .9910 CRS -.9080 CST -.9512
LSA 3259.8 MSA 428.8 SSA 32.5
EL1 2908.1 EL2 61.5 ALF 9.15

LAUNCH DATE NOV 23 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 758.801 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.965 GAL -1.20 AZL 87.85 HCA 227.63 SMA 186.83 ECC .21042 INC 2.1481 V1 30.164
RP 212.43 LAP -1.59 LOP 288.35 VP 23.220 GAP -9.28 AZP 91.45 TAL 353.11 TAP 220.74 RCA 147.52 APO 226.15 V2 25.831
RC 299.592 GL 23.84 GP -3.21 ZAL 96.72 ZAP 53.98 ETS 176.94 ZAE 81.48 ETE 178.64 ZAC 80.89 ETC 257.98 CLP 53.91

PLANETOCENTRIC CONIC

C3 9.339 VHL 3.056 DLA 30.44 RAL 169.82 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.549 DPA 5.58 RAP 163.05 ECC 1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.33	10 57 36	3672.62	-24.96	145.26	27.46	71.98	11 58 48	3072.6	-27.19	137.13
101.67	14 5 14	3068.44	-24.95	100.75	27.45	71.97	14 56 22	2468.4	-27.18	92.61
78.33	10 57 36	3672.62	-24.96	145.26	27.46	71.98	11 58 48	3072.6	-27.19	137.13
101.67	14 5 14	3068.44	-24.95	100.75	27.45	71.97	14 56 22	2468.4	-27.18	92.61
110.00	17 0 59	2518.49	-33.80	61.09	29.56	84.59	17 42 58	1918.5	-34.18	51.87
110.00	13 1 1	3270.58	-16.71	112.06	23.51	59.74	13 55 31	2670.6	-20.61	105.09

DIFFERENTIAL CORRECTIONS
TDE 1.3997 TRA 1.5676 TC-15.3867 BAU 1.9212
RDE .2406 RRA .1682 RC3 -.2452 FAU .36728
FDE 1.9010 FRA 4.6704 FC-34.0489 BSP 35901
BDE 1.4202 BRA 1.5766 BC315.3887 FSP 6752

MID-COURSE EXECUTION ACCURACY
SGT10341.5 SGR 599.8 SG3 2024.3
RRT .6191 RRF .6007 RTF .9892
SGB10358.8 R23 -.0166 R13 .9892
SG110348.1 SG2 470.7 THA 2.06

ORBIT DETERMINATION ACCURACY
ST 2830.7 SR 464.3 SS 1450.3
CRT .9871 CRS -.8856 CST -.9444
LSA 3184.0 MSA 438.9 SSA 32.8
EL1 2867.5 EL2 73.2 ALF 9.20

LAUNCH DATE NOV 23 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 763.044 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.969 GAL -1.29 AZL 87.87 HCA 228.83 SMA 186.91 ECC .21089 INC 2.1342 V1 30.164
RP 212.15 LAP -1.61 LOP 289.55 VP 23.261 GAP -9.41 AZP 91.41 TAL 352.58 TAP 221.41 RCA 147.49 APO 226.33 V2 25.863
RC 300.645 GL 23.63 GP -3.11 ZAL 97.72 ZAP 52.81 ETS 176.92 ZAE 80.04 ETE 178.60 ZAC 81.00 ETC 257.98 CLP 52.75

PLANETOCENTRIC CONIC

C3 9.379 VHL 3.063 DLA 29.82 RAL 170.75 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.604 DPA 5.66 RAP 163.12 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.23	11 15 38	3627.87	-24.46	141.75	28.28	72.38	12 16 6	3027.9	-26.64	133.63
99.77	13 54 37	3114.90	-24.44	104.03	28.27	72.36	14 46 32	2514.9	-26.63	95.92
100.00	14 13 38	3054.17	-25.59	99.90	28.65	73.99	15 4 32	2454.2	-27.53	91.64
100.00	13 39 18	3163.83	-23.32	107.26	27.86	70.75	14 32 2	2563.8	-25.73	99.29
110.00	17 14 6	2488.07	-33.97	58.73	30.36	85.98	17 55 34	1888.1	-34.16	49.49
110.00	12 55 20	3302.70	-15.60	113.88	24.04	59.19	13 50 23	2702.7	-19.57	107.01

DIFFERENTIAL CORRECTIONS
TDE 1.3633 TRA 1.6810 TC-15.6466 BAU 1.9621
RDE .2405 RRA .1685 RC3 -.2035 FAU .35375
FDE 1.6939 FRA 4.6704 FC-32.6520 BSP 36655
3DE 1.3844 BRA 1.6894 BC315.6479 FSP 6519

MID-COURSE EXECUTION ACCURACY
SGT10559.0 SGR 591.6 SG3 1954.0
RRT .5858 RRF .5664 RTF .9894
SGB10575.6 R23 -.0177 R13 .9894
SG110564.7 SG2 479.3 THA 1.88

ORBIT DETERMINATION ACCURACY
ST 2787.6 SR 463.0 SS 1376.3
CRT .9819 CRS -.8589 CST -.9368
LSA 3110.6 MSA 449.8 SSA 33.1
EL1 2824.5 EL2 86.6 ALF 9.27

LAUNCH DATE NOV 23 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 767.292 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.974 GAL -1.39 AZL 87.88 HCA 230.04 SMA 186.98 ECC .21139 INC 2.1208 V1 30.164
RP 211.87 LAP -1.63 LOP 290.76 VP 23.303 GAP -9.54 AZP 91.36 TAL 352.04 TAP 222.08 RCA 147.46 APO 226.51 -2 25.895
RC 301.687 GL 23.41 GP -3.01 ZAL 98.75 ZAP 51.68 ETS 176.89 ZAE 78.62 ETE 178.57 ZAC 81.11 ETC 257.98 CLP 51.61

PLANETOCENTRIC CONIC

C3 9.428 VHL 3.071 DLA 29.19 RAL 171.70 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.662 DPA 5.72 RAP 163.23 ECC 1.1552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.61	11 38 1	3569.28	-23.93	137.23	29.12	72.77	12 37 30	2969.3	-26.06	129.14
97.39	13 39 49	3175.52	-23.92	108.34	29.12	72.76	14 32 44	2575.5	-26.05	100.25
100.00	14 54 45	2935.25	-27.55	91.61	30.18	77.93	15 43 40	2335.2	-28.94	83.09
100.00	13 5 46	3284.79	-20.39	115.05	27.75	67.66	14 0 31	2684.8	-23.24	107.41
110.00	17 26 48	2459.03	-34.09	56.47	31.16	87.31	18 7 47	1859.0	-34.09	47.23
110.00	12 50 12	3333.77	-14.51	115.63	24.64	58.70	13 45 46	2733.8	-18.55	108.84

DIFFERENTIAL CORRECTIONS
TDE 1.3230 TRA 1.7976 TC-15.8876 BAU 2.0027
RDE .2408 RRA .1687 RC3 -.1642 FAU .34075
FDE 1.4953 FRA 4.6614 FC-31.2889 BSP 37369
BDE 1.3447 BRA 1.8055 BC315.8884 FSP 6279

MID-COURSE EXECUTION ACCURACY
SGT10772.6 SGR 584.9 SG3 1885.5
RRT .5521 RRF .5315 RTF .9896
SGB10788.5 R23 -.0192 R13 .9895
SG110777.5 SG2 487.5 THA 1.72

ORBIT DETERMINATION ACCURACY
ST 2740.1 SR 462.2 SS 1306.4
CRT .9750 CRS -.8272 CST -.9281
LSA 3035.6 MSA 461.1 SSA 33.4
EL1 2777.0 EL2 101.3 ALF 9.35

LAUNCH DATE NOV 23 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 771.544 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.978 GAL -1.49 AZL 87.89 HCA 231.25 SMA 187.06 ECC .21191 INC 2.1078 V1 30.164
RP 211.60 LAP -1.64 LOP 291.97 VP 23.344 GAP -9.66 AZP 91.32 TAL 351.48 TAP 222.73 RCA 147.42 APO 226.70 V2 25.926
RC 302.717 GL 23.18 GP -2.91 ZAL 99.81 ZAP 50.58 ETS 176.87 ZAE 77.24 ETE 178.55 ZAC 81.22 ETC 257.96 CLP 50.52

PLANETOCENTRIC CONIC

C3 9.486 VHL 3.080 DLA 28.54 RAL 172.67 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.721 DPA 5.76 RAP 163.37 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.31	12 11 57	3473.44	-23.39	130.00	30.00	73.17	13 9 50	2873.4	-25.47	121.94
93.69	13 13 35	3273.75	-23.38	115.38	30.00	73.15	14 8 9	2673.7	-25.46	107.31
100.00	15 19 35	2868.12	-28.42	86.81	31.32	80.31	16 7 23	2268.1	-29.46	78.16
100.00	12 48 38	3354.31	-18.53	119.37	28.07	66.12	13 44 33	2754.3	-21.60	111.93
110.00	17 39 10	2431.12	-34.16	54.30	31.97	88.60	18 19 42	1831.1	-33.97	45.06
110.00	12 45 32	3364.07	-13.43	117.31	25.28	58.27	13 41 36	2764.1	-17.53	110.60

DIFFERENTIAL CORRECTIONS
TDE 1.2778 TRA 1.9200 TC-16.1033 BAU 2.0423
RDE .2415 RRA .1690 RC3 -.1266 FAU .32787
FDE 1.3048 FRA 4.6546 FC-29.9229 BSP 38083
BDE 1.3004 BRA 1.9275 BC316.1038 FSP 6055

MID-COURSE EXECUTION ACCURACY
SGT10980.7 SGR 579.6 SG3 1818.1
RRT .5179 RRF .4964 RTF .9897
SGB10996.0 R23 -.0201 R13 .9897
SG110984.8 SG2 495.6 THA 1.57

ORBIT DETERMINATION ACCURACY
ST 2688.3 SR 461.9 SS 1242.5
CRT .9660 CRS -.7892 CST -.9182
LSA 2959.5 MSA 474.0 SSA 33.5
EL1 2725.2 EL2 117.8 ALF 9.44

LAUNCH DATE NOV 23 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 775.802 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.983 GAL -1.59 AZL 87.90 HCA 232.46 SMA 187.14 ECC .21247 INC 2.0952 V1 30.164
RP 211.33 LAP -1.66 LOP 293.18 VP 23.384 GAP -9.79 AZP 91.28 TAL 350.91 TAP 223.37 RCA 147.38 APO 226.90 V2 25.956
RC 303.736 GL 22.96 GP -2.82 ZAL 100.89 ZAP 49.51 ETS 176.85 ZAE 75.88 ETE 178.53 ZAC 81.34 ETC 257.95 CLP 49.45

PLANETOCENTRIC CONIC

C3 9.553 VHL 3.091 DLA 27.87 RAL 173.65 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.781 DPA 5.79 RAP 163.54 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 45	3231.75	-25.64	112.96	31.70	77.56	14 24 36	2631.8	-27.10	104.60
90.00	12 2 38	3518.19	-20.07	132.07	29.92	69.59	13 1 16	2918.2	-22.67	124.36
100.00	15 40 5	2814.78	-28.97	82.94	32.37	82.28	16 27 0	2214.8	-29.73	74.22
100.00	12 35 58	3410.39	-16.95	122.79	28.55	65.01	13 32 48	2810.4	-20.18	115.48
110.00	17 51 17	2404.15	-34.18	52.19	32.79	89.84	18 31 22	1804.1	-33.83	42.96
110.00	12 41 15	3393.79	-12.36	118.95	25.96	57.87	13 37 49	2793.8	-16.52	112.31

DIFFERENTIAL CORRECTIONS
TDE 1.2293 TRA 2.0479 TC-16.2909 BAU 2.0806
RDE .2425 RRA .1692 RC3 -.0908 FAU .31527
FDE 1.1210 FRA 4.6441 FC-28.5713 BSP 38792
BDE 1.2530 BRA 2.0549 BC316.2912 FSP 5837

MID-COURSE EXECUTION ACCURACY
SGT11182.4 SGR 575.4 SG3 1751.8
RRT .4838 RRF .4612 RTF .9898
SGB11197.2 R23 -.0213 R13 .9898
SG111185.9 SG2 503.4 THA 1.43

ORBIT DETERMINATION ACCURACY
ST 2635.2 SR 462.0 SS 1183.9
CRT .9546 CRS -.7442 CST -.9067
LSA 2884.3 MSA 488.6 SSA 33.6
EL1 2671.9 EL2 135.8 ALF 9.52

LAUNCH DATE NOV 23 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 780.063 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.987 GAL -1.69 AZL 87.92 HCA 233.67 SMA 187.22 ECC .21305 INC 2.0831 V1 30.164
RP 211.08 LAP -1.68 LOP 294.40 VP 23.423 GAP -9.91 AZP 91.23 TAL 350.33 TAP 224.00 RCA 147.34 APO 227.11 V2 25.986
RC 304.746 GL 22.72 GP -2.74 ZAL 102.00 ZAP 48.47 ETS 176.83 ZAE 74.56 ETE 178.51 ZAC 81.46 ETC 257.93 CLP 48.41

PLANETOCENTRIC CONIC

C3 9.629 VHL 3.103 DLA 27.19 RAL 174.65 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.842 DPA 5.80 RAP 163.74 ECC 1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 40	3148.02	-26.74	107.08	32.97	80.32	14 53 8	2548.0	-27.80	98.57
90.00	11 40 39	3605.06	-17.91	137.53	30.24	67.70	12 40 44	3005.1	-20.78	130.03
100.00	15 58 20	2768.68	-29.34	79.57	33.37	84.02	16 44 29	2168.7	-29.86	70.80
100.00	12 25 40	3459.63	-15.51	125.74	29.12	64.12	13 23 20	2859.6	-18.87	118.55
110.00	18 3 12	2377.97	-34.17	50.14	33.62	91.06	18 42 50	1778.0	-33.65	40.94
110.00	12 37 18	3423.11	-11.30	120.55	26.70	57.52	13 34 21	2823.1	-15.50	113.97

DIFFERENTIAL CORRECTIONS
TDE 1.1825 TRA 2.1863 TC-16.4275 BAU 2.1148
RDE .2441 RRA .1696 RC3 -.0557 FAU .30215
FDE .9614 FRA 4.6436 FC-27.1652 BSP 39608
BDE 1.2074 BRA 2.1928 BC316.4276 FSP 5647

MID-COURSE EXECUTION ACCURACY
SGT11371.3 SGR 572.9 SG3 1684.9
RRT .4504 RRF .4275 RTF .9899
SGB11385.7 R23 -.0215 R13 .9898
SG111374.2 SG2 511.4 THA 1.30

ORBIT DETERMINATION ACCURACY
ST 2591.1 SR 462.9 SS 1138.9
CRT .9405 CRS -.6964 CST -.8963
LSA 2823.4 MSA 502.4 SSA 33.6
EL1 2627.6 EL2 155.1 ALF 9.57

LAUNCH DATE NOV 23 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 784.330 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.992 GAL -1.80 AZL 87.93 HCA 234.89 SMA 187.31 ECC .21366 INC 2.0712 V1 30.164
RP 210.82 LAP -1.69 LOP 295.61 VP 23.463 GAP -10.04 AZP 91.19 TAL 349.73 TAP 224.62 RCA 147.29 APO 227.33 V2 26.015
RC 305.746 GL 22.48 GP -2.66 ZAL 103.12 ZAP 47.46 ETS 176.82 ZAE 73.27 ETE 178.49 ZAC 81.58 ETC 257.90 CLP 47.41

PLANETOCENTRIC CONIC

C3 9.716 VHL 3.117 DLA 26.50 RAL 175.66 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.906 DPA 5.79 RAP 163.97 ECC 1.1599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 38	3086.69	-27.37	102.70	34.09	82.42	15 15 5	2486.7	-28.13	94.11
90.00	11 25 43	3669.93	-16.19	141.52	30.75	66.45	12 26 53	3069.9	-19.24	134.17
100.00	16 15 9	2727.22	-29.60	76.51	34.36	85.61	17 0 36	2127.2	-29.89	67.72
100.00	12 16 54	3504.63	-14.16	128.39	29.76	63.40	13 15 19	2904.6	-17.62	121.31
110.00	18 14 54	2352.50	-34.12	48.16	34.46	92.23	18 54 7	1752.5	-33.43	38.98
110.00	12 33 38	3452.11	-10.23	122.12	27.47	57.20	13 31 10	2852.1	-14.48	115.60

DIFFERENTIAL CORRECTIONS
TDE 1.1198 TRA 2.3172 TC-16.5889 BAU 2.1548
RDE .2456 RRA .1695 RC3 -.0243 FAU .29078
FDE .7830 FRA 4.6112 FC-25.9095 BSP 40130
BDE 1.1464 BRA 2.3234 BC316.5889 FSP 5411

MID-COURSE EXECUTION ACCURACY
SGT11568.9 SGR 570.3 SG3 1622.5
RRT .4157 RRF .3913 RTF .9900
SGB11582.9 R23 -.0231 R13 .9900
SG111571.3 SG2 518.6 THA 1.18

ORBIT DETERMINATION ACCURACY
ST 2524.2 SR 463.4 SS 1087.1
CRT .9221 CRS -.6342 CST -.8816
LSA 2738.1 MSA 519.7 SSA 33.5
EL1 2560.3 EL2 176.8 ALF 9.65

LAUNCH DATE NOV 23 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 788.599 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 32.997 GAL -1.92 AZL 87.94 HCA 236.11 SMA 187.40 ECC .21431 INC 2.0597 V1 30.164
RP 210.58 LAP -1.71 LOP 296.84 VP 23.501 GAP -10.16 AZP 91.15 TAL 349.11 TAP 225.22 RCA 147.24 APO 227.56 V2 26.043
RC 306.737 GL 22.23 GP -2.58 ZAL 104.27 ZAP 46.48 ETS 176.80 ZAE 72.00 ETE 178.48 ZAC 81.70 ETC 257.87 CLP 46.43

PLANETOCENTRIC CONIC

C3 9.814 VHL 3.133 DLA 25.79 RAL 176.68 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.970 DPA 5.76 RAP 164.23 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 33	3035.28	-27.77	98.99	35.16	84.24	15 34 8	2435.3	-28.28	90.36
90.00	11 13 57	3725.30	-14.66	144.86	31.37	65.50	12 16 2	3125.3	-17.84	137.63
100.00	16 30 57	2689.01	-29.76	73.68	35.34	87.09	17 15 46	2089.0	-29.85	64.88
100.00	12 9 14	3546.80	-12.86	130.85	30.47	62.78	13 8 20	2946.8	-16.41	123.85
110.00	18 26 27	2327.66	-34.04	46.22	35.32	93.37	19 5 15	1727.7	-33.19	37.08
110.00	12 30 13	3480.92	-9.16	123.67	28.29	56.92	13 28 14	2880.9	-13.46	117.20

DIFFERENTIAL CORRECTIONS
TDE 1.0588 TRA 2.4601 TC-16.6979 BAU 2.1908
RDE .2477 RRA .1696 RC3 .0062 FAU .27906
FDE .6238 FRA 4.5917 FC-24.6172 BSP 40786
BDE 1.0873 BRA 2.4660 BC316.6979 FSP 5208

MID-COURSE EXECUTION ACCURACY
SGT11754.7 SGR 569.1 SG3 1560.4
RRT .3823 RRF .3570 RTF .9900
SGB11768.5 R23 -.0241 R13 .9900
SG111756.7 SG2 525.8 THA 1.06

ORBIT DETERMINATION ACCURACY
ST 2468.9 SR 464.6 SS 1048.5
CRT .8997 CRS -.5674 CST -.8677
LSA 2668.5 MSA 537.7 SSA 33.4
EL1 2504.3 EL2 200.0 ALF 9.67

LAUNCH DATE NOV 23 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 792.873 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.002	GAL	-2.03	AZL	87.95	HCA	237.34	SMA	187.49	ECC	.21499	INC	2.0485	V1	30.164
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.539	GAP	-10.28	AZP	91.11	TAL	348.48	TAP	225.82	RCA	147.18	APO	227.79	V2	26.071
RC	307.719	GL	21.98	GP	-2.50	ZAL	105.45	ZAP	45.53	ETS	176.78	ZAE	70.76	ETE	178.47	ZAC	81.83	ETC	257.84	CLP	45.48

PLANETOCENTRIC CONIC

C3	9.923	VHL	3.150	DLA	25.07	RAL	177.71	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	4.036	DPA	5.72	RAP	164.51	ECC	1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 38	2989.81	-28.04	95.69	36.21	85.87	15 51 28	2389.8	-28.32	87.04
90.00	11 4 5	3775.15	-13.23	147.82	32.07	64.73	12 7 1	3175.2	-16.52	140.69
100.00	16 46 1	2653.27	-29.86	71.03	36.31	88.48	17 30 15	2053.3	-29.75	62.23
100.00	12 2 23	3586.93	-11.60	133.16	31.24	62.26	13 2 10	2986.9	-15.22	126.24
110.00	18 37 51	2303.38	-33.92	44.33	36.19	94.49	19 16 15	1703.4	-32.93	35.24
110.00	12 27 3	3509.59	-8.10	125.21	29.14	56.68	13 25 32	2909.6	-12.42	118.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9933	TRA	2.6070	TC-16.7849	BAU	2.2267	SGT11937.1	SGR	568.7	SG3	1499.7	ST	2414.8	SR	466.3	SS	1017.3
RDE	.2501	RRA	.1696	RC3 .0351	FAU	.26763	RRT .3493	RRF	.3233	RTF	.9900	CRT	.8723	CRS	-.4948	CST	-.8544
FDE	.4740	FRA	4.5685	FC-23.3496	BSP	41412	SGB11950.6	R23	-.0248	R13	.9900	LSA	2602.5	MSA	556.0	SSA	33.2
BDE	1.0243	BRA	2.6126	BC316.7849	FSP	5009	SG111938.7	SG2	532.8	THA	.96	EL1	2449.1	EL2	224.8	ALF	9.64

LAUNCH DATE NOV 23 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 797.150 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.008	GAL	-2.15	AZL	87.96	HCA	238.56	SMA	187.58	ECC	.21570	INC	2.0375	V1	30.164
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.576	GAP	-10.40	AZP	91.06	TAL	347.84	TAP	226.40	RCA	147.12	APO	228.04	V2	26.098
RC	308.691	GL	21.72	GP	-2.43	ZAL	106.64	ZAP	44.61	ETS	176.76	ZAE	69.54	ETE	178.46	ZAC	81.96	ETC	257.80	CLP	44.56

PLANETOCENTRIC CONIC

C3	10.044	VHL	3.169	DLA	24.33	RAL	178.75	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.103	DPA	5.67	RAP	164.82	ECC	1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 29	2948.41	-28.21	92.67	37.24	87.38	16 7 37	2348.4	-28.27	84.01
90.00	10 55 33	3821.41	-11.87	150.54	32.84	64.10	11 59 14	3221.4	-15.26	143.50
100.00	17 0 30	2619.48	-29.89	68.52	37.29	89.80	17 44 9	2019.5	-29.60	59.73
100.00	11 56 12	3625.57	-10.37	135.37	32.05	61.81	12 56 38	3025.6	-14.05	128.52
110.00	18 49 8	2279.62	-33.78	42.49	37.07	95.57	19 27 7	1679.6	-32.64	33.44
110.00	12 24 4	3538.19	-7.02	126.73	30.03	56.46	13 23 2	2938.2	-11.38	120.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9239	TRA	2.7603	TC-16.8408	BAU	2.2615	SGT12113.3	SGR	569.0	SG3	1440.4	ST	2364.7	SR	468.2	SS	993.0
RDE	.2529	RRA	.1695	RC3 .0623	FAU	.25647	RRT .3170	RRF	.2903	RTF	.9901	CRT	.8391	CRS	-.4168	CST	-.8422
FDE	.3318	FRA	4.5428	FC-22.1049	BSP	42017	SGB12126.7	R23	-.0255	R13	.9900	LSA	2542.7	MSA	574.9	SSA	32.9
BDE	.9579	BRA	2.7655	BC316.8410	FSP	4814	SG112114.7	SG2	539.6	THA	.85	EL1	2397.5	EL2	251.2	ALF	9.54

LAUNCH DATE NOV 23 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 801.429 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.013	GAL	-2.27	AZL	87.97	HCA	239.79	SMA	187.67	ECC	.21644	INC	2.0269	V1	30.164
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.612	GAP	-10.52	AZP	91.02	TAL	347.18	TAP	226.97	RCA	147.05	APO	228.29	V2	26.124
RC	309.654	GL	21.45	GP	-2.36	ZAL	107.85	ZAP	43.71	ETS	176.75	ZAE	68.36	ETE	178.45	ZAC	82.09	ETC	257.77	CLP	43.66

PLANETOCENTRIC CONIC

C3	10.179	VHL	3.190	DLA	23.58	RAL	179.80	RAD	6567.4	VEL	11.470	PTH	1.99	VHP	4.171	DPA	5.60	RAP	165.15	ECC	1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 25	2910.00	-28.29	89.87	38.27	88.78	16 22 55	2310.0	-28.16	81.20
90.00	10 47 58	3865.12	-10.56	153.08	33.66	63.57	11 52 23	3265.1	-14.02	146.11
100.00	17 14 30	2587.30	-29.88	66.13	38.27	91.06	17 57 37	1987.3	-29.41	57.35
100.00	11 50 34	3663.06	-9.15	137.49	32.92	61.42	12 51 37	3063.1	-12.90	130.70
110.00	19 0 17	2256.36	-33.61	40.70	37.97	96.62	19 37 53	1656.4	-32.33	31.70
110.00	12 21 17	3566.76	-5.94	128.24	30.96	56.28	13 20 43	2966.8	-10.34	121.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8516	TRA	2.9194	TC-16.8689	BAU	2.2956	SGT12285.0	SGR	569.9	SG3	1382.8	ST	2321.3	SR	470.6	SS	975.8
RDE	.2561	RRA	.1694	RC3 .0877	FAU	.24567	RRT .2857	RRF	.2583	RTF	.9901	CRT	.7999	CRS	-.3363	CST	-.8324
FDE	.1997	FRA	4.5148	FC-20.8949	BSP	42628	SGB12298.2	R23	-.0262	R13	.9901	LSA	2491.8	MSA	593.3	SSA	32.6
BDE	.8893	BRA	2.9243	BC316.8692	FSP	4628	SG112286.1	SG2	546.1	THA	.76	EL1	2352.0	EL2	278.7	ALF	9.34

LAUNCH DATE NOV 23 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 805.712 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.018	GAL	-2.40	AZL	87.98	HCA	241.03	SMA	187.76	ECC	.21723	INC	2.0164	V1	30.164
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.648	GAP	-10.63	AZP	90.98	TAL	346.50	TAP	227.53	RCA	146.98	APO	228.55	V2	26.149
RC	310.607	GL	21.17	GP	-2.30	ZAL	109.08	ZAP	42.84	ETS	176.73	ZAE	67.19	ETE	178.44	ZAC	82.23	ETC	257.72	CLP	42.79

PLANETOCENTRIC CONIC

C3	10.327	VHL	3.214	DLA	22.82	RAL	180.85	RAD	6567.4	VEL	11.477	PTH	1.99	VHP	4.241	DPA	5.51	RAP	165.51	ECC	1.1700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 39	2873.95	-28.32	87.23	39.30	90.10	16 37 33	2273.9	-28.00	78.58
90.00	10 41 9	3906.98	-9.28	155.49	34.54	63.13	11 46 16	3307.0	-12.81	148.59
100.00	17 28 6	2556.49	-29.81	63.84	39.26	92.26	18 10 43	1956.5	-29.18	55.09
100.00	11 45 23	3699.67	-7.95	139.54	33.83	61.09	12 47 2	3099.7	-11.75	132.81
110.00	19 11 19	2233.57	-33.42	38.95	38.90	97.64	19 48 33	1633.6	-32.00	30.00
110.00	12 18 39	3595.35	-4.86	129.74	31.93	56.12	13 18 34	2995.3	-9.28	123.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7755	TRA	3.0846	TC-16.8700	BAU	2.3291	SGT12452.8	SGR	571.4	SG3	1326.6	ST	2285.1	SR	473.2	SS	964.8
RDE	.2596	RRA	.1692	RC3 .1115	FAU	.23510	RRT .2551	RRF	.2270	RTF	.9900	CRT	.7538	CRS	-.2531	CST	-.8249
FDE	.0736	FRA	4.4847	FC-19.7096	BSP	43229	SGB12465.9	R23	-.0270	R13	.9900	LSA	2449.7	MSA	611.9	SSA	32.2
BDE	.8178	BRA	3.0892	BC316.8704	FSP	4449	SG112453.6	SG2	552.4	THA	.67	EL1	2313.2	EL2	307.2	ALF	9.03

LAUNCH DATE NOV 23 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 809.996 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.024 GAL -2.53 AZL 87.99 HCA 242.26 SMA 187.86 ECC .21805 INC 2.0062 V1 30.164
RP 209.44 LAP -1.78 LOP 302.99 VP 23.682 GAP -10.75 AZP 90.93 TAL 345.81 TAP 228.07 RCA 146.90 APO 228.82 V2 26.174
RC 311.551 GL 20.89 GP -2.24 ZAL 110.32 ZAP 41.99 ETS 176.71 ZAE 66.05 ETE 178.44 ZAC 82.37 ETC 257.68 CLP 41.94

PLANETOCENTRIC CONIC

C3 10.489 VHL 3.239 DLA 22.04 RAL 181.91 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.312 DPA 5.41 RAP 165.89 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 19	2839.80	-28.29	84.73	40.33	91.36	16 51 38	2239.8	-27.80	76.10
90.00	10 34 57	3947.42	-8.02	157.80	35.46	62.75	11 40 44	3347.4	-11.61	150.96
100.00	17 41 22	2526.87	-29.71	61.64	40.27	93.42	18 23 29	1926.9	-28.92	52.93
100.00	11 40 34	3735.59	-6.76	141.55	34.78	60.81	12 42 50	3135.6	-10.61	134.87
110.00	19 22 15	2211.25	-33.21	37.24	39.83	98.62	19 59 6	1611.3	-31.66	28.35
110.00	12 16 11	3623.97	-3.77	131.24	32.93	56.00	13 16 35	3024.0	-8.21	124.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6948 TRA 3.2546 TC-16.8463 BAU 2.3625 SGT12616.3 SGR 573.2 SG3 1271.9 ST 2256.2 SR 476.1 SS 959.1
RDE .2635 RRA .1688 RC3 .1336 FAU .22492 RRT .2253 RRF .1963 RTF .9900 CRT .7003 CRS -.1689 CST -.8203
FDE -.0464 FRA 4.4497 FC-18.5636 BSP 43809 SGB12629.3 R23 -.0279 R13 .9900 LSA 2416.5 MSA 629.7 SSA 31.7
BDE .7431 BRA 3.2590 BC316.8469 FSP 4271 SG112616.9 SG2 558.4 THA .59 EL1 2281.3 EL2 336.1 ALF 8.59

LAUNCH DATE NOV 23 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 814.283 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.029 GAL -2.66 AZL 88.00 HCA 243.50 SMA 187.96 ECC .21890 INC 1.9962 V1 30.164
RP 209.24 LAP -1.79 LOP 304.22 VP 23.717 GAP -10.87 AZP 90.89 TAL 345.11 TAP 228.61 RCA 146.81 APO 229.11 V2 26.198
RC 312.486 GL 20.60 GP -2.18 ZAL 111.58 ZAP 41.17 ETS 176.69 ZAE 64.93 ETE 178.44 ZAC 82.51 ETC 257.63 CLP 41.12

PLANETOCENTRIC CONIC

C3 10.667 VHL 3.266 DLA 21.26 RAL 182.97 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.384 DPA 5.30 RAP 166.30 ECC 1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 30	2807.27	-28.21	82.36	41.38	92.55	17 5 17	2207.3	-27.56	73.75
90.00	10 29 14	3986.78	-6.79	160.03	36.43	62.44	11 35 41	3386.8	-10.43	153.24
100.00	17 54 19	2498.30	-29.58	59.53	41.28	94.52	18 35 58	1898.3	-28.64	50.85
100.00	11 36 6	3770.98	-5.59	143.51	35.77	60.59	12 38 57	3171.0	-9.46	136.87
110.00	19 33 4	2189.38	-32.97	35.58	40.79	99.58	20 9 33	1589.4	-31.30	26.75
110.00	12 13 51	3652.67	-2.68	132.74	33.97	55.91	13 14 44	3052.7	-7.14	126.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6110 TRA 3.4309 TC-16.7923 BAU 2.3949 SGT12774.1 SGR 575.5 SG3 1218.5 ST 2238.5 SR 479.3 SS 958.5
RDE .2678 RRA .1683 RC3 .1542 FAU .21492 RRT .1965 RRF .1669 RTF .9899 CRT .6400 CRS -.0883 CST -.8204
FDE -.1562 FRA 4.4133 FC-17.4428 BSP 44378 SGB12787.0 R23 -.0285 R13 .9899 LSA 2396.4 MSA 644.8 SSA 31.2
BDE .6671 BRA 3.4351 BC316.7930 FSP 4101 SG112774.6 SG2 564.3 THA .51 EL1 2260.0 EL2 364.8 ALF 8.01

LAUNCH DATE NOV 23 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 818.570 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.035 GAL -2.79 AZL 88.01 HCA 244.74 SMA 188.06 ECC .21980 INC 1.9863 V1 30.164
RP 209.04 LAP -1.80 LOP 305.46 VP 23.750 GAP -10.99 AZP 90.85 TAL 344.39 TAP 229.13 RCA 146.72 APO 229.40 V2 26.221
RC 313.411 GL 20.31 GP -2.12 ZAL 112.85 ZAP 40.37 ETS 176.68 ZAE 63.83 ETE 178.44 ZAC 82.65 ETC 257.58 CLP 40.32

PLANETOCENTRIC CONIC

C3 10.861 VHL 3.296 DLA 20.46 RAL 184.04 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.457 DPA 5.18 RAP 166.73 ECC 1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 18	2776.14	-28.10	80.09	42.44	93.68	17 18 34	2176.1	-27.29	71.51
90.00	10 23 58	4025.27	-5.57	162.21	37.44	62.19	11 31 3	3425.3	-9.25	155.46
100.00	18 7 1	2470.70	-29.41	57.49	42.31	95.58	18 48 12	1870.7	-28.33	48.86
100.00	11 31 56	3805.95	-4.41	145.45	36.80	60.41	12 35 22	3205.9	-8.32	138.84
110.00	19 43 47	2167.97	-32.72	33.96	41.77	100.51	20 19 55	1568.0	-30.92	25.20
110.00	12 11 39	3681.44	-1.58	134.25	35.04	55.85	13 13 1	3081.4	-6.05	128.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5242 TRA 3.6138 TC-16.7140 BAU 2.4271 SGT12929.4 SGR 578.2 SG3 1166.8 ST 2233.2 SR 482.8 SS 961.8
RDE .2725 RRA .1677 RC3 .1733 FAU .20525 RRT .1686 RRF .1385 RTF .9898 CRT .5735 CRS -.0112 CST -.8242
FDE -.2583 FRA 4.3747 FC-16.3601 BSP 44950 SGB12942.3 R23 -.0291 R13 .9898 LSA 2390.0 MSA 657.5 SSA 30.7
BDE .5908 BRA 3.6177 BC316.7149 FSP 3939 SG112929.8 SG2 569.9 THA .43 EL1 2250.8 EL2 392.4 ALF 7.29

LAUNCH DATE NOV 23 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 822.860 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.041 GAL -2.93 AZL 88.02 HCA 245.98 SMA 188.16 ECC .22074 INC 1.9767 V1 30.164
RP 208.85 LAP -1.81 LOP 306.71 VP 23.782 GAP -11.10 AZP 90.81 TAL 343.66 TAP 229.64 RCA 146.63 APO 229.70 V2 26.243
RC 314.329 GL 20.00 GP -2.07 ZAL 114.13 ZAP 39.59 ETS 176.66 ZAE 62.76 ETE 178.43 ZAC 82.80 ETC 257.52 CLP 39.54

PLANETOCENTRIC CONIC

C3 11.073 VHL 3.328 DLA 19.66 RAL 185.11 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 4.532 DPA 5.04 RAP 167.17 ECC 1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 44	2746.25	-27.95	77.91	43.51	94.76	17 31 30	2146.3	-26.99	69.37
90.00	10 19 4	4063.07	-4.37	164.33	38.49	61.99	11 26 47	3463.1	-8.08	157.62
100.00	18 19 28	2443.98	-29.22	55.53	43.36	96.59	19 0 12	1844.0	-28.00	46.94
100.00	11 28 1	3840.57	-3.25	147.36	37.87	60.27	12 32 1	3240.6	-7.18	140.78
110.00	19 54 24	2147.00	-32.44	32.38	42.77	101.40	20 30 11	1547.0	-30.53	23.69
110.00	12 9 35	3710.31	-.48	135.75	36.15	55.82	13 11 25	3110.3	-4.96	129.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4342 TRA 3.8032 TC-16.6062 BAU 2.4585 SGT13078.9 SGR 581.0 SG3 1116.4 ST 2240.7 SR 486.6 SS 968.2
RDE .2775 RRA .1669 RC3 .1907 FAU .19583 RRT .1417 RRF .1109 RTF .9897 CRT .5017 CRS .0622 CST -.8309
FDE -.3540 FRA 4.3324 FC-15.3109 BSP 45515 SGB13091.8 R23 -.0299 R13 .9896 LSA 2397.6 MSA 667.6 SSA 30.0
BDE .5153 BRA 3.8068 BC316.6073 FSP 3780 SG113079.1 SG2 575.2 THA .36 EL1 2254.5 EL2 418.4 ALF 6.44

LAUNCH DATE NOV 23 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 827.149 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.047	GAL	-3.08	AZL	88.03	HCA	247.22	SMA	188.27	ECC	.22173	INC	1.9673	V1	30.164
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.814	GAP	-11.22	AZP	90.76	TAL	342.91	TAP	230.14	RCA	146.52	APO	230.01	V2	26.264
RC	315.238	GL	19.69	GP	-2.02	ZAL	115.42	ZAP	38.83	ETS	176.64	ZAE	61.71	ETE	178.43	ZAC	82.95	ETC	257.47	CLP	38.79

PLANETOCENTRIC CONIC

C3	11.303	VHL	3.362	DLA	18.85	RAL	186.18	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.609	DPA	4.89	RAP	167.64	ECC	1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 51	2717.48	-27.77	75.83	44.59	95.79	17 44 9	2117.5	-26.67	67.33
90.00	10 14 29	4100.32	-3.17	166.42	39.59	61.85	11 22 49	3500.3	-6.92	159.73
100.00	18 31 42	2418.10	-29.00	53.64	44.43	97.57	19 12 0	1818.1	-27.65	45.10
100.00	11 24 19	3874.93	-2.08	149.24	38.98	60.17	12 28 54	3274.9	-6.04	142.69
110.00	20 4 54	2126.50	-32.16	30.85	43.78	102.27	20 40 20	1526.5	-30.14	22.22
110.00	12 7 37	3739.29	.63	137.26	37.29	55.82	13 9 56	3139.3	-3.86	131.05

DIFFERENTIAL CORRECTIONS

TDE	.3413	TRA	3.9996	TC-16.4740	BAU	2.4895	
RDE	.2830	RRA	.1660	RC3 .2067	FAU	.18666	
FDE	-.4422	FRA	4.2898	FC-14.2976	BSP	46085	
BDE	.4433	BRA	4.0030	BC316.4753	FSP	3627	

MID-COURSE EXECUTION ACCURACY

SGT13225.5	SGR	584.2	SG3	1067.5			
RRT	.1157	RRF	.0845	RTF	.9895		
SGB13238.4	R23	-.0305	R13	.9895			
SG113225.7	SG2	580.3	THA	.29			

ORBIT DETERMINATION ACCURACY

ST	2262.2	SR	490.6	SS	977.1
CRT	.4261	CRS	.1303	CST	-.8404
LSA	2420.2	MSA	674.4	SSA	29.5
EL1	2272.2	EL2	441.9	ALF	5.49

LAUNCH DATE NOV 23 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 831.439 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.053	GAL	-3.22	AZL	88.04	HCA	248.47	SMA	188.37	ECC	.22275	INC	1.9579	V1	30.164
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.845	GAP	-11.34	AZP	90.72	TAL	342.15	TAP	230.62	RCA	146.41	APO	230.33	V2	26.285
RC	316.140	GL	19.37	GP	-1.97	ZAL	116.72	ZAP	38.10	ETS	176.62	ZAE	60.67	ETE	178.43	ZAC	83.10	ETC	257.41	CLP	38.05

PLANETOCENTRIC CONIC

C3	11.552	VHL	3.399	DLA	18.03	RAL	187.25	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	4.686	DPA	4.73	RAP	168.13	ECC	1.1901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 42	2689.74	-27.56	73.82	45.69	96.77	17 56 32	2089.7	-26.34	65.37
90.00	10 10 11	4137.11	-1.99	168.47	40.72	61.75	11 19 8	3537.1	-5.75	161.81
100.00	18 43 43	2393.02	-28.77	51.81	45.51	98.50	19 23 36	1793.0	-27.29	43.32
100.00	11 20 51	3909.07	-.93	151.12	40.13	60.12	12 26 0	3309.1	-4.90	144.58
110.00	20 15 18	2106.47	-31.86	29.37	44.82	103.10	20 50 24	1506.5	-29.73	20.80
110.00	12 5 45	3768.38	1.74	138.78	38.46	55.86	13 8 33	3168.4	-2.75	132.58

DIFFERENTIAL CORRECTIONS

TDE	.2445	TRA	4.2010	TC-16.3178	BAU	2.5203	
RDE	.2889	RRA	.1649	RC3 .2211	FAU	.17776	
FDE	-.5240	FRA	4.2420	FC-13.3223	BSP	46622	
BDE	.3785	BRA	4.2042	BC316.3193	FSP	3479	

MID-COURSE EXECUTION ACCURACY

SGT13366.8	SGR	587.5	SG3	1019.9			
RRT	.0904	RRF	.0586	RTF	.9893		
SGB13379.7	R23	-.0311	R13	.9893			
SG113366.9	SG2	585.1	THA	.23			

ORBIT DETERMINATION ACCURACY

ST	2296.2	SR	494.8	SS	987.1
CRT	.3478	CRS	.1936	CST	-.8515
LSA	2455.9	MSA	677.9	SSA	28.9
EL1	2302.9	EL2	462.6	ALF	4.47

LAUNCH DATE NOV 23 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 835.729 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.059	GAL	-3.38	AZL	88.05	HCA	249.72	SMA	188.48	ECC	.22383	INC	1.9488	V1	30.164
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.875	GAP	-11.46	AZP	90.68	TAL	341.37	TAP	231.09	RCA	146.29	APO	230.66	V2	26.304
RC	317.035	GL	19.05	GP	-1.92	ZAL	118.03	ZAP	37.38	ETS	176.60	ZAE	59.66	ETE	178.44	ZAC	83.25	ETC	257.35	CLP	37.34

PLANETOCENTRIC CONIC

C3	11.822	VHL	3.438	DLA	17.21	RAL	188.32	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	4.765	DPA	4.56	RAP	168.64	ECC	1.1946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 17	2662.97	-27.33	71.90	46.81	97.71	18 8 40	2063.0	-25.98	63.49
90.00	10 6 8	4173.53	-.82	170.50	41.89	61.69	11 15 41	3573.5	-4.59	163.86
100.00	18 55 32	2368.70	-28.51	50.05	46.61	99.39	19 35 1	1768.7	-26.92	41.61
100.00	11 17 33	3943.04	.22	152.98	41.31	60.11	12 23 16	3343.0	-3.75	146.45
110.00	20 25 36	2086.92	-31.55	27.93	45.88	103.90	21 0 23	1486.9	-29.32	19.43
110.00	12 3 59	3797.58	2.86	140.31	39.66	55.92	13 7 17	3197.6	-1.63	134.10

DIFFERENTIAL CORRECTIONS

TDE	.1450	TRA	4.4101	TC-16.1382	BAU	2.5508	
RDE	.2951	RRA	.1636	RC3 .2340	FAU	.16918	
FDE	-.5993	FRA	4.1919	FC-12.3895	BSP	47159	
BDE	.3288	BRA	4.4131	BC316.1399	FSP	3334	

MID-COURSE EXECUTION ACCURACY

SGT13505.5	SGR	590.9	SG3	973.9			
RRT	.0662	RRF	.0337	RTF	.9890		
SGB13518.4	R23	-.0320	R13	.9890			
SG113505.6	SG2	589.6	THA	.17			

ORBIT DETERMINATION ACCURACY

ST	2344.4	SR	499.2	SS	997.9
CRT	.2690	CRS	.2517	CST	-.8635
LSA	2506.1	MSA	678.4	SSA	28.2
EL1	2348.4	EL2	480.0	ALF	3.42

LAUNCH DATE NOV 23 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 840.019 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.065	GAL	-3.53	AZL	88.06	HCA	250.97	SMA	188.58	ECC	.22495	INC	1.9397	V1	30.164
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.904	GAP	-11.58	AZP	90.63	TAL	340.58	TAP	231.55	RCA	146.16	APO	231.01	V2	26.323
RC	317.924	GL	18.72	GP	-1.88	ZAL	119.34	ZAP	36.68	ETS	176.58	ZAE	58.66	ETE	178.44	ZAC	83.41	ETC	257.29	CLP	36.64

PLANETOCENTRIC CONIC

C3	12.113	VHL	3.480	DLA	16.38	RAL	189.39	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	4.845	DPA	4.38	RAP	169.17	ECC	1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 37	2637.12	-27.08	70.05	47.94	98.61	18 20 34	2037.1	-25.61	61.69
90.00	10 2 18	4209.64	.35	172.52	43.09	61.68	11 12 28	3609.6	-3.44	165.89
100.00	19 7 10	2345.12	-28.23	48.35	47.72	100.25	19 46 15	1745.1	-26.53	39.96
100.00	11 14 26	3976.87	1.37	154.84	42.52	60.14	12 20 43	3376.9	-2.61	148.32
110.00	20 35 47	2067.86	-31.23	26.53	46.96	104.67	21 10 15	1467.9	-28.90	18.10
110.00	12 2 19	3826.89	3.97	141.84	40.90	56.02	13 6 6	3226.9	-.51	135.63

DIFFERENTIAL CORRECTIONS

TDE	.0418	TRA	4.6259	TC-15.9351	BAU	2.5808	
RDE	.3018	RRA	.1620	RC3 .2455	FAU	.16083	
FDE	-.6697	FRA	4.1396	FC-11.4951	BSP	47688	
BDE	.3047	BRA	4.6288	BC315.9370	FSP	3194	

MID-COURSE EXECUTION ACCURACY

SGT13639.7	SGR	594.4	SG3	929.3			
RRT	.0426	RRF	.0094	RTF	.9887		
SGB13652.6	R23	-.0329	R13	.9887			
SG113639.7	SG2	593.9	THA	.11			

ORBIT DETERMINATION ACCURACY

ST	2405.4	SR	503.8	SS	1009.4
CRT	.1907	CRS	.3056	CST	-.8756
LSA	2569.1	MSA	676.4	SSA	27.6
EL1	2407.4	EL2	494.1	ALF	2.39

LAUNCH DATE NOV 23 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 844.307 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.071	GAL	-3.69	AZL	88.07	HCA	252.22	SMA	188.69	ECC	.22613	INC	1.9308	V1	30.164
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.932	GAP	-11.69	AZP	90.59	TAL	339.77	TAP	231.99	RCA	146.03	APO	231.36	V2	26.341
RC	318.808	GL	18.39	GP	-1.83	ZAL	120.66	ZAP	36.00	ETS	176.56	ZAE	57.68	ETE	178.44	ZAC	83.57	ETC	257.23	CLP	35.96

PLANETOCENTRIC CONIC

C3	12.427	VHL	3.525	DLA	15.55	RAL	190.45	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	4.927	DPA	4.18	RAP	169.71	ECC	1.2045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 44	2612.14	-26.81	68.27	49.09	99.46	18 32 16	2012.1	-25.23	59.95
90.00	9 58 41	4245.48	1.51	174.52	44.33	61.72	11 9 26	3645.5	-2.29	167.89
100.00	19 18 37	2322.28	-27.95	46.71	48.86	101.06	19 57 19	1722.3	-26.14	38.38
100.00	11 11 29	4010.58	2.51	156.69	43.78	60.20	12 18 20	3410.6	-1.47	150.17
110.00	20 45 51	2049.30	-30.90	25.19	48.06	105.40	21 20 1	1449.3	-28.48	16.82
110.00	12 0 44	3856.32	5.09	143.38	42.17	56.15	13 5 0	3256.3	.61	137.16

DIFFERENTIAL CORRECTIONS

TDE	-.0625	TRA	4.8493	TC-15.7126	BAU	2.6109	
RDE	.3089	RRA	.1603	RC3 .2557	FAU	.15273	
FDE	-.7315	FRA	4.0843	FC-10.6394	BSP	48233	
BDE	.3151	BRA	4.8519	BC315.7147	FSP	3060	

MID-COURSE EXECUTION ACCURACY

SGT13771.7	SGR	598.0	SG3	886.0			
RRT .0200	RRF	-.0139	RTF	.9884			
SGB13784.7	R23	-.0337	R13	.9884			
SG113771.8	SG2	597.9	THA	.05			

ORBIT DETERMINATION ACCURACY

ST	2478.7	SR	508.5	SS	1019.6		
CRT	.1161	CRS	.3533	CST	-.8874		
LSA	2643.9	MSA	671.7	SSA	27.0		
EL1	2479.4	EL2	505.0	ALF	1.42		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 848.593 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.077	GAL	-3.85	AZL	88.08	HCA	253.47	SMA	188.81	ECC	.22735	INC	1.9220	V1	30.164
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.959	GAP	-11.82	AZP	90.55	TAL	338.95	TAP	232.43	RCA	145.88	APO	231.73	V2	26.357
RC	319.685	GL	18.05	GP	-1.79	ZAL	121.98	ZAP	35.34	ETS	176.54	ZAE	56.72	ETE	178.44	ZAC	83.73	ETC	257.17	CLP	35.30

PLANETOCENTRIC CONIC

C3	12.766	VHL	3.573	DLA	14.71	RAL	191.51	RAD	6567.5	VEL	11.582	PTH	2.03	VHP	5.010	DPA	3.98	RAP	170.27	ECC	1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 38	2588.01	-26.53	66.56	50.26	100.28	18 43 46	1988.0	-24.84	58.29
90.00	9 55 15	4281.11	2.65	176.51	45.61	61.80	11 6 36	3681.1	-1.14	169.88
100.00	19 29 53	2300.15	-27.65	45.14	50.02	101.84	20 8 13	1700.1	-25.74	36.86
100.00	11 8 40	4044.20	3.65	158.54	45.06	60.31	12 16 5	3444.2	-.33	152.01
110.00	20 55 49	2031.26	-30.57	23.89	49.19	106.10	21 29 41	1431.3	-28.06	15.59
110.00	11 59 14	3885.85	6.21	144.94	43.47	56.32	13 3 59	3285.9	1.74	138.71

DIFFERENTIAL CORRECTIONS

TDE	-.1704	TRA	5.0799	TC-15.4679	BAU	2.6403	
RDE	.3164	RRA	.1584	RC3 .2644	FAU	.14489	
FDE	-.7882	FRA	4.0263	FC3-9.8257	BSP	48757	
BDE	.3593	BRA	5.0823	BC315.4701	FSP	2929	

MID-COURSE EXECUTION ACCURACY

SGT13899.0	SGR	601.7	SG3	844.2			
RRT -.0019	RRF	-.0366	RTF	.9881			
SGB13912.0	R23	.0347	R13	-.9881			
SG113899.0	SG2	601.7	THA	180.00			

ORBIT DETERMINATION ACCURACY

ST	2562.9	SR	513.4	SS	1029.1		
CRT	.0445	CRS	.3971	CST	-.8986		
LSA	2729.0	MSA	665.4	SSA	26.3		
EL1	2563.0	EL2	512.9	ALF	.53		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 852.877 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.084	GAL	-4.02	AZL	88.09	HCA	254.73	SMA	188.92	ECC	.22863	INC	1.9133	V1	30.164
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.985	GAP	-11.94	AZP	90.50	TAL	338.12	TAP	232.85	RCA	145.72	APO	232.11	V2	26.373
RC	320.558	GL	17.70	GP	-1.75	ZAL	123.30	ZAP	34.70	ETS	176.52	ZAE	55.78	ETE	178.44	ZAC	83.90	ETC	257.11	CLP	34.66

PLANETOCENTRIC CONIC

C3	13.131	VHL	3.624	DLA	13.88	RAL	192.57	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	5.095	DPA	3.77	RAP	170.85	ECC	1.2161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 19	2564.70	-26.24	64.91	51.45	101.05	18 55 4	1964.7	-24.45	56.70
90.00	9 51 59	4316.55	3.79	178.49	46.92	61.92	11 3 55	3716.5	.01	171.85
100.00	19 40 59	2278.73	-27.34	43.62	51.20	102.58	20 18 58	1678.7	-25.33	35.39
100.00	11 6 0	4077.75	4.78	160.39	46.38	60.46	12 13 57	3477.7	.81	153.85
110.00	21 5 40	2013.76	-30.23	22.63	50.33	106.77	21 39 14	1413.8	-27.64	14.40
110.00	11 57 48	3915.49	7.33	146.51	44.81	56.52	13 3 3	3315.5	2.87	140.25

DIFFERENTIAL CORRECTIONS

TDE	-.2811	TRA	5.3172	TC-15.2067	BAU	2.6700	
RDE	.3243	RRA	.1562	RC3 .2718	FAU	.13727	
FDE	-.8391	FRA	3.9659	FC3-9.0501	BSP	49276	
BDE	.4291	BRA	5.3195	BC315.2092	FSP	2802	

MID-COURSE EXECUTION ACCURACY

SGT14023.3	SGR	605.3	SG3	803.6			
RRT -.0231	RRF	-.0585	RTF	.9876			
SGB14036.4	R23	.0357	R13	-.9876			
SG114023.3	SG2	605.2	THA	179.94			

ORBIT DETERMINATION ACCURACY

ST	2656.4	SR	518.4	SS	1037.3		
CRT	-.0229	CRS	.4367	CST	-.9087		
LSA	2822.8	MSA	657.7	SSA	25.7		
EL1	2656.4	EL2	518.3	ALF	179.73		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 857.159 EARTH TO MARS

RL	147.71	LAL	-.00	LOL	60.74	VL	33.090	GAL	-4.19	AZL	88.10	HCA	255.99	SMA	189.03	ECC	.22997	INC	1.9047	V1	30.164
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.010	GAP	-12.06	AZP	90.46	TAL	337.27	TAP	233.25	RCA	145.56	APO	232.50	V2	26.388
RC	321.425	GL	17.35	GP	-1.71	ZAL	124.62	ZAP	34.08	ETS	176.50	ZAE	54.85	ETE	178.44	ZAC	84.06	ETC	257.05	CLP	34.04

PLANETOCENTRIC CONIC

C3	13.523	VHL	3.677	DLA	13.04	RAL	193.62	RAD	6567.5	VEL	11.615	PTH	2.04	VHP	5.181	DPA	3.54	RAP	171.44	ECC	1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 49	2542.20	-25.94	63.33	52.66	101.78	19 6 11	1942.2	-24.05	55.17
90.00	9 48 52	4351.82	4.92	180.47	48.27	62.08	11 1 24	3751.8	1.15	173.82
100.00	19 51 55	2258.03	-27.02	42.16	52.39	103.29	20 29 33	1658.0	-24.93	33.99
100.00	11 3 27	4111.22	5.90	162.24	47.73	60.64	12 11 58	3511.2	1.94	155.69
110.00	21 15 25	1996.80	-29.89	21.43	51.50	107.41	21 48 41	1396.8	-27.22	13.26
110.00	11 56 27	3945.22	8.44	148.09	46.18	56.75	13 2 12	3345.2	4.01	141.81

DIFFERENTIAL CORRECTIONS

TDE	-.3951	TRA	5.5611	TC-14.9325	BAU	2.7002	
RDE	.3327	RRA	.1537	RC3 .2780	FAU	.12993	
FDE	-.8852	FRA	3.9009	FC3-8.3178	BSP	49754	
BDE	.5165	BRA	5.5632	BC314.9351	FSP	2678	

MID-COURSE EXECUTION ACCURACY

SGT14145.5	SGR	609.0	SG3	764.3			
RRT -.0440	RRF	-.0802	RTF	.9872			
SGB14158.6	R23	.0368	R13	-.9872			
SG114145.5	SG2	608.4	THA	179.89			

ORBIT DETERMINATION ACCURACY

ST	2758.0	SR	523.5	SS	1043.9		
CRT	-.0861	CRS	.4733	CST	-.9178		
LSA	2923.7	MSA	649.2	SSA	25.1		
EL1	2758.4	EL2	521.5	ALF	179.03		

LAUNCH DATE NOV 23 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 861.437 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.096 GAL -4.37 AZL 88.10 HCA 257.25 SMA 189.15 ECC .23137 INC 1.8962 V1 30.164
RP 207.48 LAP -1.85 LOP 317.98 VP 24.035 GAP -12.19 AZP 90.42 TAL 336.40 TAP 233.64 RCA 145.38 APO 232.91 V2 26.402
RC 322.286 GL 17.00 GP -1.68 ZAL 125.93 ZAP 33.47 ETS 176.48 ZAE 53.94 ETE 178.45 ZAC 84.24 ETC 256.98 CLP 33.43

PLANETOCENTRIC CONIC

C3 13.944 VHL 3.734 DLA 12.21 RAL 194.67 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 5.268 DPA 3.31 RAP 172.05 ECC 1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 7	2520.50	-25.62	61.82	53.89	102.48	19 17 7	1920.5	-23.65	53.71
90.00	9 45 54	4386.94	6.04	182.45	49.65	62.28	10 59 1	3786.9	2.28	175.78
100.00	20 2 42	2238.03	-26.70	40.76	53.61	103.96	20 40 0	1638.0	-24.52	32.64
100.00	11 1 0	4144.64	7.01	164.10	49.12	60.87	12 10 5	3544.6	3.07	157.53
110.00	21 25 2	1980.40	-29.55	20.27	52.68	108.02	21 58 2	1380.4	-26.80	12.16
110.00	11 55 10	3975.04	9.55	149.69	47.58	57.02	13 1 25	3375.0	5.14	143.38

DIFFERENTIAL CORRECTIONS
TDE -.5106 TRA 5.8138 TC-14.6402 BAU 2.7298
RDE .3414 RRA .1510 RC3 .2831 FAU .12276
FDE -.9248 FRA 3.8342 FC3-7.6215 BSP 50260
BDE .6143 BRA 5.8158 BC314.6430 FSP 2558

MID-COURSE EXECUTION ACCURACY
SGT14264.0 SGR 612.6 SG3 726.2
RRT -.0640 RRF -.1010 RTF .9866
SGB14277.1 R23 .0379 R13 -.9866
SG114264.0 SG2 611.4 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 2866.7 SR 528.7 SS 1048.2
CRT -.1437 CRS .5060 CST -.9258
LSA 3030.9 MSA 640.0 SSA 24.5
EL1 2867.8 EL2 523.0 ALF 178.43

LAUNCH DATE NOV 23 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 865.711 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.103 GAL -4.55 AZL 88.11 HCA 258.51 SMA 189.26 ECC .23282 INC 1.8877 V1 30.164
RP 207.36 LAP -1.85 LOP 319.24 VP 24.058 GAP -12.31 AZP 90.38 TAL 335.52 TAP 234.02 RCA 145.20 APO 233.33 V2 26.416
RC 323.141 GL 16.65 GP -1.64 ZAL 127.24 ZAP 32.87 ETS 176.45 ZAE 53.04 ETE 178.45 ZAC 84.41 ETC 256.92 CLP 32.84

PLANETOCENTRIC CONIC

C3 14.396 VHL 3.794 DLA 11.37 RAL 195.70 RAD 6567.6 VEL 11.653 PTH 2.05 VHP 5.357 DPA 3.07 RAP 172.68 ECC 1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 14	2499.58	-25.31	60.37	55.14	103.14	19 27 53	1899.6	-23.25	52.31
90.00	9 43 4	4421.93	7.14	184.42	51.07	62.53	10 56 46	3821.9	3.40	177.74
100.00	20 13 16	2218.74	-26.38	39.42	54.85	104.60	20 50 17	1618.7	-24.11	31.35
100.00	10 58 41	4178.00	8.11	165.96	50.54	61.13	12 8 19	3578.0	4.20	159.36
110.00	21 34 32	1964.57	-29.21	19.17	53.89	108.60	22 7 17	1364.6	-26.39	11.12
110.00	11 53 57	4004.94	10.65	151.30	49.01	57.33	13 0 42	3404.9	6.27	144.95

DIFFERENTIAL CORRECTIONS
TDE -.6296 TRA 6.0732 TC-14.3350 BAU 2.7596
RDE .3507 RRA .1480 RC3 .2869 FAU .11584
FDE -.9609 FRA 3.7636 FC3-6.9662 BSP 50731
BDE .7206 BRA 6.0750 BC314.3379 FSP 2439

MID-COURSE EXECUTION ACCURACY
SGT14378.7 SGR 616.2 SG3 689.3
RRT -.0835 RRF -.1217 RTF .9860
SGB14391.9 R23 .0393 R13 -.9860
SG114378.8 SG2 614.1 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 2980.9 SR 533.9 SS 1050.9
CRT -.1971 CRS .5365 CST -.9326
LSA 3142.7 MSA 631.0 SSA 24.0
EL1 2982.8 EL2 523.1 ALF 177.91

LAUNCH DATE NOV 23 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 869.981 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.110 GAL -4.74 AZL 88.12 HCA 259.77 SMA 189.38 ECC .23435 INC 1.8793 V1 30.164
RP 207.26 LAP -1.85 LOP 320.50 VP 24.081 GAP -12.44 AZP 90.33 TAL 334.62 TAP 234.39 RCA 145.00 APO 233.76 V2 26.428
RC 323.990 GL 16.29 GP -1.61 ZAL 128.55 ZAP 32.30 ETS 176.43 ZAE 52.16 ETE 178.45 ZAC 84.59 ETC 256.86 CLP 32.26

PLANETOCENTRIC CONIC

C3 14.881 VHL 3.858 DLA 10.54 RAL 196.73 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 5.448 DPA 2.82 RAP 173.31 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 10	2479.44	-24.99	58.98	56.41	103.77	19 38 29	1879.4	-22.85	50.96
90.00	9 40 22	4456.80	8.23	186.41	52.51	62.81	10 54 39	3856.8	4.52	179.69
100.00	20 23 45	2200.16	-26.05	38.14	56.10	105.20	21 0 26	1600.2	-23.71	30.12
100.00	10 56 27	4211.31	9.20	167.84	51.99	61.43	12 6 39	3611.3	5.32	161.20
110.00	21 43 55	1949.32	-28.88	18.11	55.12	109.14	22 16 24	1349.3	-25.99	10.11
110.00	11 52 47	4034.91	11.75	152.93	50.47	57.67	13 0 2	3434.9	7.40	146.54

DIFFERENTIAL CORRECTIONS
TDE -.7509 TRA 6.3406 TC-14.0210 BAU 2.7900
RDE .3603 RRA .1446 RC3 .2897 FAU .10915
FDE -.9913 FRA 3.6899 FC3-6.3499 BSP 51198
BDE .8329 BRA 6.3423 BC314.0240 FSP 2325

MID-COURSE EXECUTION ACCURACY
SGT14492.3 SGR 619.8 SG3 653.7
RRT -.1026 RRF -.1418 RTF .9853
SGB14505.5 R23 .0407 R13 -.9853
SG114492.4 SG2 616.5 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 3099.7 SR 539.2 SS 1051.1
CRT -.2457 CRS .5642 CST -.9385
LSA 3258.3 MSA 621.7 SSA 23.4
EL1 3102.6 EL2 522.2 ALF 177.48

LAUNCH DATE NOV 23 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 874.245 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.116 GAL -4.93 AZL 88.13 HCA 261.03 SMA 189.50 ECC .23593 INC 1.8710 V1 30.164
RP 207.16 LAP -1.85 LOP 321.77 VP 24.102 GAP -12.57 AZP 90.29 TAL 333.71 TAP 234.74 RCA 144.79 APO 234.21 V2 26.439
RC 324.833 GL 15.93 GP -1.58 ZAL 129.85 ZAP 31.73 ETS 176.41 ZAE 51.29 ETE 178.45 ZAC 84.76 ETC 256.80 CLP 31.70

PLANETOCENTRIC CONIC

C3 15.400 VHL 3.924 DLA 9.72 RAL 197.76 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 5.540 DPA 2.56 RAP 173.97 ECC 1.2535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 55	2460.07	-24.67	57.65	57.70	104.36	19 48 55	1860.1	-22.45	49.68
90.00	9 37 46	4491.55	9.30	188.39	54.00	63.14	10 52 38	3891.5	5.63	181.64
100.00	20 34 3	2182.29	-25.73	36.91	57.38	105.77	21 10 25	1582.3	-23.32	28.94
100.00	10 54 20	4244.56	10.28	169.72	53.48	61.78	12 5 4	3644.6	6.43	163.05
110.00	21 53 11	1934.68	-28.55	17.10	56.37	109.66	22 25 25	1334.7	-25.60	9.16
110.00	11 51 41	4064.94	12.84	154.58	51.97	58.04	12 59 26	3464.9	8.52	148.14

DIFFERENTIAL CORRECTIONS
TDE -.8751 TRA 6.6152 TC-13.6964 BAU 2.8206
RDE .3704 RRA .1410 RC3 .2915 FAU .10268
FDE-1.0174 FRA 3.6130 FC3-5.7721 BSP 51637
BDE .9503 BRA 6.6167 BC313.6995 FSP 2213

MID-COURSE EXECUTION ACCURACY
SGT14601.7 SGR 623.2 SG3 619.3
RRT -.1213 RRF -.1616 RTF .9846
SGB14615.0 R23 .0423 R13 -.9846
SG114601.9 SG2 618.6 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 3221.5 SR 544.5 SS 1049.0
CRT -.2902 CRS .5897 CST -.9436
LSA 3376.3 MSA 612.5 SSA 22.9
EL1 3225.5 EL2 520.4 ALF 177.12

LAUNCH DATE NOV 23 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 878.503 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.123 GAL -5.13 AZL 88.14 HCA 262.29 SMA 189.62 ECC .23759 INC 1.8627 V1 30.164
RP 207.08 LAP -1.85 LOP 323.03 VP 24.122 GAP -12.71 AZP 90.25 TAL 332.79 TAP 235.08 RCA 144.57 APO 234.67 V2 26.449
RC 325.671 GL 15.57 GP -1.55 ZAL 131.15 ZAP 31.19 ETS 176.38 ZAE 50.44 ETE 178.45 ZAC 84.95 ETC 256.73 CLP 31.15

PLANETOCENTRIC CONIC

C3 15.956 VHL 3.995 DLA 8.90 RAL 198.77 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 5.634 DPA 2.29 RAP 174.63 ECC 1.2626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 31	2441.47	-24.35	56.38	59.00	104.92	19 59 12	1841.5	-22.06	48.46
90.00	9 35 17	4526.19	10.36	190.39	55.51	63.50	10 50 43	3926.2	6.72	183.60
100.00	20 44 11	2165.12	-25.41	35.73	58.68	106.30	21 20 17	1565.1	-22.93	27.81
100.00	10 52 17	4277.77	11.34	171.61	55.00	62.16	12 3 35	3677.8	7.53	164.90
110.00	22 2 19	1920.63	-28.22	16.13	57.64	110.14	22 34 20	1320.6	-25.22	8.25
110.00	11 50 39	4095.02	13.91	156.24	53.50	58.46	12 58 54	3495.0	9.64	149.75

DIFFERENTIAL CORRECTIONS
TDE-1.0021 TRA 6.8975 TC-13.3662 BAU 2.8520
RDE .3809 RRA .1370 RC3 .2923 FAU .09642
FDE-1.0393 FRA 3.5332 FC3-5.2315 BSP 52051
BDE 1.0720 BRA 6.8988 BC313.3694 FSP 2104

MID-COURSE EXECUTION ACCURACY
SGT14709.7 SGR 626.7 SG3 586.0
RRT -.1396 RRF -.1812 RTF .9837
SGB14723.0 R23 .0440 R13 -.9837
SG114709.9 SG2 620.5 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 3345.7 SR 549.7 SS 1044.8
CRT -.3307 CRS .6133 CST -.9478
LSA 3496.1 MSA 603.6 SSA 22.4
EL1 3350.8 EL2 518.0 ALF 176.81

LAUNCH DATE NOV 23 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 882.754 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.130 GAL -5.33 AZL 88.15 HCA 263.56 SMA 189.74 ECC .23932 INC 1.8545 V1 30.164
RP 207.00 LAP -1.84 LOP 324.30 VP 24.142 GAP -12.84 AZP 90.21 TAL 331.85 TAP 235.41 RCA 144.33 APO 235.15 V2 26.459
RC 326.503 GL 15.21 GP -1.52 ZAL 132.43 ZAP 30.66 ETS 176.36 ZAE 49.60 ETE 178.45 ZAC 85.13 ETC 256.67 CLP 30.62

PLANETOCENTRIC CONIC

C3 16.551 VHL 4.068 DLA 8.09 RAL 199.78 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 5.730 DPA 2.01 RAP 175.31 ECC 1.2724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 56	2423.63	-24.03	55.17	60.33	105.45	20 9 19	1823.6	-21.68	47.29
90.00	9 32 54	4560.73	11.41	192.39	57.06	63.91	10 48 55	3960.7	7.81	185.56
100.00	20 54 11	2148.67	-25.09	34.62	59.99	106.81	21 29 59	1548.7	-22.55	26.74
100.00	10 50 20	4310.92	12.39	173.52	56.56	62.58	12 2 11	3710.9	8.62	166.76
110.00	22 11 20	1907.20	-27.90	15.22	58.93	110.60	22 43 7	1307.2	-24.84	7.38
110.00	11 49 40	4125.15	14.98	157.92	55.06	58.91	12 58 25	3525.1	10.75	151.37

DIFFERENTIAL CORRECTIONS
TDE-1.1307 TRA 7.1887 TC-13.0277 BAU 2.8834
RDE .3919 RRA .1327 RC3 .2923 FAU .09034
FDE-1.0562 FRA 3.4496 FC3-4.7254 BSP 52472
BDE 1.1967 BRA 7.1899 BC313.0310 FSP 1998

MID-COURSE EXECUTION ACCURACY
SGT14814.4 SGR 630.0 SG3 553.7
RRT -.1574 RRF -.2004 RTF .9827
SGB14827.8 R23 .0460 R13 -.9827
SG114814.8 SG2 622.1 THA 179.62

ORBIT DETERMINATION ACCURACY
ST 3471.1 SR 554.9 SS 1037.6
CRT -.3673 CRS .6349 CST -.9514
LSA 3616.4 MSA 595.1 SSA 21.9
EL1 3477.2 EL2 515.2 ALF 176.56

LAUNCH DATE NOV 23 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 886.998 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.136 GAL -5.53 AZL 88.15 HCA 264.82 SMA 189.86 ECC .24112 INC 1.8463 V1 30.164
RP 206.93 LAP -1.84 LOP 325.56 VP 24.160 GAP -12.98 AZP 90.17 TAL 330.89 TAP 235.72 RCA 144.08 APO 235.64 V2 26.467
RC 327.330 GL 14.85 GP -1.49 ZAL 133.71 ZAP 30.14 ETS 176.34 ZAE 48.78 ETE 178.46 ZAC 85.32 ETC 256.61 CLP 30.10

PLANETOCENTRIC CONIC

C3 17.187 VHL 4.146 DLA 7.28 RAL 200.78 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 5.827 DPA 1.73 RAP 176.01 ECC 1.2829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 11	2406.54	-23.72	54.02	61.68	105.94	20 19 17	1806.5	-21.30	46.18
90.00	9 30 37	4595.16	12.43	194.40	58.64	64.35	10 47 12	3995.2	8.88	187.52
100.00	21 4 1	2132.93	-24.77	33.55	61.33	107.29	21 39 34	1532.9	-22.17	25.72
100.00	10 48 28	4344.01	13.42	175.43	58.14	63.04	12 0 52	3744.0	9.69	168.62
110.00	22 20 14	1894.40	-27.59	14.35	60.24	111.03	22 51 48	1294.4	-24.48	6.56
110.00	11 48 44	4155.30	16.03	159.63	56.66	59.40	12 58 0	3555.3	11.85	153.01

DIFFERENTIAL CORRECTIONS
TDE-1.2625 TRA 7.4879 TC-12.6859 BAU 2.9157
RDE .4034 RRA .1281 RC3 .2915 FAU .08446
FDE-1.0691 FRA 3.3632 FC3-4.2545 BSP 52854
BDE 1.3254 BRA 7.4890 BC312.6893 FSP 1894

MID-COURSE EXECUTION ACCURACY
SGT14917.3 SGR 633.2 SG3 522.6
RRT -.1750 RRF -.2193 RTF .9816
SGB14930.7 R23 .0480 R13 -.9816
SG114917.7 SG2 623.5 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3597.2 SR 560.1 SS 1028.2
CRT -.4008 CRS .6550 CST -.9544
LSA 3737.1 MSA 586.8 SSA 21.5
EL1 3604.3 EL2 512.1 ALF 176.36

.AUNCH DATE NOV 23 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 891.233 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.143 GAL -5.75 AZL 88.16 HCA 266.09 SMA 189.98 ECC .24300 INC 1.8381 V1 30.164
RP 206.86 LAP -1.83 LOP 326.83 VP 24.178 GAP -13.13 AZP 90.13 TAL 329.93 TAP 236.02 RCA 143.82 APO 236.15 V2 26.474
RC 328.152 GL 14.49 GP -1.46 ZAL 134.97 ZAP 29.63 ETS 176.31 ZAE 47.97 ETE 178.46 ZAC 85.51 ETC 256.55 CLP 29.60

PLANETOCENTRIC CONIC

C3 17.867 VHL 4.227 DLA 6.49 RAL 201.77 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 5.927 DPA 1.44 RAP 176.71 ECC 1.2941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 16	2390.21	-23.41	52.92	63.04	106.41	20 29 6	1790.2	-20.94	45.12
90.00	9 28 25	4629.48	13.43	196.42	60.26	64.84	10 45 35	4029.5	9.93	189.49
100.00	21 13 42	2117.89	-24.46	32.54	62.69	107.73	21 49 0	1517.9	-21.81	24.75
100.00	10 46 40	4377.03	14.43	177.36	59.76	63.53	11 59 37	3777.0	10.76	170.50
110.00	22 29 0	1882.21	-27.29	13.53	61.57	111.43	23 0 23	1282.2	-24.13	5.79
110.00	11 47 51	4185.48	17.07	161.35	58.29	59.92	12 57 37	3585.5	12.94	154.67

DIFFERENTIAL CORRECTIONS
TDE-1.3961 TRA 7.7952 TC-12.3401 BAU 2.9485
RDE .4152 RRA .1231 RC3 .2898 FAU .07876
FDE-1.0782 FRA 3.2729 FC3-3.8161 BSP 53237
BDE 1.4566 BRA 7.7962 BC312.3435 FSP 1793

MID-COURSE EXECUTION ACCURACY
SGT15016.7 SGR 636.4 SG3 492.4
RRT -.1921 RRF -.2381 RTF .9804
SGB15030.2 R23 .0503 R13 -.9804
SG115017.2 SG2 624.5 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 3722.6 SR 565.1 SS 1016.3
CRT -.4310 CRS .6738 CST -.9568
LSA 3856.7 MSA 579.0 SSA 21.0
EL1 3730.7 EL2 508.8 ALF 176.19

LAUNCH DATE NOV 23 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 895.459 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.150 GAL -5.96 AZL 88.17 HCA 267.36 SMA 190.11 ECC .24497 INC 1.8300 V1 30.164
RP 206.81 LAP -1.83 LOP 328.10 VP 24.194 GAP -13.27 AZP 90.08 TAL 328.94 TAP 236.30 RCA 143.54 APO 236.68 V2 26.480
RC 328.970 GL 14.13 GP -1.44 ZAL 136.22 ZAP 29.14 ETS 176.29 ZAE 47.17 ETE 178.46 ZAC 85.70 ETC 256.49 CLP 29.11

PLANETOCENTRIC CONIC

C3 18.594 VHL 4.312 DLA 5.70 RAL 202.75 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 6.028 DPA 1.14 RAP 177.43 ECC 1.3060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 12	2374.62	-23.10	51.88	64.42	106.84	20 38 47	1774.6	-20.58	44.12
90.00	9 26 18	4663.71	14.41	198.46	61.91	65.36	10 44 2	4063.7	10.97	191.47
100.00	21 23 14	2103.56	-24.16	31.58	64.06	108.15	21 58 18	1503.6	-21.46	23.83
100.00	10 44 57	4410.00	15.42	179.31	61.41	64.07	11 58 27	3810.0	11.81	172.38
110.00	22 37 40	1870.66	-27.00	12.76	62.92	111.81	23 8 50	1270.7	-23.80	5.06
110.00	11 47 1	4215.66	18.09	163.10	59.95	60.49	12 57 17	3615.7	14.03	156.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5329 TRA 8.1107 TC-11.9938 BAU 2.9823 SGT15114.2 SGR 639.5 SG3 463.2 ST 3847.3 SR 570.1 SS 1002.2
RDE .4276 RRA .1177 RC3 .2876 FAU .07323 RRT -.2091 RRF -.2566 RTF .9790 CRT -.4588 CRS .6914 CST -.9588
FDE-1.0834 FRA 3.1797 FC3-3.4097 BSP 53574 SGB15127.7 R23 .0528 R13 -.9790 LSA 3975.5 MSA 571.5 SSA 20.6
BDE 1.5914 BRA 8.1116 BC311.9972 FSP 1693 SG115114.8 SG2 625.3 THA 179.49 EL1 3856.4 EL2 505.4 ALF 176.04

LAUNCH DATE NOV 23 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 899.674 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.157 GAL -6.19 AZL 88.18 HCA 268.63 SMA 190.24 ECC .24701 INC 1.8218 V1 30.164
RP 206.77 LAP -1.82 LOP 329.37 VP 24.209 GAP -13.42 AZP 90.04 TAL 327.94 TAP 236.57 RCA 143.24 APO 237.23 V2 26.486
RC 329.784 GL 13.78 GP -1.41 ZAL 137.46 ZAP 28.66 ETS 176.26 ZAE 46.38 ETE 178.46 ZAC 85.89 ETC 256.44 CLP 28.63

PLANETOCENTRIC CONIC

C3 19.369 VHL 4.401 DLA 4.92 RAL 203.72 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 6.131 DPA .84 RAP 178.16 ECC 1.3188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 59	2359.77	-22.81	50.89	65.82	107.25	20 48 18	1759.8	-20.23	43.17
90.00	9 24 16	4697.82	15.37	200.50	63.59	65.92	10 42 34	4097.8	11.99	193.46
100.00	21 32 38	2089.94	-23.87	30.67	65.45	108.55	22 7 28	1489.9	-21.12	22.96
100.00	10 43 18	4442.89	16.39	181.27	63.10	64.65	11 57 21	3842.9	12.84	174.28
110.00	22 46 11	1859.74	-26.72	12.03	64.28	112.15	23 17 11	1259.7	-23.48	4.37
110.00	11 46 14	4245.85	19.09	164.86	61.64	61.09	12 57 0	3645.8	15.09	158.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6716 TRA 8.4353 TC-11.6456 BAU 3.0165 SGT15208.5 SGR 642.5 SG3 435.0 ST 3970.4 SR 575.0 SS 985.7
RDE .4403 RRA .1119 RC3 .2847 FAU .06787 RRT -.2257 RRF -.2752 RTF .9774 CRT -.4839 CRS .7080 CST -.9603
FDE-1.0851 FRA 3.0828 FC3-3.0337 BSP 53897 SGB15222.1 R23 .0557 R13 -.9774 LSA 4092.4 MSA 564.5 SSA 20.2
BDE 1.7286 BRA 8.4361 BC311.6491 FSP 1596 SG115209.2 SG2 625.9 THA 179.45 EL1 3980.3 EL2 501.9 ALF 175.93

LAUNCH DATE NOV 23 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 903.878 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.164 GAL -6.42 AZL 88.19 HCA 269.89 SMA 190.36 ECC .24915 INC 1.8137 V1 30.164
RP 206.73 LAP -1.81 LOP 330.63 VP 24.223 GAP -13.57 AZP 90.00 TAL 326.93 TAP 236.82 RCA 142.93 APO 237.79 V2 26.490
RC 330.595 GL 13.42 GP -1.39 ZAL 138.69 ZAP 28.20 ETS 176.24 ZAE 45.61 ETE 178.45 ZAC 86.09 ETC 256.38 CLP 28.17

PLANETOCENTRIC CONIC

C3 20.197 VHL 4.494 DLA 4.15 RAL 204.68 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 6.236 DPA .52 RAP 178.90 ECC 1.3324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 36	2345.65	-22.52	49.96	67.24	107.64	20 57 42	1745.7	-19.90	42.27
90.00	9 22 19	4731.83	16.30	202.56	65.30	66.52	10 41 11	4131.8	12.99	195.45
100.00	21 41 53	2077.01	-23.59	29.82	66.86	108.91	22 16 30	1477.0	-20.79	22.14
100.00	10 41 43	4475.70	17.33	183.25	64.82	65.26	11 56 19	3875.7	13.85	176.19
110.00	22 54 36	1849.45	-26.46	11.35	65.66	112.48	23 25 25	1249.5	-23.18	3.72
110.00	11 45 30	4276.03	20.08	166.65	63.37	61.74	12 56 46	3676.0	16.14	159.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.8136 TRA 8.7676 TC-11.3023 BAU 3.0528 SGT15301.9 SGR 645.4 SG3 407.8 ST 4091.8 SR 579.7 SS 967.0
RDE .4535 RRA .1057 RC3 .2813 FAU .06270 RRT -.2422 RRF -.2937 RTF .9756 CRT -.5072 CRS .7237 CST -.9615
FDE-1.0834 FRA 2.9822 FC3-2.6875 BSP 54179 SGB15315.5 R23 .0588 R13 -.9756 LSA 4207.4 MSA 557.6 SSA 19.8
BDE 1.8694 BRA 8.7682 BC311.3058 FSP 1501 SG115302.7 SG2 626.1 THA 179.41 EL1 4102.5 EL2 498.3 ALF 175.83

LAUNCH DATE NOV 23 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 908.070 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.171 GAL -6.65 AZL 88.19 HCA 271.16 SMA 190.49 ECC .25138 INC 1.8055 V1 30.164
RP 206.70 LAP -1.81 LOP 331.90 VP 24.237 GAP -13.73 AZP 89.96 TAL 325.90 TAP 237.07 RCA 142.60 APO 238.37 V2 26.493
RC 331.403 GL 13.07 GP -1.36 ZAL 139.91 ZAP 27.75 ETS 176.21 ZAE 44.85 ETE 178.45 ZAC 86.29 ETC 256.33 CLP 27.72

PLANETOCENTRIC CONIC

C3 21.081 VHL 4.591 DLA 3.39 RAL 205.63 RAD 6567.9 VEL 11.936 PTH 2.12 VHP 6.343 DPA .20 RAP 179.65 ECC 1.3469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 5	2332.25	-22.24	49.08	68.68	107.99	21 6 57	1732.3	-19.57	41.42
90.00	9 20 26	4765.72	17.21	204.64	67.04	67.16	10 39 52	4165.7	13.97	197.46
100.00	21 51 0	2064.77	-23.32	29.01	68.29	109.25	22 25 25	1464.8	-20.48	21.37
100.00	10 40 12	4508.44	18.25	185.24	66.57	65.91	11 55 20	3908.4	14.85	178.11
110.00	23 2 53	1839.79	-26.20	10.71	67.06	112.78	23 33 33	1239.8	-22.89	3.12
110.00	11 44 48	4306.18	21.04	168.46	65.14	62.42	12 56 34	3706.2	17.18	161.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.9567 TRA 9.1102 TC-10.9573 BAU 3.0891 SGT15391.6 SGR 648.2 SG3 381.4 ST 4210.2 SR 584.3 SS 945.9
RDE .4672 RRA .0990 RC3 .2773 FAU .05764 RRT -.2582 RRF -.3118 RTF .9735 CRT -.5281 CRS .7383 CST -.9623
FDE-1.0777 FRA 2.8789 FC3-2.3671 BSP 54445 SGB15405.3 R23 .0621 R13 -.9735 LSA 4319.5 MSA 551.2 SSA 19.4
BDE 2.0117 BRA 9.1107 BC310.9608 FSP 1408 SG115392.6 SG2 626.1 THA 179.38 EL1 4221.7 EL2 494.8 ALF 175.75

LAUNCH DATE NOV 23 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 912.248 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.178 GAL -6.90 AZL 88.20 HCA 272.43 SMA 190.62 ECC .25370 INC 1.7974 V1 30.164
RP 206.68 LAP -1.80 LOP 333.17 VP 24.249 GAP -13.90 AZP 89.92 TAL 324.86 TAP 237.29 RCA 142.26 APO 238.98 V2 26.495
RC 332.208 GL 12.72 GP -1.34 ZAL 141.11 ZAP 27.31 ETS 176.19 ZAE 44.10 ETE 178.45 ZAC 86.49 ETC 256.28 CLP 27.28

PLANETOCENTRIC CONIC

C3 22.023 VHL 4.693 DLA 2.65 RAL 206.57 RAD 6567.9 VEL 11.975 PTH 2.13 VHP 6.453 DPA -.12 RAP 180.42 ECC 1.3625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 24	2319.57	-21.97	48.24	70.13	108.33	21 16 4	1719.6	-19.26	40.62
90.00	9 18 38	4799.50	18.09	206.73	68.82	67.84	10 38 37	4199.5	14.93	199.48
100.00	21 59 59	2053.22	-23.06	28.25	69.73	109.57	22 34 12	1453.2	-20.18	20.64
100.00	10 38 44	4541.08	19.15	187.26	68.35	66.60	11 54 25	3941.1	15.82	180.04
110.00	23 11 3	1830.76	-25.96	10.12	68.48	113.06	23 41 34	1230.8	-22.62	2.56
110.00	11 44 9	4336.31	21.98	170.30	66.93	63.13	12 56 25	3736.3	18.20	163.20

DIFFERENTIAL CORRECTIONS
TDE-2.1033 TRA 9.4614 TC-10.6171 BAU 3.1271
RDE .4813 RRA .0920 RC3 .2730 FAU .05275
FDE-1.0691 FRA 2.7712 FC3-2.0737 BSP 54692
BDE 2.1577 BRA 9.4619 BC310.6206 FSP 1317

MID-COURSE EXECUTION ACCURACY
SGT15479.6 SGR 650.8 SG3 355.8
RRT -.2742 RRF -.3301 RTF .9711
SGB15493.2 R23 .0660 R13 -.9711
SG115480.6 SG2 625.9 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4326.5 SR 588.7 SS 922.8
CRT -.5475 CRS .7525 CST -.9627
LSA 4429.3 MSA 545.1 SSA 19.0
EL1 4338.6 EL2 491.2 ALF 175.68

LAUNCH DATE NOV 23 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 916.411 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.185 GAL -7.14 AZL 88.21 HCA 273.70 SMA 190.75 ECC .25612 INC 1.7893 V1 30.164
RP 206.67 LAP -1.79 LOP 334.44 VP 24.260 GAP -14.06 AZP 89.88 TAL 323.80 TAP 237.51 RCA 141.89 APO 239.60 V2 26.497
RC 333.009 GL 12.37 GP -1.32 ZAL 142.29 ZAP 26.88 ETS 176.16 ZAE 43.37 ETE 178.45 ZAC 86.69 ETC 256.23 CLP 26.85

PLANETOCENTRIC CONIC

C3 23.029 VHL 4.799 DLA 1.91 RAL 207.51 RAD 6567.9 VEL 12.017 PTH 2.14 VHP 6.565 DPA -.45 RAP 181.19 ECC 1.3790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 35	2307.58	-21.71	47.46	71.60	108.64	21 25 3	1707.6	-18.97	39.86
90.00	9 16 53	4833.16	18.94	208.83	70.62	68.55	10 37 26	4233.2	15.86	201.51
100.00	22 8 49	2042.34	-22.81	27.54	71.19	109.87	22 42 51	1442.3	-19.89	19.96
100.00	10 37 20	4573.63	20.02	189.28	70.16	67.32	11 53 34	3973.6	16.77	181.99
110.00	23 19 6	1822.35	-25.74	9.57	69.91	113.31	23 49 29	1222.3	-22.36	2.04
110.00	11 43 32	4366.39	22.89	172.15	68.76	63.89	12 56 19	3766.4	19.19	164.97

DIFFERENTIAL CORRECTIONS
TDE-2.2519 TRA 9.8218 TC-10.2807 BAU 3.1662
RDE .4959 RRA .0845 RC3 .2682 FAU .04799
FDE-1.0570 FRA 2.6606 FC3-1.8039 BSP 54890
BDE 2.3058 BRA 9.8222 BC310.2842 FSP 1229

MID-COURSE EXECUTION ACCURACY
SGT15564.6 SGR 653.4 SG3 331.2
RRT -.2898 RRF -.3482 RTF .9683
SGB15578.3 R23 .0701 R13 -.9683
SG115565.8 SG2 625.3 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 4439.2 SR 592.9 SS 897.6
CRT -.5652 CRS .7660 CST -.9629
LSA 4535.7 MSA 539.1 SSA 18.7
EL1 4452.0 EL2 487.7 ALF 175.63

LAUNCH DATE NOV 23 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 920.559 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.193 GAL -7.40 AZL 88.22 HCA 274.97 SMA 190.88 ECC .25865 INC 1.7810 V1 30.164
RP 206.67 LAP -1.77 LOP 335.71 VP 24.270 GAP -14.24 AZP 89.85 TAL 322.73 TAP 237.70 RCA 141.51 APO 240.25 V2 26.497
RC 333.807 GL 12.03 GP -1.30 ZAL 143.47 ZAP 26.47 ETS 176.13 ZAE 42.64 ETE 178.44 ZAC 86.90 ETC 256.18 CLP 26.44

PLANETOCENTRIC CONIC

C3 24.101 VHL 4.909 DLA 1.19 RAL 208.43 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 6.679 DPA -.79 RAP 181.98 ECC 1.3966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 38	2296.29	-21.46	46.72	73.08	108.93	21 33 54	1696.3	-18.68	39.15
90.00	9 15 12	4866.69	19.76	210.95	72.46	69.30	10 36 19	4266.7	16.77	203.55
100.00	22 17 32	2032.13	-22.57	26.88	72.66	110.14	22 51 24	1432.1	-19.62	19.32
100.00	10 35 59	4606.09	20.86	191.33	72.01	68.09	11 52 45	4006.1	17.70	183.96
110.00	23 27 2	1814.55	-25.53	9.06	71.36	113.54	23 57 17	1214.6	-22.12	1.56
110.00	11 42 58	4396.43	23.78	174.03	70.63	64.69	12 56 14	3796.4	20.17	166.75

DIFFERENTIAL CORRECTIONS
TDE-2.4032 TRA10.1921 TC3-9.9498 BAU 3.2070
RDE .5109 RRA .0765 RC3 .2632 FAU .04336
FDE-1.0419 FRA 2.5459 FC3-1.5575 BSP 55056
BDE 2.4569 BRA10.1924 BC3 9.9532 FSP 1142

MID-COURSE EXECUTION ACCURACY
SGT15648.0 SGR 655.9 SG3 307.3
RRT -.3053 RRF -.3663 RTF .9651
SGB15661.7 R23 .0748 R13 -.9651
SG115649.3 SG2 624.6 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4548.9 SR 596.9 SS 870.5
CRT -.5815 CRS .7790 CST -.9627
LSA 4639.2 MSA 533.5 SSA 18.3
EL1 4562.3 EL2 484.2 ALF 175.59

LAUNCH DATE NOV 23 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 924.689 EARTH TO MARS

RL 147.71 LAL -.00 LOL 60.74 VL 33.200 GAL -7.66 AZL 88.23 HCA 276.24 SMA 191.01 ECC .26129 INC 1.7728 V1 30.164
RP 206.68 LAP -1.76 LOP 336.98 VP 24.279 GAP -14.41 AZP 89.81 TAL 321.65 TAP 237.89 RCA 141.10 APO 240.92 V2 26.496
RC 334.601 GL 11.69 GP -1.28 ZAL 144.62 ZAP 26.06 ETS 176.11 ZAE 41.93 ETE 178.44 ZAC 87.11 ETC 256.14 CLP 26.03

PLANETOCENTRIC CONIC

C3 25.244 VHL 5.024 DLA .48 RAL 209.34 RAD 6568.0 VEL 12.109 PTH 2.17 VHP 6.795 DPA -1.14 RAP 182.77 ECC 1.4154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 32	2285.67	-21.23	46.03	74.58	109.19	21 42 38	1685.7	-18.42	38.49
90.00	9 13 35	4900.10	20.55	213.08	74.33	70.08	10 35 15	4300.1	17.65	205.61
100.00	22 26 6	2022.57	-22.34	26.26	74.15	110.39	22 59 49	1422.6	-19.37	18.73
100.00	10 34 42	4638.43	21.66	193.39	73.88	68.88	11 52 0	4038.4	18.60	185.94
110.00	23 34 51	1807.36	-25.33	8.59	72.83	113.76	24 4 59	1207.4	-21.90	1.12
110.00	11 42 26	4426.40	24.64	175.94	72.52	65.52	12 56 13	3826.4	21.12	168.55

DIFFERENTIAL CORRECTIONS
TDE-2.5558 TRA10.5726 TC3-9.6227 BAU 3.2487
RDE .5263 RRA .0681 RC3 .2578 FAU .03884
FDE-1.0234 FRA 2.4280 FC3-1.3319 BSP 55230
BDE 2.6095 BRA10.5729 BC3 9.6262 FSP 1058

MID-COURSE EXECUTION ACCURACY
SGT15727.9 SGR 658.3 SG3 284.2
RRT -.3205 RRF -.3843 RTF .9612
SGB15741.7 R23 .0800 R13 -.9612
SG115729.4 SG2 623.5 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 4654.3 SR 600.7 SS 841.3
CRT -.5964 CRS .7916 CST -.9622
LSA 4738.4 MSA 528.1 SSA 18.0
EL1 4668.2 EL2 480.7 ALF 175.55

LAUNCH DATE NOV 24 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 21 1965

HELIOCENTRIC CONIC DISTANCE 404.819 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 35.845 GAL -4.94 AZL 88.48 HCA 125.83 SMA 258.94 ECC .43668 INC 1.5181 V1 30.170
RP 245.33 LAP 1.23 LOP 187.59 VP 23.862 GAP 25.73 AZP 90.89 TAL 343.68 TAP 109.50 RCA 145.87 APO 372.02 V2 22.354
RC 122.260 GL 8.70 GP .91 ZAL 116.23 ZAP 175.82 ETS 166.13 ZAE 155.22 ETE 358.95 ZAC 89.35 ETC 256.13 CLP 175.92

PLANETOCENTRIC CONIC

C3 39.126 VHL 6.255 DLA 8.65 RAL 181.94 RAD 6568.5 VEL 12.669 PTH 2.30 VHP 11.594 DPA .65 RAP 184.12 ECC 1.6439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 25	2652.25	-27.23	71.13	58.30	98.09	18 53 38	2052.3	-25.83	62.74
90.00	8 22 12	4753.35	16.88	203.88	52.62	66.92	9 41 25	4153.3	13.61	196.73
100.00	19 34 58	2376.35	-28.59	50.60	58.06	99.12	20 14 35	1776.3	-27.04	42.15
100.00	9 39 20	4504.49	18.14	185.00	52.04	65.83	10 54 24	3904.5	14.73	177.88
110.00	20 52 48	2132.80	-32.25	31.32	57.27	102.00	21 28 20	1532.8	-30.26	22.67
110.00	10 38 0	4320.79	21.50	169.35	50.32	62.76	11 50 1	3720.8	17.67	162.30

DIFFERENTIAL CORRECTIONS
TDE .8424 TRA-2.1029 TC3 .6178 BAU .3240
RDE -.5564 RRA -.2359 RC3 -.0450 FAU .05609
FDE -.3066 FRA 1.1761 FC3-1.2411 BSP 7281
BDE 1.0096 BRA 2.1161 BC3 .6195 FSP 439

MID-COURSE EXECUTION ACCURACY
SGT 2233.6 SGR 557.4 SG3 165.7
RRT -.0088 RRF -.0071 RTF -.8265
SGB 2302.1 R23 .0149 R13 .8265
SG1 2233.6 SG2 557.4 THA 179.87

ORBIT DETERMINATION ACCURACY
ST 968.3 SR 513.9 SS 434.2
CRT -.7134 CRS -.5467 CST .9741
LSA 1122.0 MSA 361.3 SSA 29.9
EL1 1044.1 EL2 333.9 ALF 156.75

LAUNCH DATE NOV 24 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 406.299 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 35.711 GAL -4.75 AZL 88.49 HCA 126.73 SMA 254.19 ECC .42572 INC 1.5084 V1 30.170
RP 245.12 LAP 1.21 LOP 188.49 VP 23.680 GAP 25.12 AZP 90.90 TAL 344.04 TAP 110.77 RCA 145.98 APO 362.41 V2 22.374
RC 124.216 GL 8.85 GP .94 ZAL 115.63 ZAP 175.34 ETS 167.04 ZAE 154.85 ETE 359.20 ZAC 89.47 ETC 256.10 CLP 175.44

PLANETOCENTRIC CONIC

C3 37.051 VHL 6.087 DLA 9.03 RAL 181.45 RAD 6568.4 VEL 12.587 PTH 2.28 VHP 11.324 DPA .50 RAP 184.52 ECC 1.6098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 28	2650.78	-27.22	71.02	56.94	98.14	18 48 39	2050.8	-25.81	62.64
90.00	8 23 15	4727.28	16.18	202.29	51.18	66.44	9 42 3	4127.3	12.86	195.19
100.00	19 30 13	2374.22	-28.57	50.45	56.71	99.19	20 9 47	1774.2	-27.00	42.00
100.00	9 40 12	4479.08	17.43	183.45	50.60	65.32	10 54 51	3879.1	13.96	176.38
110.00	20 48 30	2129.25	-32.20	31.06	55.91	102.15	21 23 59	1529.3	-30.19	22.42
110.00	10 38 24	4296.81	20.74	167.90	48.87	62.20	11 50 1	3696.8	16.86	160.92

DIFFERENTIAL CORRECTIONS
TDE .8217 TRA-2.0775 TC3 .6758 BAU .3355
RDE -.5365 RRA -.2275 RC3 -.0461 FAU .05769
FDE -.3047 FRA 1.1932 FC3-1.3480 BSP 7510
BDE .9813 BRA 2.0899 BC3 .6773 FSP 464

MID-COURSE EXECUTION ACCURACY
SGT 2279.4 SGR 552.4 SG3 174.3
RRT -.0059 RRF -.0087 RTF -.8316
SGB 2345.4 R23 .0139 R13 .8316
SG1 2279.4 SG2 552.4 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 975.6 SR 509.1 SS 438.7
CRT -.7086 CRS -.5375 CST .9731
LSA 1127.5 MSA 362.1 SSA 30.4
EL1 1048.4 EL2 334.3 ALF 157.27

LAUNCH DATE NOV 24 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 407.959 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 35.583 GAL -4.56 AZL 88.50 HCA 127.63 SMA 249.82 ECC .41526 INC 1.4985 V1 30.170
RP 244.91 LAP 1.19 LOP 189.39 VP 23.507 GAP 24.51 AZP 90.92 TAL 344.41 TAP 112.04 RCA 146.08 APO 353.57 V2 22.396
RC 126.220 GL 9.01 GP .97 ZAL 115.00 ZAP 174.86 ETS 167.78 ZAE 154.53 ETE 359.43 ZAC 89.59 ETC 256.08 CLP 174.96

PLANETOCENTRIC CONIC

C3 35.113 VHL 5.926 DLA 9.42 RAL 180.94 RAD 6568.4 VEL 12.509 PTH 2.26 VHP 11.061 DPA .36 RAP 184.92 ECC 1.5779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 20	2649.83	-27.21	70.95	55.58	98.17	18 43 29	2049.8	-25.80	62.57
90.00	8 24 19	4701.09	15.46	200.70	49.75	65.98	9 42 40	4101.1	12.09	193.65
100.00	19 25 17	2372.59	-28.55	50.33	55.35	99.25	20 4 50	1772.6	-26.98	41.88
100.00	9 41 2	4453.56	16.70	181.91	49.16	64.84	10 55 16	3853.6	13.17	174.90
110.00	20 44 3	2126.14	-32.15	30.82	54.55	102.28	21 19 29	1526.1	-30.13	22.20
110.00	10 38 46	4272.78	19.97	166.46	47.42	61.66	11 49 59	3672.8	16.03	159.55

DIFFERENTIAL CORRECTIONS
TDE .8014 TRA-2.0509 TC3 .7390 BAU .3476
RDE -.5171 RRA -.2195 RC3 -.0471 FAU .05935
FDE -.3009 FRA 1.2105 FC3-1.4632 BSP 7711
BDE .9537 BRA 2.0626 BC3 .7405 FSP 492

MID-COURSE EXECUTION ACCURACY
SGT 2325.5 SGR 547.2 SG3 183.3
RRT -.0031 RRF -.0112 RTF -.8371
SGB 2389.0 R23 .0139 R13 .8371
SG1 2325.5 SG2 547.2 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 982.2 SR 504.2 SS 442.1
CRT -.7039 CRS -.5256 CST .9715
LSA 1132.1 MSA 363.1 SSA 30.9
EL1 1052.2 EL2 334.3 ALF 157.77

LAUNCH DATE NOV 24 1964 FLIGHT TIME 154.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 409.784 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 35.460 GAL -4.37 AZL 88.51 HCA 128.54 SMA 245.79 ECC .40525 INC 1.4883 V1 30.170
RP 244.68 LAP 1.16 LOP 190.30 VP 23.342 GAP 23.91 AZP 90.93 TAL 344.79 TAP 113.32 RCA 146.19 APO 345.40 V2 22.418
RC 128.267 GL 9.16 GP 1.01 ZAL 114.35 ZAP 174.38 ETS 168.39 ZAE 154.25 ETE 359.67 ZAC 89.72 ETC 256.07 CLP 174.47

PLANETOCENTRIC CONIC

C3 33.303 VHL 5.771 DLA 9.81 RAL 180.41 RAD 6568.3 VEL 12.437 PTH 2.25 VHP 10.804 DPA .21 RAP 185.31 ECC 1.5481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 1	2649.40	-27.20	70.92	54.22	98.18	18 38 11	2049.4	-25.79	62.54
90.00	8 25 22	4674.80	14.73	199.12	48.32	65.54	9 43 17	4074.8	11.30	192.12
100.00	19 20 12	2371.45	-28.54	50.25	53.99	99.29	19 59 43	1771.5	-26.96	41.80
100.00	9 41 52	4427.98	15.95	180.38	47.73	64.38	10 55 40	3828.0	12.37	173.42
110.00	20 39 26	2123.48	-32.11	30.63	53.19	102.39	21 14 50	1523.5	-30.08	22.01
110.00	10 39 7	4248.71	19.19	165.03	45.98	61.15	11 49 56	3648.7	15.19	158.19

DIFFERENTIAL CORRECTIONS
TDE .7811 TRA-2.0230 TC3 .8066 BAU .3598
RDE -.4984 RRA -.2117 RC3 -.0479 FAU .06107
FDE -.2968 FRA 1.2275 FC3-1.5876 BSP 7901
BDE .9266 BRA 2.0341 BC3 .8080 FSP 520

MID-COURSE EXECUTION ACCURACY
SGT 2371.3 SGR 541.7 SG3 192.7
RRT -.0003 RRF -.0139 RTF -.8425
SGB 2432.4 R23 .0141 R13 .8425
SG1 2371.3 SG2 541.7 THA 180.00

ORBIT DETERMINATION ACCURACY
ST 988.0 SR 499.0 SS 445.3
CRT -.6991 CRS -.5133 CST .9696
LSA 1135.8 MSA 363.9 SSA 31.4
EL1 1055.2 EL2 334.0 ALF 158.26

LAUNCH DATE NOV 24 1964 FLIGHT TIME 156.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 411.755 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	35.343	GAL	-4.19	AZL	88.52	HCA	129.44	SMA	242.07	ECC	.39569	INC	1.4779
RP	244.46	LAP	1.14	LOP	191.20	VP	23.185	GAP	23.30	AZP	90.94	TAL	345.17	TAP	114.62	RCA	146.28	APO	337.85
RC	130.354	GL	9.31	GP	1.04	ZAL	113.67	ZAP	173.88	ETS	168.89	ZAE	154.03	ETE	359.90	ZAC	89.84	ETC	256.05

V1 30.170 V2 22.440 CLP 173.97

PLANETOCENTRIC CONIC

C3	31.612	VHL	5.622	DLA	10.22	RAL	179.85	RAD	6568.3	VEL	12.369	PTH	2.23	VHP	10.554	DPA	.07	RAP	185.70

ECC 1.5203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 33	2649.50	-27.20	70.93	52.85	98.18	18 32 42	2049.5	-25.79	62.55
90.00	8 26 24	4648.46	13.98	197.55	46.90	65.12	9 43 53	4048.5	10.51	190.59
100.00	19 14 57	2370.82	-28.53	50.20	52.62	99.32	19 54 28	1770.8	-26.95	41.76
100.00	9 42 41	4402.37	15.19	178.86	46.31	63.94	10 56 3	3802.4	11.57	171.94
110.00	20 34 42	2121.28	-32.08	30.46	51.83	102.49	21 10 3	1521.3	-30.03	21.85
110.00	10 39 26	4224.67	18.39	163.62	44.55	60.67	11 49 50	3624.7	14.35	156.84

DIFFERENTIAL CORRECTIONS

TDE	.7604	TRA	-1.9940	TC3	.8791	BAU	.3721
RDE	-.4803	RRA	-.2043	RC3	-.0485	FAU	.06286
FDE	-.2912	FRA	1.2445	FC3	-1.7216	BSP	8081
BDE	.8994	BRA	2.0044	BC3	.8804	FSP	552

MID-COURSE EXECUTION ACCURACY

SGT	2416.8	SGR	536.0	SG3	202.6		
RRT	.0027	RRF	-.0174	RTF	-.8479		
SGB	2475.5	R23	-.0149	R13	-.8479		
SG1	2416.8	SG2	536.0	THA	.04		

ORBIT DETERMINATION ACCURACY

ST	992.5	SR	493.6	SS	447.6
CRT	-.6941	CRS	-.4987	CST	.9672
LSA	1137.9	MSA	364.8	SSA	31.8
EL1	1057.0	EL2	333.6	ALF	158.74

LAUNCH DATE NOV 24 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 413.862 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	35.230	GAL	-4.01	AZL	88.53	HCA	130.35	SMA	238.62	ECC	.38655	INC	1.4672
RP	244.23	LAP	1.12	LOP	192.11	VP	23.035	GAP	22.70	AZP	90.95	TAL	345.57	TAP	115.92	RCA	146.38	APO	330.85
RC	132.477	GL	9.45	GP	1.08	ZAL	112.98	ZAP	173.38	ETS	169.32	ZAE	153.85	ETE	.12	ZAC	89.97	ETC	256.03

V1 30.170 V2 22.463 CLP 173.47

PLANETOCENTRIC CONIC

C3	30.032	VHL	5.480	DLA	10.63	RAL	179.27	RAD	6568.2	VEL	12.305	PTH	2.22	VHP	10.311	DPA	-.06	RAP	186.08

ECC 1.4943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 54	2650.12	-27.21	70.98	51.48	98.16	18 27 4	2050.1	-25.80	62.59
90.00	8 27 26	4622.09	13.22	195.99	45.49	64.73	9 44 28	4022.1	9.70	189.07
100.00	19 9 32	2370.69	-28.53	50.19	51.25	99.32	19 49 3	1770.7	-26.95	41.75
100.00	9 43 29	4376.75	14.42	177.35	44.89	63.53	10 56 25	3776.8	10.75	170.48
110.00	20 29 48	2119.53	-32.06	30.33	50.47	102.56	21 5 8	1519.5	-30.00	21.73
110.00	10 39 42	4200.67	17.59	162.23	43.13	60.20	11 49 43	3600.7	13.49	155.51

DIFFERENTIAL CORRECTIONS

TDE	.7400	TRA	-1.9641	TC3	.9559	BAU	.3843
RDE	-.4628	RRA	-.1971	RC3	-.0488	FAU	.06475
FDE	-.2849	FRA	1.2609	FC3	-1.8665	BSP	8249
BDE	.8728	BRA	1.9740	BC3	.9572	FSP	585

MID-COURSE EXECUTION ACCURACY

SGT	2462.0	SGR	530.1	SG3	212.9		
RRT	.0059	RRF	-.0212	RTF	-.8531		
SGB	2518.4	R23	-.0159	R13	-.8531		
SG1	2462.0	SG2	530.1	THA	.08		

ORBIT DETERMINATION ACCURACY

ST	996.2	SR	488.0	SS	449.3
CRT	-.6892	CRS	-.4832	CST	.9644
LSA	1139.2	MSA	365.6	SSA	32.3
EL1	1058.2	EL2	332.9	ALF	159.20

LAUNCH DATE NOV 24 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 416.089 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	35.123	GAL	-3.83	AZL	88.54	HCA	131.26	SMA	235.41	ECC	.37781	INC	1.4561
RP	243.99	LAP	1.09	LOP	193.02	VP	22.894	GAP	22.10	AZP	90.96	TAL	345.97	TAP	117.23	RCA	146.47	APO	324.35
RC	134.631	GL	9.59	GP	1.12	ZAL	112.26	ZAP	172.87	ETS	169.67	ZAE	153.73	ETE	.35	ZAC	90.09	ETC	256.01

V1 30.170 V2 22.486 CLP 172.96

PLANETOCENTRIC CONIC

C3	28.557	VHL	5.344	DLA	11.04	RAL	178.67	RAD	6568.1	VEL	12.245	PTH	2.20	VHP	10.073	DPA	-.20	RAP	186.46

ECC 1.4700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 6	2651.27	-27.22	71.06	50.12	98.12	18 21 17	2051.3	-25.82	62.67
90.00	8 28 27	4595.73	12.45	194.43	44.08	64.36	9 45 2	3995.7	8.89	187.56
100.00	19 3 58	2371.06	-28.53	50.22	49.89	99.31	19 43 30	1771.1	-26.95	41.78
100.00	9 44 15	4351.17	13.64	175.85	43.48	63.14	10 56 46	3751.2	9.93	169.03
110.00	20 24 46	2118.24	-32.04	30.24	49.10	102.61	21 0 4	1518.2	-29.97	21.63
110.00	10 39 57	4176.76	16.77	160.85	41.71	59.77	11 49 33	3576.8	12.63	154.19

DIFFERENTIAL CORRECTIONS

TDE	.7191	TRA	-1.9342	TC3	1.0371	BAU	.3964
RDE	-.4459	RRA	-.1902	RC3	-.0489	FAU	.06674
FDE	-.2779	FRA	1.2769	FC3	-2.0232	BSP	8423
BDE	.8461	BRA	1.9436	BC3	1.0383	FSP	620

MID-COURSE EXECUTION ACCURACY

SGT	2507.5	SGR	523.9	SG3	223.8		
RRT	.0096	RRF	-.0254	RTF	-.8581		
SGB	2561.7	R23	-.0168	R13	-.8581		
SG1	2507.5	SG2	523.9	THA	.12		

ORBIT DETERMINATION ACCURACY

ST	998.7	SR	482.1	SS	450.6
CRT	-.6835	CRS	-.4664	CST	.9614
LSA	1139.1	MSA	366.4	SSA	32.8
EL1	1058.0	EL2	332.2	ALF	159.64

LAUNCH DATE NOV 24 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 418.429 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	35.020	GAL	-3.66	AZL	88.56	HCA	132.17	SMA	232.43	ECC	.36946	INC	1.4447
RP	243.75	LAP	1.07	LOP	193.93	VP	22.759	GAP	21.51	AZP	90.97	TAL	346.38	TAP	118.55	RCA	146.56	APO	318.31
RC	136.814	GL	9.73	GP	1.16	ZAL	111.53	ZAP	172.36	ETS	169.97	ZAE	153.64	ETE	.58	ZAC	90.22	ETC	256.00

V1 30.170 V2 22.510 CLP 172.45

PLANETOCENTRIC CONIC

C3	27.179	VHL	5.213	DLA	11.46	RAL	178.05	RAD	6568.1	VEL	12.188	PTH	2.19	VHP	9.841	DPA	-.32	RAP	186.84

ECC 1.4473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 8	2652.93	-27.24	71.18	48.75	98.06	18 15 21	2052.9	-25.84	62.79
90.00	8 29 26	4569.41	11.67	192.90	42.68	64.01	9 45 36	3969.4	8.08	186.05
100.00	18 58 16	2371.92	-28.54	50.28	48.52	99.28	19 37 48	1771.9	-26.97	41.84
100.00	9 45 0	4325.65	12.85	174.37	42.07	62.78	10 57 5	3725.7	9.10	167.59
110.00	20 19 36	2117.39	-32.02	30.17	47.74	102.65	20 54 54	1517.4	-29.95	21.57
110.00	10 40 8	4152.95	15.95	159.49	40.30	59.36	11 49 21	3552.9	11.77	152.89

DIFFERENTIAL CORRECTIONS

TDE	.6976	TRA	-1.9038	TC3	1.1226	BAU	.4083
RDE	-.4295	RRA	-.1836	RC3	-.0486	FAU	.06881
FDE	-.2698	FRA	1.2923	FC3	-2.1919	BSP	8591
BDE	.8192	BRA	1.9126	BC3	1.1236	FSP	656

MID-COURSE EXECUTION ACCURACY

SGT	2552.5	SGR	517.5	SG3	235.2		
RRT	.0140	RRF	-.0303	RTF	-.8629		
SGB	2604.4	R23	-.0177	R13	-.8629		
SG1	2552.5	SG2	517.4	THA	.17		

ORBIT DETERMINATION ACCURACY

ST	999.6	SR	476.1	SS	451.2
CRT	-.6774	CRS	-.4481	CST	.9580
LSA	1137.2	MSA	367.4	SSA	33.3
EL1	1056.4	EL2	331.3	ALF	160.08

LAUNCH DATE NOV 24 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 420.869 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 34.921 GAL -3.49 AZL 88.57 HCA 133.09 SMA 229.66 ECC .36148 INC 1.4329 V1 30.170
RP 243.50 LAP 1.05 LOP 194.85 VP 22.631 GAP 20.92 AZP 90.98 TAL 346.80 TAP 119.88 RCA 146.64 APO 312.67 V2 22.535
RC 139.022 GL 9.86 GP 1.20 ZAL 110.77 ZAP 171.83 ETS 170.23 ZAE 153.61 ETE .82 ZAC 90.35 ETC 255.98 CLP 171.92

PLANETOCENTRIC CONIC

C3 25.891 VHL 5.088 DLA 11.88 RAL 177.40 RAD 6568.0 VEL 12.135 PTH 2.18 VHP 9.615 DPA -.45 RAP 187.21 ECC 1.4261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 1	2655.10	-27.26	71.33	47.38	97.99	18 9 16	2055.1	-25.87	62.94
90.00	8 30 25	4543.17	10.88	191.37	41.29	63.69	9 46 8	3943.2	7.26	184.56
100.00	18 52 25	2373.27	-28.56	50.38	47.16	99.23	19 31 58	1773.3	-26.99	41.93
100.00	9 45 42	4300.24	12.05	172.90	40.68	62.44	10 57 23	3700.2	8.27	166.16
110.00	20 14 19	2116.98	-32.02	30.14	46.38	102.66	20 49 36	1517.0	-29.94	21.55
110.00	10 40 18	4129.29	15.13	158.16	38.91	58.97	11 49 7	3529.3	10.90	151.60

DIFFERENTIAL CORRECTIONS
TDE .6765 TRA-1.8719 TC3 1.2137 BAU .4204
RDE -.4137 RRA -.1773 RC3 -.0479 FAU .07101
FDE -.2609 FRA 1.3070 FC3-2.3745 BSP 8756
BDE .7929 BRA 1.8803 BC3 1.2146 FSP 694

MID-COURSE EXECUTION ACCURACY
SGT 2597.2 SGR 510.9 SG3 247.2
RRT .0184 RRF -.0357 RTF -.8676
SGB 2647.0 R23 -.0191 R13 -.8677
SG1 2597.3 SG2 510.8 THA .22

ORBIT DETERMINATION ACCURACY
ST 999.6 SR 469.9 SS 451.3
CRT -.6714 CRS -.4284 CST .9540
LSA 1134.4 MSA 368.3 SSA 33.8
EL1 1054.0 EL2 330.2 ALF 160.49

LAUNCH DATE NOV 24 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 423.403 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 34.827 GAL -3.33 AZL 88.58 HCA 134.00 SMA 227.07 ECC .35384 INC 1.4208 V1 30.170
RP 243.25 LAP 1.02 LOP 195.76 VP 22.510 GAP 20.33 AZP 90.99 TAL 347.22 TAP 121.22 RCA 146.72 APO 307.41 V2 22.560
RC 141.251 GL 9.99 GP 1.25 ZAL 110.00 ZAP 171.30 ETS 170.45 ZAE 153.61 ETE 1.05 ZAC 90.47 ETC 255.97 CLP 171.39

PLANETOCENTRIC CONIC

C3 24.689 VHL 4.969 DLA 12.31 RAL 176.74 RAD 6568.0 VEL 12.086 PTH 2.16 VHP 9.394 DPA -.57 RAP 187.58 ECC 1.4063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 46	2657.76	-27.28	71.52	46.02	97.89	18 3 4	2057.8	-25.91	63.12
90.00	8 31 21	4517.05	10.09	189.86	39.91	63.40	9 46 38	3917.1	6.43	183.08
100.00	18 46 25	2375.08	-28.58	50.51	45.80	99.16	19 26 0	1775.1	-27.02	42.06
100.00	9 46 23	4274.97	11.25	171.45	39.30	62.12	10 57 38	3675.0	7.43	164.74
110.00	20 8 54	2117.00	-32.02	30.15	45.03	102.66	20 44 11	1517.0	-29.95	21.55
110.00	10 40 24	4105.81	14.30	156.84	37.52	58.61	11 48 50	3505.8	10.04	150.33

DIFFERENTIAL CORRECTIONS
TDE .6541 TRA-1.8410 TC3 1.3071 BAU .4317
RDE -.3984 RRA -.1713 RC3 -.0468 FAU .07328
FDE -.2506 FRA 1.3217 FC3-2.5696 BSP 8932
BDE .7659 BRA 1.8489 BC3 1.3079 FSP 735

MID-COURSE EXECUTION ACCURACY
SGT 2641.5 SGR 504.1 SG3 259.7
RRT .0242 RRF -.0421 RTF -.8720
SGB 2689.1 R23 -.0202 R13 -.8720
SG1 2641.5 SG2 503.9 THA .27

ORBIT DETERMINATION ACCURACY
ST 997.7 SR 463.4 SS 450.7
CRT -.6642 CRS -.4060 CST .9494
LSA 1129.4 MSA 369.6 SSA 34.3
EL1 1049.6 EL2 329.3 ALF 160.90

LAUNCH DATE NOV 24 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 426.024 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 34.736 GAL -3.17 AZL 88.59 HCA 134.92 SMA 224.65 ECC .34654 INC 1.4083 V1 30.170
RP 243.00 LAP 1.00 LOP 196.68 VP 22.395 GAP 19.75 AZP 90.99 TAL 347.65 TAP 122.57 RCA 146.80 APO 302.50 V2 22.585
RC 143.499 GL 10.11 GP 1.29 ZAL 109.21 ZAP 170.76 ETS 170.63 ZAE 153.66 ETE 1.30 ZAC 90.60 ETC 255.96 CLP 170.85

PLANETOCENTRIC CONIC

C3 23.565 VHL 4.854 DLA 12.74 RAL 176.05 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 9.178 DPA -.68 RAP 187.94 ECC 1.3878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 22	2660.92	-27.31	71.75	44.65	97.78	17 56 43	2060.9	-25.95	63.35
90.00	8 32 16	4491.05	9.29	188.36	38.53	63.13	9 47 7	3891.0	5.61	181.62
100.00	18 40 17	2377.37	-28.60	50.68	44.43	99.08	19 19 55	1777.4	-27.05	42.22
100.00	9 47 2	4249.82	10.45	170.02	37.92	61.83	10 57 52	3649.8	6.60	163.34
110.00	20 3 21	2117.44	-32.03	30.18	43.67	102.65	20 38 39	1517.4	-29.95	21.58
110.00	10 40 27	4082.52	13.47	155.55	36.14	58.28	11 48 30	3482.5	9.18	149.08

DIFFERENTIAL CORRECTIONS
TDE .6418 TRA-1.7988 TC3 1.4242 BAU .4489
RDE -.3839 RRA -.1656 RC3 -.0455 FAU .07559
FDE -.2367 FRA 1.3380 FC3-2.7769 BSP 8850
BDE .7478 BRA 1.8064 BC3 1.4249 FSP 782

MID-COURSE EXECUTION ACCURACY
SGT 2687.7 SGR 497.4 SG3 272.8
RRT .0239 RRF -.0501 RTF -.8796
SGB 2733.3 R23 -.0284 R13 -.8796
SG1 2687.7 SG2 497.3 THA .26

ORBIT DETERMINATION ACCURACY
ST 1001.0 SR 457.1 SS 449.0
CRT -.6645 CRS -.3767 CST .9391
LSA 1128.6 MSA 370.9 SSA 34.2
EL1 1051.2 EL2 325.2 ALF 161.26

LAUNCH DATE NOV 24 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 428.722 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 34.649 GAL -3.01 AZL 88.60 HCA 135.84 SMA 222.38 ECC .33957 INC 1.3953 V1 30.170
RP 242.74 LAP .97 LOP 197.60 VP 22.287 GAP 19.17 AZP 91.00 TAL 348.08 TAP 123.92 RCA 146.87 APO 297.90 V2 22.611
RC 145.763 GL 10.23 GP 1.35 ZAL 108.40 ZAP 170.21 ETS 170.79 ZAE 153.75 ETE 1.55 ZAC 90.73 ETC 255.94 CLP 170.30

PLANETOCENTRIC CONIC

C3 22.516 VHL 4.745 DLA 13.17 RAL 175.34 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 8.968 DPA -.79 RAP 188.30 ECC 1.3706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 52	2664.49	-27.34	72.01	43.29	97.66	17 50 16	2064.5	-26.00	63.60
90.00	8 33 9	4465.30	8.49	186.89	37.17	62.89	9 47 34	3865.3	4.79	180.17
100.00	18 34 3	2380.05	-28.63	50.87	43.08	98.98	19 13 44	1780.1	-27.09	42.41
100.00	9 47 38	4224.97	9.64	168.61	36.56	61.57	10 58 3	3625.0	5.77	161.96
110.00	19 57 43	2118.26	-32.04	30.24	42.32	102.61	20 33 2	1518.3	-29.97	21.64
110.00	10 40 27	4059.53	12.64	154.28	34.78	57.97	11 48 7	3459.5	8.32	147.85

DIFFERENTIAL CORRECTIONS
TDE .6140 TRA-1.7714 TC3 1.5180 BAU .4571
RDE -.3696 RRA -.1600 RC3 -.0432 FAU .07818
FDE -.2262 FRA 1.3494 FC3-3.0059 BSP 9147
BDE .7167 BRA 1.7786 BC3 1.5187 FSP 825

MID-COURSE EXECUTION ACCURACY
SGT 2729.6 SGR 490.1 SG3 286.7
RRT .0344 RRF -.0573 RTF -.8819
SGB 2773.2 R23 -.0260 R13 -.8819
SG1 2729.6 SG2 489.8 THA .37

ORBIT DETERMINATION ACCURACY
ST 992.9 SR 450.2 SS 447.7
CRT -.6525 CRS -.3539 CST .9359
LSA 1117.7 MSA 372.2 SSA 35.0
EL1 1040.5 EL2 325.6 ALF 161.66

LAUNCH DATE NOV 24 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 431.493 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	34.566	GAL	-2.86	AZL	88.62	HCA	136.76	SMA	220.27	ECC	.33290	INC	1.3818	V1	30.170
RP	242.47	LAP	.95	LOP	198.52	VP	22.185	GAP	18.60	AZP	91.01	TAL	348.52	TAP	125.28	RCA	146.94	APO	293.59	V2	22.638
RC	148.041	GL	10.33	GP	1.40	ZAL	107.57	ZAP	169.65	ETS	170.92	ZAE	153.88	ETE	1.81	ZAC	90.87	ETC	255.93	CLP	169.75

PLANETOCENTRIC CONIC

C3	21.537	VHL	4.641	DLA	13.60	RAL	174.62	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	8.763	DPA	-.89	RAP	188.66	ECC	1.3544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 14	2668.50	-27.38	72.29	41.93	97.52	17 43 42	2068.5	-26.06	63.88
90.00	8 33 58	4439.78	7.70	185.44	35.82	62.67	9 47 58	3839.8	3.98	178.74
100.00	18 27 43	2383.14	-28.66	51.10	41.72	98.87	19 7 26	1783.1	-27.14	42.62
100.00	9 48 11	4200.36	8.84	167.22	35.20	61.33	10 58 11	3600.4	4.95	160.60
110.00	19 52 0	2119.44	-32.06	30.33	40.98	102.56	20 27 19	1519.4	-29.99	21.72
110.00	10 40 23	4036.84	11.82	153.04	33.42	57.69	11 47 40	3436.8	7.47	146.64

DIFFERENTIAL CORRECTIONS

TDE	.5887	TRA	-1.7413	TC3	1.6202	BAU	.4666
RDE	-.3558	RRA	-.1547	RC3	-.0403	FAU	.08085
FDE	-.2135	FRA	1.3612	FC3	-3.2501	BSP	9370
BDE	.6879	BRA	1.7482	BC3	1.6207	FSP	870

MID-COURSE EXECUTION ACCURACY

SGT	2771.6	SGR	482.7	SG3	301.3		
RRT	.0441	RRF	-.0660	RTF	-.8849		
SGB	2813.3	R23	-.0258	R13	-.8849		
SG1	2771.7	SG2	482.2	THA	.45		

ORBIT DETERMINATION ACCURACY

ST	985.2	SR	443.2	SS	445.8
CRT	-.6418	CRS	-.3269	CST	.9306
LSA	1106.7	MSA	373.8	SSA	35.7
EL1	1030.3	EL2	325.0	ALF	162.05

LAUNCH DATE NOV 24 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 434.332 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	34.487	GAL	-2.71	AZL	88.63	HCA	137.68	SMA	218.28	ECC	.32652	INC	1.3678	V1	30.170
RP	242.20	LAP	.92	LOP	199.44	VP	22.089	GAP	18.03	AZP	91.01	TAL	348.96	TAP	126.64	RCA	147.00	APO	289.55	V2	22.664
RC	150.330	GL	10.43	GP	1.45	ZAL	106.73	ZAP	169.09	ETS	171.03	ZAE	154.05	ETE	2.08	ZAC	91.00	ETC	255.92	CLP	169.18

PLANETOCENTRIC CONIC

C3	20.622	VHL	4.541	DLA	14.02	RAL	173.87	RAD	6567.8	VEL	11.916	PTH	2.12	VHP	8.562	DPA	-.99	RAP	189.00	ECC	1.3394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 30	2672.90	-27.42	72.61	40.58	97.37	17 37 3	2072.9	-26.12	64.18
90.00	8 34 45	4414.53	6.91	184.00	34.48	62.47	9 48 20	3814.5	3.17	177.32
100.00	18 21 16	2386.61	-28.70	51.35	40.37	98.74	19 1 3	1786.6	-27.19	42.87
100.00	9 48 40	4176.05	8.05	165.86	33.86	61.11	10 58 16	3576.1	4.13	159.26
110.00	19 46 10	2120.96	-32.08	30.44	39.64	102.50	20 21 31	1521.0	-30.03	21.83
110.00	10 40 16	4014.47	11.00	151.82	32.08	57.43	11 47 10	3414.5	6.63	145.45

DIFFERENTIAL CORRECTIONS

TDE	.5643	TRA	-1.7091	TC3	1.7285	BAU	.4766
RDE	-.3426	RRA	-.1496	RC3	-.0367	FAU	.08364
FDE	-.1991	FRA	1.3722	FC3	-3.5114	BSP	9566
BDE	.6601	BRA	1.7156	BC3	1.7289	FSP	919

MID-COURSE EXECUTION ACCURACY

SGT	2812.7	SGR	475.1	SG3	316.5		
RRT	.0541	RRF	-.0760	RTF	-.8882		
SGB	2852.5	R23	-.0265	R13	-.8883		
SG1	2812.8	SG2	474.4	THA	.54		

ORBIT DETERMINATION ACCURACY

ST	976.5	SR	436.1	SS	443.2
CRT	-.6312	CRS	-.2963	CST	.9236
LSA	1094.5	MSA	375.6	SSA	36.3
EL1	1019.2	EL2	324.1	ALF	162.42

LAUNCH DATE NOV 24 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 437.233 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	34.411	GAL	-2.57	AZL	88.65	HCA	138.61	SMA	216.41	ECC	.32043	INC	1.3533	V1	30.170
RP	241.93	LAP	.89	LOP	200.37	VP	21.998	GAP	17.46	AZP	91.02	TAL	349.40	TAP	128.01	RCA	147.07	APO	285.76	V2	22.692
RC	152.629	GL	10.52	GP	1.51	ZAL	105.88	ZAP	168.51	ETS	171.12	ZAE	154.25	ETE	2.36	ZAC	91.13	ETC	255.91	CLP	168.60

PLANETOCENTRIC CONIC

C3	19.768	VHL	4.446	DLA	14.44	RAL	173.11	RAD	6567.8	VEL	11.881	PTH	2.11	VHP	8.366	DPA	-1.08	RAP	189.34	ECC	1.3253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 40	2677.65	-27.46	72.95	39.23	97.20	17 30 18	2077.7	-26.18	64.52
90.00	8 35 29	4389.61	6.12	182.60	33.14	62.30	9 48 39	3789.6	2.36	175.93
100.00	18 14 45	2390.41	-28.74	51.62	39.03	98.60	18 54 35	1790.4	-27.25	43.14
100.00	9 49 6	4152.08	7.26	164.52	32.53	60.92	10 58 18	3552.1	3.32	157.94
110.00	19 40 16	2122.79	-32.10	30.58	38.31	102.42	20 15 39	1522.8	-30.06	21.96
110.00	10 40 4	3992.47	10.19	150.63	30.75	57.19	11 46 36	3392.5	5.80	144.29

DIFFERENTIAL CORRECTIONS

TDE	.5415	TRA	-1.6765	TC3	1.8440	BAU	.4874
RDE	-.3298	RRA	-.1448	RC3	-.0324	FAU	.08658
FDE	-.1838	FRA	1.3833	FC3	-3.7919	BSP	9732
BDE	.6341	BRA	1.6828	BC3	1.8443	FSP	972

MID-COURSE EXECUTION ACCURACY

SGT	2855.4	SGR	467.5	SG3	332.5		
RRT	.0644	RRF	-.0872	RTF	-.8918		
SGB	2893.4	R23	-.0282	R13	-.8919		
SG1	2855.5	SG2	466.5	THA	.62		

ORBIT DETERMINATION ACCURACY

ST	968.2	SR	428.9	SS	440.5
CRT	-.6212	CRS	-.2634	CST	.9151
LSA	1082.4	MSA	377.5	SSA	36.9
EL1	1008.6	EL2	322.7	ALF	162.80

LAUNCH DATE NOV 24 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 440.192 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	34.338	GAL	-2.42	AZL	88.66	HCA	139.53	SMA	214.66	ECC	.31461	INC	1.3383	V1	30.170
RP	241.65	LAP	.87	LOP	201.29	VP	21.912	GAP	16.90	AZP	91.02	TAL	349.85	TAP	129.38	RCA	147.12	APO	282.19	V2	22.720
RC	154.936	GL	10.60	GP	1.58	ZAL	105.02	ZAP	167.92	ETS	171.19	ZAE	154.50	ETE	2.65	ZAC	91.27	ETC	255.90	CLP	168.02

PLANETOCENTRIC CONIC

C3	18.971	VHL	4.356	DLA	14.86	RAL	172.32	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	8.175	DPA	-1.16	RAP	189.68	ECC	1.3122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 46	2682.71	-27.50	73.32	37.89	97.02	17 23 29	2082.7	-26.24	64.87
90.00	8 36 9	4365.06	5.34	181.21	31.82	62.15	9 48 54	3765.1	1.57	174.56
100.00	18 8 8	2394.50	-28.78	51.92	37.69	98.45	18 48 3	1794.5	-27.31	43.42
100.00	9 49 27	4128.50	6.47	163.20	31.20	60.75	10 58 16	3528.5	2.53	156.64
110.00	19 34 19	2124.89	-32.14	30.73	36.98	102.34	20 9 43	1524.9	-30.10	22.11
110.00	10 39 47	3970.88	9.39	149.47	29.42	56.98	11 45 58	3370.9	4.98	143.16

DIFFERENTIAL CORRECTIONS

TDE	.5178	TRA	-1.6423	TC3	1.9617	BAU	.4976
RDE	-.3175	RRA	-.1402	RC3	-.0272	FAU	.08965
FDE	-.1665	FRA	1.3930	FC3	-4.0912	BSP	9885
BDE	.6074	BRA	1.6483	BC3	1.9619	FSP	1027

MID-COURSE EXECUTION ACCURACY

SGT	2894.9	SGR	459.9	SG3	349.3		
RRT	.0763	RRF	-.1000	RTF	-.8952		
SGB	2931.2	R23	-.0300	R13	-.8953		
SG1	2895.1	SG2	458.5	THA	.71		

ORBIT DETERMINATION ACCURACY

ST	957.2	SR	421.6	SS	437.1
CRT	-.6100	CRS	-.2262	CST	.9050
LSA	1067.5	MSA	379.8	SSA	37.4
EL1	995.4	EL2	321.3	ALF	163.15

LAUNCH DATE NOV 24 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 23 1965

DISTANCE 443.206

HELIOCENTRIC CONIC

RL 147.68 LAL -.00 LOL 61.75 VL 34.268 GAL -2.29 AZL 88.68 HCA 140.46 SMA 213.01 ECC .30905 INC 1.3226 V1 30.170
RP 241.36 LAP .84 LOP 202.22 VP 21.832 GAP 16.34 AZP 91.02 TAL 350.30 TAP 130.76 RCA 147.18 APO 278.84 V2 22.748
RC 157.250 GL 10.67 GP 1.64 ZAL 104.14 ZAP 167.31 ETS 171.25 ZAE 154.78 ETE 2.97 ZAC 91.41 ETC 255.89 CLP 167.42

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.226 VHL 4.269 DLA 15.27 RAL 171.52 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 7.988 DPA -1.24 RAP 190.01 ECC 1.3000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 48	2688.03	-27.55	73.70	36.55	96.83	17 16 37	2088.0	-26.31	65.25
90.00	8 36 44	4340.94	4.57	179.86	30.51	62.02	9 49 5	3740.9	.80	173.21
100.00	18 1 29	2398.84	-28.82	52.23	36.35	98.29	18 41 28	1798.8	-27.38	43.73
100.00	9 49 44	4105.37	5.70	161.92	29.89	60.61	10 58 10	3505.4	1.74	155.37
110.00	19 28 18	2127.21	-32.17	30.90	35.65	102.24	20 3 45	1527.2	-30.15	22.27
110.00	10 39 25	3949.76	8.61	148.33	28.11	56.79	11 45 15	3349.8	4.18	142.05

DIFFERENTIAL CORRECTIONS

TDE .4949 TRA-1.6083 TC3 2.0828 BAU .5075
RDE -.3057 RRA -.1359 RC3 -.0210 FAU .09287
FDE -.1488 FRA 1.4022 FC3-4.4114 BSP 10037
BDE .5817 BRA 1.6141 BC3 2.0829 FSP 1085

MID-COURSE EXECUTION ACCURACY

SGT 2934.3 SGR 452.1 SG3 366.9
RRT .0894 RRF -.1143 RTF -.8985
SGB 2969.0 R23 -.0321 R13 -.8986
SG1 2934.6 SG2 450.2 THA .81

ORBIT DETERMINATION ACCURACY

ST 945.8 SR 414.2 SS 433.8
CRT -.5985 CRS -.1874 CST .8939
LSA 1052.1 MSA 382.2 SSA 37.9
EL1 981.8 EL2 319.6 ALF 163.52

LAUNCH DATE NOV 24 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 25 1965

DISTANCE 446.270

HELIOCENTRIC CONIC

RL 147.68 LAL -.00 LOL 61.75 VL 34.201 GAL -2.15 AZL 88.69 HCA 141.40 SMA 211.45 ECC .30373 INC 1.3063 V1 30.170
RP 241.08 LAP .82 LOP 203.15 VP 21.758 GAP 15.79 AZP 91.02 TAL 350.75 TAP 132.14 RCA 147.23 APO 275.68 V2 22.777
RC 159.568 GL 10.72 GP 1.72 ZAL 103.26 ZAP 166.70 ETS 171.29 ZAE 155.09 ETE 3.30 ZAC 91.55 ETC 255.88 CLP 166.81

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.530 VHL 4.187 DLA 15.68 RAL 170.71 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 7.805 DPA -1.31 RAP 190.33 ECC 1.2885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 47	2693.59	-27.59	74.10	35.21	96.64	17 9 40	2093.6	-26.38	65.64
90.00	8 37 14	4317.26	3.82	178.53	29.21	61.92	9 49 11	3717.3	.03	171.89
100.00	17 54 46	2403.40	-28.87	52.57	35.02	98.12	18 34 49	1803.4	-27.44	44.05
100.00	9 49 56	4082.68	4.94	160.66	28.59	60.48	10 57 58	3482.7	.98	154.12
110.00	19 22 14	2129.75	-32.21	31.09	34.33	102.13	19 57 43	1529.7	-30.20	22.45
110.00	10 38 57	3929.10	7.84	147.23	26.81	56.62	11 44 27	3329.1	3.39	140.97

DIFFERENTIAL CORRECTIONS

TDE .4836 TRA-1.5620 TC3 2.2341 BAU .5236
RDE -.2945 RRA -.1320 RC3 -.0141 FAU .09622
FDE -.1287 FRA 1.4106 FC3-4.7518 BSP 9896
BDE .5662 BRA 1.5675 BC3 2.2341 FSP 1147

MID-COURSE EXECUTION ACCURACY

SGT 2977.6 SGR 444.7 SG3 385.3
RRT .0964 RRF -.1301 RTF -.9046
SGB 3010.7 R23 -.0412 R13 -.9047
SG1 2978.0 SG2 442.6 THA .84

ORBIT DETERMINATION ACCURACY

ST 940.6 SR 406.9 SS 430.2
CRT -.5990 CRS -.1431 CST .8729
LSA 1041.8 MSA 385.4 SSA 37.7
EL1 975.5 EL2 314.2 ALF 163.74

LAUNCH DATE NOV 24 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 27 1965

DISTANCE 449.380

HELIOCENTRIC CONIC

RL 147.68 LAL -.00 LOL 61.75 VL 34.137 GAL -2.02 AZL 88.71 HCA 142.33 SMA 209.99 ECC .29865 INC 1.2893 V1 30.170
RP 240.79 LAP .79 LOP 204.09 VP 21.688 GAP 15.25 AZP 91.02 TAL 351.20 TAP 133.53 RCA 147.28 APO 272.71 V2 22.806
RC 161.890 GL 10.77 GP 1.79 ZAL 102.37 ZAP 166.07 ETS 171.31 ZAE 155.44 ETE 3.66 ZAC 91.69 ETC 255.87 CLP 166.19

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.882 VHL 4.109 DLA 16.07 RAL 169.88 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 7.627 DPA -1.37 RAP 190.65 ECC 1.2778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 46	2699.23	-27.63	74.51	33.88	96.44	17 2 45	2099.2	-26.45	66.04
90.00	8 37 38	4294.21	3.08	177.24	27.93	61.84	9 49 12	3694.2	-.71	170.61
100.00	17 48 4	2408.04	-28.91	52.90	33.70	97.94	18 28 12	1808.0	-27.51	44.38
100.00	9 50 1	4060.64	4.20	159.44	27.30	60.38	10 57 42	3460.6	.23	152.91
110.00	19 16 10	2132.37	-32.24	31.29	33.02	102.02	19 51 42	1532.4	-30.25	22.64
110.00	10 38 24	3909.06	7.08	146.17	25.52	56.47	11 43 33	3309.1	2.63	139.92

DIFFERENTIAL CORRECTIONS

TDE .4508 TRA-1.5386 TC3 2.3380 BAU .5277
RDE -.2834 RRA -.1279 RC3 -.0052 FAU .09982
FDE -.1092 FRA 1.4177 FC3-5.1187 BSP 10287
BDE .5325 BRA 1.5439 BC3 2.3380 FSP 1210

MID-COURSE EXECUTION ACCURACY

SGT 3012.0 SGR 436.6 SG3 404.8
RRT .1200 RRF -.1484 RTF -.9050
SGB 3043.4 R23 -.0378 R13 -.9051
SG1 3012.4 SG2 433.4 THA 1.02

ORBIT DETERMINATION ACCURACY

ST 920.5 SR 399.1 SS 427.1
CRT -.5748 CRS -.0998 CST .8657
LSA 1018.3 MSA 387.9 SSA 38.9
EL1 952.3 EL2 315.7 ALF 164.23

LAUNCH DATE NOV 24 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 29 1965

DISTANCE 452.535

HELIOCENTRIC CONIC

RL 147.68 LAL -.00 LOL 61.75 VL 34.076 GAL -1.89 AZL 88.73 HCA 143.27 SMA 208.61 ECC .29379 INC 1.2714 V1 30.170
RP 240.49 LAP .76 LOP 205.02 VP 21.622 GAP 14.71 AZP 91.02 TAL 351.65 TAP 134.91 RCA 147.32 APO 269.90 V2 22.836
RC 164.213 GL 10.80 GP 1.87 ZAL 101.47 ZAP 165.43 ETS 171.32 ZAE 155.83 ETE 4.04 ZAC 91.84 ETC 255.87 CLP 165.55

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.276 VHL 4.034 DLA 16.46 RAL 169.03 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 7.453 DPA -1.42 RAP 190.96 ECC 1.2679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 42	2705.02	-27.68	74.92	32.55	96.23	16 55 47	2105.0	-26.53	66.45
90.00	8 37 55	4271.66	2.35	175.98	26.64	61.77	9 49 7	3671.7	-1.44	169.35
100.00	17 41 19	2412.82	-28.96	53.25	32.37	97.77	18 21 32	1812.8	-27.58	44.72
100.00	9 50 0	4039.10	3.48	158.26	26.02	60.29	10 57 19	3439.1	-.50	151.73
110.00	19 10 4	2135.13	-32.28	31.49	31.70	101.91	19 45 39	1535.1	-30.31	22.84
110.00	10 37 44	3889.55	6.35	145.14	24.24	56.34	11 42 33	3289.5	1.88	138.90

DIFFERENTIAL CORRECTIONS

TDE .4428 TRA-1.4891 TC3 2.5017 BAU .5444
RDE -.2731 RRA -.1244 RC3 .0041 FAU .10353
FDE -.0878 FRA 1.4235 FC3-5.5070 BSP 10093
BDE .5202 BRA 1.4943 BC3 2.5017 FSP 1279

MID-COURSE EXECUTION ACCURACY

SGT 3055.0 SGR 429.4 SG3 425.1
RRT .1290 RRF -.1679 RTF -.9113
SGB 3085.0 R23 -.0485 R13 -.9114
SG1 3055.5 SG2 425.7 THA 1.06

ORBIT DETERMINATION ACCURACY

ST 914.8 SR 391.7 SS 423.8
CRT -.5785 CRS -.0520 CST .8385
LSA 1007.4 MSA 391.8 SSA 38.4
EL1 945.9 EL2 309.0 ALF 164.38

LAUNCH DATE NOV 24 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 455.730 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 34.017 GAL -1.77 AZL 88.75 HCA 144.20 SMA 207.31 ECC .28917 INC 1.2527 V1 30.170
RP 240.19 LAP .73 LOP 205.96 VP 21.562 GAP 14.18 AZP 91.02 TAL 352.10 TAP 136.30 RCA 147.36 APO 267.26 V2 22.866
RC 166.536 GL 10.81 GP 1.96 ZAL 100.57 ZAP 164.78 ETS 171.32 ZAE 156.24 ETE 4.45 ZAC 91.98 ETC 255.86 CLP 164.91

PLANETOCENTRIC CONIC

C3 15.711 VHL 3.964 DLA 16.83 RAL 168.17 RAD 6567.6 VEL 11.709 PTH 2.06 VHP 7.283 DPA -1.46 RAP 191.26 ECC 1.2586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 43	2710.73	-27.72	75.34	31.24	96.03	16 48 54	2110.7	-26.59	66.85
90.00	8 38 5	4249.90	1.65	174.76	25.38	61.73	9 48 55	3649.9	-2.14	168.14
100.00	17 34 38	2417.52	-29.00	53.60	31.06	97.59	18 14 56	1817.5	-27.65	45.05
100.00	9 49 51	4018.35	2.78	157.12	24.75	60.22	10 56 49	3418.3	-1.21	150.59
110.00	19 4 2	2137.85	-32.32	31.70	30.40	101.79	19 39 40	1537.8	-30.36	23.03
110.00	10 36 57	3870.79	5.64	144.15	22.98	56.23	11 41 28	3270.8	1.17	137.92

DIFFERENTIAL CORRECTIONS
TDE .4046 TRA-1.4699 TC3 2.5933 BAU .5447
RDE -.2627 RRA -.1208 RC3 .0159 FAU .10746
FDE -.0651 FRA 1.4282 FC3-5.9211 BSP 10598
BDE .4824 BRA 1.4749 BC3 2.5933 FSP 1351

MID-COURSE EXECUTION ACCURACY
SGT 3081.5 SGR 421.4 SG3 446.4
RRT .1607 RRF -.1915 RTF -.9103
SGB 3110.2 R23 -.0430 R13 -.9104
SG1 3082.3 SG2 415.9 THA 1.28

ORBIT DETERMINATION ACCURACY
ST 888.4 SR 383.6 SS 420.9
CRT -.5446 CRS -.0011 CST .8324
LSA 977.9 MSA 394.7 SSA 40.0
EL1 916.0 EL2 312.1 ALF 164.98

LAUNCH DATE NOV 24 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 458.965 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.961 GAL -1.65 AZL 88.77 HCA 145.15 SMA 206.08 ECC .28474 INC 1.2330 V1 30.170
RP 239.88 LAP .70 LOP 206.90 VP 21.506 GAP 13.65 AZP 91.01 TAL 352.54 TAP 137.69 RCA 147.40 APO 264.76 V2 22.897
RC 168.857 GL 10.81 GP 2.05 ZAL 99.66 ZAP 164.11 ETS 171.31 ZAE 156.70 ETE 4.89 ZAC 92.14 ETC 255.85 CLP 164.24

PLANETOCENTRIC CONIC

C3 15.183 VHL 3.897 DLA 17.18 RAL 167.30 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 7.116 DPA -1.49 RAP 191.55 ECC 1.2499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 44	2716.42	-27.76	75.75	29.92	95.83	16 42 1	2116.4	-26.66	67.25
90.00	8 38 6	4228.80	.97	173.59	24.12	61.70	9 48 35	3628.8	-2.82	166.96
100.00	17 27 58	2422.22	-29.04	53.94	29.75	97.41	18 8 20	1822.2	-27.71	45.39
100.00	9 49 33	3998.24	2.10	156.01	23.49	60.17	10 56 12	3398.2	-1.89	149.49
110.00	18 57 59	2140.57	-32.36	31.90	29.10	101.68	19 33 40	1540.6	-30.41	23.23
110.00	10 36 2	3852.65	4.95	143.19	21.72	56.13	11 40 14	3252.7	.47	136.97

DIFFERENTIAL CORRECTIONS
TDE .3921 TRA-1.4262 TC3 2.7478 BAU .5578
RDE -.2530 RRA -.1176 RC3 .0286 FAU .11162
FDE -.0433 FRA 1.4303 FC3-6.3644 BSP 10525
BDE .4666 BRA 1.4310 BC3 2.7479 FSP 1424

MID-COURSE EXECUTION ACCURACY
SGT 3120.3 SGR 414.3 SG3 468.9
RRT .1783 RRF -.2159 RTF -.9148
SGB 3147.7 R23 -.0507 R13 -.9149
SG1 3121.2 SG2 407.6 THA 1.38

ORBIT DETERMINATION ACCURACY
ST 877.6 SR 376.0 SS 418.1
CRT -.5416 CRS .0479 CST .8064
LSA 962.3 MSA 398.4 SSA 39.9
EL1 904.1 EL2 306.8 ALF 165.19

LAUNCH DATE NOV 24 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 462.235 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.908 GAL -1.53 AZL 88.79 HCA 146.09 SMA 204.92 ECC .28052 INC 1.2124 V1 30.170
RP 239.58 LAP .68 LOP 207.85 VP 21.454 GAP 13.13 AZP 91.01 TAL 352.99 TAP 139.08 RCA 147.44 APO 262.40 V2 22.928
RC 171.174 GL 10.79 GP 2.15 ZAL 98.76 ZAP 163.43 ETS 171.29 ZAE 157.18 ETE 5.38 ZAC 92.29 ETC 255.85 CLP 163.57

PLANETOCENTRIC CONIC

C3 14.691 VHL 3.833 DLA 17.52 RAL 166.42 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 6.954 DPA -1.51 RAP 191.83 ECC 1.2418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 51	2721.90	-27.80	76.15	28.62	95.63	16 35 13	2121.9	-26.73	67.64
90.00	8 37 58	4208.59	.32	172.46	22.87	61.68	9 48 6	3608.6	-3.47	165.83
100.00	17 21 24	2426.71	-29.08	54.27	28.45	97.25	18 1 50	1826.7	-27.77	45.71
100.00	9 49 7	3979.01	1.44	154.96	22.25	60.14	10 55 26	3379.0	-2.54	148.43
110.00	18 52 1	2143.16	-32.39	32.09	27.81	101.57	19 27 44	1543.2	-30.46	23.41
110.00	10 34 58	3835.33	4.30	142.28	20.47	56.06	11 38 54	3235.3	-.19	136.07

DIFFERENTIAL CORRECTIONS
TDE .3619 TRA-1.4004 TC3 2.8543 BAU .5606
RDE -.2435 RRA -.1144 RC3 .0436 FAU .11587
FDE -.0181 FRA 1.4339 FC3-6.8285 BSP 10864
BDE .4362 BRA 1.4051 BC3 2.8546 FSP 1505

MID-COURSE EXECUTION ACCURACY
SGT 3146.3 SGR 407.2 SG3 492.2
RRT .2108 RRF -.2450 RTF -.9151
SGB 3172.6 R23 -.0501 R13 -.9153
SG1 3147.5 SG2 397.9 THA 1.59

ORBIT DETERMINATION ACCURACY
ST 854.8 SR 368.0 SS 416.3
CRT -.5131 CRS .1043 CST .7919
LSA 936.0 MSA 402.0 SSA 41.0
EL1 878.4 EL2 307.4 ALF 165.76

LAUNCH DATE NOV 24 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 465.540 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.856 GAL -1.42 AZL 88.81 HCA 147.03 SMA 203.82 ECC .27649 INC 1.1906 V1 30.170
RP 239.26 LAP .65 LOP 208.79 VP 21.406 GAP 12.61 AZP 91.00 TAL 353.43 TAP 140.47 RCA 147.47 APO 260.18 V2 22.959
RC 173.485 GL 10.75 GP 2.26 ZAL 97.85 ZAP 162.73 ETS 171.25 ZAE 157.69 ETE 5.91 ZAC 92.45 ETC 255.84 CLP 162.88

PLANETOCENTRIC CONIC

C3 14.231 VHL 3.772 DLA 17.84 RAL 165.53 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 6.795 DPA -1.52 RAP 192.11 ECC 1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 4	2727.14	-27.83	76.52	27.31	95.44	16 28 31	2127.1	-26.79	68.01
90.00	8 37 39	4189.25	-.31	171.38	21.63	61.68	9 47 28	3589.3	-4.09	164.74
100.00	17 14 54	2431.00	-29.12	54.58	27.15	97.08	17 55 25	1831.0	-27.83	46.01
100.00	9 48 30	3960.63	.82	153.95	21.01	60.12	10 54 30	3360.6	-3.16	147.42
110.00	18 46 7	2145.58	-32.43	32.28	26.53	101.46	19 21 53	1545.6	-30.51	23.58
110.00	10 33 46	3818.81	3.67	141.42	19.23	55.99	11 37 24	3218.8	-.82	135.21

DIFFERENTIAL CORRECTIONS
TDE .3409 TRA-1.3648 TC3 2.9871 BAU .5684
RDE -.2345 RRA -.1116 RC3 .0603 FAU .12042
FDE .0072 FRA 1.4342 FC3-7.3256 BSP 10976
BDE .4138 BRA 1.3694 BC3 2.9877 FSP 1587

MID-COURSE EXECUTION ACCURACY
SGT 3176.4 SGR 400.8 SG3 516.8
RRT .2402 RRF -.2765 RTF -.9175
SGB 3201.6 R23 -.0543 R13 -.9177
SG1 3177.9 SG2 388.8 THA 1.76

ORBIT DETERMINATION ACCURACY
ST 836.4 SR 360.1 SS 414.7
CRT -.4961 CRS .1603 CST .7686
LSA 913.5 MSA 406.1 SSA 41.4
EL1 858.1 EL2 304.8 ALF 166.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 468.877 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.807 GAL -1.31 AZL 88.83 HCA 147.98 SMA 202.79 ECC .27264 INC 1.1677 V1 30.170
RP 238.95 LAP .62 LOP 209.74 VP 21.363 GAP 12.10 AZP 90.99 TAL 353.87 TAP 141.86 RCA 147.50 APO 258.07 V2 22.991
RC 175.790 GL 10.69 GP 2.37 ZAL 96.95 ZAP 162.02 ETS 171.20 ZAE 158.24 ETE 6.50 ZAC 92.61 ETC 255.84 CLP 162.17

PLANETOCENTRIC CONIC

C3 13.801 VHL 3.715 DLA 18.14 RAL 164.63 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 6.640 DPA -1.52 RAP 192.38 ECC 1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 24	2732.01	-27.86	76.88	26.02	95.27	16 21 56	2132.0	-26.84	68.36
90.00	8 37 7	4170.90	-.90	170.36	20.40	61.70	9 46 38	3570.9	-4.68	163.71
100.00	17 8 31	2434.94	-29.15	54.87	25.86	96.94	17 49 6	1834.9	-27.88	46.29
100.00	9 47 41	3943.20	.23	152.99	19.77	60.11	10 53 24	3343.2	-3.75	146.46
110.00	18 40 19	2147.74	-32.45	32.44	25.24	101.37	19 16 7	1547.7	-30.55	23.74
110.00	10 32 23	3803.17	3.07	140.60	18.00	55.94	11 35 46	3203.2	-1.42	134.39

DIFFERENTIAL CORRECTIONS

TDE .3207 TRA-1.3286 TC3 3.1190 BAU .5757
RDE -.2258 RRA -.1089 RC3 .0792 FAU .12516
FDE .0332 FRA 1.4327 FC3-7.8512 BSP 11066
BDE .3922 BRA 1.3331 BC3 3.1200 FSP 1674

MID-COURSE EXECUTION ACCURACY

SGT 3203.8 SGR 394.9 SG3 542.6
RRT .2728 RRF -.3113 RTF -.9198
SGB 3228.0 R23 -.0590 R13 -.9201
SG1 3205.6 SG2 379.7 THA 1.95

ORBIT DETERMINATION ACCURACY

ST 817.2 SR 352.3 SS 413.6
CRT -.4787 CRS .2171 CST .7434
LSA 890.4 MSA 410.4 SSA 41.8
EL1 837.1 EL2 301.9 ALF 166.56

LAUNCH DATE NOV 24 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 472.246 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.760 GAL -1.20 AZL 88.86 HCA 148.93 SMA 201.80 ECC .26897 INC 1.1435 V1 30.170
RP 238.63 LAP .59 LOP 210.69 VP 21.323 GAP 11.59 AZP 90.98 TAL 354.31 TAP 143.24 RCA 147.52 APO 256.08 V2 23.024
RC 178.086 GL 10.60 GP 2.49 ZAL 96.05 ZAP 161.29 ETS 171.14 ZAE 158.82 ETE 7.15 ZAC 92.78 ETC 255.83 CLP 161.45

PLANETOCENTRIC CONIC

C3 13.400 VHL 3.661 DLA 18.42 RAL 163.72 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 6.488 DPA -1.50 RAP 192.63 ECC 1.2205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 55	2736.40	-27.89	77.20	24.73	95.11	16 15 31	2136.4	-26.89	68.67
90.00	8 36 22	4153.64	-1.46	169.40	19.18	61.72	9 45 36	3553.6	-5.23	162.74
100.00	17 2 18	2438.46	-29.18	55.13	24.57	96.80	17 42 57	1838.5	-27.93	46.55
100.00	9 46 40	3926.82	-.33	152.09	18.55	60.11	10 52 6	3326.8	-4.30	145.56
110.00	18 34 38	2149.58	-32.48	32.57	23.96	101.30	19 10 28	1549.6	-30.58	23.87
110.00	10 30 49	3788.46	2.51	139.83	16.78	55.90	11 33 58	3188.5	-1.98	133.63

DIFFERENTIAL CORRECTIONS

TDE .3037 TRA-1.2930 TC3 3.2547 BAU .5834
RDE -.2175 RRA -.1064 RC3 .1004 FAU .13015
FDE .0592 FRA 1.4317 FC3-8.4088 BSP 11121
BDE .3735 BRA 1.2974 BC3 3.2563 FSP 1765

MID-COURSE EXECUTION ACCURACY

SGT 3233.3 SGR 390.0 SG3 569.8
RRT .3076 RRF -.3495 RTF -.9222
SGB 3256.7 R23 -.0652 R13 -.9225
SG1 3235.5 SG2 370.8 THA 2.15

ORBIT DETERMINATION ACCURACY

ST 800.3 SR 344.4 SS 413.7
CRT -.4641 CRS .2726 CST .7153
LSA 869.6 MSA 415.1 SSA 42.1
EL1 818.7 EL2 298.3 ALF 166.94

LAUNCH DATE NOV 24 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 475.644 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.715 GAL -1.10 AZL 88.88 HCA 149.89 SMA 200.87 ECC .26547 INC 1.1180 V1 30.170
RP 238.31 LAP .56 LOP 211.64 VP 21.287 GAP 11.10 AZP 90.97 TAL 354.74 TAP 144.63 RCA 147.55 APO 254.20 V2 23.056
RC 180.373 GL 10.50 GP 2.62 ZAL 95.15 ZAP 160.54 ETS 171.07 ZAE 159.42 ETE 7.87 ZAC 92.96 ETC 255.83 CLP 160.71

PLANETOCENTRIC CONIC

C3 13.025 VHL 3.609 DLA 18.67 RAL 162.81 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 6.340 DPA -1.47 RAP 192.88 ECC 1.2144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 36	2740.22	-27.91	77.47	23.44	94.98	16 9 17	2140.2	-26.93	68.94
90.00	8 35 22	4137.54	-1.98	168.50	17.96	61.75	9 44 19	3537.5	-5.74	161.84
100.00	16 56 15	2441.45	-29.20	55.35	23.29	96.69	17 36 57	1841.4	-27.97	46.76
100.00	9 45 24	3911.54	-.84	151.25	17.33	60.12	10 50 35	3311.5	-4.81	144.72
110.00	18 29 5	2151.00	-32.50	32.68	22.68	101.23	19 4 56	1551.0	-30.61	23.97
110.00	10 29 3	3774.76	1.99	139.11	15.56	55.87	11 31 58	3174.8	-2.51	132.91

DIFFERENTIAL CORRECTIONS

TDE .2956 TRA-1.2476 TC3 3.4178 BAU .5955
RDE -.2095 RRA -.1042 RC3 .1242 FAU .13551
FDE .0833 FRA 1.4253 FC3-9.0068 BSP 10956
BDE .3623 BRA 1.2520 BC3 3.4200 FSP 1857

MID-COURSE EXECUTION ACCURACY

SGT 3267.6 SGR 386.2 SG3 598.5
RRT .3408 RRF -.3901 RTF -.9264
SGB 3290.3 R23 -.0749 R13 -.9268
SG1 3270.3 SG2 362.7 THA 2.34

ORBIT DETERMINATION ACCURACY

ST 786.8 SR 336.7 SS 413.1
CRT -.4644 CRS .3230 CST .6770
LSA 851.3 MSA 420.3 SSA 41.7
EL1 804.6 EL2 291.6 ALF 167.03

LAUNCH DATE NOV 24 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 479.067 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.672 GAL -1.00 AZL 88.91 HCA 150.84 SMA 200.00 ECC .26214 INC 1.0906 V1 30.170
RP 237.98 LAP .53 LOP 212.60 VP 21.255 GAP 10.60 AZP 90.95 TAL 355.17 TAP 146.01 RCA 147.57 APO 252.42 V2 23.089
RC 182.651 GL 10.37 GP 2.76 ZAL 94.27 ZAP 159.77 ETS 170.99 ZAE 160.05 ETE 8.68 ZAC 93.14 ETC 255.82 CLP 159.95

PLANETOCENTRIC CONIC

C3 12.676 VHL 3.560 DLA 18.89 RAL 161.89 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 6.195 DPA -1.42 RAP 193.12 ECC 1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 36	2743.22	-27.93	77.69	22.16	94.87	16 3 19	2143.2	-26.96	69.16
90.00	8 34 4	4122.85	-2.45	167.68	16.76	61.78	9 42 47	3522.9	-6.20	161.01
100.00	16 50 28	2443.70	-29.22	55.51	22.02	96.61	17 31 12	1843.7	-28.00	46.92
100.00	9 43 52	3897.60	-1.32	150.49	16.13	60.13	10 48 50	3297.6	-5.28	143.95
110.00	18 23 45	2151.85	-32.51	32.74	21.42	101.20	18 59 37	1551.8	-30.62	24.03
110.00	10 27 5	3762.22	1.51	138.46	14.36	55.85	11 29 47	3162.2	-2.98	132.25

DIFFERENTIAL CORRECTIONS

TDE .2641 TRA-1.2240 TC3 3.5045 BAU .5944
RDE -.2016 RRA -.1019 RC3 .1514 FAU .14091
FDE .1130 FRA 1.4196 FC3-9.6239 BSP 11395
BDE .3323 BRA 1.2283 BC3 3.5078 FSP 1966

MID-COURSE EXECUTION ACCURACY

SGT 3277.5 SGR 383.4 SG3 628.0
RRT .3916 RRF -.4365 RTF -.9257
SGB 3299.9 R23 -.0759 R13 -.9260
SG1 3281.0 SG2 352.4 THA 2.65

ORBIT DETERMINATION ACCURACY

ST 759.2 SR 328.7 SS 414.6
CRT -.4216 CRS .3824 CST .6641
LSA 821.9 MSA 423.0 SSA 43.0
EL1 773.9 EL2 292.4 ALF 167.90

LAUNCH DATE NOV 24 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 482.518 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.630	GAL	-.91	AZL	88.94	HCA	151.80	SMA	199.16	ECC	.25896	INC	1.0616
RP	237.65	LAP	.50	LOP	213.56	VP	21.226	GAP	10.12	AZP	90.94	TAL	355.59	TAP	147.39	RCA	147.59	APO	250.74
RC	184.919	GL	10.21	GP	2.92	ZAL	93.39	ZAP	158.98	ETS	170.89	ZAE	160.71	ETE	9.59	ZAC	93.33	ETC	255.82

V1	30.170	V2	23.123	CLP	159.17														

PLANETOCENTRIC CONIC

C3	12.349	VHL	3.514	DLA	19.08	RAL	160.97	RAD	6567.5	VEL	11.564	PTH	2.02	VHP	6.054	DPA	-1.36	RAP	193.35
ECC	1.2032																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 50	2745.38	-27.94	77.85	20.89	94.79	15 57 36	2145.4	-26.98	69.31
90.00	8 32 27	4109.54	-2.88	166.93	15.55	61.82	9 40 57	3509.5	-6.63	160.26
100.00	16 44 56	2445.21	-29.23	55.62	20.74	96.55	17 25 41	1845.2	-28.02	47.03
100.00	9 42 3	3884.95	-1.75	149.80	14.92	60.15	10 46 48	3285.0	-5.70	143.25
110.00	18 18 37	2152.11	-32.51	32.76	20.15	101.19	18 54 29	1552.1	-30.63	24.05
110.00	10 24 52	3750.81	1.07	137.86	13.16	55.83	11 27 22	3150.8	-3.42	131.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2484	TRA	-1.1904	TC3	3.6218	BAU	.5987	SGT	3295.6	SGR	382.4	SG3	658.9	ST	741.2	SR	320.8	SS	415.9
RDE	-.1941	RRA	-.0999	RC3	.1815	FAU	.14660	RRT	.4370	RRF	-.4845	RTF	-.9270	CRT	-.4039	CRS	.4313	CST	.6375
FDE	.1382	FRA	1.4125	FC	-10.2776	BSP	11469	SGB	3317.7	R23	-.0834	R13	-.9275	LSA	801.0	MSA	426.4	SSA	43.4
BDE	.3152	BRA	1.1946	BC3	3.6263	FSP	2072	SG1	3299.9	SG2	343.5	THA	2.93	EL1	754.4	EL2	288.3	ALF	168.36

LAUNCH DATE NOV 24 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 485.993 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.591	GAL	-.81	AZL	88.97	HCA	152.76	SMA	198.37	ECC	.25592	INC	1.0307
RP	237.31	LAP	.47	LOP	214.52	VP	21.201	GAP	9.64	AZP	90.92	TAL	356.01	TAP	148.77	RCA	147.60	APO	249.14
RC	187.176	GL	10.03	GP	3.08	ZAL	92.52	ZAP	158.17	ETS	170.78	ZAE	161.40	ETE	10.62	ZAC	93.53	ETC	255.81

V1	30.170	V2	23.157	CLP	158.38														

PLANETOCENTRIC CONIC

C3	12.043	VHL	3.470	DLA	19.24	RAL	160.04	RAD	6567.5	VEL	11.551	PTH	2.02	VHP	5.916	DPA	-1.28	RAP	193.57
ECC	1.1982																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 25	2746.53	-27.95	77.93	19.62	94.75	15 52 11	2146.5	-27.00	69.39
90.00	8 30 29	4097.78	-3.26	166.28	14.35	61.86	9 38 47	3497.8	-7.00	159.59
100.80	16 39 41	2445.79	-29.24	55.66	19.47	96.53	17 20 26	1845.8	-28.02	47.07
100.00	9 39 55	3873.75	-2.12	149.18	13.72	60.18	10 44 28	3273.8	-6.08	142.62
110.00	18 13 42	2151.64	-32.51	32.73	18.88	101.21	18 49 33	1551.6	-30.62	24.02
110.00	10 22 23	3740.66	.68	137.33	11.97	55.82	11 24 44	3140.7	-3.81	131.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2330	TRA	-1.1562	TC3	3.7408	BAU	.6033	SGT	3313.2	SGR	383.4	SG3	691.5	ST	722.5	SR	312.9	SS	417.6
RDE	-.1869	RRA	-.0981	RC3	.2152	FAU	.15257	RRT	.4850	RRF	-.5350	RTF	-.9286	CRT	-.3854	CRS	.4792	CST	.6102
FDE	.1641	FRA	1.4034	FC	-10.9681	BSP	11486	SGB	3335.3	R23	-.0915	R13	-.9292	LSA	779.4	MSA	430.0	SSA	43.7
BDE	.2987	BRA	1.1604	BC3	3.7469	FSP	2181	SG1	3318.4	SG2	334.8	THA	3.25	EL1	734.3	EL2	284.1	ALF	168.83

LAUNCH DATE NOV 24 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 489.494 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.553	GAL	-.72	AZL	89.00	HCA	153.73	SMA	197.63	ECC	.25303	INC	.9976
RP	236.98	LAP	.44	LOP	215.48	VP	21.178	GAP	9.17	AZP	90.89	TAL	356.42	TAP	150.14	RCA	147.62	APO	247.63
RC	189.421	GL	9.81	GP	3.26	ZAL	91.67	ZAP	157.34	ETS	170.66	ZAE	162.11	ETE	11.80	ZAC	93.73	ETC	255.81

V1	30.170	V2	23.191	CLP	157.56														

PLANETOCENTRIC CONIC

C3	11.757	VHL	3.429	DLA	19.36	RAL	159.11	RAD	6567.4	VEL	11.539	PTH	2.01	VHP	5.781	DPA	-1.17	RAP	193.78
ECC	1.1935																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 21	2746.51	-27.95	77.93	18.34	94.75	15 47 7	2146.5	-27.00	69.39
90.00	8 28 7	4087.69	-3.58	165.71	13.15	61.89	9 36 15	3487.7	-7.31	159.02
100.00	16 34 45	2445.33	-29.23	55.63	18.20	96.54	17 15 30	1845.3	-28.02	47.04
100.00	9 37 25	3864.10	-2.45	148.65	12.53	60.20	10 41 49	3264.1	-6.40	142.09
110.00	18 9 2	2150.36	-32.49	32.63	17.61	101.26	18 44 52	1550.4	-30.60	23.93
110.00	10 19 37	3731.83	.35	136.87	10.78	55.82	11 21 49	3131.8	-4.14	130.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2284	TRA	-1.1112	TC3	3.8946	BAU	.6134	SGT	3339.5	SGR	387.0	SG3	726.6	ST	707.6	SR	305.1	SS	416.5
RDE	-.1799	RRA	-.0964	RC3	.2533	FAU	.15918	RRT	.5303	RRF	-.5863	RTF	-.9321	CRT	-.3895	CRS	.5180	CST	.5698
FDE	.1847	FRA	1.3852	FC	-11.7213	BSP	11356	SGB	3361.9	R23	-.1028	R13	-.9328	LSA	759.8	MSA	433.6	SSA	43.4
BDE	.2907	BRA	1.1154	BC3	3.9028	FSP	2294	SG1	3345.9	SG2	327.4	THA	3.55	EL1	719.2	EL2	276.4	ALF	168.79

LAUNCH DATE NOV 24 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 493.014 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.517	GAL	-.64	AZL	89.04	HCA	154.69	SMA	196.92	ECC	.25028	INC	.9621
RP	236.64	LAP	.41	LOP	216.45	VP	21.159	GAP	8.70	AZP	90.87	TAL	356.82	TAP	151.51	RCA	147.63	APO	246.20
RC	191.655	GL	9.56	GP	3.46	ZAL	90.82	ZAP	156.48	ETS	170.52	ZAE	162.84	ETE	13.15	ZAC	93.95	ETC	255.80

V1	30.170	V2	23.226	CLP	156.73														

PLANETOCENTRIC CONIC

C3	11.489	VHL	3.390	DLA	19.45	RAL	158.18	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	5.650	DPA	-1.05	RAP	193.98
ECC	1.1891																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 45	2745.06	-27.94	77.82	17.08	94.80	15 42 30	2145.1	-26.98	69.29
90.00	8 25 19	4079.53	-3.84	165.25	11.96	61.92	9 33 19	3479.5	-7.57	158.56
100.00	16 30 14	2443.58	-29.22	55.50	16.93	96.61	17 10 58	1843.6	-28.00	46.91
100.00	9 34 31	3856.24	-2.72	148.22	11.34	60.22	10 38 47	3256.2	-6.66	141.65
110.00	18 4 42	2148.07	-32.46	32.46	16.34	101.36	18 40 30	1548.1	-30.55	23.76
110.00	10 16 33	3724.52	.07	136.49	9.60	55.82	11 18 38	3124.5	-4.42	130.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2049	TRA	-1.0876	TC3	3.9528	BAU	.6088	SGT	3332.0	SGR	393.3	SG3	760.7	ST	684.5	SR	297.2	SS	419.8
RDE	-.1732	RRA	-.0949	RC3	.2952	FAU	.16532	RRT	.5849	RRF	-.6394	RTF	-.9310	CRT	-.3493	CRS	.5642	CST	.5585
FDE	.2120	FRA	1.3749	FC	-12.4571	BSP	11621	SGB	3355.1	R23	-.1108	R13	-.9317	LSA	736.6	MSA	434.3	SSA	44.5
BDE	.2683	BRA	1.0918	BC3	3.9638	FSP	2423	SG1	3340.0	SG2	318.2	THA	3.99	EL1	693.8	EL2	274.7	ALF	169.75

LAUNCH DATE NOV 24 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 496.558 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.483	GAL	-.55	AZL	89.08	HCA	155.66	SMA	196.25	ECC	.24766	INC	.9236
RP	236.29	LAP	.38	LOP	217.42	VP	21.144	GAP	8.24	AZP	90.84	TAL	357.21	TAP	152.87	RCA	147.64	APO	244.85
RC	193.877	GL	9.26	GP	3.67	ZAL	90.00	ZAP	155.61	ETS	170.36	ZAE	163.59	ETE	14.71	ZAC	94.19	ETC	255.80

V1	30.170	V2	23.261	CLP	155.87														

PLANETOCENTRIC CONIC

C3	11.239	VHL	3.352	DLA	19.49	RAL	157.25	RAD	6567.4	VEL	11.516	PTH	2.01	VHP	5.522	DPA	-.90	RAP	194.17
ECC	1.1850																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 36	2742.10	-27.92	77.61	15.81	94.91	15 38 18	2142.1	-26.95	69.08
90.00	8 22 3	4073.34	-4.04	164.91	10.76	61.95	9 29 56	3473.3	-7.76	158.20
100.00	16 26 8	2440.48	-29.19	55.27	15.66	96.73	17 6 48	1840.5	-27.96	46.69
100.00	9 31 12	3850.19	-2.92	147.89	10.15	60.24	10 35 22	3250.2	-6.86	141.31
110.00	18 0 40	2144.70	-32.41	32.21	15.06	101.50	18 36 25	1544.7	-30.49	23.52
110.00	10 13 8	3718.74	-.16	136.19	8.42	55.82	11 15 7	3118.7	-4.64	129.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1950	TRA	-1.0558	TC3	4.0635	BAU	.6127	SGT	3346.3	SGR	403.3	SG3	798.7	ST	669.0	SR	289.2	SS	419.7
RDE	-.1665	RRA	-.0936	RC3	.3429	FAU	.17233	RRT	.6345	RRF	-.6911	RTF	-.9322	CRT	-.3363	CRS	.5963	CST	.5355
FDE	.2307	FRA	1.3600	FC	-13.2753	BSP	11694	SGB	3370.5	R23	-.1223	R13	-.9331	LSA	718.7	MSA	434.5	SSA	44.8
BDE	.2564	BRA	1.0599	BC3	4.0779	FSP	2557	SG1	3356.2	SG2	310.8	THA	4.41	EL1	677.3	EL2	269.0	ALF	170.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 500.122 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.450	GAL	-.47	AZL	89.12	HCA	156.64	SMA	195.61	ECC	.24517	INC	.8821
RP	235.94	LAP	.35	LOP	218.39	VP	21.131	GAP	7.79	AZP	90.81	TAL	357.59	TAP	154.23	RCA	147.65	APO	243.57
RC	196.086	GL	8.93	GP	3.91	ZAL	89.18	ZAP	154.70	ETS	170.19	ZAE	164.35	ETE	16.52	ZAC	94.44	ETC	255.79

V1	30.170	V2	23.297	CLP	154.98														

PLANETOCENTRIC CONIC

C3	11.004	VHL	3.317	DLA	19.48	RAL	156.32	RAD	6567.4	VEL	11.506	PTH	2.00	VHP	5.397	DPA	-.72	RAP	194.35
ECC	1.1811																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 58	2737.40	-27.90	77.27	14.54	95.08	15 34 36	2137.4	-26.90	68.74
90.00	8 18 14	4069.34	-4.17	164.68	9.57	61.97	9 26 3	3469.3	-7.89	157.98
100.00	16 22 30	2435.81	-29.16	54.93	14.39	96.90	17 3 6	1835.8	-27.89	46.36
100.00	9 27 23	3846.16	-3.06	147.66	8.95	60.25	10 31 30	3246.2	-7.00	141.09
110.00	17 57 1	2140.08	-32.35	31.86	13.78	101.70	18 32 41	1540.1	-30.40	23.19
110.00	10 9 21	3714.65	-.31	135.98	7.24	55.82	11 11 16	3114.7	-4.79	129.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1828	TRA	-1.0200	TC3	4.1500	BAU	.6133	SGT	3342.4	SGR	417.1	SG3	837.0	ST	648.7	SR	281.3	SS	418.6
RDE	-.1601	RRA	-.0922	RC3	.3958	FAU	.17939	RRT	.6823	RRF	-.7404	RTF	-.9331	CRT	-.3193	CRS	.6312	CST	.5113
FDE	.2511	FRA	1.3354	FC	-14.1140	BSP	11776	SGB	3368.4	R23	-.1346	R13	-.9342	LSA	696.2	MSA	434.1	SSA	45.3
BDE	.2430	BRA	1.0241	BC3	4.1688	FSP	2698	SG1	3354.6	SG2	303.8	THA	4.91	EL1	656.1	EL2	263.6	ALF	170.58

LAUNCH DATE NOV 24 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 503.705 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.418	GAL	-.40	AZL	89.16	HCA	157.61	SMA	195.01	ECC	.24280	INC	.8369
RP	235.59	LAP	.32	LOP	219.36	VP	21.120	GAP	7.34	AZP	90.77	TAL	357.97	TAP	155.58	RCA	147.66	APO	242.35
RC	198.280	GL	8.55	GP	4.17	ZAL	88.39	ZAP	153.77	ETS	170.00	ZAE	165.12	ETE	18.65	ZAC	94.70	ETC	255.79

V1	30.170	V2	23.333	CLP	154.08														

PLANETOCENTRIC CONIC

C3	10.783	VHL	3.284	DLA	19.42	RAL	155.38	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	5.276	DPA	-.52	RAP	194.51
ECC	1.1775																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 56	2730.74	-27.85	76.79	13.27	95.32	15 31 27	2130.7	-26.83	68.27
90.00	8 13 50	4067.72	-4.22	164.59	8.37	61.97	9 21 38	3467.7	-7.94	157.88
100.00	16 19 23	2429.37	-29.10	54.46	13.11	97.15	16 59 53	1829.4	-27.81	45.90
100.00	9 23 4	3844.32	-3.12	147.56	7.76	60.26	10 27 8	3244.3	-7.06	140.99
110.00	17 53 47	2134.06	-32.27	31.41	12.50	101.95	18 29 21	1534.1	-30.28	22.76
110.00	10 5 10	3712.40	-.40	135.86	6.06	55.82	11 7 2	3112.4	-4.88	129.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1752	TRA	-.9855	TC3	4.2386	BAU	.6146	SGT	3341.6	SGR	435.6	SG3	877.6	ST	632.1	SR	273.0	SS	414.0
RDE	-.1537	RRA	-.0910	RC3	.4555	FAU	.18689	RRT	.7266	RRF	-.7861	RTF	-.9341	CRT	-.3107	CRS	.6544	CST	.4906
FDE	.2628	FRA	1.3084	FC	-15.0049	BSP	11771	SGB	3369.9	R23	-.1485	R13	-.9353	LSA	676.9	MSA	430.4	SSA	45.9
BDE	.2331	BRA	.9897	BC3	4.2630	FSP	2837	SG1	3356.7	SG2	297.9	THA	5.45	EL1	638.9	EL2	256.8	ALF	170.87

LAUNCH DATE NOV 24 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 507.308 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.389	GAL	-.32	AZL	89.21	HCA	158.59	SMA	194.44	ECC	.24054	INC	.7884
RP	235.24	LAP	.29	LOP	220.34	VP	21.113	GAP	6.90	AZP	90.73	TAL	358.33	TAP	156.92	RCA	147.67	APO	241.20
RC	200.460	GL	8.12	GP	4.45	ZAL	87.61	ZAP	152.81	ETS	169.78	ZAE	165.89	ETE	21.15	ZAC	94.99	ETC	255.78

V1	30.170	V2	23.369	CLP	153.15														

PLANETOCENTRIC CONIC

C3	10.576	VHL	3.252	DLA	19.30	RAL	154.45	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	5.157	DPA	-.28	RAP	194.67
ECC	1.1741																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 32	2721.89	-27.80	76.14	11.99	95.63	15 28 54	2121.9	-26.73	67.64
90.00	8 8 48	4068.69	-4.19	164.65	7.16	61.97	9 16 36	3468.7	-7.91	157.94
100.00	16 16 51	2420.96	-29.03	53.85	11.83	97.46	16 57 12	1821.0	-27.69	45.30
100.00	9 18 9	3844.86	-3.10	147.59	6.56	60.25	10 22 14	3244.9	-7.04	141.02
110.00	17 50 59	2126.45	-32.16	30.85	11.20	102.27	18 26 25	1526.4	-30.13	22.22
110.00	10 0 31	3712.13	-.41	135.85	4.88	55.82	11 2 23	3112.1	-4.89	129.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1683	TRA	-.9549	TC3	4.3180	BAU	.6150	SGT	3339.7	SGR	459.6	SG3	920.2	ST	617.2	SR	264.8	SS	409.7
RDE	-.1474	RRA	-.0900	RC3	.5225	FAU	.19469	RRT	.7669	RRF	-.8276	RTF	-.9346	CRT	-.3010	CRS	.6752	CST	.4725
FDE	.2731	FRA	1.2841	FC	-15.9368	BSP	11766	SGB	3371.1	R23	-.1640	R13	-.9362	LSA	659.7	MSA	426.1	SSA	46.5
BDE	.2237	BRA	.9592	BC3	4.3495	FSP	2987	SG1	3358.3	SG2	293.3	THA	6.07	EL1	623.3	EL2	250.0	ALF	171.22

LAUNCH DATE NOV 24 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 510.929 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.360	GAL	-.25	AZL	89.27	HCA	159.57	SMA	193.89	ECC	.23839	INC	.7342	V1	30.170
RP	234.89	LAP	.26	LOP	221.32	VP	21.108	GAP	6.47	AZP	90.69	TAL	358.69	TAP	158.26	RCA	147.67	APO	240.12	V2	23.405
RC	202.623	GL	7.63	GP	4.76	ZAL	86.85	ZAP	151.82	ETS	169.55	ZAE	166.65	ETE	24.13	ZAC	95.30	ETC	255.77	CLP	152.19

PLANETOCENTRIC CONIC

C3	10.382	VHL	3.222	DLA	19.11	RAL	153.52	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	5.042	DPA	-.00	RAP	194.83	ECC	1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 49	2710.61	-27.72	75.33	10.70	96.03	15 27 0	2110.6	-26.59	66.84
90.00	8 3 3	4072.48	-4.07	164.86	5.95	61.95	9 10 55	3472.5	-7.79	158.15
100.00	16 14 56	2410.33	-28.93	53.07	10.53	97.86	16 55 7	1810.3	-27.54	44.54
100.00	9 12 37	3847.99	-3.00	147.76	5.36	60.24	10 16 45	3248.0	-6.93	141.19
110.00	17 48 41	2117.05	-32.02	30.15	9.88	102.66	18 23 58	1517.0	-29.95	21.55
110.00	9 55 22	3714.03	-.34	135.95	3.70	55.82	10 57 16	3114.0	-4.82	129.73

DIFFERENTIAL CORRECTIONS

TDE	.1678	TRA	-.9247	TC3	4.3884	BAU	.6147
RDE	-.1407	RRA	-.0891	RC3	.5982	FAU	.20286
FDE	.2673	FRA	1.2546	FC-16.9154		BSP	11774
BDE	.2190	BRA	.9290	BC3	4.4290	FSP	3142

MID-COURSE EXECUTION ACCURACY

SGT	3333.9	SGR	489.2	SG3	964.5		
RRT	.8015	RRF	-.8637	RTF	-.9349		
SGB	3369.6	R23	-.1817	R13	-.9368		
SG1	3357.1	SG2	290.6	THA	6.76		

ORBIT DETERMINATION ACCURACY

ST	607.2	SR	255.5	SS	398.0		
CRT	-.3056	CRS	.6783	CST	.4610		
LSA	646.2	MSA	415.4	SSA	47.6		
EL1	613.2	EL2	241.0	ALF	171.32		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 514.568 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.333	GAL	-.18	AZL	89.32	HCA	160.55	SMA	193.38	ECC	.23635	INC	.6756	V1	30.170
RP	234.53	LAP	.22	LOP	222.31	VP	21.106	GAP	6.04	AZP	90.64	TAL	359.03	TAP	159.59	RCA	147.67	APO	239.09	V2	23.442
RC	204.770	GL	7.07	GP	5.11	ZAL	86.11	ZAP	150.80	ETS	169.28	ZAE	167.39	ETE	27.67	ZAC	95.64	ETC	255.76	CLP	151.21

PLANETOCENTRIC CONIC

C3	10.200	VHL	3.194	DLA	18.85	RAL	152.58	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	4.930	DPA	.32	RAP	194.97	ECC	1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 52	2696.61	-27.61	74.32	9.39	96.53	15 25 49	2096.6	-26.42	65.85
90.00	7 56 31	4079.35	-3.85	165.24	4.73	61.92	9 4 31	3479.3	-7.57	158.55
100.00	16 13 43	2397.23	-28.81	52.12	9.21	98.35	16 53 40	1797.2	-27.35	43.62
100.00	9 6 22	3853.96	-2.79	148.09	4.14	60.23	10 10 36	3254.0	-6.74	141.52
110.00	17 46 55	2105.62	-31.85	29.30	8.55	103.13	18 22 1	1505.6	-29.71	20.74
110.00	9 49 39	3718.33	-.17	136.17	2.51	55.82	10 51 37	3118.3	-4.65	129.96

DIFFERENTIAL CORRECTIONS

TDE	.1632	TRA	-.8933	TC3	4.4715	BAU	.6169
RDE	-.1343	RRA	-.0881	RC3	.6846	FAU	.21162
FDE	.2656	FRA	1.2188	FC-17.9619		BSP	11754
BDE	.2113	BRA	.8976	BC3	4.5236	FSP	3305

MID-COURSE EXECUTION ACCURACY

SGT	3333.3	SGR	526.5	SG3	1012.0		
RRT	.8327	RRF	-.8947	RTF	-.9359		
SGB	3374.6	R23	-.1977	R13	-.9382		
SG1	3362.2	SG2	289.0	THA	7.55		

ORBIT DETERMINATION ACCURACY

ST	592.5	SR	246.5	SS	387.1		
CRT	-.3009	CRS	.6879	CST	.4496		
LSA	628.7	MSA	405.1	SSA	48.7		
EL1	598.0	EL2	232.9	ALF	171.58		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 518.224 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.307	GAL	-.12	AZL	89.39	HCA	161.54	SMA	192.89	ECC	.23441	INC	.6105	V1	30.170
RP	234.17	LAP	.19	LOP	223.29	VP	21.107	GAP	5.62	AZP	90.58	TAL	359.37	TAP	160.91	RCA	147.68	APO	238.11	V2	23.479
RC	206.900	GL	6.43	GP	5.50	ZAL	85.39	ZAP	149.74	ETS	168.99	ZAE	168.09	ETE	31.89	ZAC	96.02	ETC	255.76	CLP	150.19

PLANETOCENTRIC CONIC

C3	10.029	VHL	3.167	DLA	18.51	RAL	151.64	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.822	DPA	.68	RAP	195.11	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 45	2679.59	-27.48	73.09	8.06	97.13	15 25 25	2079.6	-26.20	64.65
90.00	7 49 8	4089.60	-3.52	165.82	3.49	61.88	8 57 18	3489.6	-7.25	159.13
100.00	16 13 14	2381.35	-28.65	50.97	7.87	98.93	16 52 56	1781.3	-27.11	42.50
100.00	8 59 20	3863.07	-2.49	148.59	2.92	60.20	10 3 43	3263.1	-6.43	142.03
110.00	17 45 45	2091.90	-31.63	28.29	7.18	103.70	18 20 37	1491.9	-29.42	19.78
110.00	9 43 18	3725.28	.09	136.53	1.31	55.82	10 45 24	3125.3	-4.39	130.32

DIFFERENTIAL CORRECTIONS

TDE	.1616	TRA	-.8627	TC3	4.4936	BAU	.6115
RDE	-.1276	RRA	-.0872	RC3	.7798	FAU	.21990
FDE	.2528	FRA	1.1781	FC-18.9831		BSP	11770
BDE	.2059	BRA	.8671	BC3	4.5607	FSP	3482

MID-COURSE EXECUTION ACCURACY

SGT	3300.7	SGR	570.0	SG3	1057.5		
RRT	.8568	RRF	-.9199	RTF	-.9352		
SGB	3349.6	R23	-.2177	R13	-.9382		
SG1	3336.9	SG2	290.7	THA	8.48		

ORBIT DETERMINATION ACCURACY

ST	580.2	SR	236.6	SS	371.2		
CRT	-.3028	CRS	.6857	CST	.4450		
LSA	613.3	MSA	389.6	SSA	50.2		
EL1	585.3	EL2	223.5	ALF	171.75		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 521.896 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.282	GAL	-.06	AZL	89.46	HCA	162.53	SMA	192.43	ECC	.23257	INC	.5370	V1	30.170
RP	233.80	LAP	.16	LOP	224.28	VP	21.109	GAP	5.21	AZP	90.51	TAL	359.69	TAP	162.22	RCA	147.68	APO	237.19	V2	23.517
RC	209.011	GL	5.71	GP	5.94	ZAL	84.70	ZAP	148.64	ETS	168.66	ZAE	168.71	ETE	36.92	ZAC	96.43	ETC	255.74	CLP	149.15

PLANETOCENTRIC CONIC

C3	9.868	VHL	3.141	DLA	18.07	RAL	150.69	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	4.717	DPA	1.10	RAP	195.24	ECC	1.1624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 32	2659.19	-27.30	71.63	6.71	97.84	15 25 51	2059.2	-25.93	63.22
90.00	7 40 48	4103.58	-3.07	166.60	2.24	61.84	8 49 11	3503.6	-6.81	159.92
100.00	16 13 35	2362.35	-28.44	49.59	6.51	99.63	16 52 57	1762.3	-26.81	41.17
100.00	8 51 26	3875.66	-2.06	149.28	1.68	60.17	9 56 1	3275.7	-6.01	142.73
110.00	17 45 14	2075.57	-31.36	27.10	5.79	104.36	18 19 50	1475.6	-29.07	18.64
110.00	9 36 15	3735.20	.47	137.05	.10	55.82	10 38 31	3135.2	-4.01	130.84

DIFFERENTIAL CORRECTIONS

TDE	.1673	TRA	-.8298	TC3	4.4134	BAU	.5937
RDE	-.1199	RRA	-.0859	RC3	.8807	FAU	.22662
FDE	.2163	FRA	1.1227	FC-19.8810		BSP	11842
BDE	.2058	BRA	.8342	BC3	4.5004	FSP	3673

MID-COURSE EXECUTION ACCURACY

SGT	3211.8	SGR	617.4	SG3	1095.7		
RRT	.8725	RRF	-.9392	RTF	-.9316		
SGB	3270.6	R23	-.2443	R13	-.9355		
SG1	3257.1	SG2	297.5	THA	9.60		

ORBIT DETERMINATION ACCURACY

ST	572.8	SR	224.7	SS	344.3		
CRT	-.3239	CRS	.6553	CST	.4535		
LSA	602.2	MSA	362.9	SSA	52.7		
EL1	578.1	EL2	210.7	ALF	171.64		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE .000 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.258	GAL	.00	AZL	89.54	HCA	163.52	SMA	191.99	ECC	.23082	INC	.4555	V1	30.170
RP	233.44	LAP	.13	LOP	225.28	VP	21.114	GAP	4.80	AZP	90.44	TAL	.00	TAP	163.53	RCA	147.68	APO	236.31	V2	23.555
RC	211.104	GL	4.87	GP	6.43	ZAL	84.02	ZAP	147.51	ETS	168.30	ZAE	169.23	ETE	42.84	ZAC	96.89	ETC	255.73	CLP	148.08

PLANETOCENTRIC CONIC

C3	9.718	VHL	3.117	DLA	17.52	RAL	149.73	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	4.615	DPA	1.58	RAP	195.37	ECC	1.1599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 17	2635.00	-27.06	69.89	5.32	98.68	15 27 12	2035.0	-25.58	61.54
90.00	7 31 24	4121.71	-2.49	167.61	.98	61.78	8 40 5	3521.7	-6.24	160.94
100.00	16 14 50	2339.81	-28.17	47.97	5.10	100.44	16 53 49	1739.8	-26.44	39.59
100.00	8 42 33	3892.13	-1.50	150.19	.43	60.14	9 47 25	3292.1	-5.46	143.64
110.00	17 45 27	2056.26	-31.03	25.69	4.36	105.13	18 19 44	1456.3	-28.64	17.30
110.00	9 28 24	3748.45	.98	137.74	358.88	55.83	10 30 53	3148.5	-3.51	131.53

DIFFERENTIAL CORRECTIONS

TDE	.4054	TRA	-.8614	TC3	5.4947	BAU	.7280
RDE	-.0910	RRA	-.0904	RC3	1.0956	FAU	.25746
FDE	-.2717	FRA	1.1880	FC	-22.9349	BSP	4144
BDE	.4154	BRA	.8662	BC3	5.6029	FSP	2577

MID-COURSE EXECUTION ACCURACY

SGT	3879.2	SGR	724.5	SG3	1252.0		
RRT	.8913	RRF	-.9605	RTF	-.9458		
SGB	3946.3	R23	-.2461	R13	-.9493		
SG1	3933.0	SG2	324.1	THA	9.52		

ORBIT DETERMINATION ACCURACY

ST	902.0	SR	176.4	SS	379.4		
CRT	-.6060	CRS	-.2312	CST	.8835		
LSA	969.6	MSA	211.4	SSA	63.3		
EL1	908.5	EL2	139.3	ALF	173.08		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 529.288 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.236	GAL	.06	AZL	89.64	HCA	164.52	SMA	191.58	ECC	.22916	INC	.3646	V1	30.170
RP	233.07	LAP	.10	LOP	226.27	VP	21.121	GAP	4.40	AZP	90.35	TAL	.31	TAP	164.83	RCA	147.68	APO	235.48	V2	23.593
RC	213.179	GL	3.92	GP	6.99	ZAL	83.38	ZAP	146.33	ETS	167.89	ZAE	169.60	ETE	49.70	ZAC	97.42	ETC	255.71	CLP	146.98

PLANETOCENTRIC CONIC

C3	9.579	VHL	3.095	DLA	16.84	RAL	148.76	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	4.518	DPA	2.14	RAP	195.50	ECC	1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 46 8	2606.50	-26.75	67.87	3.88	99.65	15 29 34	2006.5	-25.14	59.57
90.00	7 20 48	4144.52	-1.75	168.89	359.69	61.73	8 29 52	3544.5	-5.52	162.23
100.00	16 17 4	2313.25	-27.83	46.07	3.65	101.38	16 55 37	1713.2	-25.97	37.76
100.00	8 32 33	3913.01	-.79	151.33	359.16	60.12	9 37 46	3313.0	-4.76	144.80
110.00	17 46 29	2033.49	-30.61	24.05	2.88	106.02	18 20 22	1433.5	-28.11	15.74
110.00	9 19 37	3765.53	1.63	138.63	357.64	55.85	10 22 23	3165.5	-2.86	132.43

DIFFERENTIAL CORRECTIONS

TDE	.1928	TRA	-.7544	TC3	4.7050	BAU	.6209
RDE	-.1010	RRA	-.0820	RC3	1.1713	FAU	.25057
FDE	.0836	FRA	.9780	FC	-22.6455	BSP	11092
BDE	.2177	BRA	.7588	BC3	4.8486	FSP	3933

MID-COURSE EXECUTION ACCURACY

SGT	3277.0	SGR	765.4	SG3	1222.2		
RRT	.9075	RRF	-.9691	RTF	-.9391		
SGB	3365.2	R23	-.2594	R13	-.9445		
SG1	3350.4	SG2	314.4	THA	12.08		

ORBIT DETERMINATION ACCURACY

ST	571.6	SR	194.2	SS	282.2		
CRT	-.3968	CRS	.4635	CST	.5563		
LSA	599.6	MSA	284.1	SSA	62.0		
EL1	577.3	EL2	176.5	ALF	171.52		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 533.005 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.215	GAL	.11	AZL	89.74	HCA	165.52	SMA	191.19	ECC	.22759	INC	.2594	V1	30.170
RP	232.70	LAP	.07	LOP	227.27	VP	21.131	GAP	4.01	AZP	90.25	TAL	.59	TAP	166.11	RCA	147.68	APO	234.70	V2	23.631
RC	215.236	GL	2.81	GP	7.63	ZAL	82.75	ZAP	145.10	ETS	167.42	ZAE	169.76	ETE	57.37	ZAC	98.01	ETC	255.70	CLP	145.84

PLANETOCENTRIC CONIC

C3	9.451	VHL	3.074	DLA	16.01	RAL	147.77	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	4.424	DPA	2.78	RAP	195.64	ECC	1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 10	2573.08	-26.35	65.50	2.39	100.77	15 33 3	1973.1	-24.59	57.27
90.00	7 8 50	4172.67	-.84	170.46	358.38	61.69	8 18 23	3572.7	-4.62	163.81
100.00	16 20 25	2282.05	-27.39	43.85	2.15	102.47	16 58 27	1682.0	-25.39	35.62
100.00	8 21 16	3938.94	.09	152.76	357.86	60.11	9 26 55	3338.9	-3.89	146.23
110.00	17 48 25	2006.71	-30.09	22.13	1.34	107.04	18 21 52	1406.7	-27.46	13.93
110.00	9 9 46	3787.04	2.46	139.76	356.38	55.89	10 12 53	3187.0	-2.04	133.55

DIFFERENTIAL CORRECTIONS

TDE	.2134	TRA	-.7243	TC3	4.6518	BAU	.6114
RDE	-.0885	RRA	-.0798	RC3	1.3328	FAU	.25931
FDE	-.0284	FRA	.8989	FC	-23.7527	BSP	11178
BDE	.2310	BRA	.7287	BC3	4.8389	FSP	4146

MID-COURSE EXECUTION ACCURACY

SGT	3211.1	SGR	850.1	SG3	1270.8		
RRT	.9142	RRF	-.9781	RTF	-.9367		
SGB	3321.7	R23	-.2770	R13	-.9439		
SG1	3304.8	SG2	334.8	THA	13.75		

ORBIT DETERMINATION ACCURACY

ST	585.7	SR	173.1	SS	261.5		
CRT	-.4335	CRS	.2220	CST	.6961		
LSA	619.5	MSA	229.4	SSA	70.9		
EL1	590.9	EL2	154.6	ALF	172.16		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 536.738 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.194	GAL	.16	AZL	89.86	HCA	166.52	SMA	190.82	ECC	.22610	INC	.1385	V1	30.170
RP	232.32	LAP	.03	LOP	228.27	VP	21.142	GAP	3.62	AZP	90.14	TAL	.87	TAP	167.39	RCA	147.67	APO	233.96	V2	23.670
RC	217.275	GL	1.53	GP	8.37	ZAL	82.16	ZAP	143.81	ETS	166.89	ZAE	169.67	ETE	65.59	ZAC	98.69	ETC	255.67	CLP	144.66

PLANETOCENTRIC CONIC

C3	9.336	VHL	3.056	DLA	14.99	RAL	146.75	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	4.335	DPA	3.52	RAP	195.79	ECC	1.1537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 33	2533.97	-25.82	62.76	.83	102.05	15 37 47	1934.0	-23.90	54.62
90.00	6 55 18	4207.00	.26	172.37	357.04	61.68	8 5 25	3607.0	-3.52	165.74
100.00	16 25 1	2245.45	-26.82	41.28	.57	103.71	17 2 26	1645.4	-24.67	33.14
100.00	8 8 31	3970.76	1.16	154.50	356.54	60.13	9 14 42	3370.8	-2.82	147.98
110.00	17 51 23	1975.20	-29.44	19.91	359.73	108.21	18 24 18	1375.2	-26.67	11.82
110.00	8 58 38	3813.77	3.47	141.15	355.10	55.97	10 2 12	3213.8	-1.02	134.95

DIFFERENTIAL CORRECTIONS

TDE	.2251	TRA	-.7000	TC3	4.5802	BAU	.6023
RDE	-.0748	RRA	-.0776	RC3	1.5190	FAU	.26809
FDE	-.1434	FRA	.8207	FC	-24.8593	BSP	11287
BDE	.2372	BRA	.7043	BC3	4.8255	FSP	4371

MID-COURSE EXECUTION ACCURACY

SGT	3139.9	SGR	950.8	SG3	1320.0		
RRT	.9190	RRF	-.9848	RTF	-.9339		
SGB	3280.7	R23	-.2915	R13	-.9435		
SG1	3260.8	SG2	360.9	THA	15.75		

ORBIT DETERMINATION ACCURACY

ST	592.8	SR	149.9	SS	267.1		
CRT	-.4324	CRS	-.0318	CST	.8200		
LSA	637.0	MSA	180.4	SSA	83.2		
EL1	596.5	EL2	134.3	ALF	173.43		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 540.484 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.175	GAL	.21	AZL	90.00	HCA	167.53	SMA	190.47	ECC	.22468	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	21.156	GAP	3.24	AZP	90.00	TAL	1.13	TAP	168.66	RCA	147.67	APO	233.26
RC	219.295	GL	.01	GP	9.23	ZAL	81.59	ZAP	142.47	ETS	166.28	ZAE	169.26	ETE	73.90	ZAC	99.48	ETC	255.64

V1	30.170	V2	23.709	CLP	143.45														

PLANETOCENTRIC CONIC

C3	9.237	VHL	3.039	DLA	13.75	RAL	145.68	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	4.250	DPA	4.38	RAP	195.96
ECC	1.1520																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 27	2488.15	-25.13	59.58	359.19	103.50	15 43 55	1888.1	-23.02	51.54
90.00	6 39 55	4248.66	1.61	174.69	355.68	61.72	7 50 43	3648.7	-2.18	168.07
100.00	16 31 2	2202.45	-26.09	38.29	358.92	105.12	17 7 44	1602.5	-23.76	30.27
100.00	7 54 1	4009.59	2.48	156.63	355.20	60.20	9 0 50	3409.6	-1.50	150.11
110.00	17 55 32	1938.05	-28.62	17.33	358.03	109.54	18 27 50	1338.0	-25.69	9.38
110.00	8 46 0	3846.76	4.73	142.88	353.80	56.11	9 50 7	3246.8	.25	136.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2449	TRA	-.6741	TC3	4.5478	BAU	.6014	SGT	3092.9	SGR	1074.7	SG3	1375.5	ST	611.6	SR	119.5	SS	315.4
RDE	-.0566	RRA	-.0742	RC3	1.7432	FAU	.27817	RRT	.9231	RRF	-.9897	RTF	-.9325	CRT	-.4062	CRS	-.2759	CST	.8979
FDE	-.3064	FRA	.7245	FC	-26.0721	BSP	11102	SGB	3274.3	R23	-.2984	R13	-.9449	LSA	678.2	MSA	133.8	SSA	99.6
BDE	.2513	BRA	.6782	BC3	4.8704	FSP	4538	SG1	3250.6	SG2	393.2	THA	18.06	EL1	613.5	EL2	108.8	ALF	175.32

LAUNCH DATE NOV 24 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 544.244 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.157	GAL	.25	AZL	90.16	HCA	168.54	SMA	190.14	ECC	.22335	INC	.1639
RP	231.57	LAP	-.03	LOP	230.29	VP	21.171	GAP	2.87	AZP	89.84	TAL	1.38	TAP	169.92	RCA	147.67	APO	232.60
RC	221.297	GL	-1.78	GP	10.23	ZAL	81.06	ZAP	141.04	ETS	165.59	ZAE	168.51	ETE	81.79	ZAC	100.41	ETC	255.60

V1	30.170	V2	23.748	CLP	142.20														

PLANETOCENTRIC CONIC

C3	9.158	VHL	3.026	DLA	12.23	RAL	144.56	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	4.172	DPA	5.40	RAP	196.16
ECC	1.1507																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 7	2434.29	-24.22	55.90	357.46	105.13	15 51 42	1834.3	-21.91	47.99
90.00	6 22 18	4299.19	3.24	177.52	354.30	61.85	7 33 57	3699.2	-.55	170.89
100.00	16 38 43	2151.78	-25.15	34.83	357.17	106.72	17 14 35	1551.8	-22.62	26.94
100.00	7 37 23	4056.93	4.08	159.24	353.84	60.36	8 45 0	3456.9	.10	152.71
110.00	18 1 5	1894.05	-27.58	14.33	356.24	111.04	18 32 39	1294.1	-24.47	6.54
110.00	8 31 31	3887.43	6.27	145.02	352.48	56.33	9 36 18	3287.4	1.80	138.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2765	TRA	-.6456	TC3	4.4985	BAU	.6030	SGT	3041.6	SGR	1222.2	SG3	1430.2	ST	649.3	SR	80.9	SS	424.1
RDE	-.0317	RRA	-.0692	RC3	2.0047	FAU	.28804	RRT	.9253	RRF	-.9932	RTF	-.9309	CRT	-.2541	CRS	-.2966	CST	.9169
FDE	-.5321	FRA	.6080	FC	-27.2291	BSP	11223	SGB	3278.0	R23	-.3000	R13	-.9473	LSA	762.3	MSA	144.7	SSA	76.9
BDE	.2784	BRA	.6493	BC3	4.9250	FSP	4766	SG1	3249.2	SG2	433.8	THA	20.78	EL1	649.6	EL2	78.2	ALF	178.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 548.020 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.139	GAL	.29	AZL	90.36	HCA	169.55	SMA	189.82	ECC	.22208	INC	.3628
RP	231.20	LAP	-.06	LOP	231.30	VP	21.188	GAP	2.50	AZP	89.65	TAL	1.62	TAP	171.17	RCA	147.67	APO	231.98
RC	223.281	GL	-3.94	GP	11.44	ZAL	80.57	ZAP	139.53	ETS	164.77	ZAE	167.38	ETE	88.85	ZAC	101.52	ETC	255.55

V1	30.170	V2	23.788	CLP	140.91														

PLANETOCENTRIC CONIC

C3	9.108	VHL	3.018	DLA	10.35	RAL	143.36	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	4.100	DPA	6.61	RAP	196.41
ECC	1.1499																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 54	2370.65	-23.02	51.62	355.61	106.95	16 1 24	1770.7	-20.49	43.87
90.00	6 1 57	4360.72	5.20	180.97	352.91	62.13	7 14 38	3760.7	1.43	174.32
100.00	16 48 23	2091.73	-23.91	30.79	355.30	108.49	17 23 15	1491.7	-21.16	23.08
100.00	7 18 10	4114.87	6.02	162.44	352.46	60.67	8 26 44	3514.9	2.07	155.89
110.00	18 8 18	1841.65	-26.25	10.83	354.33	112.72	18 38 59	1241.7	-22.94	3.24
110.00	8 14 44	3937.71	8.16	147.69	351.15	56.69	9 20 22	3337.7	3.72	141.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3182	TRA	-.6049	TC3	4.4490	BAU	.6106	SGT	2989.8	SGR	1400.7	SG3	1483.6	ST	702.8	SR	54.6	SS	588.8
RDE	.0024	RRA	-.0600	RC3	2.3126	FAU	.29768	RRT	.9280	RRF	-.9956	RTF	-.9313	CRT	.4756	CRS	.4128	CST	.9195
FDE	-.8216	FRA	.4476	FC	-28.2952	BSP	10947	SGB	3301.6	R23	-.2912	R13	-.9523	LSA	899.2	MSA	181.1	SSA	47.8
BDE	.3182	BRA	.6078	BC3	5.0142	FSP	4917	SG1	3266.9	SG2	477.5	THA	24.04	EL1	703.3	EL2	48.0	ALF	2.13

LAUNCH DATE NOV 24 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 551.805 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.123	GAL	.33	AZL	90.60	HCA	170.56	SMA	189.53	ECC	.22088	INC	.5970
RP	230.82	LAP	-.10	LOP	232.32	VP	21.207	GAP	2.14	AZP	89.41	TAL	1.84	TAP	172.41	RCA	147.66	APO	231.39
RC	225.247	GL	-6.56	GP	12.89	ZAL	80.14	ZAP	137.90	ETS	163.81	ZAE	165.84	ETE	94.79	ZAC	102.87	ETC	255.48

V1	30.170	V2	23.827	CLP	139.57														

PLANETOCENTRIC CONIC

C3	9.102	VHL	3.017	DLA	8.02	RAL	142.06	RAD	6567.3	VEL	11.423	PTH	1.98	VHP	4.037	DPA	8.06	RAP	196.73
ECC	1.1498																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 19	2294.66	-21.43	46.62	353.66	108.97	16 13 33	1694.7	-18.64	39.05
90.00	5 38 9	4436.44	7.59	185.25	351.54	62.64	6 52 5	3836.4	3.87	178.55
100.00	17 0 31	2019.83	-22.28	26.08	353.33	110.46	17 34 11	1419.8	-19.29	18.55
100.00	6 55 37	4186.50	8.39	166.44	351.11	61.20	8 5 24	3586.5	4.48	159.83
110.00	18 17 36	1778.63	-24.53	6.75	352.31	114.59	18 47 14	1178.6	-21.01	359.37
110.00	7 55 2	4000.47	10.49	151.06	349.84	57.28	9 1 42	3400.5	6.10	144.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3615	TRA	-.5794	TC3	4.3094	BAU	.6169	SGT	2909.8	SGR	1616.8	SG3	1531.8	ST	767.1	SR	112.3	SS	820.1
RDE	.0513	RRA	-.0479	RC3	2.6703	FAU	.30620	RRT	.9264	RRF	-.9973	RTF	-.9274	CRT	.9277	CRS	.9574	CST	.9218
FDE	-1.2035	FRA	.2725	FC	-29.1252	BSP	11142	SGB	3328.8	R23	-.2845	R13	-.9559	LSA	1106.2	MSA	221.6	SSA	29.5
BDE	.3651	BRA	.5813	BC3	5.0697	FSP	5093	SG1	3284.9	SG2	539.1	THA	28.06	EL1	774.2	EL2	41.5	ALF	7.75

LAUNCH DATE NOV 24 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 555.602 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.107 GAL .37 AZL 90.89 HCA 171.58 SMA 189.25 ECC .21975 INC .8925 V1 30.170
RP 230.43 LAP -.13 LOP 233.33 VP 21.227 GAP 1.79 AZP 89.12 TAL 2.05 TAP 173.63 RCA 147.66 APO 230.83 V2 23.867
RC 227.193 GL -9.81 GP 14.67 ZAL 79.77 ZAP 136.13 ETS 162.67 ZAE 163.85 ETE 99.55 ZAC 104.52 ETC 255.38 CLP 138.18

PLANETOCENTRIC CONIC

C3 9.165 VHL 3.027 DLA 5.08 RAL 140.60 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 3.987 DPA 9.83 RAP 197.15 ECC 1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 4	2202.84	-19.28	40.74	351.60	111.15	16 28 47	1602.8	-16.24	33.39
90.00	5 9 46	4530.94	10.51	190.66	350.23	63.55	6 25 17	3930.9	6.87	183.87
100.00	17 15 49	1932.76	-20.10	20.53	351.25	112.60	17 48 1	1332.8	-16.86	13.23
100.00	6 28 43	4276.26	11.29	171.52	349.82	62.14	7 39 59	3676.3	7.48	164.81
110.00	18 29 32	1702.01	-22.28	1.94	350.18	116.63	18 57 54	1102.0	-18.52	354.82
110.00	7 31 29	4079.76	13.37	155.39	348.60	58.24	8 39 28	3479.8	9.07	148.93

DIFFERENTIAL CORRECTIONS
TDE .4097 TRA -.5540 TC3 4.1288 BAU .6314
RDE .1209 RRA -.0301 RC3 3.0842 FAU .31310
FDE-1.6731 FRA .0679 FC-29.5758 BSP 11353
BDE .4272 BRA .5548 BC3 5.1535 FSP 5232

MID-COURSE EXECUTION ACCURACY
SGT 2821.1 SGR 1882.2 SG3 1571.2
RRT .9239 RRF -.9983 RTF -.9231
SGB 3391.4 R23 -.2694 R13 -.9613
SG1 3336.2 SG2 609.0 THA 32.88

ORBIT DETERMINATION ACCURACY
ST 840.6 SR 236.2 SS 1106.3
CRT .9420 CRS .9956 CST .9289
LSA 1386.4 MSA 253.0 SSA 18.9
EL1 869.8 EL2 76.6 ALF 14.95

LAUNCH DATE NOV 24 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 559.412 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.092 GAL .40 AZL 91.27 HCA 172.60 SMA 188.98 ECC .21868 INC 1.2702 V1 30.170
RP 230.05 LAP -.16 LOP 234.36 VP 21.249 GAP 1.44 AZP 88.74 TAL 2.25 TAP 174.85 RCA 147.66 APO 230.31 V2 23.907
RC 229.120 GL -13.89 GP 16.91 ZAL 79.50 ZAP 134.16 ETS 161.30 ZAE 161.33 ETE 103.14 ZAC 106.61 ETC 255.23 CLP 136.73

PLANETOCENTRIC CONIC

C3 9.348 VHL 3.057 DLA 1.33 RAL 138.93 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.953 DPA 12.04 RAP 197.73 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 24	2089.97	-16.36	33.74	349.48	113.44	16 48 14	1490.0	-13.05	26.63
90.00	4 35 6	4651.47	14.06	197.73	349.11	65.17	5 52 37	4051.5	10.60	190.76
100.00	17 35 21	1825.60	-17.16	13.93	349.10	114.86	18 5 47	1225.6	-13.67	6.88
100.00	5 55 49	4391.08	14.85	178.19	348.72	63.76	7 9 0	3791.1	11.21	171.30
110.00	18 45 1	1607.53	-19.28	356.25	347.97	118.79	19 11 49	1007.5	-15.29	349.40
110.00	7 2 38	4181.90	16.95	161.15	347.55	59.86	8 12 20	3581.9	12.82	154.47

DIFFERENTIAL CORRECTIONS
TDE .4732 TRA -.5256 TC3 3.8742 BAU .6567
RDE .2276 RRA -.0008 RC3 3.5503 FAU .31720
FDE-2.2849 FRA -.1911 FC-29.3783 BSP 11757
BDE .5251 BRA .5256 BC3 5.2549 FSP 5328

MID-COURSE EXECUTION ACCURACY
SGT 2714.6 SGR 2212.4 SG3 1595.9
RRT .9195 RRF -.9990 RTF -.9174
SGB 3502.0 R23 -.2452 R13 -.9684
SG1 3433.9 SG2 687.4 THA 38.69

ORBIT DETERMINATION ACCURACY
ST 937.5 SR 431.4 SS 1474.4
CRT .9469 CRS .9993 CST .9399
LSA 1778.5 MSA 275.3 SSA 12.2
EL1 1024.1 EL2 127.0 ALF 23.93

LAUNCH DATE NOV 24 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 563.234 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.078 GAL .43 AZL 91.77 HCA 173.63 SMA 188.74 ECC .21767 INC 1.7705 V1 30.170
RP 229.67 LAP -.20 LOP 235.38 VP 21.273 GAP 1.09 AZP 88.24 TAL 2.43 TAP 176.06 RCA 147.65 APO 229.82 V2 23.948
RC 231.027 GL -19.11 GP 19.78 ZAL 79.39 ZAP 131.89 ETS 159.64 ZAE 158.14 ETE 105.65 ZAC 109.29 ETC 255.01 CLP 135.20

PLANETOCENTRIC CONIC

C3 9.748 VHL 3.122 DLA -3.51 RAL 136.94 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.946 DPA 14.84 RAP 198.54 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 25	1947.87	-12.33	25.26	347.42	115.69	17 13 53	1347.9	-8.78	18.38
90.00	3 51 10	4810.04	18.36	207.38	348.41	68.06	5 11 20	4210.0	15.22	200.11
100.00	18 1 7	1690.77	-13.13	5.94	347.01	117.10	18 29 18	1090.8	-9.40	359.15
100.00	5 14 9	4542.37	19.18	187.34	348.05	66.63	6 29 51	3942.4	15.86	180.12
110.00	19 5 35	1488.93	-15.25	349.41	345.80	120.97	19 30 24	888.9	-11.04	342.84
110.00	6 26 10	4316.98	21.38	169.12	346.94	62.67	7 38 7	3717.0	17.55	162.08

DIFFERENTIAL CORRECTIONS
TDE .5654 TRA -.4964 TC3 3.5500 BAU .7024
RDE .4008 RRA .0471 RC3 4.0559 FAU .31759
FDE-3.0949 FRA -.5102 FC-28.2056 BSP 12546
BDE .6931 BRA .4987 BC3 5.3901 FSP 5372

MID-COURSE EXECUTION ACCURACY
SGT 2612.3 SGR 2638.7 SG3 1600.9
RRT .9137 RRF -.9994 RTF -.9107
SGB 3713.1 R23 -.2114 R13 -.9768
SG1 3632.1 SG2 771.1 THA 45.32

ORBIT DETERMINATION ACCURACY
ST 1075.2 SR 739.9 SS 1947.0
CRT .9567 CRS .9998 CST .9529
LSA 2325.9 MSA 290.6 SSA 7.9
EL1 1292.9 EL2 179.0 ALF 34.10

LAUNCH DATE NOV 24 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 567.066 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.065 GAL .46 AZL 92.46 HCA 174.65 SMA 188.50 ECC .21671 INC 2.4641 V1 30.170
RP 229.28 LAP -.23 LOP 236.41 VP 21.298 GAP .76 AZP 87.55 TAL 2.60 TAP 177.26 RCA 147.65 APO 229.35 V2 23.988
RC 232.913 GL -25.92 GP 23.56 ZAL 79.52 ZAP 129.17 ETS 157.61 ZAE 154.03 ETE 107.22 ZAC 112.83 ETC 254.65 CLP 133.55

PLANETOCENTRIC CONIC

C3 10.582 VHL 3.253 DLA -9.87 RAL 134.45 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 3.985 DPA 18.49 RAP 199.71 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 31	1762.20	-6.65	14.58	345.77	117.59	17 49 54	1162.2	-2.90	7.90
90.00	2 52 11	5028.61	23.30	221.50	348.66	73.43	4 16 0	4428.6	20.81	213.71
100.00	18 37 0	1515.49	-7.50	355.98	345.31	119.02	19 2 15	915.5	-3.57	349.39
100.00	4 18 24	4750.55	24.23	200.73	348.34	71.93	5 37 34	4150.6	21.53	192.97
110.00	19 34 10	1336.45	-9.75	341.03	343.94	122.93	19 56 27	736.4	-5.34	334.71
110.00	5 37 42	4502.36	26.69	180.89	347.34	67.80	6 52 45	3902.4	23.44	173.23

DIFFERENTIAL CORRECTIONS
TDE .6851 TRA -.4632 TC3 3.1049 BAU .7770
RDE .6899 RRA .1322 RC3 4.5304 FAU .31118
FDE-4.1072 FRA -.9163 FC-25.4575 BSP 13574
BDE .9723 BRA .4816 BC3 5.4923 FSP 5225

MID-COURSE EXECUTION ACCURACY
SGT 2494.5 SGR 3197.0 SG3 1568.0
RRT .9060 RRF -.9997 RTF -.9020
SGB 4055.0 R23 -.1699 R13 -.9852
SG1 3964.6 SG2 851.5 THA 52.73

ORBIT DETERMINATION ACCURACY
ST 1233.5 SR 1220.5 SS 2502.1
CRT .9659 CRS .9999 CST .9635
LSA 3029.9 MSA 301.7 SSA 5.2
EL1 1720.4 EL2 226.5 ALF 44.69

LAUNCH DATE NOV 24 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 570.909 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.053 GAL .49 AZL 93.49 HCA 175.68 SMA 188.28 ECC .21582 INC 3.4913 V1 30.170
RP 228.89 LAP -.26 LOP 237.44 VP 21.325 GAP .43 AZP 86.52 TAL 2.76 TAP 178.45 RCA 147.65 APO 228.92 V2 24.029
RC 234.778 GL -34.89 GP 28.70 ZAL 80.07 ZAP 125.72 ETS 155.18 ZAE 148.59 ETE 108.02 ZAC 117.65 ETC 254.02 CLP 131.72

PLANETOCENTRIC CONIC

C3 12.384 VHL 3.519 DLA -18.26 RAL 131.14 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 4.111 DPA 23.42 RAP 201.48 ECC 1.2038

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 50	1498.75	1.81	359.84	345.55	118.26	18 47 49	898.7	5.57	353.18
90.00	1 23 32	5357.40	27.74	244.48	350.79	84.06	2 52 49	4757.4	26.63	235.99
100.00	19 33 17	1271.43	.71	342.52	344.94	119.88	19 54 28	671.4	4.68	335.98
100.00	2 55 46	5059.95	28.98	222.43	350.62	82.35	4 20 6	4460.0	27.62	213.89
110.00	20 17 44	1132.13	-2.04	330.23	343.22	124.13	20 36 37	532.1	2.45	324.03
110.00	4 27 48	4772.02	32.18	199.92	349.97	77.79	5 47 20	4172.0	30.17	191.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8617 TRA -.4246 TC3 2.4958 BAU .8944 SGT 2363.1 SGR 3933.8 SG3 1464.1 ST 1420.9 SR 1973.6 SS 3087.4
RDE 1.2072 RRA .2878 RC3 4.7906 FAU .29211 RRT .8951 RRF -.9998 RTF -.8900 CRT .9737 CRS 1.0000 CST .9719
FDE-5.3134 FRA-1.3980 FC-20.4197 BSP 15276 SGB 4589.0 R23 -.1268 R13 -.9918 LSA 3917.9 MSA 310.0 SSA 3.4
BDE 1.4832 BRA .5130 BC3 5.4017 FSP 4863 SG1 4495.5 SG2 921.8 THA 60.36 EL1 2417.5 EL2 264.2 ALF 54.48

LAUNCH DATE NOV 24 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 574.761 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.041 GAL .51 AZL 95.17 HCA 176.72 SMA 188.08 ECC .21497 INC 5.1656 V1 30.170
RP 228.51 LAP -.30 LOP 238.48 VP 21.353 GAP .10 AZP 84.84 TAL 2.91 TAP 179.63 RCA 147.64 APO 228.51 V2 24.070
RC 236.623 GL -46.67 GP 35.87 ZAL 81.27 ZAP 121.03 ETS 152.47 ZAE 141.17 ETE 108.40 ZAC 124.32 ETC 252.86 CLP 129.51

PLANETOCENTRIC CONIC

C3 16.733 VHL 4.091 DLA -29.22 RAL 126.38 RAD 6567.7 VEL 11.752 PTH 2.07 VHP 4.431 DPA 30.22 RAP 204.24 ECC 1.2754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.48	20 30 3	1051.58	21.24	336.60	352.33	110.55	20 47 35	451.6	23.85	328.83
97.52	22 34 22	649.73	21.25	307.12	352.34	110.53	22 45 12	49.7	23.86	299.35
100.00	22 0 19	759.01	17.17	313.39	350.53	114.85	22 12 58	159.0	20.37	306.07
100.00	23 46 48	5705.58	25.45	269.36	353.86	106.24	25 21 53	5105.6	27.43	261.12
110.00	21 43 56	810.55	10.14	313.30	346.55	122.82	21 57 27	210.6	14.39	306.79
110.00	2 23 35	5226.80	33.28	234.99	355.81	98.29	3 50 42	4626.8	34.07	225.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1393 TRA -.3655 TC3 1.7255 BAU 1.0900 SGT 2209.8 SGR 4960.4 SG3 1251.8 ST 1606.0 SR 3130.8 SS 3529.1
RDE 2.2234 RRA .6253 RC3 4.5570 FAU .25430 RRT .8798 RRF -.9998 RTF -.8730 CRT .9788 CRS 1.0000 CST .9773
FDE-6.5414 FRA-1.9810 FC-13.1573 BSP 17324 SGB 5430.3 R23 -.0881 R13 -.9960 LSA 4973.3 MSA 318.6 SSA 2.3
BDE 2.4983 BRA .7243 BC3 4.8727 FSP 3978 SG1 5342.0 SG2 975.4 THA 67.82 EL1 3506.4 EL2 293.8 ALF 63.14

LAUNCH DATE NOV 24 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 578.612 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.030 GAL .54 AZL 98.38 HCA 177.74 SMA 187.88 ECC .21418 INC 8.3807 V1 30.170
RP 228.12 LAP -.33 LOP 239.52 VP 21.382 GAP -.22 AZP 81.62 TAL 3.05 TAP 180.80 RCA 147.64 APO 228.12 V2 24.111
RC 238.446 GL -61.75 GP 45.87 ZAL 83.34 ZAP 114.30 ETS 150.28 ZAE 130.90 ETE 109.29 ZAC 133.44 ETC 250.49 CLP 126.23

PLANETOCENTRIC CONIC

C3 29.871 VHL 5.465 DLA -42.93 RAL 118.49 RAD 6568.2 VEL 12.298 PTH 2.22 VHP 5.273 DPA 39.68 RAP 208.71 ECC 1.4916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.27	17 22 52	1664.53	25.02	26.99	358.36	126.10	17 50 36	1064.5	29.55	19.98
123.73	0 42 34	5604.98	25.04	261.30	358.37	126.09	2 15 59	5005.0	29.56	254.29
56.27	17 22 52	1664.53	25.02	26.99	358.36	126.10	17 50 36	1064.5	29.55	19.98
123.73	0 42 34	5604.98	25.04	261.30	358.37	126.09	2 15 59	5005.0	29.56	254.29
56.27	17 22 52	1664.53	25.02	26.99	358.36	126.10	17 50 36	1064.5	29.55	19.98
123.73	0 42 34	5604.98	25.04	261.30	358.37	126.09	2 15 59	5005.0	29.56	254.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5722 TRA -.3135 TC3 .8263 BAU 1.3968 SGT 1932.3 SGR 6208.0 SG3 838.3 ST 1653.9 SR 4609.9 SS 3275.3
RDE 4.3601 RRA 1.3695 RC3 3.3987 FAU .18038 RRT .8344 RRF -.9997 RTF -.8226 CRT .9781 CRS 1.0000 CST .9761
FDE-6.7913 FRA-2.2941 FC3-5.2279 BSP 20860 SGB 6501.8 R23 -.0637 R13 -.9979 LSA 5882.3 MSA 336.8 SSA 1.9
BDE 4.6349 BRA 1.4050 BC3 3.4977 FSP 2644 SG1 6419.7 SG2 1029.9 THA 75.05 EL1 4886.8 EL2 324.6 ALF 70.57

LAUNCH DATE NOV 24 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 598.227 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.985 GAL .58 AZL 80.70 HCA 183.06 SMA 187.09 ECC .21089 INC 9.2950 V1 30.170
RP 226.17 LAP -.49 LOP 244.77 VP 21.546 GAP -1.70 AZP 99.28 TAL 3.34 TAP 186.40 RCA 147.63 APO 226.54 V2 24.318
RC 247.256 GL 65.12 GP -40.52 ZAL 83.56 ZAP 112.03 ETS 198.54 ZAE 135.23 ETE 233.88 ZAC 49.32 ETC 251.58 CLP 119.56

PLANETOCENTRIC CONIC

C3 34.490 VHL 5.873 DLA 71.43 RAL 197.20 RAD 6568.4 VEL 12.484 PTH 2.26 VHP 4.326 DPA -36.69 RAP 164.74 ECC 1.5676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
18.22	10 58 49	4417.92	-43.31	236.46	123.06	22.23	12 12 26	3817.9	-50.62	232.12
18.22	6 47 22	4699.41	-25.26	243.18	67.92	17.72	8 5 42	4099.4	-32.85	240.71
21.21	8 59 20	4551.84	-33.81	237.01	94.22	22.53	10 15 11	3951.8	-41.13	233.37
158.79	19 34 4	2790.04	-33.80	85.23	94.20	22.53	20 20 34	2190.0	-41.12	81.59
21.21	8 59 20	4551.84	-33.81	237.01	94.22	22.53	10 15 11	3951.8	-41.13	233.37
158.79	19 34 4	2790.04	-33.80	85.23	94.20	22.53	20 20 34	2190.0	-41.12	81.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8375 TRA -.2267 TC3 .2130 BAU 1.3203 SGT 1101.2 SGR 6076.3 SG3 1288.4 ST 843.2 SR 2594.9 SS 2429.3
RDE 2.2572 RRA 1.4894 RC3-2.8555 FAU .28496 RRT -.3302 RRF .9997 RTF -.3137 CRT .6916 CRS -.9997 CST -.7091
FDE 5.7382 FRA 3.5821 FC3-7.1528 BSP 20648 SGB 6175.3 R23 -.0279 R13 .9995 LSA 3604.4 MSA 595.6 SSA 2.3
BDE 2.4076 BRA 1.5066 BC3 2.8634 FSP 4326 SG1 6087.5 SG2 1037.5 THA 93.53 EL1 2663.2 EL2 593.5 ALF 76.66

LAUNCH DATE NOV 24 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 602.151 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.977	GAL	.59	AZL	82.64	HCA	184.12	SMA	186.96	ECC	.21036	INC	7.3635
RP	225.78	LAP	-.53	LOP	245.83	VP	21.582	GAP	-1.99	AZP	97.35	TAL	3.38	TAP	187.50	RCA	147.63	APO	226.29
RC	248.959	GL	58.20	GP	-33.43	ZAL	82.35	ZAP	113.48	ETS	195.12	ZAE	140.24	ETE	227.65	ZAC	56.14	ETC	253.22

PLANETOCENTRIC CONIC

C3	24.732	VHL	4.973	DLA	67.28	RAL	181.35	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	3.801	DPA	-30.56	RAP	169.04

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.02	8 6 29	4455.21	-37.76	228.88	72.43	29.24	9 20 44	3855.2	-44.62	223.82
153.98	18 20 25	2720.46	-37.76	82.21	72.42	29.24	19 5 46	2120.5	-44.62	77.15
26.02	8 6 29	4455.21	-37.76	228.88	72.43	29.24	9 20 44	3855.2	-44.62	223.82
153.98	18 20 25	2720.46	-37.76	82.21	72.42	29.24	19 5 46	2120.5	-44.62	77.15
26.02	8 6 29	4455.21	-37.76	228.88	72.43	29.24	9 20 44	3855.2	-44.62	223.82
153.98	18 20 25	2720.46	-37.76	82.21	72.42	29.24	19 5 46	2120.5	-44.62	77.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5955	TRA	-.2775	TC3	.2487	BAU	1.0752	SGT	1103.3	SGR	5217.5	SG3	1717.5	ST	729.7	SR	2837.5	SS	3565.1
RDE	2.3247	RRA	1.0413	RC3	-3.2423	FAU	.35980	RRT	-.2661	RRF	.9998	RTF	-.2540	CRT	.7754	CRS	-.9999	CST	-.7822
FDE	8.9264	FRA	3.8583	FC	-12.5946	BSP	17772	SGB	5332.9	R23	-.0244	R13	.9996	LSA	4592.1	MSA	454.1	SSA	2.7
BDE	2.3998	BRA	1.0776	BC3	3.2518	FSP	5795	SG1	5226.1	SG2	1061.8	THA	93.36	EL1	2894.7	EL2	451.7	ALF	78.44

LAUNCH DATE NOV 24 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 606.090 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.971	GAL	.59	AZL	83.78	HCA	185.18	SMA	186.84	ECC	.20986	INC	6.2170
RP	225.38	LAP	-.56	LOP	246.90	VP	21.619	GAP	-2.26	AZP	96.19	TAL	3.41	TAP	188.59	RCA	147.63	APO	226.06
RC	250.643	GL	53.00	GP	-28.30	ZAL	81.45	ZAP	113.59	ETS	192.14	ZAE	142.91	ETE	221.08	ZAC	61.00	ETC	254.10

PLANETOCENTRIC CONIC

C3	19.986	VHL	4.471	DLA	63.46	RAL	172.86	RAD	6567.8	VEL	11.890	PTH	2.11	VHP	3.518	DPA	-25.88	RAP	171.44

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.50	7 42 54	4387.80	-39.34	221.35	58.71	35.29	8 56 2	3787.8	-45.69	215.16
149.50	17 36 16	2684.66	-39.32	79.70	58.69	35.28	18 21 1	2084.7	-45.68	73.51
30.50	7 42 54	4387.80	-39.34	221.35	58.71	35.29	8 56 2	3787.8	-45.69	215.16
149.50	17 36 16	2684.66	-39.32	79.70	58.69	35.28	18 21 1	2084.7	-45.68	73.51
30.50	7 42 54	4387.80	-39.34	221.35	58.71	35.29	8 56 2	3787.8	-45.69	215.16
149.50	17 36 16	2684.66	-39.32	79.70	58.69	35.28	18 21 1	2084.7	-45.68	73.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5259	TRA	-.2870	TC3	.1975	BAU	.9099	SGT	1078.4	SGR	4547.0	SG3	2032.9	ST	717.8	SR	2621.0	SS	4105.0
RDE	1.9753	RRA	.7816	RC3	-3.3996	FAU	.41433	RRT	-.1379	RRF	.9998	RTF	-.1275	CRT	.8184	CRS	-1.0000	CST	-.8230
FDE	10.1992	FRA	3.9013	FC	-17.9477	BSP	15535	SGB	4673.1	R23	-.0185	R13	.9996	LSA	4906.2	MSA	406.5	SSA	3.1
BDE	2.0441	BRA	.8326	BC3	3.4053	FSP	6904	SG1	4549.5	SG2	1067.5	THA	91.98	EL1	2687.6	EL2	402.3	ALF	77.07

LAUNCH DATE NOV 24 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 610.041 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.964	GAL	.59	AZL	84.54	HCA	186.24	SMA	186.74	ECC	.20941	INC	5.4576
RP	224.99	LAP	-.59	LOP	247.97	VP	21.657	GAP	-2.54	AZP	95.43	TAL	3.42	TAP	189.66	RCA	147.63	APO	225.84
RC	252.307	GL	48.98	GP	-24.51	ZAL	80.80	ZAP	112.94	ETS	189.72	ZAE	144.01	ETE	214.91	ZAC	64.55	ETC	254.64

PLANETOCENTRIC CONIC

C3	17.269	VHL	4.156	DLA	60.24	RAL	167.73	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	3.342	DPA	-22.25	RAP	172.81

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.32	7 31 45	4337.34	-39.76	214.99	49.35	40.21	8 44 2	3737.3	-45.64	208.03
145.68	17 6 32	2666.54	-39.75	77.87	49.33	40.21	17 50 58	2066.5	-45.63	70.91
34.32	7 31 45	4337.34	-39.76	214.99	49.35	40.21	8 44 2	3737.3	-45.64	208.03
145.68	17 6 32	2666.54	-39.75	77.87	49.33	40.21	17 50 58	2066.5	-45.63	70.91
34.32	7 31 45	4337.34	-39.76	214.99	49.35	40.21	8 44 2	3737.3	-45.64	208.03
145.68	17 6 32	2666.54	-39.75	77.87	49.33	40.21	17 50 58	2066.5	-45.63	70.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5254	TRA	-.2828	TC3	.0587	BAU	.7895	SGT	1069.7	SGR	4016.6	SG3	2266.7	ST	761.8	SR	2325.0	SS	4331.6
RDE	1.6436	RRA	.6154	RC3	-3.4192	FAU	.45536	RRT	.0373	RRF	.9997	RTF	.0465	CRT	.8586	CRS	-1.0000	CST	-.8623
FDE	10.6220	FRA	3.8401	FC	-22.8288	BSP	13638	SGB	4156.6	R23	-.0064	R13	.9997	LSA	4960.0	MSA	383.7	SSA	3.7
BDE	1.7255	BRA	.6773	BC3	3.4197	FSP	7683	SG1	4016.8	SG2	1068.9	THA	89.39	EL1	2417.6	EL2	375.6	ALF	73.89

LAUNCH DATE NOV 24 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 614.002 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.959	GAL	.59	AZL	85.08	HCA	187.31	SMA	186.64	ECC	.20898	INC	4.9184
RP	224.60	LAP	-.63	LOP	249.04	VP	21.695	GAP	-2.80	AZP	94.88	TAL	3.41	TAP	190.73	RCA	147.63	APO	225.64
RC	253.951	GL	45.79	GP	-21.61	ZAL	80.31	ZAP	111.83	ETS	187.78	ZAE	144.09	ETE	209.47	ZAC	67.21	ETC	255.01

PLANETOCENTRIC CONIC

C3	15.539	VHL	3.942	DLA	57.57	RAL	164.36	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	3.221	DPA	-19.37	RAP	173.58

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.53	7 26 35	4297.43	-39.63	209.72	42.61	44.14	8 38 12	3697.4	-45.12	202.25
142.47	16 44 45	2658.22	-39.62	76.63	42.60	44.13	17 29 4	2058.2	-45.11	69.16
37.53	7 26 35	4297.43	-39.63	209.72	42.61	44.14	8 38 12	3697.4	-45.12	202.25
142.47	16 44 45	2658.22	-39.62	76.63	42.60	44.13	17 29 4	2058.2	-45.11	69.16
37.53	7 26 35	4297.43	-39.63	209.72	42.61	44.14	8 38 12	3697.4	-45.12	202.25
142.47	16 44 45	2658.22	-39.62	76.63	42.60	44.13	17 29 4	2058.2	-45.11	69.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5562	TRA	-.2721	TC3	-.1437	BAU	.6951	SGT	1100.1	SGR	3604.3	SG3	2452.6	ST	838.2	SR	2069.9	SS	4443.3
RDE	1.3936	RRA	.5142	RC3	-3.3427	FAU	.48455	RRT	.2291	RRF	.9996	RTF	.2370	CRT	.8908	CRS	-1.0000	CST	-.8938
FDE	10.7657	FRA	3.8336	FC	-26.9970	BSP	12402	SGB	3768.4	R23	.0145	R13	.9995	LSA	4958.9	MSA	372.6	SSA	4.3
BDE	1.5005	BRA	.5818	BC3	3.3458	FSP	8445	SG1	3613.9	SG2	1068.0	THA	85.62	EL1	2204.3	EL2	357.7	ALF	69.60

LAUNCH DATE NOV 24 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 617.975 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.953 GAL .58 AZL 85.49 HCA 188.39 SMA 186.55 ECC .20859 INC 4.5145 V1 30.170
RP 224.21 LAP -.66 LOP 250.12 VP 21.735 GAP -3.06 AZP 94.47 TAL 3.39 TAP 191.78 RCA 147.63 APO 225.46 V2 24.527
RC 255.576 GL 43.21 GP -19.33 ZAL 79.96 ZAP 110.45 ETS 186.20 ZAE 143.47 ETE 204.83 ZAC 69.26 ETC 255.27 CLP 111.73

PLANETOCENTRIC CONIC

C3 14.352 VHL 3.788 DLA 55.33 RAL 161.99 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.131 DPA -17.00 RAP 173.95 ECC 1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.25	7 24 34	4264.59	-39.26	205.34	37.59	47.27	8 35 39	3664.6	-44.41	197.53
139.75	16 27 56	2655.56	-39.25	75.84	37.58	47.26	17 12 11	2055.6	-44.40	68.03
40.25	7 24 34	4264.59	-39.26	205.34	37.59	47.27	8 35 39	3664.6	-44.41	197.53
139.75	16 27 56	2655.56	-39.25	75.84	37.58	47.26	17 12 11	2055.6	-44.40	68.03
40.25	7 24 34	4264.59	-39.26	205.34	37.59	47.27	8 35 39	3664.6	-44.41	197.53
139.75	16 27 56	2655.56	-39.25	75.84	37.58	47.26	17 12 11	2055.6	-44.40	68.03

DIFFERENTIAL CORRECTIONS
TDE .5993 TRA -.2590 TC3 -.4012 BAU .6277
RDE 1.1964 RRA .4369 RC3-3.2466 FAU .51023
FDE10.6999 FRA 3.7675 FC-30.7773 BSP 11292
BDE 1.3381 BRA .5079 BC3 3.2713 FSP 8964

MID-COURSE EXECUTION ACCURACY
SGT 1178.2 SGR 3267.2 SG3 2600.6
RRT .4125 RRF .9994 RTF .4190
SGB 3473.1 R23 .0458 R13 .9983
SG1 3307.3 SG2 1060.2 THA 80.56

ORBIT DETERMINATION ACCURACY
ST 929.6 SR 1844.1 SS 4456.8
CRT .9150 CRS-1.0000 CST -.9176
LSA 4898.5 MSA 364.9 SSA 5.0
EL1 2037.1 EL2 339.6 ALF 64.48

LAUNCH DATE NOV 24 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 621.957 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.949 GAL .58 AZL 85.80 HCA 189.47 SMA 186.46 ECC .20824 INC 4.2011 V1 30.170
RP 223.82 LAP -.69 LOP 251.20 VP 21.775 GAP -3.32 AZP 94.14 TAL 3.35 TAP 192.82 RCA 147.63 APO 225.29 V2 24.569
RC 257.180 GL 41.07 GP -17.50 ZAL 79.71 ZAP 108.88 ETS 184.91 ZAE 142.39 ETE 200.92 ZAC 70.86 ETC 255.47 CLP 109.84

PLANETOCENTRIC CONIC

C3 13.493 VHL 3.673 DLA 53.45 RAL 160.28 RAD 6567.5 VEL 11.614 PTH 2.03 VHP 3.062 DPA -15.02 RAP 174.05 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.57	7 24 22	4236.78	-38.77	201.66	33.74	49.81	8 34 59	3636.8	-43.64	193.63
137.43	16 14 27	2656.25	-38.76	75.37	33.73	49.80	16 58 43	2056.2	-43.63	67.34
42.57	7 24 22	4236.78	-38.77	201.66	33.74	49.81	8 34 59	3636.8	-43.64	193.63
137.43	16 14 27	2656.25	-38.76	75.37	33.73	49.80	16 58 43	2056.2	-43.63	67.34
42.57	7 24 22	4236.78	-38.77	201.66	33.74	49.81	8 34 59	3636.8	-43.64	193.63
137.43	16 14 27	2656.25	-38.76	75.37	33.73	49.80	16 58 43	2056.2	-43.63	67.34

DIFFERENTIAL CORRECTIONS
TDE .6509 TRA -.2422 TC3 -.6993 BAU .5783
RDE 1.0458 RRA .3817 RC3-3.1285 FAU .53105
FDE10.5787 FRA 3.7231 FC-34.0741 BSP 10535
BDE 1.2318 BRA .4521 BC3 3.2057 FSP 9447

MID-COURSE EXECUTION ACCURACY
SGT 1302.8 SGR 2990.5 SG3 2724.0
RRT .5654 RRF .9991 RTF .5704
SGB 3261.9 R23 .0870 R13 .9953
SG1 3091.9 SG2 1039.3 THA 74.35

ORBIT DETERMINATION ACCURACY
ST 1033.1 SR 1660.0 SS 4438.4
CRT .9331 CRS-1.0000 CST -.9352
LSA 4836.6 MSA 359.1 SSA 5.8
EL1 1928.8 EL2 319.8 ALF 58.91

LAUNCH DATE NOV 24 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 625.950 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.944 GAL .57 AZL 86.05 HCA 190.55 SMA 186.39 ECC .20791 INC 3.9500 V1 30.170
RP 223.44 LAP -.72 LOP 252.28 VP 21.815 GAP -3.57 AZP 93.88 TAL 3.30 TAP 193.85 RCA 147.64 APO 225.14 V2 24.611
RC 258.763 GL 39.29 GP -15.99 ZAL 79.54 ZAP 107.19 ETS 183.83 ZAE 140.99 ETE 197.66 ZAC 72.15 ETC 255.63 CLP 107.91

PLANETOCENTRIC CONIC

C3 12.843 VHL 3.584 DLA 51.84 RAL 159.00 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.008 DPA -13.31 RAP 173.97 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.58	7 25 18	4212.63	-38.25	198.51	30.73	51.90	8 35 31	3612.6	-42.89	190.33
135.42	16 3 19	2659.05	-38.24	75.13	30.71	51.88	16 47 38	2059.0	-42.88	66.95
44.58	7 25 18	4212.63	-38.25	198.51	30.73	51.90	8 35 31	3612.6	-42.89	190.33
135.42	16 3 19	2659.05	-38.24	75.13	30.71	51.88	16 47 38	2059.0	-42.88	66.95
44.58	7 25 18	4212.63	-38.25	198.51	30.73	51.90	8 35 31	3612.6	-42.89	190.33
135.42	16 3 19	2659.05	-38.24	75.13	30.71	51.88	16 47 38	2059.0	-42.88	66.95

DIFFERENTIAL CORRECTIONS
TDE .7056 TRA -.2244 TC3-1.0390 BAU .5472
RDE .9229 RRA .3357 RC3-3.0132 FAU .55037
FDE10.3693 FRA 3.6353 FC-37.1014 BSP 9941
BDE 1.1617 BRA .4038 BC3 3.1873 FSP 9766

MID-COURSE EXECUTION ACCURACY
SGT 1471.2 SGR 2756.1 SG3 2826.8
RRT .6828 RRF .9988 RTF .6865
SGB 3124.1 R23 .1343 R13 .9897
SG1 2959.4 SG2 1001.0 THA 67.22

ORBIT DETERMINATION ACCURACY
ST 1141.7 SR 1499.8 SS 4374.8
CRT .9465 CRS-1.0000 CST -.9484
LSA 4750.4 MSA 353.3 SSA 6.6
EL1 1861.4 EL2 296.9 ALF 53.13

LAUNCH DATE NOV 24 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 629.952 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.940 GAL .55 AZL 86.26 HCA 191.64 SMA 186.32 ECC .20762 INC 3.7451 V1 30.170
RP 223.05 LAP -.75 LOP 253.37 VP 21.857 GAP -3.81 AZP 93.67 TAL 3.23 TAP 194.87 RCA 147.64 APO 225.00 V2 24.653
RC 260.326 GL 37.78 GP -14.72 ZAL 79.45 ZAP 105.42 ETS 182.93 ZAE 139.36 ETE 194.94 ZAC 73.19 ETC 255.78 CLP 105.95

PLANETOCENTRIC CONIC

C3 12.334 VHL 3.512 DLA 50.44 RAL 158.04 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 2.963 DPA -11.81 RAP 173.75 ECC 1.2030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.34	7 26 58	4191.30	-37.73	195.78	28.33	53.64	8 36 49	3591.3	-42.17	187.50
133.66	15 54 0	2663.11	-37.72	75.05	28.31	53.62	16 38 23	2063.1	-42.16	66.77
46.34	7 26 58	4191.30	-37.73	195.78	28.33	53.64	8 36 49	3591.3	-42.17	187.50
133.66	15 54 0	2663.11	-37.72	75.05	28.31	53.62	16 38 23	2063.1	-42.16	66.77
46.34	7 26 58	4191.30	-37.73	195.78	28.33	53.64	8 36 49	3591.3	-42.17	187.50
133.66	15 54 0	2663.11	-37.72	75.05	28.31	53.62	16 38 23	2063.1	-42.16	66.77

DIFFERENTIAL CORRECTIONS
TDE .7629 TRA -.2051 TC3-1.4139 BAU .5288
RDE .8300 RRA .3051 RC3-2.8787 FAU .56399
FDE10.2120 FRA 3.6240 FC-39.5872 BSP 9707
BDE 1.1274 BRA .3677 BC3 3.2072 FSP 10110

MID-COURSE EXECUTION ACCURACY
SGT 1676.7 SGR 2556.0 SG3 2913.3
RRT .7660 RRF .9983 RTF .7689
SGB 3056.9 R23 .1800 R13 .9820
SG1 2906.2 SG2 948.0 THA 59.77

ORBIT DETERMINATION ACCURACY
ST 1254.9 SR 1375.7 SS 4330.0
CRT .9559 CRS-1.0000 CST -.9575
LSA 4700.4 MSA 350.5 SSA 7.5
EL1 1841.6 EL2 275.2 ALF 47.75

LAUNCH DATE NOV 24 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 633.963 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.937 GAL .54 AZL 86.43 HCA 192.73 SMA 186.26 ECC .20735 INC 3.5735 V1 30.170
RP 222.66 LAP -.79 LOP 254.46 VP 21.899 GAP -4.05 AZP 93.49 TAL 3.14 TAP 195.88 RCA 147.64 APO 224.88 V2 24.695
RC 261.869 GL 36.48 GP -13.65 ZAL 79.41 ZAP 103.57 ETS 182.17 ZAE 137.58 ETE 192.66 ZAC 74.05 ETC 255.90 CLP 103.98

PLANETOCENTRIC CONIC

C3 11.925 VHL 3.453 DLA 49.22 RAL 157.32 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 2.927 DPA -10.47 RAP 173.42 ECC 1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.90	7 29 6	4172.22	-37.22	193.39	26.39	55.11	8 38 39	3572.2	-41.49	185.04
132.10	15 46 4	2667.95	-37.21	75.08	26.38	55.10	16 30 32	2068.0	-41.48	66.74
47.90	7 29 6	4172.22	-37.22	193.39	26.39	55.11	8 38 39	3572.2	-41.49	185.04
132.10	15 46 4	2667.95	-37.21	75.08	26.38	55.10	16 30 32	2068.0	-41.48	66.74
47.90	7 29 6	4172.22	-37.22	193.39	26.39	55.11	8 38 39	3572.2	-41.49	185.04
132.10	15 46 4	2667.95	-37.21	75.08	26.38	55.10	16 30 32	2068.0	-41.48	66.74

DIFFERENTIAL CORRECTIONS
TDE .8200 TRA -.1873 TC3-1.8124 BAU .5271
RDE .7492 RRA .2778 RC3-2.7650 FAU .57896
FDE 9.9688 FRA 3.5743 FC-42.0307 BSP 9612
BDE 1.1107 BRA .3350 BC3 3.3061 FSP 10311

MID-COURSE EXECUTION ACCURACY
SGT 1908.9 SGR 2385.4 SG3 2991.3
RRT .8226 RRF .9978 RTF .8249
SGB 3055.2 R23 .2177 R13 .9738
SG1 2924.0 SG2 885.5 THA 52.64

ORBIT DETERMINATION ACCURACY
ST 1368.4 SR 1262.2 SS 4245.5
CRT .9628 CRS-1.0000 CST -.9641
LSA 4622.6 MSA 348.6 SSA 8.4
EL1 1844.4 EL2 253.1 ALF 42.60

LAUNCH DATE NOV 24 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 637.984 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.934 GAL .52 AZL 86.57 HCA 193.83 SMA 186.21 ECC .20712 INC 3.4286 V1 30.170
RP 222.28 LAP -.82 LOP 255.55 VP 21.941 GAP -4.29 AZP 93.33 TAL 3.05 TAP 196.87 RCA 147.64 APO 224.78 V2 24.737
RC 263.392 GL 35.35 GP -12.72 ZAL 79.43 ZAP 101.69 ETS 181.51 ZAE 135.68 ETE 190.74 ZAC 74.76 ETC 256.02 CLP 101.99

PLANETOCENTRIC CONIC

C3 11.589 VHL 3.404 DLA 48.14 RAL 156.78 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 2.898 DPA -9.26 RAP 173.02 ECC 1.1907

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.29	7 31 39	4154.82	-36.74	191.25	24.82	56.38	8 40 53	3554.8	-40.85	182.86
130.71	15 39 14	2673.36	-36.73	75.20	24.81	56.37	16 23 47	2073.4	-40.84	66.81
49.29	7 31 39	4154.82	-36.74	191.25	24.82	56.38	8 40 53	3554.8	-40.85	182.86
130.71	15 39 14	2673.36	-36.73	75.20	24.81	56.37	16 23 47	2073.4	-40.84	66.81
49.29	7 31 39	4154.82	-36.74	191.25	24.82	56.38	8 40 53	3554.8	-40.85	182.86
130.71	15 39 14	2673.36	-36.73	75.20	24.81	56.37	16 23 47	2073.4	-40.84	66.81

DIFFERENTIAL CORRECTIONS
TDE .8788 TRA -.1652 TC3-2.2344 BAU .5360
RDE .6852 RRA .2571 RC3-2.6416 FAU .58951
FDE 9.7639 FRA 3.5533 FC-44.0392 BSP 9824
BDE 1.1143 BRA .3056 BC3 3.4599 FSP 10557

MID-COURSE EXECUTION ACCURACY
SGT 2162.3 SGR 2232.7 SG3 3054.0
RRT .8641 RRF .9971 RTF .8660
SGB 3108.1 R23 .2424 R13 .9672
SG1 3000.8 SG2 809.8 THA 46.06

ORBIT DETERMINATION ACCURACY
ST 1485.0 SR 1170.7 SS 4176.1
CRT .9685 CRS-1.0000 CST -.9696
LSA 4571.2 MSA 345.4 SSA 9.3
EL1 1876.9 EL2 230.7 ALF 38.04

LAUNCH DATE NOV 24 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 642.014 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.931 GAL .50 AZL 86.70 HCA 194.92 SMA 186.16 ECC .20691 INC 3.3045 V1 30.170
RP 221.89 LAP -.85 LOP 256.65 VP 21.984 GAP -4.52 AZP 93.19 TAL 2.93 TAP 197.86 RCA 147.64 APO 224.68 V2 24.779
RC 264.895 GL 34.37 GP -11.90 ZAL 79.50 ZAP 99.77 ETS 180.94 ZAE 133.70 ETE 189.11 ZAC 75.36 ETC 256.13 CLP 99.99

PLANETOCENTRIC CONIC

C3 11.307 VHL 3.363 DLA 47.17 RAL 156.39 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.875 DPA -8.15 RAP 172.56 ECC 1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.56	7 34 28	4138.82	-36.28	189.33	23.53	57.49	8 43 27	3538.8	-40.26	180.90
129.44	15 33 17	2679.12	-36.26	75.38	23.52	57.47	16 17 57	2079.1	-40.25	66.96
50.56	7 34 28	4138.82	-36.28	189.33	23.53	57.49	8 43 27	3538.8	-40.26	180.90
129.44	15 33 17	2679.12	-36.26	75.38	23.52	57.47	16 17 57	2079.1	-40.25	66.96
50.56	7 34 28	4138.82	-36.28	189.33	23.53	57.49	8 43 27	3538.8	-40.26	180.90
129.44	15 33 17	2679.12	-36.26	75.38	23.52	57.47	16 17 57	2079.1	-40.25	66.96

DIFFERENTIAL CORRECTIONS
TDE .9384 TRA -.1420 TC3-2.6808 BAU .5555
RDE .6329 RRA .2426 RC3-2.5133 FAU .59631
FDE 9.5761 FRA 3.5790 FC-45.6593 BSP 10268
BDE 1.1319 BRA .2811 BC3 3.6747 FSP 10804

MID-COURSE EXECUTION ACCURACY
SGT 2435.9 SGR 2095.1 SG3 3102.7
RRT .8926 RRF .9962 RTF .8946
SGB 3213.0 R23 .2556 R13 .9629
SG1 3127.6 SG2 735.8 THA 40.19

ORBIT DETERMINATION ACCURACY
ST 1603.5 SR 1094.9 SS 4114.8
CRT .9727 CRS -.9999 CST -.9735
LSA 4536.8 MSA 344.8 SSA 10.2
EL1 1930.1 EL2 211.2 ALF 34.05

LAUNCH DATE NOV 24 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 646.054 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.929 GAL .48 AZL 86.80 HCA 196.03 SMA 186.12 ECC .20672 INC 3.1961 V1 30.170
RP 221.51 LAP -.88 LOP 257.75 VP 22.028 GAP -4.74 AZP 93.07 TAL 2.80 TAP 198.83 RCA 147.65 APO 224.60 V2 24.820
RC 266.379 GL 33.50 GP -11.18 ZAL 79.61 ZAP 97.84 ETS 180.44 ZAE 131.66 ETE 187.73 ZAC 75.87 ETC 256.24 CLP 97.99

PLANETOCENTRIC CONIC

C3 11.066 VHL 3.327 DLA 46.29 RAL 156.12 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 2.857 DPA -7.12 RAP 172.06 ECC 1.1821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.71	7 37 31	4123.98	-35.83	187.57	22.48	58.46	8 46 15	3524.0	-39.70	179.12
128.29	15 28 6	2685.09	-35.82	75.61	22.48	58.45	16 12 51	2085.1	-39.69	67.16
51.71	7 37 31	4123.98	-35.83	187.57	22.48	58.46	8 46 15	3524.0	-39.70	179.12
128.29	15 28 6	2685.09	-35.82	75.61	22.48	58.45	16 12 51	2085.1	-39.69	67.16
51.71	7 37 31	4123.98	-35.83	187.57	22.48	58.46	8 46 15	3524.0	-39.70	179.12
128.29	15 28 6	2685.09	-35.82	75.61	22.48	58.45	16 12 51	2085.1	-39.69	67.16

DIFFERENTIAL CORRECTIONS
TDE .9948 TRA -.1198 TC3-3.1447 BAU .5855
RDE .5854 RRA .2284 RC3-2.4031 FAU .60443
FDE 9.3266 FRA 3.5670 FC-47.2859 BSP 10787
BDE 1.1543 BRA .2579 BC3 3.9578 FSP 10887

MID-COURSE EXECUTION ACCURACY
SGT 2720.7 SGR 1974.1 SG3 3147.2
RRT .9128 RRF .9951 RTF .9151
SGB 3361.4 R23 .2585 R13 .9611
SG1 3294.9 SG2 665.7 THA 35.16

ORBIT DETERMINATION ACCURACY
ST 1716.9 SR 1023.8 SS 4026.9
CRT .9759 CRS -.9999 CST -.9764
LSA 4482.6 MSA 343.8 SSA 11.2
EL1 1989.6 EL2 192.9 ALF 30.51

LAUNCH DATE NOV 24 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 650.102 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.927 GAL .46 AZL 86.90 HCA 197.13 SMA 186.09 ECC .20657 INC 3.1015 V1 30.170
RP 221.13 LAP -.91 LOP 258.86 VP 22.072 GAP -4.96 AZP 92.96 TAL 2.66 TAP 199.79 RCA 147.65 APO 224.53 V2 24.862
RC 267.844 GL 32.73 GP -10.53 ZAL 79.76 ZAP 95.88 ETS 180.01 ZAE 129.57 ETE 186.55 ZAC 76.31 ETC 256.35 CLP 95.99

PLANETOCENTRIC CONIC

C3 10.858 VHL 3.295 DLA 45.49 RAL 155.96 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.844 DPA -6.17 RAP 171.53 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.78	7 40 47	4110.05	-35.41	185.96	21.63	59.34	8 49 17	3510.0	-39.17	177.49
127.22	15 23 32	2691.25	-35.40	75.88	21.62	59.32	16 8 23	2091.2	-39.16	67.41
52.78	7 40 47	4110.05	-35.41	185.96	21.63	59.34	8 49 17	3510.0	-39.17	177.49
127.22	15 23 32	2691.25	-35.40	75.88	21.62	59.32	16 8 23	2091.2	-39.16	67.41
52.78	7 40 47	4110.05	-35.41	185.96	21.63	59.34	8 49 17	3510.0	-39.17	177.49
127.22	15 23 32	2691.25	-35.40	75.88	21.62	59.32	16 8 23	2091.2	-39.16	67.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0528 TRA -.0940 TC3-3.6213 BAU .6216 SGT 3016.8 SGR 1862.7 SG3 3178.3 ST 1833.2 SR 966.2 SS 3958.9
RDE .5471 RRA .2193 RC3-2.2855 FAU .60827 RRT .9270 RRF .9938 RTF .9300 CRT .9784 CRS -.9999 CST -.9787
FDE 9.1182 FRA 3.6134 FC-48.4968 BSP 11527 SGB 3545.5 R23 .2541 R13 .9611 LSA 4455.2 MSA 344.6 SSA 12.1
BDE 1.1864 BRA .2386 BC3 4.2822 FSP 11023 SG1 3493.8 SG2 603.1 THA 30.80 EL1 2064.7 EL2 177.2 ALF 27.50

LAUNCH DATE NOV 24 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 654.160 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.925 GAL .43 AZL 86.98 HCA 198.24 SMA 186.06 ECC .20643 INC 3.0176 V1 30.170
RP 220.75 LAP -.94 LOP 259.97 VP 22.116 GAP -5.18 AZP 92.87 TAL 2.50 TAP 200.75 RCA 147.65 APO 224.47 V2 24.903
RC 269.292 GL 32.03 GP -9.95 ZAL 79.95 ZAP 93.93 ETS 179.63 ZAE 127.46 ETE 185.53 ZAC 76.69 ETC 256.45 CLP 93.99

PLANETOCENTRIC CONIC

C3 10.677 VHL 3.268 DLA 44.75 RAL 155.88 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 2.836 DPA -5.28 RAP 170.97 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.78	7 44 15	4096.85	-35.01	184.45	20.94	60.12	8 52 32	3496.8	-38.68	175.98
126.22	15 19 29	2697.58	-35.00	76.17	20.93	60.11	16 4 26	2097.6	-38.67	67.70
53.78	7 44 15	4096.85	-35.01	184.45	20.94	60.12	8 52 32	3496.8	-38.68	175.98
126.22	15 19 29	2697.58	-35.00	76.17	20.93	60.11	16 4 26	2097.6	-38.67	67.70
53.78	7 44 15	4096.85	-35.01	184.45	20.94	60.12	8 52 32	3496.8	-38.68	175.98
126.22	15 19 29	2697.58	-35.00	76.17	20.93	60.11	16 4 26	2097.6	-38.67	67.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1080 TRA -.0671 TC3-4.1118 BAU .6644 SGT 3320.0 SGR 1760.7 SG3 3202.3 ST 1945.1 SR 910.4 SS 3863.1
RDE .5111 RRA .2085 RC3-2.1812 FAU .61277 RRT .9385 RRF .9923 RTF .9420 CRT .9808 CRS -.9999 CST -.9808
FDE 8.8454 FRA 3.5962 FC-49.6859 BSP 12311 SGB 3758.0 R23 .2425 R13 .9627 LSA 4406.6 MSA 341.9 SSA 13.1
BDE 1.2202 BRA .2191 BC3 4.6545 FSP 11041 SG1 3718.6 SG2 542.8 THA 27.08 EL1 2141.5 EL2 161.2 ALF 24.81

LAUNCH DATE NOV 24 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 658.226 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.924 GAL .40 AZL 87.06 HCA 199.36 SMA 186.04 ECC .20633 INC 2.9428 V1 30.170
RP 220.37 LAP -.97 LOP 261.09 VP 22.161 GAP -5.39 AZP 92.78 TAL 2.33 TAP 201.69 RCA 147.66 APO 224.43 V2 24.945
RC 270.721 GL 31.41 GP -9.43 ZAL 80.18 ZAP 91.97 ETS 179.29 ZAE 125.33 ETE 184.65 ZAC 77.02 ETC 256.55 CLP 92.00

PLANETOCENTRIC CONIC

C3 10.517 VHL 3.243 DLA 44.06 RAL 155.89 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 2.831 DPA -4.45 RAP 170.40 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.72	7 47 55	4084.20	-34.62	183.03	20.38	60.84	8 56 0	3484.2	-38.20	174.55
125.28	15 15 52	2704.08	-34.61	76.50	20.38	60.83	16 0 56	2104.1	-38.19	68.02
54.72	7 47 55	4084.20	-34.62	183.03	20.38	60.84	8 56 0	3484.2	-38.20	174.55
125.28	15 15 52	2704.08	-34.61	76.50	20.38	60.83	16 0 56	2104.1	-38.19	68.02
54.72	7 47 55	4084.20	-34.62	183.03	20.38	60.84	8 56 0	3484.2	-38.20	174.55
125.28	15 15 52	2704.08	-34.61	76.50	20.38	60.83	16 0 56	2104.1	-38.19	68.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1624 TRA -.0371 TC3-4.6113 BAU .7108 SGT 3629.2 SGR 1666.3 SG3 3215.3 ST 2055.8 SR 865.2 SS 3788.4
RDE .4819 RRA .2010 RC3-2.0728 FAU .61379 RRT .9466 RRF .9904 RTF .9512 CRT .9828 CRS -.9999 CST -.9824
FDE 8.6170 FRA 3.6182 FC-50.5273 BSP 13234 SGB 3993.4 R23 .2266 R13 .9651 LSA 4383.1 MSA 339.8 SSA 14.1
BDE 1.2583 BRA .2044 BC3 5.0557 FSP 11095 SG1 3963.0 SG2 492.0 THA 23.88 EL1 2225.6 EL2 147.5 ALF 22.58

LAUNCH DATE NOV 24 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 662.301 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.923 GAL .37 AZL 87.12 HCA 200.48 SMA 186.03 ECC .20624 INC 2.8756 V1 30.170
RP 220.00 LAP -1.01 LOP 262.20 VP 22.206 GAP -5.60 AZP 92.69 TAL 2.14 TAP 202.62 RCA 147.66 APO 224.39 V2 24.986
RC 272.134 GL 30.85 GP -8.95 ZAL 80.45 ZAP 90.03 ETS 178.99 ZAE 123.19 ETE 183.89 ZAC 77.31 ETC 256.65 CLP 90.03

PLANETOCENTRIC CONIC

C3 10.374 VHL 3.221 DLA 43.41 RAL 155.97 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 2.830 DPA -3.66 RAP 169.83 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.61	7 51 46	4072.05	-34.25	181.69	19.95	61.50	8 59 38	3472.0	-37.75	173.21
124.39	15 12 39	2710.71	-34.24	76.85	19.94	61.49	15 57 50	2110.7	-37.74	68.37
55.61	7 51 46	4072.05	-34.25	181.69	19.95	61.50	8 59 38	3472.0	-37.75	173.21
124.39	15 12 39	2710.71	-34.24	76.85	19.94	61.49	15 57 50	2110.7	-37.74	68.37
55.61	7 51 46	4072.05	-34.25	181.69	19.95	61.50	8 59 38	3472.0	-37.75	173.21
124.39	15 12 39	2710.71	-34.24	76.85	19.94	61.49	15 57 50	2110.7	-37.74	68.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2135 TRA -.0082 TC3-5.1276 BAU .7618 SGT 3946.0 SGR 1578.5 SG3 3219.7 ST 2161.0 SR 822.2 SS 3696.1
RDE .4546 RRA .1950 RC3-1.9694 FAU .61373 RRT .9515 RRF .9882 RTF .9578 CRT .9842 CRS -.9998 CST -.9834
FDE 8.3433 FRA 3.6502 FC-51.2170 BSP 14166 SGB 4250.0 R23 .2101 R13 .9673 LSA 4346.4 MSA 340.9 SSA 15.1
BDE 1.2959 BRA .1952 BC3 5.4928 FSP 11068 SG1 4225.8 SG2 453.4 THA 21.09 EL1 2308.2 EL2 136.3 ALF 20.60

LAUNCH DATE NOV 24 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 666.385 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.923 GAL .33 AZL 87.19 HCA 201.60 SMA 186.02 ECC .20618 INC 2.8147 V1 30.170
RP 219.62 LAP -1.04 LOP 263.33 VP 22.251 GAP -5.80 AZP 92.62 TAL 1.94 TAP 203.54 RCA 147.66 APO 224.37 V2 25.027
RC 273.529 GL 30.34 GP -8.50 ZAL 80.75 ZAP 88.09 ETS 178.72 ZAE 121.06 ETE 183.22 ZAC 77.56 ETC 256.75 CLP 88.07

PLANETOCENTRIC CONIC

C3 10.246 VHL 3.201 DLA 42.80 RAL 156.11 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 2.833 DPA -2.92 RAP 169.26 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.46	7 55 46	4060.29	-33.89	180.41	19.62	62.12	9 3 27	3460.3	-37.31	171.93
123.54	15 9 46	2717.48	-33.88	77.21	19.62	62.10	15 55 4	2117.5	-37.30	68.74
56.46	7 55 46	4060.29	-33.89	180.41	19.62	62.12	9 3 27	3460.3	-37.31	171.93
123.54	15 9 46	2717.48	-33.88	77.21	19.62	62.10	15 55 4	2117.5	-37.30	68.74
56.46	7 55 46	4060.29	-33.89	180.41	19.62	62.12	9 3 27	3460.3	-37.31	171.93
123.54	15 9 46	2717.48	-33.88	77.21	19.62	62.10	15 55 4	2117.5	-37.30	68.74

DIFFERENTIAL CORRECTIONS
TDE 1.2628 TRA .0235 TC3-5.6491 BAU .8150
RDE .4306 RRA .1901 RC3-1.8681 FAU .61183
FDE 8.0671 FRA 3.6866 FC-51.6965 BSP 15150
BDE 1.3342 BRA .1915 BC3 5.9500 FSP 11016

MID-COURSE EXECUTION ACCURACY
SGT 4265.2 SGR 1496.4 SG3 3215.1
RRT .9548 RRF .9855 RTF .9630
SGB 4520.1 R23 .1916 R13 .9696
SG1 4500.4 SG2 421.7 THA 18.69

ORBIT DETERMINATION ACCURACY
ST 2263.1 SR 784.0 SS 3604.2
CRT .9855 CRS -.9997 CST -.9842
LSA 4313.8 MSA 341.7 SSA 16.1
EL1 2391.7 EL2 126.1 ALF 18.90

LAUNCH DATE NOV 24 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 670.477 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.922 GAL .29 AZL 87.24 HCA 202.72 SMA 186.01 ECC .20615 INC 2.7596 V1 30.170
RP 219.25 LAP -1.07 LOP 264.45 VP 22.296 GAP -6.00 AZP 92.55 TAL 1.72 TAP 204.45 RCA 147.67 APO 224.36 V2 25.067
RC 274.906 GL 29.87 GP -8.10 ZAL 81.09 ZAP 86.17 ETS 178.49 ZAE 118.93 ETE 182.64 ZAC 77.79 ETC 256.84 CLP 86.13

PLANETOCENTRIC CONIC

C3 10.131 VHL 3.183 DLA 42.21 RAL 156.31 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 2.840 DPA -2.22 RAP 168.69 ECC 1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.28	8 0 0	4048.72	-33.53	179.17	19.39	62.69	9 7 29	3448.7	-36.89	170.69
122.72	15 7 9	2724.50	-33.52	77.61	19.39	62.68	15 52 34	2124.5	-36.88	69.14
57.28	8 0 0	4048.72	-33.53	179.17	19.39	62.69	9 7 29	3448.7	-36.89	170.69
122.72	15 7 9	2724.50	-33.52	77.61	19.39	62.68	15 52 34	2124.5	-36.88	69.14
57.28	8 0 0	4048.72	-33.53	179.17	19.39	62.69	9 7 29	3448.7	-36.89	170.69
122.72	15 7 9	2724.50	-33.52	77.61	19.39	62.68	15 52 34	2124.5	-36.88	69.14

DIFFERENTIAL CORRECTIONS
TDE 1.3102 TRA .0580 TC3-6.1699 BAU .8695
RDE .4095 RRA .1858 RC3-1.7730 FAU .60942
FDE 7.7945 FRA 3.7234 FC-52.0797 BSP 16174
BDE 1.3727 BRA .1946 BC3 6.4196 FSP 10991

MID-COURSE EXECUTION ACCURACY
SGT 4583.5 SGR 1421.7 SG3 3207.1
RRT .9568 RRF .9825 RTF .9673
SGB 4798.9 R23 .1718 R13 .9719
SG1 4782.6 SG2 396.0 THA 16.65

ORBIT DETERMINATION ACCURACY
ST 2361.8 SR 750.3 SS 3514.9
CRT .9866 CRS -.9997 CST -.9849
LSA 4287.0 MSA 341.9 SSA 17.1
EL1 2475.4 EL2 116.7 ALF 17.44

LAUNCH DATE NOV 24 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 674.577 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.922 GAL .25 AZL 87.29 HCA 203.85 SMA 186.01 ECC .20613 INC 2.7092 V1 30.170
RP 218.89 LAP -1.10 LOP 265.58 VP 22.342 GAP -6.19 AZP 92.48 TAL 1.49 TAP 205.34 RCA 147.67 APO 224.36 V2 25.108
RC 276.266 GL 29.44 GP -7.72 ZAL 81.46 ZAP 84.27 ETS 178.28 ZAE 116.81 ETE 182.13 ZAC 78.00 ETC 256.94 CLP 84.22

PLANETOCENTRIC CONIC

C3 10.026 VHL 3.166 DLA 41.65 RAL 156.57 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 2.849 DPA -1.55 RAP 168.13 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.08	8 4 24	4037.36	-33.18	177.96	19.25	63.23	9 11 42	3437.4	-36.47	169.49
121.92	15 4 47	2731.72	-33.17	78.03	19.24	63.22	15 50 19	2131.7	-36.46	69.56
58.08	8 4 24	4037.36	-33.18	177.96	19.25	63.23	9 11 42	3437.4	-36.47	169.49
121.92	15 4 47	2731.72	-33.17	78.03	19.24	63.22	15 50 19	2131.7	-36.46	69.56
58.08	8 4 24	4037.36	-33.18	177.96	19.25	63.23	9 11 42	3437.4	-36.47	169.49
121.92	15 4 47	2731.72	-33.17	78.03	19.24	63.22	15 50 19	2131.7	-36.46	69.56

DIFFERENTIAL CORRECTIONS
TDE 1.3549 TRA .0950 TC3-6.6946 BAU .9252
RDE .3907 RRA .1824 RC3-1.6806 FAU .60565
FDE 7.5160 FRA 3.7664 FC-52.2970 BSP 17230
BDE 1.4101 BRA .2057 BC3 6.9023 FSP 10858

MID-COURSE EXECUTION ACCURACY
SGT 4902.8 SGR 1352.0 SG3 3192.1
RRT .9576 RRF .9789 RTF .9708
SGB 5085.8 R23 .1517 R13 .9740
SG1 5071.8 SG2 376.6 THA 14.88

ORBIT DETERMINATION ACCURACY
ST 2456.0 SR 720.0 SS 3424.1
CRT .9877 CRS -.9995 CST -.9854
LSA 4261.1 MSA 342.4 SSA 18.1
EL1 2557.0 EL2 108.2 ALF 16.18

LAUNCH DATE NOV 24 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 678.683 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.923 GAL .21 AZL 87.34 HCA 204.99 SMA 186.02 ECC .20614 INC 2.6631 V1 30.170
RP 218.52 LAP -1.12 LOP 266.71 VP 22.388 GAP -6.38 AZP 92.41 TAL 1.24 TAP 206.23 RCA 147.67 APO 224.36 V2 25.148
RC 277.609 GL 29.04 GP -7.37 ZAL 81.86 ZAP 82.40 ETS 178.09 ZAE 114.71 ETE 181.68 ZAC 78.19 ETC 257.03 CLP 82.33

PLANETOCENTRIC CONIC

C3 9.931 VHL 3.151 DLA 41.10 RAL 156.88 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 2.862 DPA -.93 RAP 167.60 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.87	8 9 2	4026.12	-32.84	176.78	19.18	63.75	9 16 8	3426.1	-36.07	168.32
121.13	15 2 38	2739.16	-32.83	78.47	19.17	63.73	15 48 17	2139.2	-36.06	70.00
58.87	8 9 2	4026.12	-32.84	176.78	19.18	63.75	9 16 8	3426.1	-36.07	168.32
121.13	15 2 38	2739.16	-32.83	78.47	19.17	63.73	15 48 17	2139.2	-36.06	70.00
58.87	8 9 2	4026.12	-32.84	176.78	19.18	63.75	9 16 8	3426.1	-36.07	168.32
121.13	15 2 38	2739.16	-32.83	78.47	19.17	63.73	15 48 17	2139.2	-36.06	70.00

DIFFERENTIAL CORRECTIONS
TDE 1.4039 TRA .1407 TC3-7.2021 BAU .9787
RDE .3768 RRA .1823 RC3-1.5699 FAU .59385
FDE 7.3147 FRA 3.8863 FC-51.7698 BSP 18471
BDE 1.4536 BRA .2303 BC3 7.3712 FSP 10916

MID-COURSE EXECUTION ACCURACY
SGT 5218.7 SGR 1281.3 SG3 3150.3
RRT .9555 RRF .9743 RTF .9735
SGB 5373.7 R23 .1339 R13 .9758
SG1 5361.1 SG2 367.9 THA 13.27

ORBIT DETERMINATION ACCURACY
ST 2558.1 SR 698.2 SS 3370.6
CRT .9887 CRS -.9994 CST -.9857
LSA 4274.7 MSA 345.5 SSA 18.7
EL1 2649.8 EL2 101.1 ALF 15.12

LAUNCH DATE NOV 24 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 682.801 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.923	GAL	.17	AZL	87.38	HCA	206.12	SMA	186.03	ECC	.20617	INC	2.6204	V1	30.170
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.434	GAP	-6.56	AZP	92.35	TAL	.98	TAP	207.11	RCA	147.67	APO	224.38	V2	25.188
RC	278.933	GL	28.67	GP	-7.04	ZAL	82.30	ZAP	80.55	ETS	177.92	ZAE	112.63	ETE	181.28	ZAC	78.36	ETC	257.12	CLP	80.48

PLANETOCENTRIC CONIC

C3	9.844	VHL	3.138	DLA	40.57	RAL	157.23	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	2.879	DPA	-.34	RAP	167.08	ECC	1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.64	8 13 52	4014.84	-32.50	175.62	19.18	64.24	9 20 46	3414.8	-35.66	167.16
120.36	15 0 37	2746.97	-32.49	78.94	19.17	64.22	15 46 24	2147.0	-35.66	70.48
59.64	8 13 52	4014.84	-32.50	175.62	19.18	64.24	9 20 46	3414.8	-35.66	167.16
120.36	15 0 37	2746.97	-32.49	78.94	19.17	64.22	15 46 24	2147.0	-35.66	70.48
59.64	8 13 52	4014.84	-32.50	175.62	19.18	64.24	9 20 46	3414.8	-35.66	167.16
120.36	15 0 37	2746.97	-32.49	78.94	19.17	64.22	15 46 24	2147.0	-35.66	70.48

DIFFERENTIAL CORRECTIONS

TDE	1.4392	TRA	.1790	TC3	-7.7426	BAU	1.0376
RDE	.3604	RRA	.1781	RC3	-1.4868	FAU	.58877
FDE	6.9941	FRA	3.8809	FC	-51.7773	BSP	19449
BDE	1.4836	BRA	.2525	BC3	7.8841	FSP	10765

MID-COURSE EXECUTION ACCURACY

SGT	5540.6	SGR	1219.3	SG3	3122.2		
RRT	.9542	RRF	.9694	RTF	.9761		
SGB	5673.2	R23	.1137	R13	.9777		
SG1	5662.0	SG2	356.9	THA	11.91		

ORBIT DETERMINATION ACCURACY

ST	2635.4	SR	671.0	SS	3260.8		
CRT	.9896	CRS	-.9992	CST	-.9860		
LSA	4232.0	MSA	343.7	SSA	19.8		
EL1	2717.9	EL2	93.5	ALF	14.16		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 686.927 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.924	GAL	.12	AZL	87.42	HCA	207.27	SMA	186.04	ECC	.20623	INC	2.5810	V1	30.170
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.480	GAP	-6.75	AZP	92.29	TAL	.71	TAP	207.97	RCA	147.68	APO	224.41	V2	25.228
RC	280.240	GL	28.32	GP	-6.73	ZAL	82.76	ZAP	78.73	ETS	177.77	ZAE	110.57	ETE	180.93	ZAC	78.52	ETC	257.21	CLP	78.65

PLANETOCENTRIC CONIC

C3	9.766	VHL	3.125	DLA	40.05	RAL	157.63	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	2.898	DPA	.22	RAP	166.58	ECC	1.1607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.40	8 18 54	4003.54	-32.16	174.46	19.24	64.71	9 25 38	3403.5	-35.27	166.01
119.60	14 58 45	2755.09	-32.14	79.44	19.24	64.70	15 44 40	2155.1	-35.26	70.99
60.40	8 18 54	4003.54	-32.16	174.46	19.24	64.71	9 25 38	3403.5	-35.27	166.01
119.60	14 58 45	2755.09	-32.14	79.44	19.24	64.70	15 44 40	2155.1	-35.26	70.99
60.40	8 18 54	4003.54	-32.16	174.46	19.24	64.71	9 25 38	3403.5	-35.27	166.01
119.60	14 58 45	2755.09	-32.14	79.44	19.24	64.70	15 44 40	2155.1	-35.26	70.99

DIFFERENTIAL CORRECTIONS

TDE	1.4721	TRA	.2224	TC3	-8.2665	BAU	1.0947
RDE	.3440	RRA	.1753	RC3	-1.4046	FAU	.58207
FDE	6.6246	FRA	3.9020	FC	-51.6014	BSP	20476
BDE	1.5118	BRA	.2832	BC3	8.3850	FSP	10489

MID-COURSE EXECUTION ACCURACY

SGT	5853.4	SGR	1159.6	SG3	3085.1		
RRT	.9519	RRF	.9635	RTF	.9779		
SGB	5967.2	R23	.0957	R13	.9790		
SG1	5957.0	SG2	349.1	THA	10.72		

ORBIT DETERMINATION ACCURACY

ST	2708.3	SR	643.6	SS	3130.0		
CRT	.9904	CRS	-.9989	CST	-.9858		
LSA	4174.5	MSA	345.6	SSA	20.9		
EL1	2782.4	EL2	86.7	ALF	13.26		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 691.060 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.925	GAL	.07	AZL	87.46	HCA	208.41	SMA	186.06	ECC	.20630	INC	2.5444	V1	30.170
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.526	GAP	-6.92	AZP	92.24	TAL	.42	TAP	208.83	RCA	147.68	APO	224.45	V2	25.268
RC	281.529	GL	28.00	GP	-6.44	ZAL	83.26	ZAP	76.94	ETS	177.64	ZAE	108.54	ETE	180.63	ZAC	78.67	ETC	257.29	CLP	76.86

PLANETOCENTRIC CONIC

C3	9.694	VHL	3.113	DLA	39.54	RAL	158.07	RAD	6567.3	VEL	11.449	PTH	1.99	VHP	2.919	DPA	.74	RAP	166.10	ECC	1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.17	8 24 12	3992.10	-31.81	173.31	19.37	65.17	9 30 44	3392.1	-34.87	164.87
118.83	14 57 0	2763.60	-31.80	79.97	19.36	65.15	15 43 3	2163.6	-34.86	71.53
61.17	8 24 12	3992.10	-31.81	173.31	19.37	65.17	9 30 44	3392.1	-34.87	164.87
118.83	14 57 0	2763.60	-31.80	79.97	19.36	65.15	15 43 3	2163.6	-34.86	71.53
61.17	8 24 12	3992.10	-31.81	173.31	19.37	65.17	9 30 44	3392.1	-34.87	164.87
118.83	14 57 0	2763.60	-31.80	79.97	19.36	65.15	15 43 3	2163.6	-34.86	71.53

DIFFERENTIAL CORRECTIONS

TDE	1.5024	TRA	.2681	TC3	-8.7921	BAU	1.1523
RDE	.3300	RRA	.1718	RC3	-1.3246	FAU	.57434
FDE	6.2807	FRA	3.8843	FC	-51.2935	BSP	21544
BDE	1.5383	BRA	.3184	BC3	8.8913	FSP	10367

MID-COURSE EXECUTION ACCURACY

SGT	6166.6	SGR	1103.2	SG3	3042.1		
RRT	.9491	RRF	.9567	RTF	.9799		
SGB	6264.5	R23	.0757	R13	.9806		
SG1	6255.1	SG2	342.5	THA	9.67		

ORBIT DETERMINATION ACCURACY

ST	2776.4	SR	620.1	SS	3008.2		
CRT	.9913	CRS	-.9985	CST	-.9860		
LSA	4126.0	MSA	342.5	SSA	21.9		
EL1	2843.7	EL2	79.5	ALF	12.49		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 695.201 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.927	GAL	.02	AZL	87.49	HCA	209.56	SMA	186.09	ECC	.20640	INC	2.5102	V1	30.170
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.572	GAP	-7.10	AZP	92.18	TAL	.11	TAP	209.67	RCA	147.68	APO	224.49	V2	25.307
RC	282.801	GL	27.70	GP	-6.17	ZAL	83.80	ZAP	75.19	ETS	177.52	ZAE	106.54	ETE	180.35	ZAC	78.81	ETC	257.37	CLP	75.10

PLANETOCENTRIC CONIC

C3	9.628	VHL	3.103	DLA	39.03	RAL	158.55	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	2.944	DPA	1.23	RAP	165.66	ECC	1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.93	8 29 44	3980.47	-31.47	172.15	19.55	65.61	9 36 5	3380.5	-34.47	163.72
118.07	14 55 19	2772.58	-31.46	80.53	19.54	65.59	15 41 31	2172.6	-34.46	72.11
61.93	8 29 44	3980.47	-31.47	172.15	19.55	65.61	9 36 5	3380.5	-34.47	163.72
118.07	14 55 19	2772.58	-31.46	80.53	19.54	65.59	15 41 31	2172.6	-34.46	72.11
61.93	8 29 44	3980.47	-31.47	172.15	19.55	65.61	9 36 5	3380.5	-34.47	163.72
118.07	14 55 19	2772.58	-31.46	80.53	19.54	65.59	15 41 31	2172.6	-34.46	72.11

DIFFERENTIAL CORRECTIONS

TDE	1.5233	TRA	.3039	TC3	-9.3088	BAU	1.2087
RDE	.3108	RRA	.1580	RC3	-1.2335	FAU	.56084
FDE	5.7265	FRA	3.5225	FC	-50.4278	BSP	22412
BDE	1.5547	BRA	.3425	BC3	9.3901	FSP	10048

MID-COURSE EXECUTION ACCURACY

SGT	6465.8	SGR	1027.8	SG3	2944.3		
RRT	.9491	RRF	.9470	RTF	.9829		
SGB	6547.0	R23	.0374	R13	.9832		
SG1	6539.1	SG2	320.0	THA	8.60		

ORBIT DETERMINATION ACCURACY

ST	2826.4	SR	585.3	SS	2774.6		
CRT	.9929	CRS	-.9981	CST	-.9876		
LSA	3991.4	MSA	312.9	SSA	23.3		
EL1	2885.6	EL2	68.0	ALF	11.63		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 699.349 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.928 GAL -.04 AZL 87.52 HCA 210.71 SMA 186.11 ECC .20651 INC 2.4784 V1 30.170
RP 216.74 LAP -1.27 LOP 272.44 VP 22.618 GAP -7.27 AZP 92.13 TAL 359.80 TAP 210.51 RCA 147.68 APO 224.55 V2 25.346
RC 284.057 GL 27.41 GP -5.91 ZAL 84.36 ZAP 73.47 ETS 177.41 ZAE 104.58 ETE 180.11 ZAC 78.95 ETC 257.45 CLP 73.38

PLANETOCENTRIC CONIC

C3 9.569 VHL 3.093 DLA 38.53 RAL 159.08 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 2.971 DPA 1.69 RAP 165.24 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.70	8 35 33	3968.55	-31.12	170.97	19.78	66.04	9 41 42	3368.5	-34.07	162.56
117.30	14 53 40	2782.07	-31.11	81.14	19.77	66.03	15 40 2	2182.1	-34.06	72.73
62.70	8 35 33	3968.55	-31.12	170.97	19.78	66.04	9 41 42	3368.5	-34.07	162.56
117.30	14 53 40	2782.07	-31.11	81.14	19.77	66.03	15 40 2	2182.1	-34.06	72.73
62.70	8 35 33	3968.55	-31.12	170.97	19.78	66.04	9 41 42	3368.5	-34.07	162.56
117.30	14 53 40	2782.07	-31.11	81.14	19.77	66.03	15 40 2	2182.1	-34.06	72.73

DIFFERENTIAL CORRECTIONS
TDE 1.5609 TRA .3735 TC3-9.7958 BAU 1.2616
RDE .3114 RRA .1721 RC3-1.1357 FAU .54284
FDE 5.7752 FRA 4.0543 FC-49.1114 BSP 23634
BDE 1.5917 BRA .4113 BC3 9.8614 FSP 9925

MID-COURSE EXECUTION ACCURACY
SGT 6772.7 SGR 996.2 SG3 2904.1
RRT .9317 RRF .9386 RTF .9820
SGB 6845.6 R23 .0581 R13 .9825
SG1 6836.2 SG2 358.4 THA 7.83

ORBIT DETERMINATION ACCURACY
ST 2908.9 SR 590.0 SS 2853.1
CRT .9928 CRS -.9975 CST -.9852
LSA 4102.1 MSA 350.6 SSA 23.4
EL1 2967.3 EL2 69.3 ALF 11.39

LAUNCH DATE NOV 24 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 703.505 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.930 GAL -.09 AZL 87.55 HCA 211.87 SMA 186.14 ECC .20665 INC 2.4485 V1 30.170
RP 216.39 LAP -1.29 LOP 273.59 VP 22.664 GAP -7.43 AZP 92.08 TAL 359.46 TAP 211.33 RCA 147.68 APO 224.61 V2 25.385
RC 285.296 GL 27.13 GP -5.67 ZAL 84.96 ZAP 71.79 ETS 177.31 ZAE 102.65 ETE 179.89 ZAC 79.08 ETC 257.52 CLP 71.70

PLANETOCENTRIC CONIC

C3 9.516 VHL 3.085 DLA 38.02 RAL 159.64 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.001 DPA 2.12 RAP 164.86 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.49	8 41 39	3956.27	-30.77	169.78	20.06	66.46	9 47 36	3356.3	-33.67	161.38
116.51	14 52 2	2792.15	-30.76	81.79	20.06	66.45	15 38 34	2192.1	-33.66	73.39
63.49	8 41 39	3956.27	-30.77	169.78	20.06	66.46	9 47 36	3356.3	-33.67	161.38
116.51	14 52 2	2792.15	-30.76	81.79	20.06	66.45	15 38 34	2192.1	-33.66	73.39
63.49	8 41 39	3956.27	-30.77	169.78	20.06	66.46	9 47 36	3356.3	-33.67	161.38
116.51	14 52 2	2792.15	-30.76	81.79	20.06	66.45	15 38 34	2192.1	-33.66	73.39

DIFFERENTIAL CORRECTIONS
TDE 1.5807 TRA .4308 TC-10.3119 BAU 1.3189
RDE .3023 RRA .1724 RC3-1.0736 FAU .53649
FDE 5.4800 FRA 4.1344 FC-48.8099 BSP 24683
BDE 1.6094 BRA .4640 BC310.3677 FSP 9807

MID-COURSE EXECUTION ACCURACY
SGT 7080.0 SGR 958.8 SG3 2872.6
RRT .9245 RRF .9293 RTF .9829
SGB 7144.6 R23 .0479 R13 .9832
SG1 7135.4 SG2 362.7 THA 7.15

ORBIT DETERMINATION ACCURACY
ST 2957.9 SR 575.0 SS 2755.5
CRT .9935 CRS -.9966 CST -.9844
LSA 4067.5 MSA 356.8 SSA 24.4
EL1 3012.6 EL2 64.4 ALF 10.93

LAUNCH DATE NOV 24 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 707.669 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.932 GAL -.15 AZL 87.58 HCA 213.03 SMA 186.18 ECC .20681 INC 2.4205 V1 30.170
RP 216.05 LAP -1.32 LOP 274.75 VP 22.709 GAP -7.60 AZP 92.03 TAL 359.11 TAP 212.14 RCA 147.67 APO 224.68 V2 25.423
RC 286.520 GL 26.87 GP -5.44 ZAL 85.59 ZAP 70.15 ETS 177.23 ZAE 100.75 ETE 179.70 ZAC 79.20 ETC 257.58 CLP 70.06

PLANETOCENTRIC CONIC

C3 9.468 VHL 3.077 DLA 37.52 RAL 160.23 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.033 DPA 2.52 RAP 164.51 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.29	8 48 3	3943.58	-30.41	168.56	20.39	66.88	9 53 47	3343.6	-33.26	160.17
115.71	14 50 23	2802.86	-30.40	82.49	20.39	66.87	15 37 6	2202.9	-33.25	74.10
64.29	8 48 3	3943.58	-30.41	168.56	20.39	66.88	9 53 47	3343.6	-33.26	160.17
115.71	14 50 23	2802.86	-30.40	82.49	20.39	66.87	15 37 6	2202.9	-33.25	74.10
64.29	8 48 3	3943.58	-30.41	168.56	20.39	66.88	9 53 47	3343.6	-33.26	160.17
115.71	14 50 23	2802.86	-30.40	82.49	20.39	66.87	15 37 6	2202.9	-33.25	74.10

DIFFERENTIAL CORRECTIONS
TDE 1.5986 TRA .4894 TC-10.7955 BAU 1.3723
RDE .2941 RRA .1710 RC3 -.9991 FAU .52391
FDE 5.1866 FRA 4.1496 FC-47.9054 BSP 25700
BDE 1.6254 BRA .5184 BC310.8417 FSP 9598

MID-COURSE EXECUTION ACCURACY
SGT 7370.1 SGR 916.0 SG3 2809.4
RRT .9148 RRF .9174 RTF .9839
SGB 7426.8 R23 .0372 R13 .9842
SG1 7417.7 SG2 367.6 THA 6.50

ORBIT DETERMINATION ACCURACY
ST 3003.2 SR 561.0 SS 2654.0
CRT .9943 CRS -.9955 CST -.9840
LSA 4031.2 MSA 356.2 SSA 25.2
EL1 3054.6 EL2 58.6 ALF 10.53

LAUNCH DATE NOV 24 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 711.840 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.934 GAL -.21 AZL 87.61 HCA 214.19 SMA 186.22 ECC .20700 INC 2.3941 V1 30.170
RP 215.71 LAP -1.34 LOP 275.92 VP 22.755 GAP -7.76 AZP 91.98 TAL 358.75 TAP 212.94 RCA 147.67 APO 224.76 V2 25.461
RC 287.729 GL 26.62 GP -5.23 ZAL 86.25 ZAP 68.55 ETS 177.15 ZAE 98.89 ETE 179.53 ZAC 79.33 ETC 257.65 CLP 68.45

PLANETOCENTRIC CONIC

C3 9.426 VHL 3.070 DLA 37.01 RAL 160.86 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.067 DPA 2.89 RAP 164.19 ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.11	8 54 48	3930.29	-30.04	167.30	20.77	67.29	10 0 18	3330.3	-32.84	158.93
114.89	14 48 40	2814.41	-30.03	83.25	20.77	67.28	15 35 34	2214.4	-32.83	74.88
65.11	8 54 48	3930.29	-30.04	167.30	20.77	67.29	10 0 18	3330.3	-32.84	158.93
114.89	14 48 40	2814.41	-30.03	83.25	20.77	67.28	15 35 34	2214.4	-32.83	74.88
65.11	8 54 48	3930.29	-30.04	167.30	20.77	67.29	10 0 18	3330.3	-32.84	158.93
114.89	14 48 40	2814.41	-30.03	83.25	20.77	67.28	15 35 34	2214.4	-32.83	74.88

DIFFERENTIAL CORRECTIONS
TDE 1.6117 TRA .5547 TC-11.2756 BAU 1.4257
RDE .2859 RRA .1712 RC3 -.9318 FAU .51273
FDE 4.8664 FRA 4.2108 FC-47.0931 BSP 26705
BDE 1.6369 BRA .5805 BC311.3140 FSP 9362

MID-COURSE EXECUTION ACCURACY
SGT 7659.2 SGR 878.6 SG3 2753.3
RRT .9041 RRF .9045 RTF .9845
SGB 7709.4 R23 .0289 R13 .9846
SG1 7700.4 SG2 373.4 THA 5.94

ORBIT DETERMINATION ACCURACY
ST 3040.0 SR 547.1 SS 2540.9
CRT .9950 CRS -.9939 CST -.9827
LSA 3983.1 MSA 363.0 SSA 26.1
EL1 3088.4 EL2 53.6 ALF 10.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 716.019 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.937 GAL -.28 AZL 87.63 HCA 215.36 SMA 186.26 ECC .20720 INC 2.3690 V1 30.170
RP 215.38 LAP -1.37 LOP 277.08 VP 22.801 GAP -7.91 AZP 91.93 TAL 358.38 TAP 213.73 RCA 147.67 APO 224.85 V2 25.498
RC 288.924 GL 26.38 GP -5.03 ZAL 86.94 ZAP 66.98 ETS 177.08 ZAE 97.06 ETE 179.38 ZAC 79.45 ETC 257.70 CLP 66.89

PLANETOCENTRIC CONIC

C3 9.389 VHL 3.064 DLA 36.50 RAL 161.53 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.104 DPA 3.23 RAP 163.91 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.95	9 1 54	3916.39	-29.67	166.00	21.19	67.70	10 7 10	3316.4	-32.42	157.64
114.05	14 46 51	2826.79	-29.66	84.07	21.19	67.68	15 33 58	2226.8	-32.41	75.71
65.95	9 1 54	3916.39	-29.67	166.00	21.19	67.70	10 7 10	3316.4	-32.42	157.64
114.05	14 46 51	2826.79	-29.66	84.07	21.19	67.68	15 33 58	2226.8	-32.41	75.71
65.95	9 1 54	3916.39	-29.67	166.00	21.19	67.70	10 7 10	3316.4	-32.42	157.64
114.05	14 46 51	2826.79	-29.66	84.07	21.19	67.68	15 33 58	2226.8	-32.41	75.71

DIFFERENTIAL CORRECTIONS
TDE 1.6202 TRA .6186 TC-11.7426 BAU 1.4779
RDE .2789 RRA .1700 RC3 -.8621 FAU .49923
FDE 4.5680 FRA 4.2126 FC-46.0321 BSP 27619
BDE 1.6440 BRA .6415 BC311.7742 FSP 9063

MID-COURSE EXECUTION ACCURACY
SGT 7939.4 SGR 841.1 SG3 2683.6
RRT .8911 RRF .8893 RTF .9853
SGB 7983.8 R23 .0203 R13 .9854
SG1 7974.8 SG2 379.9 THA 5.41

ORBIT DETERMINATION ACCURACY
ST 3067.7 SR 535.1 SS 2432.8
CRT .9958 CRS -.9922 CST -.9819
LSA 3934.9 MSA 362.8 SSA 26.9
EL1 3113.6 EL2 48.2 ALF 9.86

LAUNCH DATE NOV 24 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 720.204 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.940 GAL -.35 AZL 87.65 HCA 216.53 SMA 186.31 ECC .20743 INC 2.3453 V1 30.170
RP 215.05 LAP -1.40 LOP 278.26 VP 22.846 GAP -8.07 AZP 91.89 TAL 357.98 TAP 214.51 RCA 147.66 APO 224.95 V2 25.535
RC 290.105 GL 26.14 GP -4.83 ZAL 87.66 ZAP 65.46 ETS 177.02 ZAE 95.28 ETE 179.25 ZAC 79.56 ETC 257.75 CLP 65.37

PLANETOCENTRIC CONIC

C3 9.358 VHL 3.059 DLA 35.98 RAL 162.22 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.142 DPA 3.55 RAP 163.66 ECC 1.1540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.82	9 9 24	3901.69	-29.29	164.64	21.65	68.10	10 14 26	3301.7	-31.98	156.30
113.18	14 44 54	2840.18	-29.27	84.96	21.65	68.08	15 32 14	2240.2	-31.97	76.63
66.82	9 9 24	3901.69	-29.29	164.64	21.65	68.10	10 14 26	3301.7	-31.98	156.30
113.18	14 44 54	2840.18	-29.27	84.96	21.65	68.08	15 32 14	2240.2	-31.97	76.63
66.82	9 9 24	3901.69	-29.29	164.64	21.65	68.10	10 14 26	3301.7	-31.98	156.30
113.18	14 44 54	2840.18	-29.27	84.96	21.65	68.08	15 32 14	2240.2	-31.97	76.63

DIFFERENTIAL CORRECTIONS
TDE 1.6249 TRA .6897 TC-12.1992 BAU 1.5295
RDE .2726 RRA .1700 RC3 -.7974 FAU .48647
FDE 4.2685 FRA 4.2533 FC-45.0056 BSP 28589
BDE 1.6476 BRA .7103 BC312.2253 FSP 8834

MID-COURSE EXECUTION ACCURACY
SGT 8216.8 SGR 808.4 SG3 2619.2
RRT .8767 RRF .8728 RTF .9858
SGB 8256.5 R23 .0137 R13 .9859
SG1 8247.4 SG2 387.4 THA 4.94

ORBIT DETERMINATION ACCURACY
ST 3088.9 SR 524.2 SS 2324.7
CRT .9965 CRS -.9897 CST -.9804
LSA 3883.8 MSA 368.0 SSA 27.7
EL1 3132.8 EL2 43.3 ALF 9.60

LAUNCH DATE NOV 24 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 724.396 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.942 GAL -.42 AZL 87.68 HCA 217.70 SMA 186.36 ECC .20767 INC 2.3229 V1 30.170
RP 214.72 LAP -1.42 LOP 279.43 VP 22.891 GAP -8.22 AZP 91.84 TAL 357.58 TAP 215.28 RCA 147.66 APO 225.06 V2 25.572
RC 291.272 GL 25.92 GP -4.65 ZAL 88.41 ZAP 63.98 ETS 176.97 ZAE 93.53 ETE 179.13 ZAC 79.68 ETC 257.80 CLP 63.88

PLANETOCENTRIC CONIC

C3 9.332 VHL 3.055 DLA 35.45 RAL 162.95 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.183 DPA 3.84 RAP 163.45 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.72	9 17 19	3886.17	-28.89	163.22	22.15	68.50	10 22 5	3286.2	-31.54	154.90
112.28	14 42 47	2854.64	-28.88	85.94	22.15	68.49	15 30 22	2254.6	-31.53	77.62
67.72	9 17 19	3886.17	-28.89	163.22	22.15	68.50	10 22 5	3286.2	-31.54	154.90
112.28	14 42 47	2854.64	-28.88	85.94	22.15	68.49	15 30 22	2254.6	-31.53	77.62
67.72	9 17 19	3886.17	-28.89	163.22	22.15	68.50	10 22 5	3286.2	-31.54	154.90
112.28	14 42 47	2854.64	-28.88	85.94	22.15	68.49	15 30 22	2254.6	-31.53	77.62

DIFFERENTIAL CORRECTIONS
TDE 1.6273 TRA .7646 TC-12.6353 BAU 1.5791
RDE .2675 RRA .1702 RC3 -.7326 FAU .47241
FDE 3.9968 FRA 4.2945 FC-43.8245 BSP 29520
BDE 1.6491 BRA .7834 BC312.6565 FSP 8572

MID-COURSE EXECUTION ACCURACY
SGT 8485.9 SGR 778.2 SG3 2549.7
RRT .8596 RRF .8543 RTF .9863
SGB 8521.5 R23 .0091 R13 .9863
SG1 8512.3 SG2 396.4 THA 4.52

ORBIT DETERMINATION ACCURACY
ST 3106.1 SR 515.5 SS 2228.0
CRT .9971 CRS -.9866 CST -.9788
LSA 3839.0 MSA 372.4 SSA 28.4
EL1 3148.3 EL2 38.7 ALF 9.40

LAUNCH DATE NOV 24 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 728.595 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.946 GAL -.49 AZL 87.70 HCA 218.88 SMA 186.41 ECC .20794 INC 2.3015 V1 30.170
RP 214.40 LAP -1.44 LOP 280.61 VP 22.936 GAP -8.37 AZP 91.79 TAL 357.16 TAP 216.04 RCA 147.65 APO 225.17 V2 25.608
RC 292.426 GL 25.69 GP -4.48 ZAL 89.19 ZAP 62.53 ETS 176.92 ZAE 91.81 ETE 179.03 ZAC 79.80 ETC 257.84 CLP 62.44

PLANETOCENTRIC CONIC

C3 9.312 VHL 3.052 DLA 34.91 RAL 163.70 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.226 DPA 4.10 RAP 163.28 ECC 1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.67	9 25 41	3869.60	-28.48	161.73	22.69	68.90	10 30 11	3269.6	-31.09	153.43
111.33	14 40 26	2870.38	-28.48	87.00	22.69	68.89	15 28 16	2270.4	-31.08	78.70
68.67	9 25 41	3869.60	-28.48	161.73	22.69	68.90	10 30 11	3269.6	-31.09	153.43
111.33	14 40 26	2870.38	-28.48	87.00	22.69	68.89	15 28 16	2270.4	-31.08	78.70
68.67	9 25 41	3869.60	-28.48	161.73	22.69	68.90	10 30 11	3269.6	-31.09	153.43
111.33	14 40 26	2870.38	-28.48	87.00	22.69	68.89	15 28 16	2270.4	-31.08	78.70

DIFFERENTIAL CORRECTIONS
TDE 1.6243 TRA .8418 TC-13.0603 BAU 1.6281
RDE .2627 RRA .1700 RC3 -.6709 FAU .45851
FDE 3.7191 FRA 4.3135 FC-42.6267 BSP 30421
BDE 1.6454 BRA .8588 BC313.0775 FSP 8326

MID-COURSE EXECUTION ACCURACY
SGT 8749.4 SGR 750.0 SG3 2478.8
RRT .8410 RRF .8338 RTF .9868
SGB 8781.5 R23 .0040 R13 .9868
SG1 8772.1 SG2 404.7 THA 4.13

ORBIT DETERMINATION ACCURACY
ST 3113.2 SR 507.1 SS 2125.2
CRT .9976 CRS -.9828 CST -.9771
LSA 3784.6 MSA 375.9 SSA 29.1
EL1 3154.0 EL2 34.6 ALF 9.23

LAUNCH DATE NOV 24 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 732.801 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.949	GAL	-.56	AZL	87.72	HCA	220.06	SMA	186.47	ECC	.20824	INC	2.2810	V1	30.170
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.980	GAP	-8.51	AZP	91.75	TAL	356.72	TAP	216.78	RCA	147.64	APO	225.29	V2	25.644
RC	293.566	GL	25.47	GP	-4.31	ZAL	90.01	ZAP	61.13	ETS	176.88	ZAE	90.14	ETE	178.93	ZAC	79.92	ETC	257.87	CLP	61.04

PLANETOCENTRIC CONIC

C3	9.298	VHL	3.049	DLA	34.37	RAL	164.49	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.270	DPA	4.34	RAP	163.14	ECC	1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.66	9 34 38	3851.65	-28.07	160.14	23.27	69.30	10 38 50	3251.7	-30.62	151.86
110.34	14 37 44	2887.72	-28.06	88.18	23.27	69.28	15 25 52	2287.7	-30.61	79.90
69.66	9 34 38	3851.65	-28.07	160.14	23.27	69.30	10 38 50	3251.7	-30.62	151.86
110.34	14 37 44	2887.72	-28.06	88.18	23.27	69.28	15 25 52	2287.7	-30.61	79.90
69.66	9 34 38	3851.65	-28.07	160.14	23.27	69.30	10 38 50	3251.7	-30.62	151.86
110.34	14 37 44	2887.72	-28.06	88.18	23.27	69.28	15 25 52	2287.7	-30.61	79.90

DIFFERENTIAL CORRECTIONS

TDE	1.6168	TRA	.9229	TC-13.4685	BAU	1.6760	
RDE	.2586	RRA	.1701	RC3 -.6115	FAU	.44450	
FDE	3.4493	FRA	4.3407	FC-41.3871	BSP	31289	
BDE	1.6373	BRA	.9385	BC313.4823	FSP	8057	

MID-COURSE EXECUTION ACCURACY

SGT	9006.1	SGR	724.7	SG3	2407.9		
RRT	.8202	RRF	.8115	RTF	.9871		
SGB	9035.2	R23	.0002	R13	.9871		
SG1	9025.7	SG2	413.7	THA	3.78		

ORBIT DETERMINATION ACCURACY

ST	3112.4	SR	499.7	SS	2025.0		
CRT	.9979	CRS	-.9778	CST	-.9748		
LSA	3727.1	MSA	381.3	SSA	29.8		
EL1	3152.1	EL2	31.7	ALF	9.10		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 737.009 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.952	GAL	-.64	AZL	87.74	HCA	221.24	SMA	186.52	ECC	.20855	INC	2.2616	V1	30.170
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.025	GAP	-8.65	AZP	91.70	TAL	356.27	TAP	217.52	RCA	147.62	APO	225.42	V2	25.679
RC	294.693	GL	25.25	GP	-4.16	ZAL	90.86	ZAP	59.76	ETS	176.84	ZAE	88.50	ETE	178.85	ZAC	80.03	ETC	257.90	CLP	59.67

PLANETOCENTRIC CONIC

C3	9.290	VHL	3.048	DLA	33.81	RAL	165.30	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.317	DPA	4.55	RAP	163.03	ECC	1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.70	9 44 10	3832.29	-27.64	158.45	23.89	69.70	10 48 3	3232.3	-30.14	150.18
109.30	14 34 41	2906.73	-27.63	89.48	23.88	69.68	15 23 8	2306.7	-30.13	81.22
70.70	9 44 10	3832.29	-27.64	158.45	23.89	69.70	10 48 3	3232.3	-30.14	150.18
109.30	14 34 41	2906.73	-27.63	89.48	23.88	69.68	15 23 8	2306.7	-30.13	81.22
110.00	15 17 12	2776.87	-30.44	80.44	24.95	73.64	16 3 29	2176.9	-32.38	71.76
110.00	14 0 50	3010.15	-24.89	96.29	22.63	65.78	14 51 0	2410.2	-27.94	88.45

DIFFERENTIAL CORRECTIONS

TDE	1.6259	TRA	1.0298	TC-13.7789	BAU	1.7126	
RDE	.2569	RRA	.1722	RC3 -.5462	FAU	.42642	
FDE	3.2723	FRA	4.4508	FC-39.7390	BSP	32659	
BDE	1.6461	BRA	1.0441	BC313.7897	FSP	7995	

MID-COURSE EXECUTION ACCURACY

SGT	9236.9	SGR	704.2	SG3	2328.1		
RRT	.7964	RRF	.7884	RTF	.9873		
SGB	9263.7	R23	.0007	R13	.9873		
SG1	9253.9	SG2	425.1	THA	3.48		

ORBIT DETERMINATION ACCURACY

ST	3145.4	SR	497.0	SS	1974.8		
CRT	.9981	CRS	-.9726	CST	-.9732		
LSA	3726.8	MSA	387.8	SSA	30.0		
EL1	3184.3	EL2	30.1	ALF	8.96		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 741.230 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.956	GAL	-.72	AZL	87.76	HCA	222.43	SMA	186.59	ECC	.20889	INC	2.2431	V1	30.170
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.069	GAP	-8.79	AZP	91.66	TAL	355.81	TAP	218.24	RCA	147.61	APO	225.56	V2	25.714
RC	295.805	GL	25.04	GP	-4.01	ZAL	91.73	ZAP	58.43	ETS	176.80	ZAE	86.90	ETE	178.78	ZAC	80.15	ETC	257.93	CLP	58.34

PLANETOCENTRIC CONIC

C3	9.288	VHL	3.048	DLA	33.24	RAL	166.13	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	3.365	DPA	4.74	RAP	162.96	ECC	1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.81	9 54 22	3811.16	-27.19	156.63	24.54	70.10	10 57 54	3211.2	-29.65	148.39
108.19	14 31 9	2927.79	-27.18	90.93	24.53	70.08	15 19 56	2327.8	-29.64	82.69
71.81	9 54 22	3811.16	-27.19	156.63	24.54	70.10	10 57 54	3211.2	-29.65	148.39
108.19	14 31 9	2927.79	-27.18	90.93	24.53	70.08	15 19 56	2327.8	-29.64	82.69
110.00	15 42 54	2707.64	-31.66	75.41	26.08	76.39	16 28 2	2107.6	-33.21	66.53
110.00	13 41 47	3079.30	-22.89	100.66	22.52	63.89	14 33 7	2479.3	-26.20	93.07

DIFFERENTIAL CORRECTIONS

TDE	1.6026	TRA	1.1124	TC-14.1780	BAU	1.7615	
RDE	.2530	RRA	.1717	RC3 -.4942	FAU	.41378	
FDE	2.9794	FRA	4.4357	FC-38.5695	BSP	33324	
BDE	1.6225	BRA	1.1256	BC314.1866	FSP	7671	

MID-COURSE EXECUTION ACCURACY

SGT	9487.4	SGR	682.5	SG3	2258.8		
RRT	.7723	RRF	.7618	RTF	.9877		
SGB	9511.9	R23	-.0040	R13	.9876		
SG1	9502.1	SG2	432.9	THA	3.19		

ORBIT DETERMINATION ACCURACY

ST	3115.8	SR	489.5	SS	1857.4		
CRT	.9979	CRS	-.9644	CST	-.9697		
LSA	3638.9	MSA	393.9	SSA	30.8		
EL1	3153.8	EL2	31.4	ALF	8.91		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 745.455 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	32.959	GAL	-.81	AZL	87.77	HCA	223.62	SMA	186.65	ECC	.20925	INC	2.2252	V1	30.170
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.112	GAP	-8.93	AZP	91.61	TAL	355.33	TAP	218.96	RCA	147.59	APO	225.71	V2	25.748
RC	296.904	GL	24.82	GP	-3.87	ZAL	92.63	ZAP	57.14	ETS	176.77	ZAE	85.33	ETE	178.72	ZAC	80.27	ETC	257.94	CLP	57.05

PLANETOCENTRIC CONIC

C3	9.292	VHL	3.048	DLA	32.66	RAL	166.99	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	3.415	DPA	4.91	RAP	162.93	ECC	1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.00	10 5 23	3787.83	-26.74	154.65	25.22	70.50	11 8 31	3187.8	-29.14	146.43
107.00	14 27 0	2951.31	-26.73	92.56	25.22	70.48	15 16 11	2351.3	-29.14	84.34
73.00	10 5 23	3787.83	-26.74	154.65	25.22	70.50	11 8 31	3187.8	-29.14	146.43
107.00	14 27 0	2951.31	-26.73	92.56	25.22	70.48	15 16 11	2351.3	-29.14	84.34
110.00	16 2 40	2656.57	-32.42	71.62	27.03	78.51	16 46 56	2056.6	-33.66	62.61
110.00	13 28 53	3130.57	-21.32	103.81	22.65	62.62	14 21 4	2530.6	-24.81	96.40

DIFFERENTIAL CORRECTIONS

TDE	1.5775	TRA	1.2013	TC-14.5532	BAU	1.8088	
RDE	.2500	RRA	.1715	RC3 -.4441	FAU	.40113	
FDE	2.7139	FRA	4.4321	FC-37.3720	BSP	34003	
BDE	1.5972	BRA	1.2135	BC314.5600	FSP	7375	

MID-COURSE EXECUTION ACCURACY

SGT	9731.8	SGR	663.8	SG3	2191.0		
RRT	.7465	RRF	.7339	RTF	.9880		
SGB	9754.4	R23	-.0077	R13	.9880		
SG1	9744.5	SG2	441.2	THA	2.92		

ORBIT DETERMINATION ACCURACY

ST	3083.7	SR	483.8	SS	1752.8		
CRT	.9973	CRS	-.9544	CST	-.9658		
LSA	3557.3	MSA	400.3	SSA	31.4		
EL1	3121.3	EL2	35.4	ALF	8.89		

LAUNCH DATE NOV 24 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 749.687 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.963 GAL -.89 AZL 87.79 HCA 224.82 SMA 186.72 ECC .20964 INC 2.2081 V1 30.170
RP 212.87 LAP -1.56 LOP 286.55 VP 23.155 GAP -9.07 AZP 91.57 TAL 354.84 TAP 219.66 RCA 147.57 APO 225.86 V2 25.782
RC 297.989 GL 24.60 GP -3.74 ZAL 93.57 ZAP 55.88 ETS 176.74 ZAE 83.80 ETE 178.66 ZAC 80.39 ETC 257.95 CLP 55.80

PLANETOCENTRIC CONIC

C3 9.304 VHL 3.050 DLA 32.07 RAL 167.88 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.466 DPA 5.05 RAP 162.93 ECC 1.1531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.28	10 17 22	3761.78	-26.27	152.47	25.94	70.90	11 20 3	3161.8	-28.62	144.27
105.72	14 22 4	2977.83	-26.25	94.40	25.93	70.89	15 11 42	2377.8	-28.62	86.20
74.28	10 17 22	3761.78	-26.27	152.47	25.94	70.90	11 20 3	3161.8	-28.62	144.27
105.72	14 22 4	2977.83	-26.25	94.40	25.93	70.89	15 11 42	2377.8	-28.62	86.20
110.00	16 19 49	2613.52	-32.96	68.38	27.91	80.36	17 3 23	2013.5	-33.93	59.28
110.00	13 18 47	3174.08	-19.93	106.43	22.91	61.64	14 11 41	2574.1	-23.56	99.17

DIFFERENTIAL CORRECTIONS
TDE 1.5499 TRA 1.2959 TC-14.9003 BAU 1.8540
RDE .2477 RRA .1714 RC3 -.3946 FAU .38787
FDE 2.4645 FRA 4.4295 FC-36.0927 BSP 34737
BDE 1.5696 BRA 1.3072 BC314.9055 FSP 7117

MID-COURSE EXECUTION ACCURACY
SGT 9967.6 SGR 647.2 SG3 2121.0
RRT .7184 RRF .7041 RTF .9883
SGB 9988.5 R23 -.0106 R13 .9883
SG1 9978.4 SG2 449.7 THA 2.68

ORBIT DETERMINATION ACCURACY
ST 3048.6 SR 479.0 SS 1655.1
CRT .9961 CRS -.9421 CST -.9613
LSA 3477.9 MSA 407.2 SSA 32.0
EL1 3085.7 EL2 41.7 ALF 8.90

LAUNCH DATE NOV 24 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 753.923 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.967 GAL -.98 AZL 87.81 HCA 226.02 SMA 186.79 ECC .21006 INC 2.1916 V1 30.170
RP 212.57 LAP -1.58 LOP 287.75 VP 23.198 GAP -9.20 AZP 91.52 TAL 354.34 TAP 220.35 RCA 147.55 APO 226.02 V2 25.815
RC 299.061 GL 24.39 GP -3.61 ZAL 94.53 ZAP 54.67 ETS 176.71 ZAE 82.30 ETE 178.61 ZAC 80.51 ETC 257.96 CLP 54.58

PLANETOCENTRIC CONIC

C3 9.322 VHL 3.053 DLA 31.46 RAL 168.78 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.519 DPA 5.18 RAP 162.96 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.67	10 30 32	3732.21	-25.78	150.04	26.69	71.31	11 32 45	3132.2	-28.09	141.87
104.33	14 16 7	3008.17	-25.77	96.52	26.68	71.29	15 6 15	2408.2	-28.08	88.34
75.67	10 30 32	3732.21	-25.78	150.04	26.69	71.31	11 32 45	3132.2	-28.09	141.87
104.33	14 16 7	3008.17	-25.77	96.52	26.68	71.29	15 6 15	2408.2	-28.08	88.34
110.00	16 35 28	2575.22	-33.35	65.46	28.75	82.04	17 18 23	1975.2	-34.09	56.30
110.00	13 10 22	3213.15	-18.65	108.73	23.27	60.82	14 3 55	2613.2	-22.39	101.60

DIFFERENTIAL CORRECTIONS
TDE 1.5202 TRA 1.3969 TC-15.2219 BAU 1.8975
RDE .2460 RRA .1717 RC3 -.3473 FAU .37482
FDE 2.2326 FRA 4.4373 FC-34.8104 BSP 35458
BDE 1.5400 BRA 1.4074 BC315.2259 FSP 6859

MID-COURSE EXECUTION ACCURACY
SGT10197.1 SGR 633.1 SG3 2053.1
RRT .6892 RRF .6734 RTF .9885
SGB10216.8 R23 -.0128 R13 .9885
SG110206.5 SG2 458.3 THA 2.46

ORBIT DETERMINATION ACCURACY
ST 3011.1 SR 475.4 SS 1566.3
CRT .9943 CRS -.9270 CST -.9561
LSA 3401.8 MSA 415.6 SSA 32.4
EL1 3047.9 EL2 50.1 ALF 8.92

LAUNCH DATE NOV 24 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 758.166 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.972 GAL -1.07 AZL 87.82 HCA 227.22 SMA 186.86 ECC .21049 INC 2.1758 V1 30.170
RP 212.29 LAP -1.60 LOP 288.95 VP 23.240 GAP -9.33 AZP 91.48 TAL 353.82 TAP 221.03 RCA 147.53 APO 226.19 V2 25.847
RC 300.120 GL 24.16 GP -3.49 ZAL 95.52 ZAP 53.48 ETS 176.69 ZAE 80.84 ETE 178.57 ZAC 80.63 ETC 257.96 CLP 53.40

PLANETOCENTRIC CONIC

C3 9.348 VHL 3.057 DLA 30.84 RAL 169.71 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.574 DPA 5.28 RAP 163.02 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.23	10 45 14	3698.12	-25.28	147.29	27.47	71.71	11 46 52	3098.1	-27.54	139.14
102.77	14 8 50	3043.33	-25.27	98.98	27.47	71.70	14 59 33	2443.3	-27.53	90.83
77.23	10 45 14	3698.12	-25.28	147.29	27.47	71.71	11 46 52	3098.1	-27.54	139.14
102.77	14 8 50	3043.33	-25.27	98.98	27.47	71.70	14 59 33	2443.3	-27.53	90.83
110.00	16 50 6	2540.11	-33.65	62.76	29.57	83.61	17 32 26	1940.1	-34.17	53.56
110.00	13 3 8	3249.33	-17.44	110.83	23.71	60.12	13 57 17	2649.3	-21.28	103.81

DIFFERENTIAL CORRECTIONS
TDE 1.4869 TRA 1.5033 TC-15.5153 BAU 1.9393
RDE .2448 RRA .1720 RC3 -.3010 FAU .36143
FDE 2.0103 FRA 4.4395 FC-33.4743 BSP 36200
BDE 1.5069 BRA 1.5131 BC315.5182 FSP 6617

MID-COURSE EXECUTION ACCURACY
SGT10418.2 SGR 620.7 SG3 1983.6
RRT .6582 RRF .6410 RTF .9887
SGB10436.7 R23 -.0148 R13 .9887
SG110426.2 SG2 466.9 THA 2.25

ORBIT DETERMINATION ACCURACY
ST 2968.9 SR 472.4 SS 1481.5
CRT .9916 CRS -.9084 CST -.9501
LSA 3324.3 MSA 424.2 SSA 32.8
EL1 3005.6 EL2 60.4 ALF 8.97

LAUNCH DATE NOV 24 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 762.413 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.976 GAL -1.17 AZL 87.84 HCA 228.42 SMA 186.94 ECC .21096 INC 2.1605 V1 30.170
RP 212.01 LAP -1.62 LOP 290.15 VP 23.282 GAP -9.46 AZP 91.43 TAL 353.28 TAP 221.70 RCA 147.50 APO 226.37 V2 25.879
RC 301.167 GL 23.94 GP -3.38 ZAL 96.54 ZAP 52.33 ETS 176.66 ZAE 79.41 ETE 178.53 ZAC 80.75 ETC 257.96 CLP 52.26

PLANETOCENTRIC CONIC

C3 9.381 VHL 3.063 DLA 30.21 RAL 170.66 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.630 DPA 5.36 RAP 163.12 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.01	11 2 5	3657.33	-24.76	144.05	28.29	72.12	12 3 2	3057.3	-26.97	135.92
100.99	13 59 31	3085.52	-24.75	101.95	28.28	72.10	14 50 57	2485.5	-26.96	93.83
79.01	11 2 5	3657.33	-24.76	144.05	28.29	72.12	12 3 2	3057.3	-26.97	135.92
100.99	13 59 31	3085.52	-24.75	101.95	28.28	72.10	14 50 57	2485.5	-26.96	93.83
110.00	17 4 1	2507.32	-33.87	60.23	30.39	85.10	17 45 48	1907.3	-34.18	51.00
110.00	12 56 46	3283.52	-16.27	112.79	24.22	59.51	13 51 29	2683.5	-20.19	105.87

DIFFERENTIAL CORRECTIONS
TDE 1.4497 TRA 1.6155 TC-15.7852 BAU 1.9800
RDE .2440 RRA .1723 RC3 -.2568 FAU .34825
FDE 1.7970 FRA 4.4453 FC-32.1382 BSP 36932
BDE 1.4701 BRA 1.6246 BC315.7873 FSP 6382

MID-COURSE EXECUTION ACCURACY
SGT10634.0 SGR 610.1 SG3 1915.4
RRT .6262 RRF .6077 RTF .9889
SGB10651.5 R23 -.0164 R13 .9889
SG110640.9 SG2 475.4 THA 2.06

ORBIT DETERMINATION ACCURACY
ST 2922.1 SR 470.0 SS 1401.9
CRT .9878 CRS -.8854 CST -.9428
LSA 3245.8 MSA 434.8 SSA 33.2
EL1 2958.8 EL2 72.4 ALF 9.03

LAUNCH DATE NOV 24 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 766.666 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.980 GAL -1.27 AZL 87.85 HCA 229.63 SMA 187.01 ECC .21145 INC 2.1457 V1 30.170
RP 211.73 LAP -1.63 LOP 291.36 VP 23.323 GAP -9.58 AZP 91.39 TAL 352.73 TAP 222.36 RCA 147.47 APO 226.56 V2 25.911
RC 302.203 GL 23.71 GP -3.27 ZAL 97.58 ZAP 51.22 ETS 176.64 ZAE 78.01 ETE 178.50 ZAC 80.88 ETC 257.95 CLP 51.14

PLANETOCENTRIC CONIC

C3 9.423 VHL 3.070 DLA 29.56 RAL 171.62 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.687 DPA 5.43 RAP 163.25 ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.15	11 22 12	3606.24	-24.23	140.06	29.13	72.52	12 22 18	3006.2	-26.39	131.96
98.85	13 47 6	3138.34	-24.22	105.69	29.13	72.51	14 39 25	2538.3	-26.38	97.59
100.00	14 33 29	2989.95	-26.72	95.46	29.91	76.07	15 23 19	2389.9	-28.37	87.05
100.00	13 18 30	3229.87	-21.77	111.55	28.21	69.00	14 12 20	2629.9	-24.44	103.77
110.00	17 17 24	2476.29	-34.03	57.82	31.21	86.52	17 58 40	1876.3	-34.13	48.57
110.00	12 51 5	3316.29	-15.13	114.65	24.79	58.97	13 46 21	2716.3	-19.13	107.81

DIFFERENTIAL CORRECTIONS
TDE 1.4075 TRA 1.7306 TC-16.0337 BAU 2.0200
RDE .2437 RRA .1726 RC3 -.2146 FAU .33542
FDE 1.5929 FRA 4.4417 FC-30.8167 BSP 37625
BDE 1.4285 BRA 1.7391 BC316.0351 FSP 6150

MID-COURSE EXECUTION ACCURACY
SGT10843.8 SGR 601.1 SG3 1848.3
RRT .5932 RRF .5735 RTF .9891
SGB10860.5 R23 -.0180 R13 .9891
SG110849.7 SG2 483.6 THA 1.89

ORBIT DETERMINATION ACCURACY
ST 2868.8 SR 468.2 SS 1326.6
CRT .9826 CRS -.8577 CST -.9346
LSA 3163.8 MSA 445.4 SSA 33.5
EL1 2905.5 EL2 85.9 ALF 9.12

LAUNCH DATE NOV 24 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 770.923 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.985 GAL -1.37 AZL 87.87 HCA 230.84 SMA 187.09 ECC .21197 INC 2.1314 V1 30.170
RP 211.47 LAP -1.65 LOP 292.57 VP 23.363 GAP -9.71 AZP 91.35 TAL 352.17 TAP 223.01 RCA 147.44 APO 226.75 V2 25.941
RC 303.228 GL 23.48 GP -3.17 ZAL 98.66 ZAP 50.13 ETS 176.62 ZAE 76.64 ETE 178.47 ZAC 81.00 ETC 257.94 CLP 50.06

PLANETOCENTRIC CONIC

C3 9.473 VHL 3.078 DLA 28.89 RAL 172.60 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.746 DPA 5.47 RAP 163.41 ECC 1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.00	11 48 49	3534.35	-23.68	134.57	30.01	72.94	12 47 43	2934.4	-25.79	126.49
96.00	13 28 20	3212.32	-23.67	110.97	30.01	72.92	14 21 52	2612.3	-25.78	102.89
100.00	15 4 43	2902.70	-28.00	89.30	31.21	79.07	15 53 6	2302.7	-29.22	80.71
100.00	12 55 7	3319.20	-19.49	117.20	28.36	66.87	13 50 26	2719.2	-22.45	109.66
110.00	17 30 22	2446.66	-34.13	55.51	32.03	87.88	18 11 8	1846.7	-34.04	46.26
110.00	12 45 57	3348.01	-14.01	116.42	25.41	58.49	13 41 45	2748.0	-18.07	109.67

DIFFERENTIAL CORRECTIONS
TDE 1.3623 TRA 1.8527 TC-16.2521 BAU 2.0584
RDE .2437 RRA .1729 RC3 -.1740 FAU .32260
FDE 1.3967 FRA 4.4407 FC-29.4808 BSP 38360
BDE 1.3839 BRA 1.8607 BC316.2530 FSP 5938

MID-COURSE EXECUTION ACCURACY
SGT11047.0 SGR 593.7 SG3 1781.7
RRT .5597 RRF .5387 RTF .9892
SGB11062.9 R23 -.0193 R13 .9892
SG111052.0 SG2 491.8 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 2813.8 SR 466.9 SS 1257.0
CRT .9757 CRS -.8238 CST -.9247
LSA 3082.9 MSA 458.2 SSA 33.6
EL1 2850.5 EL2 101.1 ALF 9.21

LAUNCH DATE NOV 24 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 775.185 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.990 GAL -1.47 AZL 87.88 HCA 232.06 SMA 187.18 ECC .21252 INC 2.1176 V1 30.170
RP 211.20 LAP -1.67 LOP 293.79 VP 23.403 GAP -9.83 AZP 91.30 TAL 351.59 TAP 223.64 RCA 147.40 APO 226.96 V2 25.971
RC 304.242 GL 23.25 GP -3.07 ZAL 99.75 ZAP 49.08 ETS 176.60 ZAE 75.30 ETE 178.44 ZAC 81.13 ETC 257.92 CLP 49.01

PLANETOCENTRIC CONIC

C3 9.533 VHL 3.088 DLA 28.21 RAL 173.60 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.807 DPA 5.50 RAP 163.60 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 43	3305.93	-24.46	118.07	31.33	75.27	13 58 49	2705.9	-26.24	109.86
90.00	12 21 24	3443.20	-21.77	127.23	30.46	71.43	13 18 47	2843.2	-24.11	119.34
100.00	15 27 50	2841.25	-28.71	84.87	32.32	81.30	16 15 11	2241.3	-29.62	76.18
100.00	12 39 58	3383.11	-17.73	121.14	28.77	65.53	13 36 21	2783.1	-20.88	113.76
110.00	17 43 0	2418.17	-34.17	53.28	32.85	89.20	18 23 18	1818.2	-33.91	44.05
110.00	12 41 17	3378.95	-12.90	118.14	26.08	58.07	13 37 36	2779.0	-17.03	111.46

DIFFERENTIAL CORRECTIONS
TDE 1.3132 TRA 1.9796 TC-16.4474 BAU 2.0963
RDE .2442 RRA .1732 RC3 -.1355 FAU .31012
FDE 1.2122 FRA 4.4382 FC-28.1631 BSP 39036
BDE 1.3357 BRA 1.9872 BC316.4480 FSP 5714

MID-COURSE EXECUTION ACCURACY
SGT11246.0 SGR 587.7 SG3 1716.9
RRT .5257 RRF .5038 RTF .9893
SGB11261.3 R23 -.0204 R13 .9893
SG111250.2 SG2 499.8 THA 1.58

ORBIT DETERMINATION ACCURACY
ST 2755.9 SR 466.2 SS 1194.7
CRT .9666 CRS -.7840 CST -.9138
LSA 3002.7 MSA 471.7 SSA 33.8
EL1 2792.6 EL2 117.9 ALF 9.30

LAUNCH DATE NOV 24 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 779.451 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 32.995 GAL -1.58 AZL 87.90 HCA 233.27 SMA 187.26 ECC .21309 INC 2.1042 V1 30.170
RP 210.95 LAP -1.69 LOP 295.01 VP 23.443 GAP -9.96 AZP 91.26 TAL 350.99 TAP 224.27 RCA 147.36 APO 227.17 V2 26.001
RC 305.247 GL 23.00 GP -2.97 ZAL 100.88 ZAP 48.06 ETS 176.58 ZAE 74.00 ETE 178.42 ZAC 81.26 ETC 257.90 CLP 47.99

PLANETOCENTRIC CONIC

C3 9.602 VHL 3.099 DLA 27.52 RAL 174.62 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.869 DPA 5.51 RAP 163.82 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 33	3183.93	-26.30	109.61	32.85	79.11	14 38 37	2583.9	-27.54	101.17
90.00	11 47 39	3568.05	-18.85	135.22	30.51	68.47	12 47 7	2968.0	-21.61	127.64
100.00	15 47 39	2790.30	-29.18	81.15	33.36	83.20	16 34 10	2190.3	-29.81	72.41
100.00	12 28 13	3436.91	-16.18	124.38	29.29	64.52	13 25 30	2836.9	-19.48	117.14
110.00	17 55 22	2390.64	-34.18	51.13	33.68	90.47	18 35 13	1790.6	-33.74	41.92
110.00	12 37 0	3409.33	-11.80	119.80	26.80	57.68	13 33 49	2809.3	-15.98	113.19

DIFFERENTIAL CORRECTIONS
TDE 1.2634 TRA 2.1147 TC-16.6011 BAU 2.1312
RDE .2452 RRA .1736 RC3 -.0980 FAU .29740
FDE 1.0449 FRA 4.4374 FC-26.8135 BSP 39812
BDE 1.2870 BRA 2.1218 BC316.6014 FSP 5526

MID-COURSE EXECUTION ACCURACY
SGT11434.6 SGR 583.3 SG3 1651.7
RRT .4917 RRF .4693 RTF .9894
SGB11449.5 R23 -.0208 R13 .9893
SG111438.2 SG2 507.8 THA 1.44

ORBIT DETERMINATION ACCURACY
ST 2702.1 SR 466.2 SS 1142.5
CRT .9552 CRS -.7393 CST -.9027
LSA 2930.4 MSA 485.2 SSA 33.8
EL1 2738.6 EL2 136.2 ALF 9.38

LAUNCH DATE NOV 24 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 783.722 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.000 GAL -1.69 AZL 87.91 HCA 234.49 SMA 187.35 ECC .21370 INC 2.0912 V1 30.170
RP 210.70 LAP -1.70 LOP 296.23 VP 23.481 GAP -10.08 AZP 91.22 TAL 350.39 TAP 224.88 RCA 147.31 APO 227.39 V2 26.029
RC 306.243 GL 22.76 GP -2.88 ZAL 102.02 ZAP 47.06 ETS 176.56 ZAE 72.71 ETE 178.40 ZAC 81.40 ETC 257.87 CLP 47.00

PLANETOCENTRIC CONIC

C3 9.682 VHL 3.112 DLA 26.81 RAL 175.64 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.932 DPA 5.50 RAP 164.06 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 40	3112.66	-27.12	104.56	34.05	81.52	15 3 33	2512.7	-28.01	96.00
90.00	11 29 43	3642.57	-16.93	139.85	30.95	66.96	12 30 25	3042.6	-19.90	132.44
100.00	16 5 35	2745.44	-29.49	77.86	34.37	84.91	16 51 20	2145.4	-29.89	69.07
100.00	12 18 29	3485.02	-14.75	127.24	29.91	63.70	13 16 34	2885.0	-18.17	120.11
110.00	18 7 30	2363.95	-34.15	49.05	34.53	91.70	18 46 54	1763.9	-33.53	39.86
110.00	12 33 3	3439.28	-10.70	121.43	27.56	57.34	13 30 23	2839.3	-14.93	114.88

DIFFERENTIAL CORRECTIONS
TDE 1.2018 TRA 2.2468 TC-16.7618 BAU 2.1697
RDE .2463 RRA .1736 RC3 -.0639 FAU .28601
FDE .8676 FRA 4.4179 FC-25.5741 BSP 40358
BDE 1.2268 BRA 2.2535 BC316.7619 FSP 5301

MID-COURSE EXECUTION ACCURACY
SGT11627.3 SGR 579.3 SG3 1590.6
RRT .4571 RRF .4334 RTF .9895
SGB11641.7 R23 -.0222 R13 .9894
SG111630.3 SG2 515.1 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 2632.3 SR 466.1 SS 1088.0
CRT .9401 CRS -.6826 CST -.8881
LSA 2842.0 MSA 501.9 SSA 33.9
EL1 2668.7 EL2 156.7 ALF 9.48

LAUNCH DATE NOV 24 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 787.996 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.005 GAL -1.80 AZL 87.92 HCA 235.71 SMA 187.44 ECC .21434 INC 2.0785 V1 30.170
RP 210.46 LAP -1.72 LOP 297.45 VP 23.520 GAP -10.20 AZP 91.17 TAL 349.76 TAP 225.48 RCA 147.26 APO 227.61 V2 26.057
RC 307.229 GL 22.50 GP -2.80 ZAL 103.19 ZAP 46.10 ETS 176.55 ZAE 71.46 ETE 178.39 ZAC 81.53 ETC 257.84 CLP 46.03

PLANETOCENTRIC CONIC

C3 9.773 VHL 3.126 DLA 26.09 RAL 176.68 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.996 DPA 5.47 RAP 164.34 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 18	3055.88	-27.62	100.48	35.15	83.51	15 24 14	2455.9	-28.23	91.87
90.00	11 16 22	3703.03	-15.28	143.52	31.53	65.87	12 18 5	3103.0	-18.41	136.24
100.00	16 22 15	2704.64	-29.70	74.84	35.36	86.48	17 7 19	2104.6	-29.88	66.04
100.00	12 10 6	3529.50	-13.40	129.84	30.60	63.03	13 8 56	2929.5	-16.91	122.81
110.00	18 19 26	2337.97	-34.07	47.02	35.39	92.90	18 58 24	1738.0	-33.30	37.87
110.00	12 29 24	3468.93	-9.61	123.03	28.37	57.04	13 27 13	2868.9	-13.88	116.54

DIFFERENTIAL CORRECTIONS
TDE 1.1392 TRA 2.3881 TC-16.8820 BAU 2.2056
RDE .2479 RRA .1738 RC3 -.0312 FAU .27460
FDE .7052 FRA 4.4033 FC-24.3260 BSP 40996
BDE 1.1659 BRA 2.3945 BC316.8821 FSP 5103

MID-COURSE EXECUTION ACCURACY
SGT11811.8 SGR 576.7 SG3 1530.4
RRT .4231 RRF .3984 RTF .9895
SGB11825.9 R23 -.0233 R13 .9895
SG111814.3 SG2 522.4 THA 1.19

ORBIT DETERMINATION ACCURACY
ST 2568.5 SR 466.7 SS 1044.1
CRT .9214 CRS -.6195 CST -.8734
LSA 2763.0 MSA 519.4 SSA 33.8
EL1 2604.4 EL2 178.9 ALF 9.55

LAUNCH DATE NOV 24 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 792.274 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.010 GAL -1.92 AZL 87.93 HCA 236.94 SMA 187.53 ECC .21501 INC 2.0661 V1 30.170
RP 210.22 LAP -1.73 LOP 298.67 VP 23.557 GAP -10.31 AZP 91.13 TAL 349.13 TAP 226.07 RCA 147.21 APO 227.85 V2 26.085
RC 308.206 GL 22.24 GP -2.72 ZAL 104.38 ZAP 45.16 ETS 176.53 ZAE 70.24 ETE 178.37 ZAC 81.67 ETC 257.81 CLP 45.10

PLANETOCENTRIC CONIC

C3 9.875 VHL 3.142 DLA 25.35 RAL 177.73 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.062 DPA 5.43 RAP 164.64 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 32	3006.82	-27.95	96.93	36.22	85.26	15 42 39	2406.8	-28.31	88.28
90.00	11 5 30	3756.20	-13.78	146.70	32.21	65.01	12 8 6	3156.2	-17.03	139.53
100.00	16 38 0	2666.80	-29.83	72.04	36.35	87.95	17 22 27	2066.8	-29.79	63.23
100.00	12 2 43	3571.45	-12.09	132.27	31.35	62.45	13 2 14	2971.5	-15.68	125.33
110.00	18 31 12	2312.65	-33.97	45.05	36.26	94.06	19 9 44	1712.6	-33.03	35.94
110.00	12 26 1	3498.37	-8.51	124.61	29.22	56.77	13 24 19	2898.4	-12.83	118.17

DIFFERENTIAL CORRECTIONS
TDE 1.0731 TRA 2.5350 TC-16.9732 BAU 2.2407
RDE .2499 RRA .1738 RC3 .0001 FAU .26329
FDE .5522 FRA 4.3851 FC-23.0833 BSP 41614
BDE 1.1018 BRA 2.5409 BC316.9732 FSP 4906

MID-COURSE EXECUTION ACCURACY
SGT11990.7 SGR 574.9 SG3 1470.7
RRT .3894 RRF .3638 RTF .9895
SGB12004.5 R23 -.0242 R13 .9895
SG111992.8 SG2 529.5 THA 1.07

ORBIT DETERMINATION ACCURACY
ST 2507.0 SR 467.6 SS 1007.9
CRT .8981 CRS -.5495 CST -.8586
LSA 2688.7 MSA 537.7 SSA 33.6
EL1 2542.2 EL2 202.8 ALF 9.57

LAUNCH DATE NOV 24 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 796.555 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.015 GAL -2.04 AZL 87.95 HCA 238.17 SMA 187.62 ECC .21571 INC 2.0541 V1 30.170
RP 209.99 LAP -1.75 LOP 299.90 VP 23.594 GAP -10.43 AZP 91.08 TAL 348.48 TAP 226.64 RCA 147.15 APO 228.09 V2 26.111
RC 309.174 GL 21.97 GP -2.64 ZAL 105.60 ZAP 44.25 ETS 176.51 ZAE 69.03 ETE 178.36 ZAC 81.81 ETC 257.77 CLP 44.19

PLANETOCENTRIC CONIC

C3 9.989 VHL 3.161 DLA 24.60 RAL 178.79 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.129 DPA 5.38 RAP 164.96 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 15	2962.73	-28.16	93.72	37.27	86.86	15 59 38	2362.7	-28.30	85.05
90.00	10 56 13	3804.86	-12.36	149.57	32.96	64.32	11 59 38	3204.9	-15.71	142.50
100.00	16 53 4	2631.25	-29.89	69.39	37.33	89.34	17 36 55	2031.2	-29.66	60.60
100.00	11 56 6	3611.58	-10.81	134.57	32.16	61.96	12 56 17	3011.6	-14.48	127.70
110.00	18 42 48	2287.92	-33.83	43.13	37.15	95.19	19 20 56	1687.9	-32.75	34.07
110.00	12 22 51	3527.68	-7.42	126.17	30.11	56.54	13 21 38	2927.7	-11.77	119.77

DIFFERENTIAL CORRECTIONS
TDE 1.0032 TRA 2.6878 TC-17.0360 BAU 2.2750
RDE .2523 RRA .1738 RC3 .0295 FAU .25229
FDE .4072 FRA 4.3658 FC-21.8665 BSP 42222
BDE 1.0345 BRA 2.6934 BC317.0360 FSP 4716

MID-COURSE EXECUTION ACCURACY
SGT12164.9 SGR 574.1 SG3 1412.7
RRT .3562 RRF .3298 RTF .9895
SGB12178.4 R23 -.0250 R13 .9895
SG112166.6 SG2 536.3 THA .96

ORBIT DETERMINATION ACCURACY
ST 2448.8 SR 469.0 SS 979.3
CRT .8696 CRS -.4728 CST -.8441
LSA 2619.9 MSA 557.1 SSA 33.4
EL1 2482.8 EL2 228.5 ALF 9.54

LAUNCH DATE NOV 24 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 800.839 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.021	GAL	-2.16	AZL	87.96	HCA	239.40	SMA	187.72	ECC	.21645	INC	2.0424	V1	30.170
RP	209.77	LAP	-1.76	LOP	301.13	VP	23.630	GAP	-10.55	AZP	91.04	TAL	347.81	TAP	227.21	RCA	147.09	APO	228.35	V2	26.137
RC	310.132	GL	21.70	GP	-2.57	ZAL	106.83	ZAP	43.37	ETS	176.49	ZAE	67.86	ETE	178.35	ZAC	81.95	ETC	257.73	CLP	43.31

PLANETOCENTRIC CONIC

C3	10.116	VHL	3.181	DLA	23.83	RAL	179.85	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	4.197	DPA	5.31	RAP	165.31	ECC	1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 53	2922.19	-28.27	90.76	38.31	88.34	16 15 35	2322.2	-28.20	82.09
90.00	10 48 6	3850.45	-11.00	152.23	33.77	63.74	11 52 16	3250.5	-14.44	145.24
100.00	17 7 35	2597.54	-29.89	66.89	38.32	90.66	17 50 52	1997.5	-29.47	58.11
100.00	11 50 6	3650.34	-9.56	136.77	33.01	61.54	12 50 56	3050.3	-13.29	129.96
110.00	18 54 16	2263.73	-33.67	41.27	38.05	96.28	19 32 0	1663.7	-32.43	32.25
110.00	12 19 53	3556.91	-6.32	127.72	31.04	56.34	13 19 10	2956.9	-10.70	121.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9299	TRA	2.8459	TC-17.0723	BAU	2.3089	SGT12335.1	SGR	574.0	SG3	1356.3	ST	2395.7	SR	470.9	SS	958.0
RDE	.2551	RRA	.1736	RC3 .0571	FAU	.24166	RRT .3237	RRF	.2965	RTF	.9896	CRT	.8350	CRS	-.3926	CST	-.8318
FDE	.2725	FRA	4.3423	FC-20.6812	BSP	42824	SGB12348.4	R23	-.0258	R13	.9895	LSA	2558.5	MSA	576.1	SSA	33.1
BDE	.9643	BRA	2.8512	BC317.0724	FSP	4536	SG112336.5	SG2	543.0	THA	.86	EL1	2428.1	EL2	255.6	ALF	9.43

LAUNCH DATE NOV 24 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 805.126 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.026	GAL	-2.29	AZL	87.97	HCA	240.63	SMA	187.81	ECC	.21722	INC	2.0309	V1	30.170
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.665	GAP	-10.67	AZP	91.00	TAL	347.13	TAP	227.76	RCA	147.02	APO	228.61	V2	26.162
RC	311.080	GL	21.42	GP	-2.50	ZAL	108.07	ZAP	42.51	ETS	176.48	ZAE	66.70	ETE	178.35	ZAC	82.09	ETC	257.68	CLP	42.45

PLANETOCENTRIC CONIC

C3	10.257	VHL	3.203	DLA	23.05	RAL	180.93	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	4.267	DPA	5.22	RAP	165.68	ECC	1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 42	2884.35	-28.32	87.99	39.35	89.72	16 30 47	2284.4	-28.05	79.33
90.00	10 40 51	3893.83	-9.68	154.73	34.64	63.26	11 45 45	3293.8	-13.19	147.82
100.00	17 21 38	2565.37	-29.84	64.50	39.32	91.92	18 4 23	1965.4	-29.25	55.74
100.00	11 44 36	3688.04	-8.33	138.89	33.92	61.19	12 46 4	3088.0	-12.12	132.14
110.00	19 5 37	2240.08	-33.48	39.45	38.98	97.35	19 42 57	1640.1	-32.10	30.49
110.00	12 17 7	3586.11	-5.21	129.25	32.01	56.17	13 16 53	2986.1	-9.62	122.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8520	TRA	3.0099	TC-17.0796	BAU	2.3420	SGT12500.0	SGR	574.5	SG3	1301.4	ST	2348.0	SR	473.0	SS	943.4
RDE	.2583	RRA	.1734	RC3 .0830	FAU	.23129	RRT .2918	RRF	.2640	RTF	.9895	CRT	.7935	CRS	-.3086	CST	-.8218
FDE	.1445	FRA	4.3170	FC-19.5221	BSP	43407	SGB12513.2	R23	-.0265	R13	.9895	LSA	2504.3	MSA	595.3	SSA	32.7
BDE	.8902	BRA	3.0149	BC317.0798	FSP	4358	SG112501.2	SG2	549.4	THA	.77	EL1	2378.2	EL2	284.2	ALF	9.22

LAUNCH DATE NOV 24 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 809.415 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.032	GAL	-2.42	AZL	87.98	HCA	241.87	SMA	187.91	ECC	.21803	INC	2.0197	V1	30.170
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.700	GAP	-10.78	AZP	90.95	TAL	346.43	TAP	228.30	RCA	146.94	APO	228.88	V2	26.186
RC	312.019	GL	21.13	GP	-2.43	ZAL	109.34	ZAP	41.67	ETS	176.46	ZAE	65.57	ETE	178.34	ZAC	82.24	ETC	257.64	CLP	41.61

PLANETOCENTRIC CONIC

C3	10.412	VHL	3.227	DLA	22.26	RAL	182.01	RAD	6567.4	VEL	11.480	PTH	2.00	VHP	4.338	DPA	5.13	RAP	166.08	ECC	1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 52	2848.68	-28.30	85.38	40.39	91.03	16 45 21	2248.7	-27.86	76.74
90.00	10 34 17	3935.56	-8.39	157.12	35.56	62.86	11 39 53	3335.6	-11.97	150.27
100.00	17 35 18	2534.53	-29.74	62.21	40.33	93.12	18 17 33	1934.5	-28.99	53.49
100.00	11 39 33	3724.94	-7.12	140.96	34.87	60.89	12 41 37	3124.9	-10.95	134.26
110.00	19 16 49	2216.92	-33.26	37.67	39.92	98.37	19 53 46	1616.9	-31.75	28.77
110.00	12 14 31	3615.31	-4.10	130.79	33.01	56.03	13 14 46	3015.3	-8.54	124.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7715	TRA	3.1803	TC-17.0588	BAU	2.3746	SGT12661.2	SGR	575.6	SG3	1247.9	ST	2310.2	SR	475.5	SS	935.1
RDE	.2619	RRA	.1731	RC3 .1072	FAU	.22119	RRT .2610	RRF	.2325	RTF	.9895	CRT	.7453	CRS	-.2240	CST	-.8150
FDE	.0248	FRA	4.2897	FC-18.3918	BSP	43997	SGB12674.3	R23	-.0272	R13	.9895	LSA	2461.6	MSA	614.0	SSA	32.3
BDE	.8147	BRA	3.1850	BC317.0591	FSP	4188	SG112662.1	SG2	555.6	THA	.68	EL1	2337.7	EL2	313.3	ALF	8.88

LAUNCH DATE NOV 24 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 813.706 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.037	GAL	-2.55	AZL	87.99	HCA	243.11	SMA	188.01	ECC	.21888	INC	2.0088	V1	30.170
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.733	GAP	-10.90	AZP	90.91	TAL	345.72	TAP	228.83	RCA	146.86	APO	229.16	V2	26.209
RC	312.950	GL	20.83	GP	-2.37	ZAL	110.62	ZAP	40.86	ETS	176.44	ZAE	64.47	ETE	178.34	ZAC	82.39	ETC	257.59	CLP	40.80

PLANETOCENTRIC CONIC

C3	10.583	VHL	3.253	DLA	21.46	RAL	183.09	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	4.410	DPA	5.01	RAP	166.50	ECC	1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 31	2814.80	-28.23	82.90	41.44	92.27	16 59 26	2214.8	-27.62	74.29
90.00	10 28 17	3976.02	-7.13	159.42	36.52	62.52	11 34 33	3376.0	-10.76	152.62
100.00	17 48 38	2504.85	-29.61	60.01	41.35	94.27	18 30 23	1904.8	-28.71	51.33
100.00	11 34 51	3761.20	-5.91	142.97	35.86	60.65	12 37 32	3161.2	-9.78	136.32
110.00	19 27 55	2194.26	-33.03	35.95	40.88	99.37	20 4 29	1594.3	-31.38	27.11
110.00	12 12 4	3644.55	-2.99	132.32	34.05	55.93	13 12 48	3044.6	-7.44	126.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6869	TRA	3.3562	TC-17.0100	BAU	2.4066	SGT12817.4	SGR	577.1	SG3	1195.6	ST	2281.4	SR	478.3	SS	931.9
RDE	.2658	RRA	.1726	RC3 .1298	FAU	.21132	RRT .2307	RRF	.2016	RTF	.9894	CRT	.6894	CRS	-.1398	CST	-.8120
FDE	-.0879	FRA	4.2581	FC-17.2879	BSP	44557	SGB12830.4	R23	-.0278	R13	.9894	LSA	2429.5	MSA	631.4	SSA	31.8
BDE	.7365	BRA	3.3607	BC317.0105	FSP	4020	SG112818.1	SG2	561.5	THA	.60	EL1	2305.7	EL2	342.9	ALF	8.41

LAUNCH DATE NOV 24 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 817.998 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.043	GAL	-2.69	AZL	88.00	HCA	244.35	SMA	188.11	ECC	.21977	INC	1.9980
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.766	GAP	-11.01	AZP	90.87	TAL	345.00	TAP	229.35	RCA	146.77	APO	229.46
RC	313.871	GL	20.53	GP	-2.30	ZAL	111.91	ZAP	40.07	ETS	176.42	ZAE	63.38	ETE	178.33	ZAC	82.54	ETC	257.54

V1 30.170 V2 26.232 CLP 40.01

PLANETOCENTRIC CONIC

C3	10.769	VHL	3.282	DLA	20.65	RAL	184.18	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	4.483	DPA	4.89	RAP	166.94

ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 42	2782.45	-28.12	80.54	42.51	93.45	17 13 5	2182.5	-27.35	71.96
90.00	10 22 46	4015.48	-5.88	161.65	37.53	62.25	11 29 42	3415.5	-9.55	154.90
100.00	18 1 41	2476.22	-29.45	57.90	42.39	95.37	18 42 57	1876.2	-28.39	49.26
100.00	11 30 29	3796.95	-4.72	144.95	36.89	60.45	12 33 46	3197.0	-8.62	138.34
110.00	19 38 53	2172.08	-32.77	34.27	41.86	100.33	20 15 5	1572.1	-31.00	25.49
110.00	12 9 46	3673.85	-1.87	133.85	35.12	55.86	13 10 59	3073.9	-6.34	127.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5988	TRA	3.5387	TC-16.9347	BAU	2.4383	SGT12970.2	SGR	579.1	SG3	1145.0	ST	2264.4	SR	481.5	SS	933.5
RDE	.2702	RRA	.1720	RC3 .1507	FAU	.20182	RRT .2015	RRF	.1717	RTF	.9893	CRT	.6264	CRS	-.0584	CST	-.8133
FDE	-.1930	FRA	4.2246	FC-16.2241	BSP	45125	SGB12983.1	R23	-.0286	R13	.9893	LSA	2410.8	MSA	646.7	SSA	31.3
BDE	.6570	BRA	3.5428	BC316.9354	FSP	3861	SG112970.7	SG2	567.2	THA	.52	EL1	2285.0	EL2	371.9	ALF	7.79

LAUNCH DATE NOV 24 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 822.291 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.049	GAL	-2.83	AZL	88.01	HCA	245.59	SMA	188.22	ECC	.22071	INC	1.9875
RP	208.76	LAP	-1.81	LOP	307.33	VP	23.798	GAP	-11.13	AZP	90.82	TAL	344.26	TAP	229.85	RCA	146.68	APO	229.76
RC	314.784	GL	20.22	GP	-2.25	ZAL	113.22	ZAP	39.30	ETS	176.41	ZAE	62.32	ETE	178.33	ZAC	82.69	ETC	257.48

V1 30.170 V2 26.254 CLP 39.25

PLANETOCENTRIC CONIC

C3	10.973	VHL	3.313	DLA	19.83	RAL	185.27	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	4.558	DPA	4.75	RAP	167.40

ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 31	2751.46	-27.98	78.29	43.58	94.57	17 26 22	2151.5	-27.05	69.75
90.00	10 17 39	4054.16	-4.65	163.83	38.59	62.04	11 25 13	3454.2	-8.36	157.11
100.00	18 14 27	2448.54	-29.26	55.87	43.44	96.42	18 55 15	1848.5	-28.06	47.27
100.00	11 26 24	3832.30	-3.53	146.90	37.97	60.30	12 30 16	3232.3	-7.45	140.32
110.00	19 49 45	2150.39	-32.49	32.64	42.86	101.26	20 25 35	1550.4	-30.60	23.93
110.00	12 7 35	3703.22	-.75	135.38	36.23	55.82	13 9 18	3103.2	-5.23	129.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5080	TRA	3.7275	TC-16.8316	BAU	2.4694	SGT13118.6	SGR	581.4	SG3	1095.9	ST	2260.9	SR	484.9	SS	938.7
RDE	.2750	RRA	.1713	RC3 .1698	FAU	.19259	RRT .1733	RRF	.1428	RTF	.9891	CRT	.5573	CRS	.0193	CST	-.8180
FDE	-.2912	FRA	4.1881	FC-15.1944	BSP	45677	SGB13131.4	R23	-.0294	R13	.9891	LSA	2406.6	MSA	659.6	SSA	30.7
BDE	.5776	BRA	3.7315	BC316.8324	FSP	3704	SG113118.9	SG2	572.6	THA	.44	EL1	2277.5	EL2	399.7	ALF	7.03

LAUNCH DATE NOV 24 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 826.585 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.055	GAL	-2.97	AZL	88.02	HCA	246.84	SMA	188.32	ECC	.22168	INC	1.9771
RP	208.58	LAP	-1.82	LOP	308.57	VP	23.830	GAP	-11.24	AZP	90.78	TAL	343.51	TAP	230.34	RCA	146.58	APO	230.07
RC	315.690	GL	19.90	GP	-2.19	ZAL	114.53	ZAP	38.55	ETS	176.39	ZAE	61.27	ETE	178.33	ZAC	82.85	ETC	257.43

V1 30.170 V2 26.274 CLP 38.50

PLANETOCENTRIC CONIC

C3	11.196	VHL	3.346	DLA	19.00	RAL	186.36	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	4.634	DPA	4.60	RAP	167.88

ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 58	2721.67	-27.80	76.13	44.67	95.64	17 39 20	2121.7	-26.72	67.63
90.00	10 12 53	4092.20	-3.44	165.96	39.69	61.88	11 21 5	3492.2	-7.17	159.27
100.00	18 26 59	2421.77	-29.04	53.91	44.51	97.43	19 7 20	1821.8	-27.70	45.36
100.00	11 22 34	3867.33	-2.34	148.83	39.08	60.19	12 27 1	3267.3	-6.29	142.27
110.00	20 0 30	2129.18	-32.20	31.05	43.88	102.16	20 35 59	1529.2	-30.19	22.41
110.00	12 5 32	3732.68	.38	136.92	37.38	55.82	13 7 45	3132.7	-4.11	130.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4132	TRA	3.9223	TC-16.7055	BAU	2.5006	SGT13264.2	SGR	584.0	SG3	1048.1	ST	2270.3	SR	488.6	SS	946.5
RDE	.2802	RRA	.1703	RC3 .1874	FAU	.18363	RRT .1457	RRF	.1145	RTF	.9890	CRT	.4826	CRS	.0924	CST	-.8262
FDE	-.3825	FRA	4.1477	FC-14.1993	BSP	46227	SGB13277.0	R23	-.0302	R13	.9890	LSA	2416.7	MSA	669.2	SSA	30.1
BDE	.4992	BRA	3.9260	BC316.7066	FSP	3555	SG113264.4	SG2	577.7	THA	.37	EL1	2283.0	EL2	425.6	ALF	6.14

LAUNCH DATE NOV 24 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 830.880 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.061	GAL	-3.12	AZL	88.03	HCA	248.08	SMA	188.43	ECC	.22270	INC	1.9669
RP	208.40	LAP	-1.82	LOP	309.82	VP	23.860	GAP	-11.36	AZP	90.73	TAL	342.74	TAP	230.82	RCA	146.47	APO	230.39
RC	316.588	GL	19.57	GP	-2.14	ZAL	115.86	ZAP	37.83	ETS	176.37	ZAE	60.25	ETE	178.33	ZAC	83.00	ETC	257.37

V1 30.170 V2 26.294 CLP 37.78

PLANETOCENTRIC CONIC

C3	11.437	VHL	3.382	DLA	18.17	RAL	187.45	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	4.712	DPA	4.44	RAP	168.38

ECC 1.1882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 8	2692.98	-27.59	74.06	45.78	96.66	17 52 1	2093.0	-26.38	65.60
90.00	10 8 25	4129.72	-2.23	168.06	40.82	61.76	11 17 15	3529.7	-5.99	161.40
100.00	18 39 17	2395.83	-28.79	52.02	45.60	98.40	19 19 12	1795.8	-27.33	43.52
100.00	11 18 57	3902.11	-1.16	150.74	40.23	60.13	12 24 0	3302.1	-5.13	144.20
110.00	20 11 8	2108.47	-31.89	29.51	44.92	103.02	20 46 16	1508.5	-29.77	20.94
110.00	12 3 36	3762.24	1.51	138.46	38.56	55.85	13 6 18	3162.2	-2.98	132.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3163	TRA	4.1250	TC-16.5495	BAU	2.5307	SGT13404.7	SGR	586.9	SG3	1001.6	ST	2295.3	SR	492.6	SS	956.4
RDE	.2858	RRA	.1693	RC3 .2035	FAU	.17484	RRT .1193	RRF	.0877	RTF	.9888	CRT	.4049	CRS	.1587	CST	-.8374
FDE	-.4650	FRA	4.1073	FC-13.2345	BSP	46774	SGB13417.5	R23	-.0307	R13	.9887	LSA	2443.3	MSA	674.9	SSA	29.5
BDE	.4263	BRA	4.1284	BC316.5507	FSP	3410	SG113404.9	SG2	582.7	THA	.30	EL1	2304.3	EL2	448.6	ALF	5.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 835.174 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.067 GAL -3.27 AZL 88.04 HCA 249.33 SMA 188.54 ECC .22376 INC 1.9569 V1 30.170
RP 208.24 LAP -1.83 LOP 311.07 VP 23.890 GAP -11.48 AZP 90.69 TAL 341.95 TAP 231.29 RCA 146.35 APO 230.72 V2 26.314
RC 317.480 GL 19.24 GP -2.08 ZAL 117.19 ZAP 37.12 ETS 176.35 ZAE 59.24 ETE 178.33 ZAC 83.16 ETC 257.31 CLP 37.07

PLANETOCENTRIC CONIC

C3 11.699 VHL 3.420 DLA 17.33 RAL 188.53 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 4.790 DPA 4.27 RAP 168.90 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 0	2665.33	-27.35	72.07	46.90	97.63	18 4 26	2065.3	-26.01	63.65
90.00	10 4 14	4166.82	-1.03	170.13	42.00	61.70	11 13 41	3566.8	-4.81	163.48
100.00	18 51 22	2370.71	-28.53	50.20	46.70	99.32	19 30 53	1770.7	-26.95	41.75
100.00	11 15 33	3936.68	.01	152.63	41.42	60.11	12 21 10	3336.7	-3.97	146.10
110.00	20 21 39	2088.26	-31.57	28.02	45.98	103.84	20 56 27	1488.3	-29.35	19.52
110.00	12 1 46	3791.89	2.64	140.01	39.77	55.91	13 4 58	3191.9	-1.85	133.80

DIFFERENTIAL CORRECTIONS
TDE .2157 TRA 4.3336 TC-16.3713 BAU 2.5609
RDE .2918 RRA .1679 RC3 .2179 FAU .16639
FDE -.5427 FRA 4.0612 FC-12.3123 BSP 47303
BDE .3629 BRA 4.3369 BC316.3728 FSP 3269

MID-COURSE EXECUTION ACCURACY
SGT13541.9 SGR 589.9 SG3 956.5
RRT .0936 RRF .0612 RTF .9885
SGB13554.7 R23 -.0316 R13 .9885
SG113542.0 SG2 587.3 THA .23

ORBIT DETERMINATION ACCURACY
ST 2334.0 SR 496.8 SS 967.2
CRT .3250 CRS .2210 CST -.8495
LSA 2483.9 MSA 677.8 SSA 28.8
EL1 2339.8 EL2 468.6 ALF 4.12

LAUNCH DATE NOV 24 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 839.467 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.073 GAL -3.43 AZL 88.05 HCA 250.58 SMA 188.65 ECC .22488 INC 1.9470 V1 30.170
RP 208.08 LAP -1.84 LOP 312.32 VP 23.918 GAP -11.59 AZP 90.65 TAL 341.16 TAP 231.74 RCA 146.22 APO 231.07 V2 26.332
RC 318.367 GL 18.91 GP -2.04 ZAL 118.53 ZAP 36.43 ETS 176.33 ZAE 58.25 ETE 178.33 ZAC 83.33 ETC 257.25 CLP 36.38

PLANETOCENTRIC CONIC

C3 11.983 VHL 3.462 DLA 16.48 RAL 189.62 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 4.870 DPA 4.08 RAP 169.44 ECC 1.1972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 37	2638.64	-27.10	70.15	48.04	98.56	18 16 36	2038.6	-25.63	61.79
90.00	10 0 17	4203.57	.15	172.18	43.21	61.68	11 10 20	3603.6	-3.63	165.55
100.00	19 3 15	2346.37	-28.25	48.44	47.82	100.20	19 42 22	1746.4	-26.55	40.05
100.00	11 12 20	3971.07	1.18	154.52	42.64	60.13	12 18 31	3371.1	-2.81	148.00
110.00	20 32 3	2068.57	-31.24	26.58	47.07	104.64	21 6 31	1468.6	-28.92	18.15
110.00	12 0 2	3821.64	3.77	141.57	41.02	56.00	13 3 44	3221.6	-.71	135.36

DIFFERENTIAL CORRECTIONS
TDE .1132 TRA 4.5497 TC-16.1677 BAU 2.5904
RDE .2983 RRA .1664 RC3 .2309 FAU .15815
FDE -.6131 FRA 4.0140 FC-11.4254 BSP 47845
BDE .3190 BRA 4.5528 BC316.1693 FSP 3132

MID-COURSE EXECUTION ACCURACY
SGT13674.8 SGR 593.1 SG3 912.8
RRT .0690 RRF .0359 RTF .9882
SGB13687.6 R23 -.0324 R13 .9882
SG113674.8 SG2 591.7 THA .17

ORBIT DETERMINATION ACCURACY
ST 2387.1 SR 501.2 SS 978.4
CRT .2457 CRS .2772 CST -.8623
LSA 2539.1 MSA 677.6 SSA 28.2
EL1 2390.4 EL2 485.1 ALF 3.08

LAUNCH DATE NOV 24 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 843.760 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.080 GAL -3.59 AZL 88.06 HCA 251.84 SMA 188.76 ECC .22604 INC 1.9373 V1 30.170
RP 207.93 LAP -1.84 LOP 313.58 VP 23.946 GAP -11.71 AZP 90.60 TAL 340.34 TAP 232.18 RCA 146.09 APO 231.42 V2 26.349
RC 319.247 GL 18.56 GP -1.99 ZAL 119.87 ZAP 35.76 ETS 176.31 ZAE 57.28 ETE 178.33 ZAC 83.49 ETC 257.19 CLP 35.71

PLANETOCENTRIC CONIC

C3 12.290 VHL 3.506 DLA 15.63 RAL 190.70 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 4.952 DPA 3.89 RAP 169.99 ECC 1.2023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 0	2612.88	-26.82	68.32	49.20	99.44	18 28 33	2012.9	-25.24	60.01
90.00	9 56 33	4240.02	1.33	174.21	44.46	61.71	11 7 13	3640.0	-2.46	167.58
100.00	19 14 57	2322.80	-27.95	46.75	48.97	101.05	19 53 40	1722.8	-26.14	38.42
100.00	11 9 17	4005.33	2.34	156.40	43.90	60.19	12 16 2	3405.3	-1.65	149.88
110.00	20 42 20	2049.40	-30.90	25.19	48.17	105.40	21 16 29	1449.4	-28.48	16.83
110.00	11 58 23	3851.50	4.91	143.13	42.30	56.13	13 2 35	3251.5	.43	136.91

DIFFERENTIAL CORRECTIONS
TDE .0061 TRA 4.7718 TC-15.9490 BAU 2.6208
RDE .3052 RRA .1647 RC3 .2423 FAU .15022
FDE -.6780 FRA 3.9622 FC-10.5821 BSP 48364
BDE .3052 BRA 4.7746 BC315.9508 FSP 3000

MID-COURSE EXECUTION ACCURACY
SGT13806.9 SGR 596.4 SG3 870.4
RRT .0448 RRF .0111 RTF .9879
SGB13819.8 R23 -.0333 R13 .9879
SG113806.9 SG2 595.8 THA .11

ORBIT DETERMINATION ACCURACY
ST 2452.6 SR 505.8 SS 989.3
CRT .1669 CRS .3288 CST -.8754
LSA 2606.6 MSA 674.3 SSA 27.5
EL1 2454.1 EL2 498.4 ALF 2.06

LAUNCH DATE NOV 24 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 848.050 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.086 GAL -3.75 AZL 88.07 HCA 253.09 SMA 188.87 ECC .22725 INC 1.9276 V1 30.170
RP 207.79 LAP -1.84 LOP 314.83 VP 23.973 GAP -11.83 AZP 90.56 TAL 339.51 TAP 232.61 RCA 145.95 APO 231.79 V2 26.366
RC 320.122 GL 18.22 GP -1.94 ZAL 121.21 ZAP 35.11 ETS 176.29 ZAE 56.33 ETE 178.33 ZAC 83.66 ETC 257.13 CLP 35.06

PLANETOCENTRIC CONIC

C3 12.621 VHL 3.553 DLA 14.78 RAL 191.78 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 5.035 DPA 3.69 RAP 170.56 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 9	2588.00	-26.53	66.55	50.38	100.28	18 40 17	1988.0	-24.84	58.29
90.00	9 53 1	4276.22	2.50	176.23	45.74	61.78	11 4 17	3676.2	-1.29	169.60
100.00	19 26 27	2299.98	-27.65	45.13	50.13	101.85	20 4 47	1700.0	-25.73	36.85
100.00	11 6 23	4039.47	3.49	158.28	45.19	60.29	12 13 43	3439.5	-.49	151.75
110.00	20 52 30	2030.77	-30.56	23.85	49.30	106.12	21 26 20	1430.8	-28.05	15.56
110.00	11 56 50	3881.45	6.04	144.71	43.61	56.29	13 1 32	3281.4	1.57	138.48

DIFFERENTIAL CORRECTIONS
TDE -.1020 TRA 5.0023 TC-15.7023 BAU 2.6498
RDE .3125 RRA .1628 RC3 .2524 FAU .14245
FDE -.7360 FRA 3.9092 FC3-9.7713 BSP 48880
BDE .3287 BRA 5.0049 BC315.7043 FSP 2872

MID-COURSE EXECUTION ACCURACY
SGT13932.6 SGR 599.9 SG3 829.3
RRT .0217 RRF -.0127 RTF .9875
SGB13945.5 R23 -.0342 R13 .9875
SG113932.6 SG2 599.7 THA .05

ORBIT DETERMINATION ACCURACY
ST 2530.7 SR 510.5 SS 999.4
CRT .0922 CRS .3751 CST -.8877
LSA 2686.2 MSA 669.0 SSA 26.9
EL1 2531.2 EL2 508.3 ALF 1.11

LAUNCH DATE NOV 24 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 852.339 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.092 GAL -3.92 AZL 88.08 HCA 254.35 SMA 188.98 ECC .22852 INC 1.9181 V1 30.170
RP 207.66 LAP -1.85 LOP 316.09 VP 23.999 GAP -11.95 AZP 90.52 TAL 338.67 TAP 233.02 RCA 145.80 APO 232.17 V2 26.381
RC 320.992 GL 17.86 GP -1.90 ZAL 122.55 ZAP 34.47 ETS 176.27 ZAE 55.39 ETE 178.33 ZAC 83.83 ETC 257.07 CLP 34.43

PLANETOCENTRIC CONIC

C3 12.978 VHL 3.602 DLA 13.93 RAL 192.86 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 5.119 DPA 3.47 RAP 171.15 ECC 1.2136

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 4	2563.98	-26.23	64.86	51.57	101.07	18 51 48	1964.0	-24.44	56.65
90.00	9 49 39	4312.19	3.65	178.25	47.06	61.90	11 1 32	3712.2	-.13	171.61
100.00	19 37 47	2277.90	-27.33	43.56	51.31	102.61	20 15 45	1677.9	-25.32	35.34
100.00	11 3 38	4073.51	4.64	160.16	46.52	60.44	12 11 32	3473.5	.66	153.62
110.00	21 2 32	2012.69	-30.21	22.56	50.45	106.82	21 36 5	1412.7	-27.61	14.33
110.00	11 55 22	3911.49	7.18	146.30	44.96	56.49	13 0 33	3311.5	2.72	140.04

DIFFERENTIAL CORRECTIONS
TDE -.2137 TRA 5.2394 TC-15.4404 BAU 2.6793
RDE .3202 RRA .1606 RC3 .2610 FAU .13497
FDE -.7890 FRA 3.8517 FC3-9.0040 BSP 49396
BDE .3850 BRA 5.2418 BC315.4426 FSP 2749

MID-COURSE EXECUTION ACCURACY
SGT14056.5 SGR 603.3 SG3 789.5
RRT -.0007 RRF -.0360 RTF .9871
SGB14069.4 R23 .0353 R13 -.9871
SG114056.5 SG2 603.3 THA 180.00

ORBIT DETERMINATION ACCURACY
ST 2619.3 SR 515.4 SS 1008.3
CRT .0210 CRS .4176 CST -.8990
LSA 2775.6 MSA 662.1 SSA 26.3
EL1 2619.3 EL2 515.3 ALF .25

LAUNCH DATE NOV 24 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 856.624 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.099 GAL -4.09 AZL 88.09 HCA 255.61 SMA 189.10 ECC .22985 INC 1.9087 V1 30.170
RP 207.54 LAP -1.85 LOP 317.35 VP 24.024 GAP -12.07 AZP 90.47 TAL 337.82 TAP 233.42 RCA 145.63 APO 232.56 V2 26.396
RC 321.856 GL 17.51 GP -1.86 ZAL 123.89 ZAP 33.86 ETS 176.25 ZAE 54.47 ETE 178.33 ZAC 84.01 ETC 257.00 CLP 33.81

PLANETOCENTRIC CONIC

C3 13.362 VHL 3.655 DLA 13.08 RAL 193.93 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 5.204 DPA 3.25 RAP 171.75 ECC 1.2199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 47	2540.81	-25.92	63.24	52.79	101.83	19 3 8	1940.8	-24.03	55.08
90.00	9 46 28	4347.98	4.80	180.25	48.42	62.06	10 58 56	3748.0	1.02	173.61
100.00	19 48 56	2256.56	-27.00	42.06	52.52	103.34	20 26 32	1656.6	-24.90	33.89
100.00	11 1 1	4107.46	5.77	162.03	47.89	60.62	12 9 28	3507.5	1.82	155.48
110.00	21 12 28	1995.18	-29.86	21.32	51.62	107.47	21 45 43	1395.2	-27.18	13.15
110.00	11 53 58	3941.61	8.30	147.90	46.33	56.72	12 59 40	3341.6	3.87	141.62

DIFFERENTIAL CORRECTIONS
TDE -.3283 TRA 5.4831 TC-15.1630 BAU 2.7090
RDE .3284 RRA .1581 RC3 .2683 FAU .12772
FDE -.8363 FRA 3.7910 FC3-8.2755 BSP 49877
BDE .4644 BRA 5.4854 BC315.1653 FSP 2626

MID-COURSE EXECUTION ACCURACY
SGT14177.4 SGR 606.8 SG3 750.9
RRT -.0226 RRF -.0587 RTF .9866
SGB14190.3 R23 .0363 R13 -.9866
SG114177.4 SG2 606.6 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 2717.0 SR 520.5 SS 1015.5
CRT -.0459 CRS .4562 CST -.9093
LSA 2873.3 MSA 653.9 SSA 25.6
EL1 2717.1 EL2 519.9 ALF 179.48

LAUNCH DATE NOV 24 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 860.907 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.105 GAL -4.27 AZL 88.10 HCA 256.86 SMA 189.22 ECC .23123 INC 1.8994 V1 30.170
RP 207.42 LAP -1.85 LOP 318.61 VP 24.048 GAP -12.20 AZP 90.43 TAL 336.94 TAP 233.81 RCA 145.46 APO 232.97 V2 26.409
RC 322.714 GL 17.15 GP -1.82 ZAL 125.23 ZAP 33.25 ETS 176.23 ZAE 53.57 ETE 178.33 ZAC 84.18 ETC 256.94 CLP 33.21

PLANETOCENTRIC CONIC

C3 13.775 VHL 3.711 DLA 12.22 RAL 194.99 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 5.292 DPA 3.01 RAP 172.37 ECC 1.2267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 19	2518.47	-25.59	61.68	54.03	102.55	19 14 17	1918.5	-23.61	53.57
90.00	9 43 26	4383.60	5.93	182.26	49.81	62.26	10 56 29	3783.6	2.17	175.59
100.00	19 59 54	2235.96	-26.67	40.62	53.74	104.03	20 37 10	1636.0	-24.48	32.50
100.00	10 58 31	4141.34	6.90	163.92	49.28	60.84	12 7 33	3541.3	2.96	157.34
110.00	21 22 16	1978.24	-29.51	20.12	52.82	108.10	21 55 14	1378.2	-26.75	12.02
110.00	11 52 39	3971.82	9.43	149.52	47.75	56.99	12 58 51	3371.8	5.02	143.21

DIFFERENTIAL CORRECTIONS
TDE -.4446 TRA 5.7356 TC-14.8666 BAU 2.7382
RDE .3371 RRA .1553 RC3 .2743 FAU .12067
FDE -.8776 FRA 3.7280 FC3-7.5840 BSP 50378
BDE .5579 BRA 5.7377 BC314.8691 FSP 2509

MID-COURSE EXECUTION ACCURACY
SGT14294.4 SGR 610.3 SG3 713.5
RRT -.0437 RRF -.0806 RTF .9860
SGB14307.4 R23 .0375 R13 -.9861
SG114294.4 SG2 609.7 THA 179.89

ORBIT DETERMINATION ACCURACY
ST 2822.8 SR 525.6 SS 1020.8
CRT -.1072 CRS .4908 CST -.9183
LSA 2978.2 MSA 645.0 SSA 25.0
EL1 2823.3 EL2 522.4 ALF 178.82

LAUNCH DATE NOV 24 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 865.185 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.112 GAL -4.45 AZL 88.11 HCA 258.13 SMA 189.33 ECC .23268 INC 1.8902 V1 30.170
RP 207.31 LAP -1.85 LOP 319.87 VP 24.070 GAP -12.32 AZP 90.39 TAL 336.06 TAP 234.18 RCA 145.28 APO 233.39 V2 26.422
RC 323.566 GL 16.78 GP -1.78 ZAL 126.57 ZAP 32.67 ETS 176.21 ZAE 52.68 ETE 178.33 ZAC 84.36 ETC 256.88 CLP 32.63

PLANETOCENTRIC CONIC

C3 14.218 VHL 3.771 DLA 11.38 RAL 196.05 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 5.380 DPA 2.77 RAP 173.00 ECC 1.2340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 38	2496.94	-25.27	60.19	55.28	103.23	19 25 15	1896.9	-23.20	52.13
90.00	9 40 32	4419.07	7.05	184.26	51.24	62.50	10 54 11	3819.1	3.31	177.58
100.00	20 10 43	2216.09	-26.33	39.24	54.99	104.68	20 47 39	1616.1	-24.06	31.18
100.00	10 56 8	4175.14	8.02	165.80	50.72	61.11	12 5 43	3575.1	4.10	159.21
110.00	21 31 57	1961.91	-29.15	18.98	54.03	108.69	22 4 39	1361.9	-26.33	10.94
110.00	11 51 24	4002.09	10.55	151.15	49.19	57.29	12 58 6	3402.1	6.16	144.80

DIFFERENTIAL CORRECTIONS
TDE -.5644 TRA 5.9944 TC-14.5602 BAU 2.7682
RDE .3462 RRA .1523 RC3 .2791 FAU .11387
FDE -.9154 FRA 3.6609 FC3-6.9334 BSP 50839
BDE .6621 BRA 5.9963 BC314.5628 FSP 2392

MID-COURSE EXECUTION ACCURACY
SGT14409.3 SGR 613.8 SG3 677.4
RRT -.0644 RRF -.1024 RTF .9854
SGB14422.4 R23 .0389 R13 -.9854
SG114409.4 SG2 612.5 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 2934.8 SR 530.8 SS 1024.5
CRT -.1642 CRS .5232 CST -.9260
LSA 3088.6 MSA 636.0 SSA 24.4
EL1 2936.1 EL2 523.3 ALF 178.24

LAUNCH DATE NOV 24 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 869.458 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.119	GAL	-4.64	AZL	88.12	HCA	259.39	SMA	189.45	ECC	.23419	INC	1.8811
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.092	GAP	-12.45	AZP	90.35	TAL	335.16	TAP	234.54	RCA	145.08	APO	233.82
RC	324.413	GL	16.42	GP	-1.75	ZAL	127.90	ZAP	32.10	ETS	176.18	ZAE	51.80	ETE	178.33	ZAC	84.54	ETC	256.82

V1	30.170	V2	26.434	CLP	32.06														

PLANETOCENTRIC CONIC

C3	14.694	VHL	3.833	DLA	10.53	RAL	197.09	RAD	6567.6	VEL	11.665	PTH	2.05	VHP	5.471	DPA	2.52	RAP	173.65
ECC	1.2418																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 46	2476.21	-24.94	58.76	56.56	103.87	19 36 2	1876.2	-22.78	50.75
90.00	9 37 46	4454.39	8.15	186.27	52.70	62.79	10 52 0	3854.4	4.44	179.56
100.00	20 21 21	2196.96	-26.00	37.92	56.25	105.30	20 57 58	1597.0	-23.64	29.91
100.00	10 53 52	4208.88	9.12	167.70	52.18	61.41	12 4 1	3608.9	5.23	161.07
110.00	21 41 30	1946.17	-28.81	17.89	55.27	109.25	22 13 56	1346.2	-25.91	9.91
110.00	11 50 13	4032.43	11.66	152.80	50.67	57.64	12 57 25	3432.4	7.30	146.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6865	TRA	6.2617	TC-	14.2413	BAU	2.7983	SGT14521.9	SGR	617.2	SG3	642.5	ST	3052.2	SR	536.0	SS	1025.6
RDE	.3557	RRA	.1490	RC3	.2828	FAU	.10729	RRT -.0844	RRF	-.1235	RTF	.9847	CRT	-.2161	CRS	.5524	CST	-.9328
FDE	-.9473	FRA	3.5910	FC3-	6.3210	BSP	51302	SGB14535.0	R23	.0404	R13	-.9847	LSA	3203.5	MSA	626.6	SSA	23.8
BDE	.7731	BRA	6.2635	BC3	14.2441	FSP	2281	SG114522.0	SG2	615.0	THA	179.79	EL1	3054.5	EL2	522.9	ALF	177.76

LAUNCH DATE NOV 24 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 873.727 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.125	GAL	-4.83	AZL	88.13	HCA	260.65	SMA	189.57	ECC	.23576	INC	1.8720
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.113	GAP	-12.58	AZP	90.30	TAL	334.24	TAP	234.89	RCA	144.88	APO	234.27
RC	325.253	GL	16.05	GP	-1.71	ZAL	129.22	ZAP	31.54	ETS	176.16	ZAE	50.94	ETE	178.33	ZAC	84.73	ETC	256.76

V1	30.170	V2	26.444	CLP	31.50														

PLANETOCENTRIC CONIC

C3	15.205	VHL	3.899	DLA	9.69	RAL	198.14	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	5.563	DPA	2.26	RAP	174.31
ECC	1.2502																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 43	2456.29	-24.61	57.39	57.86	104.48	19 46 39	1856.3	-22.38	49.43
90.00	9 35 7	4489.59	9.24	188.28	54.20	63.12	10 49 57	3889.6	5.56	181.53
100.00	20 31 50	2178.55	-25.66	36.65	57.54	105.88	21 8 8	1578.6	-23.23	28.69
100.00	10 51 41	4242.55	10.21	169.60	53.68	61.75	12 2 24	3642.5	6.36	162.94
110.00	21 50 55	1931.05	-28.46	16.85	56.53	109.78	22 23 6	1331.0	-25.50	8.92
110.00	11 49 5	4062.82	12.76	154.46	52.18	58.02	12 56 48	3462.8	8.44	148.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8111	TRA	6.5367	TC-	13.9118	BAU	2.8285	SGT14631.2	SGR	620.6	SG3	608.6	ST	3173.5	SR	541.3	SS	1024.4
RDE	.3657	RRA	.1453	RC3	.2854	FAU	.10089	RRT -.1039	RRF	-.1441	RTF	.9839	CRT	-.2635	CRS	.5789	CST	-.9386
FDE	-.9744	FRA	3.5182	FC3-	5.7442	BSP	51740	SGB14644.4	R23	.0419	R13	-.9839	LSA	3321.5	MSA	617.1	SSA	23.3
BDE	.8897	BRA	6.5383	BC3	13.9147	FSP	2172	SG114631.4	SG2	617.3	THA	179.75	EL1	3176.8	EL2	521.6	ALF	177.36

LAUNCH DATE NOV 24 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 877.989 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.132	GAL	-5.03	AZL	88.14	HCA	261.92	SMA	189.69	ECC	.23741	INC	1.8630
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.133	GAP	-12.71	AZP	90.26	TAL	333.31	TAP	235.22	RCA	144.66	APO	234.73
RC	326.088	GL	15.68	GP	-1.68	ZAL	130.54	ZAP	31.00	ETS	176.14	ZAE	50.10	ETE	178.33	ZAC	84.91	ETC	256.69

V1	30.170	V2	26.454	CLP	30.96														

PLANETOCENTRIC CONIC

C3	15.752	VHL	3.969	DLA	8.86	RAL	199.17	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	5.656	DPA	1.99	RAP	174.98
ECC	1.2592																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 29	2437.15	-24.27	56.09	59.17	105.05	19 57 6	1837.2	-21.97	48.18
90.00	9 32 35	4524.65	10.32	190.30	55.73	63.48	10 48 0	3924.7	6.67	183.51
100.00	20 42 9	2160.88	-25.32	35.45	58.85	106.44	21 18 10	1560.9	-22.83	27.54
100.00	10 49 37	4276.16	11.29	171.52	55.22	62.14	12 0 53	3676.2	7.47	164.81
110.00	22 0 13	1916.55	-28.12	15.85	57.81	110.28	22 32 10	1316.6	-25.10	7.98
110.00	11 48 2	4093.25	13.85	156.14	53.72	58.43	12 56 15	3493.3	9.57	149.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9378	TRA	6.8193	TC-	13.5746	BAU	2.8593	SGT14737.9	SGR	624.0	SG3	575.9	ST	3297.2	SR	546.5	SS	1020.8
RDE	.3761	RRA	.1414	RC3	.2869	FAU	.09469	RRT -.1230	RRF	-.1644	RTF	.9830	CRT	-.3064	CRS	.6034	CST	-.9435
FDE	-.9971	FRA	3.4421	FC3-	5.2042	BSP	52180	SGB14751.1	R23	.0436	R13	-.9830	LSA	3441.2	MSA	608.1	SSA	22.8
BDE	1.0104	BRA	6.8207	BC3	13.5776	FSP	2065	SG114738.1	SG2	619.2	THA	179.70	EL1	3301.6	EL2	519.6	ALF	177.02

LAUNCH DATE NOV 24 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 882.244 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.139	GAL	-5.23	AZL	88.15	HCA	263.18	SMA	189.82	ECC	.23912	INC	1.8540
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.152	GAP	-12.85	AZP	90.22	TAL	332.36	TAP	235.54	RCA	144.43	APO	235.20
RC	326.917	GL	15.32	GP	-1.65	ZAL	131.84	ZAP	30.48	ETS	176.11	ZAE	49.26	ETE	178.33	ZAC	85.10	ETC	256.63

V1	30.170	V2	26.463	CLP	30.44														

PLANETOCENTRIC CONIC

C3	16.338	VHL	4.042	DLA	8.03	RAL	200.19	RAD	6567.7	VEL	11.735	PTH	2.07	VHP	5.751	DPA	1.71	RAP	175.67
ECC	1.2689																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 5	2418.81	-23.94	54.85	60.51	105.59	20 7 24	1818.8	-21.57	46.98
90.00	9 30 9	4559.60	11.37	192.32	57.29	63.89	10 46 9	3959.6	7.77	185.50
100.00	20 52 18	2143.95	-24.99	34.30	60.17	106.95	21 28 2	1543.9	-22.43	26.43
100.00	10 47 37	4309.69	12.35	173.45	56.79	62.56	11 59 27	3709.7	8.58	166.69
110.00	22 9 24	1902.69	-27.79	14.91	59.10	110.75	22 41 6	1302.7	-24.72	7.09
110.00	11 47 1	4123.71	14.93	157.84	55.30	58.89	12 55 45	3523.7	10.70	151.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0668	TRA	7.1101	TC-	13.2322	BAU	2.8908	SGT14842.9	SGR	627.3	SG3	544.2	ST	3422.6	SR	551.8	SS	1014.7
RDE	.3870	RRA	.1371	RC3	.2876	FAU	.08869	RRT -.1417	RRF	-.1843	RTF	.9820	CRT	-.3453	CRS	.6260	CST	-.9476
FDE	-1.0153	FRA	3.3623	FC3-	4.7000	BSP	52588	SGB14856.2	R23	.0454	R13	-.9820	LSA	3562.1	MSA	599.3	SSA	22.3
BDE	1.1348	BRA	7.1115	BC3	13.2353	FSP	1961	SG114843.2	SG2	621.0	THA	179.66	EL1	3428.0	EL2	517.0	ALF	176.74

LAUNCH DATE NOV 24 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 886.492 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.146 GAL -5.44 AZL 88.15 HCA 264.45 SMA 189.94 ECC .24091 INC 1.8451 V1 30.170
RP 206.89 LAP -1.84 LOP 326.20 VP 24.170 GAP -12.98 AZP 90.18 TAL 331.40 TAP 235.85 RCA 144.18 APO 235.70 V2 26.471
RC 327.742 GL 14.95 GP -1.61 ZAL 133.14 ZAP 29.96 ETS 176.09 ZAE 48.45 ETE 178.33 ZAC 85.29 ETC 256.57 CLP 29.92

PLANETOCENTRIC CONIC

C3 16.964 VHL 4.119 DLA 7.21 RAL 201.21 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 5.848 DPA 1.43 RAP 176.37 ECC 1.2792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 30	2401.24	-23.62	53.66	61.86	106.09	20 17 32	1801.2	-21.18	45.84
90.00	9 27 50	4594.43	12.41	194.36	58.89	64.34	10 44 24	3994.4	8.85	187.48
100.00	21 2 18	2127.75	-24.67	33.20	61.52	107.44	21 37 46	1527.7	-22.05	25.38
100.00	10 45 43	4343.16	13.39	175.38	58.39	63.02	11 58 6	3743.2	9.67	168.57
110.00	22 18 26	1889.47	-27.47	14.02	60.42	111.19	22 49 56	1289.5	-24.34	6.25
110.00	11 46 4	4154.20	15.99	159.56	56.91	59.38	12 55 18	3554.2	11.81	152.95

DIFFERENTIAL CORRECTIONS
TDE-1.1994 TRA 7.4084 TC-12.8836 BAU 2.9227
RDE .3984 RRA .1324 RC3 .2873 FAU .08289
FDE-1.0304 FRA 3.2788 FC3-4.2304 BSP 52955
BDE 1.2638 BRA 7.4096 BC312.8868 FSP 1858

MID-COURSE EXECUTION ACCURACY
SGT14944.2 SGR 630.5 SG3 513.6
RRT -.1600 RRF -.2042 RTF .9809
SGB14957.4 R23 .0476 R13 -.9809
SG114944.5 SG2 622.4 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3549.2 SR 557.0 SS 1006.5
CRT -.3810 CRS .6474 CST -.9510
LSA 3683.9 MSA 590.9 SSA 21.8
EL1 3555.7 EL2 514.0 ALF 176.50

LAUNCH DATE NOV 24 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 890.731 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.153 GAL -5.65 AZL 88.16 HCA 265.71 SMA 190.06 ECC .24278 INC 1.8362 V1 30.170
RP 206.84 LAP -1.83 LOP 327.46 VP 24.187 GAP -13.12 AZP 90.14 TAL 330.43 TAP 236.14 RCA 143.92 APO 236.21 V2 26.477
RC 328.562 GL 14.58 GP -1.58 ZAL 134.43 ZAP 29.46 ETS 176.06 ZAE 47.64 ETE 178.33 ZAC 85.48 ETC 256.52 CLP 29.43

PLANETOCENTRIC CONIC

C3 17.634 VHL 4.199 DLA 6.40 RAL 202.21 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 5.947 DPA 1.14 RAP 177.08 ECC 1.2902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 46	2384.45	-23.30	52.54	63.24	106.57	20 27 30	1784.5	-20.80	44.75
90.00	9 25 36	4629.14	13.42	196.40	60.51	64.83	10 42 45	4029.1	9.92	189.47
100.00	21 12 9	2112.27	-24.35	32.16	62.88	107.90	21 47 21	1512.3	-21.67	24.39
100.00	10 43 54	4376.55	14.41	177.34	60.02	63.53	11 56 50	3776.5	10.74	170.47
110.00	22 27 21	1876.90	-27.16	13.17	61.76	111.60	22 58 38	1276.9	-23.98	5.45
110.00	11 45 10	4184.69	17.04	161.31	58.55	59.91	12 54 55	3584.7	12.92	154.63

DIFFERENTIAL CORRECTIONS
TDE-1.3327 TRA 7.7159 TC-12.5322 BAU 2.9553
RDE .4102 RRA .1274 RC3 .2862 FAU .07727
FDE-1.0401 FRA 3.1920 FC3-3.7935 BSP 53336
BDE 1.3944 BRA 7.7169 BC312.5354 FSP 1759

MID-COURSE EXECUTION ACCURACY
SGT15043.7 SGR 633.7 SG3 483.9
RRT -.1778 RRF -.2236 RTF .9796
SGB15057.0 R23 .0499 R13 -.9796
SG115044.1 SG2 623.6 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3675.1 SR 562.1 SS 995.2
CRT -.4130 CRS .6667 CST -.9537
LSA 3804.3 MSA 582.8 SSA 21.3
EL1 3682.6 EL2 510.9 ALF 176.31

LAUNCH DATE NOV 24 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 894.961 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.160 GAL -5.87 AZL 88.17 HCA 266.98 SMA 190.19 ECC .24473 INC 1.8273 V1 30.170
RP 206.79 LAP -1.82 LOP 328.73 VP 24.203 GAP -13.27 AZP 90.10 TAL 329.44 TAP 236.42 RCA 143.65 APO 236.73 V2 26.483
RC 329.378 GL 14.21 GP -1.56 ZAL 135.70 ZAP 28.98 ETS 176.04 ZAE 46.85 ETE 178.33 ZAC 85.68 ETC 256.46 CLP 28.94

PLANETOCENTRIC CONIC

C3 18.351 VHL 4.284 DLA 5.60 RAL 203.21 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 6.048 DPA .84 RAP 177.80 ECC 1.3020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 51	2368.43	-22.98	51.47	64.63	107.02	20 37 19	1768.4	-20.43	43.72
90.00	9 23 27	4663.73	14.41	198.46	62.18	65.36	10 41 11	4063.7	10.97	191.47
100.00	21 21 50	2097.53	-24.04	31.18	64.26	108.33	21 56 48	1497.5	-21.31	23.45
100.00	10 42 9	4409.86	15.41	179.30	61.69	64.07	11 55 39	3809.9	11.80	172.37
110.00	22 36 9	1864.97	-26.86	12.38	63.12	111.99	23 7 14	1265.0	-23.63	4.70
110.00	11 44 20	4215.18	18.08	163.07	60.23	60.48	12 54 35	3615.2	14.01	156.32

DIFFERENTIAL CORRECTIONS
TDE-1.4690 TRA 8.0316 TC-12.1779 BAU 2.9884
RDE .4224 RRA .1220 RC3 .2844 FAU .07179
FDE-1.0463 FRA 3.1021 FC3-3.3870 BSP 53693
BDE 1.5286 BRA 8.0325 BC312.1812 FSP 1661

MID-COURSE EXECUTION ACCURACY
SGT15140.2 SGR 636.8 SG3 455.2
RRT -.1954 RRF -.2428 RTF .9781
SGB15153.5 R23 .0524 R13 -.9782
SG115140.7 SG2 624.5 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 3800.5 SR 567.2 SS 981.8
CRT -.4422 CRS .6848 CST -.9560
LSA 3924.1 MSA 575.1 SSA 20.9
EL1 3809.0 EL2 507.6 ALF 176.16

LAUNCH DATE NOV 24 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 899.181 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.167 GAL -6.09 AZL 88.18 HCA 268.25 SMA 190.32 ECC .24676 INC 1.8185 V1 30.170
RP 206.75 LAP -1.82 LOP 330.00 VP 24.218 GAP -13.42 AZP 90.06 TAL 328.44 TAP 236.69 RCA 143.35 APO 237.28 V2 26.488
RC 330.190 GL 13.85 GP -1.53 ZAL 136.96 ZAP 28.51 ETS 176.01 ZAE 46.07 ETE 178.33 ZAC 85.88 ETC 256.40 CLP 28.47

PLANETOCENTRIC CONIC

C3 19.116 VHL 4.372 DLA 4.81 RAL 204.19 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 6.150 DPA .53 RAP 178.54 ECC 1.3146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 46	2353.17	-22.67	50.46	66.04	107.43	20 47 0	1753.2	-20.07	42.75
90.00	9 21 23	4698.20	15.38	200.53	63.87	65.93	10 39 42	4098.2	12.00	193.48
100.00	21 31 23	2083.51	-23.73	30.25	65.67	108.73	22 6 6	1483.5	-20.96	22.55
100.00	10 40 28	4443.09	16.39	181.28	63.39	64.65	11 54 31	3843.1	12.85	174.29
110.00	22 44 48	1853.70	-26.57	11.63	64.49	112.35	23 15 42	1253.7	-23.30	3.99
110.00	11 43 32	4245.66	19.09	164.85	61.94	61.09	12 54 17	3645.7	15.09	158.02

DIFFERENTIAL CORRECTIONS
TDE-1.6077 TRA 8.3555 TC-11.8244 BAU 3.0227
RDE .4351 RRA .1162 RC3 .2820 FAU .06650
FDE-1.0491 FRA 3.0085 FC3-3.0119 BSP 54015
BDE 1.6656 BRA 8.3563 BC311.8278 FSP 1566

MID-COURSE EXECUTION ACCURACY
SGT15234.5 SGR 639.8 SG3 427.5
RRT -.2126 RRF -.2619 RTF .9765
SGB15247.9 R23 .0552 R13 -.9765
SG115235.1 SG2 625.1 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 3924.5 SR 572.1 SS 966.1
CRT -.4688 CRS .7020 CST -.9578
LSA 4042.2 MSA 567.8 SSA 20.5
EL1 3933.8 EL2 504.1 ALF 176.02

LAUNCH DATE NOV 24 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 903.389 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.174 GAL -6.32 AZL 88.19 HCA 269.52 SMA 190.44 ECC .24888 INC 1.8096 V1 30.170
RP 206.71 LAP -1.81 LOP 331.27 VP 24.232 GAP -13.57 AZP 90.02 TAL 327.42 TAP 236.94 RCA 143.05 APO 237.84 V2 26.492
RC 331.000 GL 13.49 GP -1.50 ZAL 138.21 ZAP 28.05 ETS 175.99 ZAE 45.30 ETE 178.33 ZAC 86.08 ETC 256.35 CLP 28.01

PLANETOCENTRIC CONIC

C3 19.933 VHL 4.465 DLA 4.03 RAL 205.17 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 6.255 DPA .22 RAP 179.28 ECC 1.3280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 32	2338.66	-22.37	49.50	67.47	107.82	20 56 31	1738.7	-19.73	41.82
90.00	9 19 24	4732.54	16.32	202.61	65.60	66.54	10 38 17	4132.5	13.01	195.50
100.00	21 40 46	2070.21	-23.44	29.37	67.09	109.10	22 15 16	1470.2	-20.62	21.71
100.00	10 38 52	4476.23	17.35	183.28	65.12	65.27	11 53 28	3876.2	13.87	176.22
110.00	22 53 21	1843.07	-26.29	10.93	65.89	112.68	23 24 4	1243.1	-22.99	3.33
110.00	11 42 47	4276.13	20.08	166.66	63.68	61.74	12 54 3	3676.1	16.15	159.74

DIFFERENTIAL CORRECTIONS
TDE-1.7486 TRA 8.6885 TC-11.4720 BAU 3.0580
RDE .4483 RRA .1100 RC3 .2789 FAU .06139
FDE-1.0480 FRA 2.9113 FC3-2.6661 BSP 54319
BDE 1.8052 BRA 8.6892 BC311.4754 FSP 1473

MID-COURSE EXECUTION ACCURACY
SGT15326.8 SGR 642.7 SG3 400.7
RRT -.2296 RRF -.2808 RTF .9746
SGB15340.2 R23 .0583 R13 -.9746
SG115327.5 SG2 625.5 THA 179.45

ORBIT DETERMINATION ACCURACY
ST 4046.6 SR 576.9 SS 947.9
CRT -.4930 CRS .7180 CST -.9592
LSA 4158.3 MSA 560.9 SSA 20.0
EL1 4056.7 EL2 500.7 ALF 175.92

LAUNCH DATE NOV 24 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 907.585 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.181 GAL -6.56 AZL 88.20 HCA 270.79 SMA 190.57 ECC .25109 INC 1.8008 V1 30.170
RP 206.69 LAP -1.80 LOP 332.54 VP 24.244 GAP -13.73 AZP 89.98 TAL 326.39 TAP 237.18 RCA 142.72 APO 238.42 V2 26.494
RC 331.806 GL 13.13 GP -1.48 ZAL 139.44 ZAP 27.60 ETS 175.96 ZAE 44.54 ETE 178.32 ZAC 86.28 ETC 256.30 CLP 27.56

PLANETOCENTRIC CONIC

C3 20.806 VHL 4.561 DLA 3.26 RAL 206.13 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 6.362 DPA -.10 RAP 180.04 ECC 1.3424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 9	2324.90	-22.08	48.59	68.92	108.19	21 5 54	1724.9	-19.39	40.95
90.00	9 17 30	4766.76	17.24	204.70	67.36	67.18	10 36 57	4166.8	14.00	197.52
100.00	21 50 1	2057.62	-23.16	28.54	68.52	109.45	22 24 19	1457.6	-20.29	20.92
100.00	10 37 19	4509.28	18.28	185.30	66.89	65.93	11 52 29	3909.3	14.87	178.16
110.00	23 1 45	1833.10	-26.03	10.27	67.30	112.98	23 32 18	1233.1	-22.69	2.71
110.00	11 42 5	4306.56	21.05	168.48	65.46	62.42	12 53 51	3706.6	17.19	161.48

DIFFERENTIAL CORRECTIONS
TDE-1.8922 TRA 9.0301 TC-11.1221 BAU 3.0946
RDE .4619 RRA .1033 RC3 .2753 FAU .05640
FDE-1.0437 FRA 2.8105 FC3-2.3467 BSP 54576
BDE 1.9478 BRA 9.0307 BC311.1255 FSP 1382

MID-COURSE EXECUTION ACCURACY
SGT15416.8 SGR 645.5 SG3 374.7
RRT -.2463 RRF -.2996 RTF .9724
SGB15430.3 R23 .0617 R13 -.9725
SG115417.6 SG2 625.6 THA 179.41

ORBIT DETERMINATION ACCURACY
ST 4166.5 SR 581.6 SS 927.6
CRT -.5152 CRS .7334 CST -.9601
LSA 4272.1 MSA 554.3 SSA 19.6
EL1 4177.4 EL2 497.1 ALF 175.83

LAUNCH DATE NOV 24 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 911.767 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.188 GAL -6.80 AZL 88.21 HCA 272.06 SMA 190.70 ECC .25340 INC 1.7919 V1 30.170
RP 206.68 LAP -1.79 LOP 333.81 VP 24.256 GAP -13.89 AZP 89.94 TAL 325.34 TAP 237.40 RCA 142.38 APO 239.03 V2 26.496
RC 332.609 GL 12.77 GP -1.45 ZAL 140.66 ZAP 27.16 ETS 175.94 ZAE 43.80 ETE 178.32 ZAC 86.48 ETC 256.25 CLP 27.13

PLANETOCENTRIC CONIC

C3 21.736 VHL 4.662 DLA 2.50 RAL 207.09 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 6.471 DPA -.43 RAP 180.81 ECC 1.3577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 37	2311.87	-21.80	47.74	70.38	108.53	21 15 9	1711.9	-19.07	40.13
90.00	9 15 40	4800.86	18.13	206.81	69.15	67.87	10 35 41	4200.9	14.97	199.56
100.00	21 59 7	2045.74	-22.88	27.76	69.98	109.78	22 33 13	1445.7	-19.98	20.17
100.00	10 35 51	4542.22	19.18	187.33	68.68	66.62	11 51 33	3942.2	15.85	180.11
110.00	23 10 2	1823.77	-25.78	9.66	68.73	113.27	23 40 26	1223.8	-22.40	2.13
110.00	11 41 25	4336.95	22.00	170.34	67.27	63.15	12 53 42	3737.0	18.22	163.24

DIFFERENTIAL CORRECTIONS
TDE-2.0386 TRA 9.3808 TC-10.7760 BAU 3.1325
RDE .4760 RRA .0963 RC3 .2713 FAU .05157
FDE-1.0366 FRA 2.7059 FC3-2.0541 BSP 54800
BDE 2.0934 BRA 9.3813 BC310.7794 FSP 1292

MID-COURSE EXECUTION ACCURACY
SGT15504.8 SGR 648.2 SG3 349.6
RRT -.2627 RRF -.3186 RTF .9699
SGB15518.3 R23 .0656 R13 -.9700
SG115505.7 SG2 625.4 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 4283.9 SR 586.1 SS 905.5
CRT -.5356 CRS .7481 CST -.9607
LSA 4383.4 MSA 548.0 SSA 19.3
EL1 4295.5 EL2 493.6 ALF 175.75

LAUNCH DATE NOV 24 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 915.935 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.195 GAL -7.05 AZL 88.22 HCA 273.33 SMA 190.83 ECC .25580 INC 1.7830 V1 30.170
RP 206.67 LAP -1.78 LOP 335.08 VP 24.267 GAP -14.05 AZP 89.90 TAL 324.28 TAP 237.61 RCA 142.02 APO 239.65 V2 26.497
RC 333.409 GL 12.42 GP -1.43 ZAL 141.86 ZAP 26.74 ETS 175.91 ZAE 43.07 ETE 178.31 ZAC 86.69 ETC 256.20 CLP 26.71

PLANETOCENTRIC CONIC

C3 22.730 VHL 4.768 DLA 1.76 RAL 208.04 RAD 6567.9 VEL 12.005 PTH 2.14 VHP 6.582 DPA -.76 RAP 181.59 ECC 1.3741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 56	2299.56	-21.54	46.94	71.86	108.84	21 24 15	1699.6	-18.77	39.36
90.00	9 13 54	4834.82	18.98	208.93	70.97	68.59	10 34 29	4234.8	15.91	201.61
100.00	22 8 5	2034.55	-22.62	27.03	71.45	110.08	22 42 0	1434.6	-19.69	19.47
100.00	10 34 26	4575.06	20.05	189.37	70.51	67.36	11 50 41	3975.1	16.81	182.08
110.00	23 18 12	1815.08	-25.54	9.09	70.17	113.53	23 48 27	1215.1	-22.14	1.59
110.00	11 40 48	4367.30	22.92	172.21	69.12	63.91	12 53 35	3767.3	19.22	165.02

DIFFERENTIAL CORRECTIONS
TDE-2.1857 TRA 9.7423 TC-10.4306 BAU 3.1706
RDE .4905 RRA .0888 RC3 .2668 FAU .04684
FDE-1.0250 FRA 2.5982 FC3-1.7839 BSP 55042
BDE 2.2401 BRA 9.7427 BC310.4340 FSP 1206

MID-COURSE EXECUTION ACCURACY
SGT15589.3 SGR 650.8 SG3 325.2
RRT -.2788 RRF -.3369 RTF .9670
SGB15602.8 R23 .0697 R13 -.9670
SG115590.3 SG2 625.0 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 4397.5 SR 590.4 SS 880.7
CRT -.5540 CRS .7618 CST -.9610
LSA 4490.8 MSA 542.1 SSA 18.9
EL1 4409.8 EL2 490.2 ALF 175.69

LAUNCH DATE NOV 24 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 920.087 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.202	GAL	-7.31	AZL	88.23	HCA	274.59	SMA	190.97	ECC	.25831	INC	1.7742
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.276	GAP	-14.22	AZP	89.86	TAL	323.21	TAP	237.80	RCA	141.64	APO	240.29
RC	334.204	GL	12.07	GP	-1.41	ZAL	143.05	ZAP	26.33	ETS	175.89	ZAE	42.35	ETE	178.31	ZAC	86.90	ETC	256.15

V1	30.170	V2	26.497	CLP	26.30														

PLANETOCENTRIC CONIC

C3	23.789	VHL	4.877	DLA	1.02	RAL	208.97	RAD	6568.0	VEL	12.049	PTH	2.15	VHP	6.695	DPA	-1.10	RAP	182.38
ECC	1.3915																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 6	2287.96	-21.28	46.18	73.36	109.14	21 33 14	1688.0	-18.47	38.63
90.00	9 12 12	4868.64	19.81	211.07	72.83	69.34	10 33 21	4268.6	16.82	203.67
100.00	22 16 55	2024.05	-22.38	26.35	72.93	110.35	22 50 39	1424.0	-19.40	18.82
100.00	10 33 4	4607.79	20.90	191.44	72.37	68.13	11 49 52	4007.8	17.75	184.06
110.00	23 26 15	1807.02	-25.32	8.57	71.63	113.77	23 56 22	1207.0	-21.89	1.10
110.00	11 40 13	4397.58	23.81	174.11	71.00	64.72	12 53 31	3797.6	20.21	166.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.3365	TRA	10.1109	TC	-10.0940	BAU	3.2113	SGT	15671.8	SGR	653.4	SG3	301.7	ST	4507.9	SR	594.5	SS	854.2
RDE	.5055	RRA	.0808	RC3	.2620	FAU	.04227	RRT	-.2948	RRF	-.3555	RTF	.9636	CRT	-.5711	CRS	.7752	CST	-.9609
FDE	-1.0110	FRA	2.4866	FC3	-1.5382	BSP	55188	SGB	15685.4	R23	.0743	R13	-.9636	LSA	4595.3	MSA	536.3	SSA	18.5
BDE	2.3905	BRA	10.1112	BC3	10.0974	FSP	1120	SG1	15673.0	SG2	624.3	THA	179.29	EL1	4520.8	EL2	486.6	ALF	175.64

LAUNCH DATE NOV 24 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 924.222 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.210	GAL	-7.57	AZL	88.23	HCA	275.86	SMA	191.10	ECC	.26092	INC	1.7653
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.285	GAP	-14.40	AZP	89.82	TAL	322.12	TAP	237.98	RCA	141.24	APO	240.96
RC	334.996	GL	11.72	GP	-1.39	ZAL	144.22	ZAP	25.93	ETS	175.86	ZAE	41.64	ETE	178.30	ZAC	87.11	ETC	256.11

V1	30.170	V2	26.495	CLP	25.90														

PLANETOCENTRIC CONIC

C3	24.919	VHL	4.992	DLA	.30	RAL	209.90	RAD	6568.0	VEL	12.095	PTH	2.16	VHP	6.811	DPA	-1.44	RAP	183.18
ECC	1.4101																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 7	2277.05	-21.03	45.48	74.87	109.41	21 42 4	1677.0	-18.20	37.95
90.00	9 10 34	4902.33	20.61	213.22	74.71	70.14	10 32 16	4302.3	17.71	205.74
100.00	22 25 36	2014.21	-22.14	25.71	74.44	110.61	22 59 10	1414.2	-19.14	18.21
100.00	10 31 46	4640.40	21.71	193.52	74.27	68.93	11 49 6	4040.4	18.65	186.06
110.00	23 34 10	1799.59	-25.12	8.09	73.10	113.99	24 4 10	1199.6	-21.66	.65
110.00	11 39 41	4427.79	24.68	176.03	72.91	65.56	12 53 29	3827.8	21.17	168.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4885	TRA	10.4912	TC3	-9.7618	BAU	3.2532	SGT	15752.7	SGR	655.8	SG3	279.0	ST	4614.6	SR	598.4	SS	825.7
RDE	.5209	RRA	.0724	RC3	.2568	FAU	.03780	RRT	-.3104	RRF	-.3740	RTF	.9595	CRT	-.5866	CRS	.7881	CST	-.9604
FDE	-.9937	FRA	2.3714	FC3	-1.3134	BSP	55346	SGB	15766.3	R23	.0796	R13	-.9596	LSA	4696.0	MSA	530.8	SSA	18.2
BDE	2.5424	BRA	10.4914	BC3	9.7652	FSP	1038	SG1	15754.0	SG2	623.4	THA	179.26	EL1	4628.0	EL2	483.2	ALF	175.60

LAUNCH DATE NOV 24 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 928.338 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.217	GAL	-7.84	AZL	88.24	HCA	277.13	SMA	191.23	ECC	.26365	INC	1.7563
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.292	GAP	-14.58	AZP	89.78	TAL	321.01	TAP	238.14	RCA	140.82	APO	241.65
RC	335.784	GL	11.38	GP	-1.36	ZAL	145.38	ZAP	25.54	ETS	175.83	ZAE	40.94	ETE	178.30	ZAC	87.32	ETC	256.07

V1	30.170	V2	26.493	CLP	25.51														

PLANETOCENTRIC CONIC

C3	26.123	VHL	5.111	DLA	-.40	RAL	210.81	RAD	6568.1	VEL	12.145	PTH	2.18	VHP	6.929	DPA	-1.79	RAP	183.99
ECC	1.4299																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 13 0	2266.82	-20.80	44.82	76.40	109.66	21 50 47	1666.8	-17.93	37.32
90.00	9 8 59	4935.87	21.37	215.39	76.62	70.96	10 31 15	4335.9	18.57	207.83
100.00	22 34 10	2005.04	-21.92	25.12	75.95	110.85	23 7 35	1405.0	-18.89	17.64
100.00	10 30 31	4672.88	22.49	195.62	76.19	69.77	11 48 24	4072.9	19.53	188.07
110.00	23 41 58	1792.77	-24.93	7.65	74.59	114.18	24 11 51	1192.8	-21.45	.23
110.00	11 39 12	4457.92	25.51	177.97	74.86	66.44	12 53 30	3857.9	22.10	170.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6430	TRA	10.8809	TC3	-9.4350	BAU	3.2963	SGT	15829.9	SGR	658.1	SG3	257.0	ST	4717.4	SR	602.1	SS	795.6
RDE	.5367	RRA	.0635	RC3	.2514	FAU	.03345	RRT	-.3258	RRF	-.3924	RTF	.9547	CRT	-.6009	CRS	.8008	CST	-.9595
FDE	-.9736	FRA	2.2524	FC3	-1.1086	BSP	55448	SGB	15843.6	R23	.0856	R13	-.9548	LSA	4793.0	MSA	525.6	SSA	17.9
BDE	2.6970	BRA	10.8811	BC3	9.4384	FSP	957	SG1	15831.4	SG2	622.1	THA	179.22	EL1	4731.4	EL2	479.8	ALF	175.57

LAUNCH DATE NOV 24 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 932.434 EARTH TO MARS

RL	147.68	LAL	-.00	LOL	61.75	VL	33.224	GAL	-8.12	AZL	88.25	HCA	278.40	SMA	191.37	ECC	.26649	INC	1.7473
RP	206.73	LAP	-1.73	LOP	340.16	VP	24.299	GAP	-14.77	AZP	89.74	TAL	319.89	TAP	238.30	RCA	140.37	APO	242.37
RC	336.567	GL	11.04	GP	-1.34	ZAL	146.52	ZAP	25.17	ETS	175.81	ZAE	40.25	ETE	178.29	ZAC	87.54	ETC	256.03

V1	30.170	V2	26.490	CLP	25.14														

PLANETOCENTRIC CONIC

C3	27.407	VHL	5.235	DLA	-1.10	RAL	211.72	RAD	6568.1	VEL	12.198	PTH	2.19	VHP	7.050	DPA	-2.15	RAP	184.81
ECC	1.4510																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 46	2257.25	-20.58	44.20	77.93	109.89	21 59 23	1657.2	-17.68	36.72
90.00	9 7 28	4969.25	22.09	217.57	78.56	71.82	10 30 17	4369.3	19.40	209.93
100.00	22 42 36	1996.50	-21.71	24.57	77.48	111.06	23 15 52	1396.5	-18.66	17.11
100.00	10 29 19	4705.23	23.24	197.73	78.14	70.65	11 47 45	4105.2	20.38	190.10
110.00	23 49 40	1786.54	-24.75	7.25	76.10	114.36	24 19 27	1186.5	-21.25	359.85
110.00	11 38 44	4487.96	26.31	179.94	76.83	67.35	12 53 32	3888.0	23.01	172.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.7996	TRA	11.2810	TC3	-9.1156	BAU	3.3412	SGT	15905.1	SGR	660.3	SG3	235.8	ST	4816.0	SR	605.5	SS	763.6
RDE	.5530	RRA	.0541	RC3	.2458	FAU	.02919	RRT	-.3409	RRF	-.4106	RTF	.9489	CRT	-.6141	CRS	.8131	CST	-.9583
FDE	-.9503	FRA	2.1296	FC3	-.9222	BSP	55523	SGB	15918.8	R23	.0922	R13	-.9489	LSA	4886.0	MSA	520.4	SSA	17.5
BDE	2.8537	BRA	11.2812	BC3	9.1189	FSP	878	SG1	15906.7	SG2	620.7	THA	179.19	EL1	4830.5	EL2	476.4	ALF	175.54

LAUNCH DATE NOV 24 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 936.508 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.232 GAL -8.40 AZL 88.26 HCA 279.67 SMA 191.51 ECC .26946 INC 1.7382 V1 30.170
RP 206.77 LAP -1.71 LOP 341.43 VP 24.304 GAP -14.96 AZP 89.71 TAL 318.76 TAP 238.43 RCA 139.90 APO 243.11 V2 26.485
RC 337.346 GL 10.71 GP -1.33 ZAL 147.65 ZAP 24.80 ETS 175.78 ZAE 39.58 ETE 178.28 ZAC 87.76 ETC 256.00 CLP 24.77

PLANETOCENTRIC CONIC

C3 28.775 VHL 5.364 DLA -1.78 RAL 212.62 RAD 6568.2 VEL 12.254 PTH 2.20 VHP 7.173 DPA -2.51 RAP 185.64 ECC 1.4736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 23	2248.32	-20.37	43.63	79.49	110.10	22 7 51	1648.3	-17.45	36.17
90.00	9 6 0	5002.48	22.78	219.76	80.52	72.71	10 29 23	4402.5	20.20	212.04
100.00	22 50 54	1988.60	-21.52	24.07	79.02	111.26	23 24 2	1388.6	-18.44	16.63
100.00	10 28 11	4737.44	23.95	199.86	80.11	71.55	11 47 8	4137.4	21.20	192.14
110.00	0 1 11	1780.91	-24.60	6.89	77.61	114.52	0 30 52	1180.9	-21.08	359.51
110.00	11 38 19	4517.90	27.08	181.92	78.84	68.30	12 53 37	3917.9	23.89	174.21

DIFFERENTIAL CORRECTIONS
TDE-2.9576 TRA11.6925 TC3-8.8029 BAU 3.3878
RDE .5696 RRA .0441 RC3 .2401 FAU .02503
FDE -.9244 FRA 2.0029 FC3 -.7530 BSP 55601
BDE 3.0119 BRA11.6926 BC3 8.8062 FSP 802

MID-COURSE EXECUTION ACCURACY
SGT15977.9 SGR 662.4 SG3 215.3
RRT -.3558 RRF -.4289 RTF .9417
SGB15991.6 R23 .0999 R13 -.9418
SG115979.6 SG2 619.0 THA 179.15

ORBIT DETERMINATION ACCURACY
ST 4910.2 SR 608.6 SS 730.1
CRT -.6261 CRS .8254 CST -.9565
LSA 4974.7 MSA 515.6 SSA 17.2
EL1 4925.1 EL2 473.1 ALF 175.52

LAUNCH DATE NOV 24 1964 FLIGHT TIME 430.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 940.559 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.239 GAL -8.70 AZL 88.27 HCA 280.94 SMA 191.64 ECC .27255 INC 1.7291 V1 30.170
RP 206.81 LAP -1.70 LOP 342.69 VP 24.309 GAP -15.17 AZP 89.67 TAL 317.61 TAP 238.55 RCA 139.41 APO 243.87 V2 26.480
RC 338.120 GL 10.39 GP -1.31 ZAL 148.76 ZAP 24.45 ETS 175.76 ZAE 38.91 ETE 178.27 ZAC 87.97 ETC 255.96 CLP 24.42

PLANETOCENTRIC CONIC

C3 30.234 VHL 5.499 DLA -2.44 RAL 213.51 RAD 6568.2 VEL 12.313 PTH 2.22 VHP 7.300 DPA -2.87 RAP 186.48 ECC 1.4976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 53	2240.02	-20.18	43.10	81.05	110.30	22 16 13	1640.0	-17.23	35.66
90.00	9 4 36	5035.55	23.43	221.97	82.51	73.63	10 28 31	4435.6	20.97	214.16
100.00	22 59 5	1981.29	-21.34	23.60	80.58	111.44	23 32 6	1381.3	-18.24	16.18
100.00	10 27 5	4769.51	24.62	202.00	82.11	72.49	11 46 34	4169.5	21.99	194.19
110.00	0 8 39	1775.84	-24.45	6.57	79.14	114.67	0 38 15	1175.8	-20.92	359.20
110.00	11 37 56	4547.73	27.82	183.93	80.88	69.28	12 53 44	3947.7	24.74	176.11

DIFFERENTIAL CORRECTIONS
TDE-3.1191 TRA12.1144 TC3-8.4992 BAU 3.4367
RDE .5868 RRA .0337 RC3 .2342 FAU .02096
FDE -.8958 FRA 1.8724 FC3 -.6001 BSP 55616
BDE 3.1738 BRA12.1144 BC3 8.5025 FSP 727

MID-COURSE EXECUTION ACCURACY
SGT16048.8 SGR 664.4 SG3 195.5
RRT -.3705 RRF -.4470 RTF .9328
SGB16062.5 R23 .1087 R13 -.9329
SG116050.7 SG2 617.0 THA 179.12

ORBIT DETERMINATION ACCURACY
ST 5000.9 SR 611.5 SS 695.2
CRT -.6374 CRS .8377 CST -.9542
LSA 5060.2 MSA 510.8 SSA 16.9
EL1 5016.2 EL2 469.8 ALF 175.50

LAUNCH DATE NOV 24 1964 FLIGHT TIME 432.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 944.584 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.247 GAL -9.00 AZL 88.28 HCA 282.20 SMA 191.78 ECC .27577 INC 1.7199 V1 30.170
RP 206.87 LAP -1.68 LOP 343.96 VP 24.312 GAP -15.37 AZP 89.64 TAL 316.45 TAP 238.66 RCA 138.89 APO 244.67 V2 26.474
RC 338.890 GL 10.07 GP -1.29 ZAL 149.85 ZAP 24.11 ETS 175.73 ZAE 38.26 ETE 178.26 ZAC 88.19 ETC 255.93 CLP 24.08

PLANETOCENTRIC CONIC

C3 31.789 VHL 5.638 DLA -3.10 RAL 214.39 RAD 6568.3 VEL 12.376 PTH 2.23 VHP 7.429 DPA -3.24 RAP 187.33 ECC 1.5232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 15	2232.31	-19.99	42.61	82.63	110.48	22 24 27	1632.3	-17.03	35.19
90.00	9 3 15	5068.45	24.05	224.18	84.52	74.58	10 27 43	4468.5	21.70	216.30
100.00	23 7 9	1974.58	-21.17	23.17	82.14	111.61	23 40 4	1374.6	-18.05	15.77
100.00	10 26 2	4801.42	25.26	204.16	84.14	73.46	11 46 3	4201.4	22.75	196.26
110.00	0 16 1	1771.32	-24.32	6.28	80.68	114.79	0 45 32	1171.3	-20.77	358.93
110.00	11 37 35	4577.44	28.52	185.96	82.95	70.30	12 53 53	3977.4	25.57	178.03

DIFFERENTIAL CORRECTIONS
TDE-3.2812 TRA12.5481 TC3-8.2021 BAU 3.4871
RDE .6043 RRA .0227 RC3 .2282 FAU .01696
FDE -.8642 FRA 1.7379 FC3 -.4618 BSP 55605
BDE 3.3364 BRA12.5481 BC3 8.2053 FSP 655

MID-COURSE EXECUTION ACCURACY
SGT16116.5 SGR 666.2 SG3 176.4
RRT -.3849 RRF -.4648 RTF .9215
SGB16130.2 R23 .1188 R13 -.9216
SG116118.5 SG2 614.8 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 5086.5 SR 614.2 SS 658.7
CRT -.6476 CRS .8500 CST -.9513
LSA 5140.7 MSA 506.1 SSA 16.6
EL1 5102.2 EL2 466.5 ALF 175.49

LAUNCH DATE NOV 24 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 948.577 EARTH TO MARS

RL 147.68 LAL -.00 LOL 61.75 VL 33.254 GAL -9.31 AZL 88.29 HCA 283.47 SMA 191.92 ECC .27913 INC 1.7106 V1 30.170
RP 206.93 LAP -1.66 LOP 345.23 VP 24.314 GAP -15.59 AZP 89.60 TAL 315.28 TAP 238.75 RCA 138.35 APO 245.49 V2 26.466
RC 339.657 GL 9.75 GP -1.27 ZAL 150.93 ZAP 23.78 ETS 175.70 ZAE 37.62 ETE 178.24 ZAC 88.42 ETC 255.91 CLP 23.75

PLANETOCENTRIC CONIC

C3 33.446 VHL 5.783 DLA -3.74 RAL 215.26 RAD 6568.3 VEL 12.443 PTH 2.25 VHP 7.561 DPA -3.62 RAP 188.19 ECC 1.5504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 55 31	2225.18	-19.82	42.15	84.21	110.64	22 32 36	1625.2	-16.84	34.75
90.00	9 1 56	5101.19	24.62	226.41	86.56	75.55	10 26 57	4501.2	22.39	218.44
100.00	23 15 6	1968.42	-21.02	22.78	83.72	111.76	23 47 55	1368.4	-17.88	15.39
100.00	10 25 2	4833.18	25.86	206.33	86.20	74.45	11 45 35	4233.2	23.47	198.34
110.00	0 23 16	1767.33	-24.21	6.03	82.23	114.90	0 52 44	1167.3	-20.65	358.69
110.00	11 37 17	4607.04	29.18	188.01	85.04	71.35	12 54 4	4007.0	26.35	179.97

DIFFERENTIAL CORRECTIONS
TDE-3.3947 TRA13.0446 TC3-7.8529 BAU 3.5128
RDE .6214 RRA .0104 RC3 .2213 FAU .01243
FDE -.8180 FRA 1.6068 FC3 -.3216 BSP 56773
BDE 3.4511 BRA13.0446 BC3 7.8560 FSP 606

MID-COURSE EXECUTION ACCURACY
SGT16172.2 SGR 666.8 SG3 157.9
RRT -.3952 RRF -.4740 RTF .9056
SGB16186.0 R23 .1259 R13 -.9056
SG116174.4 SG2 612.5 THA 179.07

ORBIT DETERMINATION ACCURACY
ST 5145.9 SR 615.7 SS 614.9
CRT -.6504 CRS .8585 CST -.9472
LSA 5194.6 MSA 503.9 SSA 16.5
EL1 5161.6 EL2 466.3 ALF 175.51

LAUNCH DATE NOV 25 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 20 1965

HELIOCENTRIC CONIC DISTANCE 401.653 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.946 GAL -4.84 AZL 88.50 HCA 124.37 SMA 262.49 ECC .44403 INC 1.5042 V1 30.175
RP 245.44 LAP 1.24 LOP 187.14 VP 23.997 GAP 26.12 AZP 90.85 TAL 344.20 TAP 108.57 RCA 145.94 APO 379.04 V2 22.343
RC 121.300 GL 8.55 GP .96 ZAL 115.44 ZAP 176.15 ETS 164.35 ZAE 155.31 ETE 358.95 ZAC 89.37 ETC 256.13 CLP 176.27

PLANETOCENTRIC CONIC

C3 39.975 VHL 6.323 DLA 8.43 RAL 182.07 RAD 6568.5 VEL 12.702 PTH 2.31 VHP 11.779 DPA .73 RAP 184.06 ECC 1.6579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 42	2650.71	-27.22	71.02	58.73	98.14	18 51 53	2050.7	-25.81	62.63
90.00	8 17 4	4765.74	17.21	204.64	53.13	67.16	9 36 30	4165.7	13.97	197.46
100.00	19 33 8	2375.17	-28.58	50.52	58.50	99.16	20 12 43	1775.2	-27.02	42.06
100.00	9 34 19	4516.51	18.48	185.74	52.55	66.08	10 49 36	3916.5	15.09	178.59
110.00	20 50 42	2132.44	-32.24	31.29	57.70	102.02	21 26 14	1532.4	-30.25	22.64
110.00	10 33 15	4332.01	21.84	170.03	50.85	63.03	11 45 27	3732.0	18.05	162.95

DIFFERENTIAL CORRECTIONS

TDE .8327 TRA-2.0687 TC3 .5964 BAU .3196
RDE -.5706 RRA -.2443 RC3 -.0432 FAU .05489
FDE -.2921 FRA 1.1281 FC3-1.1888 BSP 7007
BDE 1.0095 BRA 2.0830 BC3 .5979 FSP 422

MID-COURSE EXECUTION ACCURACY

SGT 2174.8 SGR 566.1 SG3 159.3
RRT -.0060 RRF -.0117 RTF -.8212
SGB 2247.3 R23 .0170 R13 .8211
SG1 2174.8 SG2 566.1 THA 179.90

ORBIT DETERMINATION ACCURACY

ST 945.1 SR 521.5 SS 417.4
CRT -.7145 CRS -.5430 CST .9727
LSA 1098.3 MSA 363.7 SSA 29.7
EL1 1025.7 EL2 336.2 ALF 155.71

LAUNCH DATE NOV 25 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 22 1965

HELIOCENTRIC CONIC DISTANCE 403.001 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.807 GAL -4.65 AZL 88.51 HCA 125.27 SMA 257.43 ECC .43269 INC 1.4941 V1 30.175
RP 245.23 LAP 1.22 LOP 188.04 VP 23.808 GAP 25.50 AZP 90.86 TAL 344.56 TAP 109.83 RCA 146.04 APO 368.82 V2 22.364
RC 123.232 GL 8.70 GP .99 ZAL 114.84 ZAP 175.68 ETS 165.52 ZAE 154.91 ETE 359.20 ZAC 89.49 ETC 256.11 CLP 175.80

PLANETOCENTRIC CONIC

C3 37.830 VHL 6.151 DLA 8.81 RAL 181.57 RAD 6568.5 VEL 12.617 PTH 2.29 VHP 11.503 DPA .58 RAP 184.46 ECC 1.6226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 44	2649.01	-27.20	70.90	57.36	98.20	18 46 53	2049.0	-25.78	62.51
90.00	8 18 5	4739.56	16.51	203.04	51.67	66.67	9 37 5	4139.6	13.22	195.91
100.00	19 28 22	2372.82	-28.55	50.35	57.12	99.24	20 7 55	1772.8	-26.98	41.90
100.00	9 35 8	4490.98	17.77	184.18	51.09	65.56	10 49 59	3891.0	14.32	177.08
110.00	20 46 23	2128.67	-32.19	31.01	56.33	102.18	21 21 52	1528.7	-30.18	22.38
110.00	10 33 36	4307.90	21.09	168.57	49.37	62.46	11 45 24	3707.9	17.24	161.56

DIFFERENTIAL CORRECTIONS

TDE .8110 TRA-2.0449 TC3 .6521 BAU .3306
RDE -.5504 RRA -.2357 RC3 -.0442 FAU .05648
FDE -.2904 FRA 1.1434 FC3-1.2925 BSP 7265
BDE .9801 BRA 2.0584 BC3 .6536 FSP 445

MID-COURSE EXECUTION ACCURACY

SGT 2220.4 SGR 561.4 SG3 167.6
RRT -.0021 RRF -.0132 RTF -.8260
SGB 2290.3 R23 .0150 R13 .8260
SG1 2220.4 SG2 561.4 THA 179.97

ORBIT DETERMINATION ACCURACY

ST 951.7 SR 517.0 SS 421.7
CRT -.7089 CRS -.5344 CST .9721
LSA 1103.1 MSA 364.9 SSA 30.3
EL1 1029.3 EL2 337.2 ALF 156.23

LAUNCH DATE NOV 25 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 404.545 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.675 GAL -4.46 AZL 88.52 HCA 126.17 SMA 252.78 ECC .42186 INC 1.4838 V1 30.175
RP 245.01 LAP 1.20 LOP 188.94 VP 23.629 GAP 24.89 AZP 90.88 TAL 344.93 TAP 111.10 RCA 146.15 APO 359.42 V2 22.385
RC 125.213 GL 8.85 GP 1.02 ZAL 114.20 ZAP 175.20 ETS 166.46 ZAE 154.56 ETE 359.43 ZAC 89.62 ETC 256.09 CLP 175.31

PLANETOCENTRIC CONIC

C3 35.827 VHL 5.986 DLA 9.20 RAL 181.05 RAD 6568.4 VEL 12.538 PTH 2.27 VHP 11.235 DPA .44 RAP 184.85 ECC 1.5896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 35	2647.84	-27.19	70.81	55.98	98.24	18 41 43	2047.8	-25.77	62.43
90.00	8 19 6	4713.25	15.80	201.44	50.21	66.19	9 37 39	4113.3	12.45	194.36
100.00	19 23 26	2370.97	-28.53	50.21	55.74	99.31	20 2 57	1771.0	-26.95	41.77
100.00	9 35 56	4465.35	17.04	182.62	49.63	65.06	10 50 22	3865.3	13.53	175.58
110.00	20 41 55	2125.36	-32.14	30.77	54.95	102.32	21 17 20	1525.4	-30.11	22.14
110.00	10 33 56	4283.73	20.32	167.11	47.90	61.91	11 45 20	3683.7	16.41	160.18

DIFFERENTIAL CORRECTIONS

TDE .7905 TRA-2.0190 TC3 .7131 BAU .3423
RDE -.5308 RRA -.2275 RC3 -.0451 FAU .05811
FDE -.2874 FRA 1.1590 FC3-1.4041 BSP 7475
BDE .9522 BRA 2.0318 BC3 .7146 FSP 471

MID-COURSE EXECUTION ACCURACY

SGT 2265.9 SGR 556.5 SG3 176.3
RRT .0010 RRF -.0153 RTF -.8312
SGB 2333.3 R23 -.0144 R13 -.8312
SG1 2265.9 SG2 556.5 THA .02

ORBIT DETERMINATION ACCURACY

ST 958.3 SR 512.3 SS 425.3
CRT -.7040 CRS -.5237 CST .9708
LSA 1107.6 MSA 366.0 SSA 30.8
EL1 1032.9 EL2 337.6 ALF 156.75

LAUNCH DATE NOV 25 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 406.264 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.548 GAL -4.27 AZL 88.53 HCA 127.07 SMA 248.51 ECC .41151 INC 1.4732 V1 30.175
RP 244.80 LAP 1.18 LOP 189.85 VP 23.457 GAP 24.29 AZP 90.89 TAL 345.32 TAP 112.39 RCA 146.25 APO 350.77 V2 22.407
RC 127.239 GL 9.00 GP 1.05 ZAL 113.54 ZAP 174.72 ETS 167.21 ZAE 154.27 ETE 359.67 ZAC 89.74 ETC 256.07 CLP 174.83

PLANETOCENTRIC CONIC

C3 33.958 VHL 5.827 DLA 9.59 RAL 180.51 RAD 6568.3 VEL 12.463 PTH 2.25 VHP 10.973 DPA .29 RAP 185.24 ECC 1.5589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 16	2647.19	-27.18	70.77	54.59	98.26	18 36 23	2047.2	-25.76	62.39
90.00	8 20 6	4686.84	15.06	199.84	48.76	65.74	9 38 13	4086.8	11.66	192.82
100.00	19 18 19	2369.63	-28.52	50.12	54.36	99.36	19 57 49	1769.6	-26.93	41.67
100.00	9 36 43	4439.63	16.29	181.08	48.17	64.59	10 50 43	3839.6	12.74	174.09
110.00	20 37 17	2122.50	-32.10	30.55	53.56	102.44	21 12 40	1522.5	-30.06	21.94
110.00	10 34 14	4259.53	19.54	165.67	46.43	61.38	11 45 14	3659.5	15.57	158.80

DIFFERENTIAL CORRECTIONS

TDE .7700 TRA-1.9913 TC3 .7794 BAU .3545
RDE -.5118 RRA -.2196 RC3 -.0458 FAU .05980
FDE -.2830 FRA 1.1746 FC3-1.5245 BSP 7665
BDE .9246 BRA 2.0034 BC3 .7808 FSP 498

MID-COURSE EXECUTION ACCURACY

SGT 2311.1 SGR 551.4 SG3 185.4
RRT .0042 RRF -.0182 RTF -.8368
SGB 2376.0 R23 -.0145 R13 -.8368
SG1 2311.1 SG2 551.4 THA .06

ORBIT DETERMINATION ACCURACY

ST 963.7 SR 507.5 SS 427.9
CRT -.6990 CRS -.5109 CST .9688
LSA 1110.7 MSA 367.1 SSA 31.3
EL1 1035.5 EL2 337.7 ALF 157.24

LAUNCH DATE NOV 25 1964 FLIGHT TIME 154.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 408.142 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.426 GAL -4.08 AZL 88.54 HCA 127.98 SMA 244.56 ECC .40163 INC 1.4624 V1 30.175
RP 244.57 LAP 1.15 LOP 190.75 VP 23.294 GAP 23.68 AZP 90.90 TAL 345.70 TAP 113.68 RCA 146.34 APO 342.79 V2 22.429
RC 129.306 GL 9.14 GP 1.09 ZAL 112.86 ZAP 174.23 ETS 167.84 ZAE 154.02 ETE 359.90 ZAC 89.87 ETC 256.05 CLP 174.33

PLANETOCENTRIC CONIC

C3 32.213 VHL 5.676 DLA 10.00 RAL 179.94 RAD 6568.3 VEL 12.393 PTH 2.24 VHP 10.718 DPA .15 RAP 185.63 ECC 1.5301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 46	2647.07	-27.18	70.76	53.21	98.26	18 30 53	2047.1	-25.76	62.38
90.00	8 21 5	4660.36	14.32	198.26	47.31	65.31	9 38 46	4060.4	10.87	191.28
100.00	19 13 3	2368.79	-28.51	50.06	52.97	99.39	19 52 31	1768.8	-26.92	41.62
100.00	9 37 29	4413.88	15.53	179.54	46.72	64.14	10 51 3	3813.9	11.93	172.60
110.00	20 32 31	2120.10	-32.06	30.38	52.18	102.54	21 7 51	1520.1	-30.01	21.77
110.00	10 34 30	4235.33	18.75	164.24	44.97	60.88	11 45 6	3635.3	14.72	157.44

DIFFERENTIAL CORRECTIONS
TDE .7497 TRA-1.9632 TC3 .8502 BAU .3667
RDE -.4934 RRA -.2120 RC3 -.0464 FAU .06155
FDE -.2777 FRA 1.1902 FC3-1.6543 BSP 7848
BDE .8975 BRA 1.9746 BC3 .8515 FSP 528

MID-COURSE EXECUTION ACCURACY
SGT 2356.7 SGR 546.0 SG3 195.0
RRT .0074 RRF -.0216 RTF -.8423
SGB 2419.1 R23 -.0150 R13 -.8423
SG1 2356.7 SG2 546.0 THA .10

ORBIT DETERMINATION ACCURACY
ST 968.6 SR 502.4 SS 430.1
CRT -.6940 CRS -.4967 CST .9665
LSA 1113.1 MSA 368.2 SSA 31.8
EL1 1037.5 EL2 337.6 ALF 157.72

LAUNCH DATE NOV 25 1964 FLIGHT TIME 156.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 410.162 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.310 GAL -3.90 AZL 88.55 HCA 128.89 SMA 240.92 ECC .39218 INC 1.4513 V1 30.175
RP 244.34 LAP 1.13 LOP 191.66 VP 23.139 GAP 23.08 AZP 90.91 TAL 346.10 TAP 114.99 RCA 146.43 APO 335.40 V2 22.451
RC 131.411 GL 9.29 GP 1.13 ZAL 112.16 ZAP 173.73 ETS 168.36 ZAE 153.82 ETE .13 ZAC 89.99 ETC 256.03 CLP 173.83

PLANETOCENTRIC CONIC

C3 30.584 VHL 5.530 DLA 10.41 RAL 179.36 RAD 6568.2 VEL 12.327 PTH 2.22 VHP 10.470 DPA .02 RAP 186.02 ECC 1.5033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 5	2647.48	-27.18	70.79	51.82	98.25	18 25 13	2047.5	-25.76	62.41
90.00	8 22 4	4633.85	13.56	196.68	45.87	64.90	9 39 18	4033.9	10.06	189.75
100.00	19 7 36	2368.46	-28.51	50.03	51.59	99.40	19 47 5	1768.5	-26.91	41.59
100.00	9 38 14	4388.11	14.76	178.02	45.27	63.71	10 51 22	3788.1	11.11	171.13
110.00	20 27 35	2118.16	-32.04	30.23	50.79	102.62	21 2 54	1518.2	-29.97	21.63
110.00	10 34 44	4211.17	17.94	162.83	43.52	60.40	11 44 55	3611.2	13.87	156.09

DIFFERENTIAL CORRECTIONS
TDE .7294 TRA-1.9334 TC3 .9257 BAU .3790
RDE -.4757 RRA -.2047 RC3 -.0467 FAU .06339
FDE -.2715 FRA 1.2050 FC3-1.7944 BSP 8010
BDE .8708 BRA 1.9442 BC3 .9268 FSP 559

MID-COURSE EXECUTION ACCURACY
SGT 2401.4 SGR 540.4 SG3 205.0
RRT .0106 RRF -.0254 RTF -.8476
SGB 2461.5 R23 -.0159 R13 -.8477
SG1 2401.4 SG2 540.3 THA .14

ORBIT DETERMINATION ACCURACY
ST 972.3 SR 497.0 SS 431.6
CRT -.6890 CRS -.4811 CST .9637
LSA 1114.1 MSA 369.2 SSA 32.3
EL1 1038.6 EL2 337.3 ALF 158.18

LAUNCH DATE NOV 25 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 412.313 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.199 GAL -3.73 AZL 88.56 HCA 129.80 SMA 237.53 ECC .38315 INC 1.4399 V1 30.175
RP 244.11 LAP 1.11 LOP 192.57 VP 22.992 GAP 22.48 AZP 90.92 TAL 346.51 TAP 116.30 RCA 146.52 APO 328.55 V2 22.475
RC 133.550 GL 9.42 GP 1.17 ZAL 111.44 ZAP 173.22 ETS 168.80 ZAE 153.67 ETE .36 ZAC 90.12 ETC 256.02 CLP 173.32

PLANETOCENTRIC CONIC

C3 29.063 VHL 5.391 DLA 10.82 RAL 178.75 RAD 6568.2 VEL 12.265 PTH 2.21 VHP 10.227 DPA -.11 RAP 186.40 ECC 1.4783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 15	2648.43	-27.19	70.85	50.43	98.22	18 19 24	2048.4	-25.78	62.47
90.00	8 23 1	4607.35	12.79	195.12	44.44	64.52	9 39 49	4007.3	9.25	188.22
100.00	19 2 0	2368.64	-28.51	50.05	50.20	99.40	19 41 29	1768.6	-26.91	41.61
100.00	9 38 57	4362.38	13.98	176.51	43.84	63.31	10 51 40	3762.4	10.29	169.66
110.00	20 22 31	2116.69	-32.01	30.12	49.40	102.68	20 57 48	1516.7	-29.94	21.53
110.00	10 34 56	4187.09	17.13	161.44	42.07	59.95	11 44 43	3587.1	13.00	154.76

DIFFERENTIAL CORRECTIONS
TDE .7087 TRA-1.9036 TC3 1.0059 BAU .3912
RDE -.4585 RRA -.1976 RC3 -.0467 FAU .06533
FDE -.2645 FRA 1.2196 FC3-1.9459 BSP 8189
BDE .8441 BRA 1.9138 BC3 1.0069 FSP 593

MID-COURSE EXECUTION ACCURACY
SGT 2446.7 SGR 534.5 SG3 215.5
RRT .0144 RRF -.0297 RTF -.8529
SGB 2504.4 R23 -.0168 R13 -.8529
SG1 2446.7 SG2 534.5 THA .19

ORBIT DETERMINATION ACCURACY
ST 974.8 SR 491.5 SS 432.6
CRT -.6834 CRS -.4640 CST .9605
LSA 1113.9 MSA 370.3 SSA 32.8
EL1 1038.4 EL2 336.8 ALF 158.63

LAUNCH DATE NOV 25 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 414.583 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 35.093 GAL -3.55 AZL 88.57 HCA 130.71 SMA 234.40 ECC .37453 INC 1.4282 V1 30.175
RP 243.87 LAP 1.08 LOP 193.48 VP 22.852 GAP 21.88 AZP 90.93 TAL 346.92 TAP 117.63 RCA 146.61 APO 322.18 V2 22.498
RC 135.719 GL 9.56 GP 1.21 ZAL 110.69 ZAP 172.71 ETS 169.17 ZAE 153.57 ETE .59 ZAC 90.24 ETC 256.00 CLP 172.81

PLANETOCENTRIC CONIC

C3 27.644 VHL 5.258 DLA 11.24 RAL 178.11 RAD 6568.1 VEL 12.207 PTH 2.19 VHP 9.991 DPA -.24 RAP 186.78 ECC 1.4549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 16	2649.91	-27.21	70.96	49.04	98.17	18 13 26	2049.9	-25.80	62.58
90.00	8 23 58	4580.88	12.01	193.57	43.01	64.16	9 40 19	3980.9	8.43	186.71
100.00	18 56 16	2369.32	-28.52	50.09	48.81	99.37	19 35 45	1769.3	-26.93	41.65
100.00	9 39 39	4336.70	13.19	175.01	42.41	62.93	10 51 55	3736.7	9.46	168.21
110.00	20 17 19	2115.67	-32.00	30.05	48.02	102.72	20 52 35	1515.7	-29.92	21.45
110.00	10 35 5	4163.11	16.30	160.07	40.64	59.53	11 44 28	3563.1	12.14	153.44

DIFFERENTIAL CORRECTIONS
TDE .6874 TRA-1.8735 TC3 1.0897 BAU .4031
RDE -.4419 RRA -.1909 RC3 -.0463 FAU .06734
FDE -.2562 FRA 1.2338 FC3-2.1088 BSP 8366
BDE .8172 BRA 1.8832 BC3 1.0907 FSP 628

MID-COURSE EXECUTION ACCURACY
SGT 2491.4 SGR 528.5 SG3 226.5
RRT .0189 RRF -.0348 RTF -.8578
SGB 2546.9 R23 -.0178 R13 -.8578
SG1 2491.5 SG2 528.4 THA .24

ORBIT DETERMINATION ACCURACY
ST 975.8 SR 485.8 SS 432.9
CRT -.6773 CRS -.4449 CST .9568
LSA 1112.0 MSA 371.5 SSA 33.3
EL1 1036.9 EL2 336.4 ALF 159.06

LAUNCH DATE NOV 25 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 416.960 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	34.991	GAL	-3.38	AZL	88.58	HCA	131.62	SMA	231.47	ECC	.36628	INC	1.4160
RP	243.63	LAP	1.06	LOP	194.39	VP	22.719	GAP	21.28	AZP	90.94	TAL	347.34	TAP	118.96	RCA	146.69	APO	316.26
RC	137.915	GL	9.69	GP	1.25	ZAL	109.92	ZAP	172.19	ETS	169.48	ZAE	153.51	ETE	.83	ZAC	90.37	ETC	255.99

V1	30.175	V2	22.522	CLP	172.29														

PLANETOCENTRIC CONIC

C3	26.319	VHL	5.130	DLA	11.67	RAL	177.46	RAD	6568.1	VEL	12.153	PTH	2.18	VHP	9.760	DPA	-.37	RAP	187.15
ECC	1.4331																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 7	2651.90	-27.23	71.10	47.64	98.10	18 7 19	2051.9	-25.83	62.72
90.00	8 24 53	4554.49	11.22	192.03	41.59	63.83	9 40 47	3954.5	7.61	185.21
100.00	18 50 22	2370.49	-28.53	50.18	47.42	99.33	19 29 52	1770.5	-26.94	41.74
100.00	9 40 18	4311.13	12.39	173.53	40.98	62.58	10 52 10	3711.1	8.62	166.77
110.00	20 11 59	2115.10	-31.99	30.00	46.64	102.74	20 47 14	1515.1	-29.91	21.41
110.00	10 35 11	4139.28	15.48	158.72	39.21	59.13	11 44 10	3539.3	11.27	152.14

DIFFERENTIAL CORRECTIONS

TDE	.6659	TRA	-1.8424	TC3	1.1787	BAU	.4151												
RDE	-.4259	RRA	-.1844	RC3	-.0456	FAU	.06947												
FDE	-.2470	FRA	1.2470	FC3	-2.2851	BSP	8534												
BDE	.7905	BRA	1.8516	BC3	1.1796	FSP	665												

MID-COURSE EXECUTION ACCURACY

SGT	2535.8	SGR	522.2	SG3	238.1						
RRT	.0237	RRF	-.0403	RTF	-.8626						
SGB	2589.0	R23	-.0190	R13	-.8627						
SG1	2535.8	SG2	522.0	THA	.29						

ORBIT DETERMINATION ACCURACY

ST	975.5	SR	479.8	SS	432.5						
CRT	-.6709	CRS	-.4242	CST	.9526						
LSA	1108.6	MSA	372.7	SSA	33.9						
EL1	1034.0	EL2	335.7	ALF	159.48						

LAUNCH DATE NOV 25 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 419.436 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	34.893	GAL	-3.22	AZL	88.60	HCA	132.53	SMA	228.75	ECC	.35841	INC	1.4035
RP	243.38	LAP	1.03	LOP	195.30	VP	22.593	GAP	20.69	AZP	90.95	TAL	347.77	TAP	120.30	RCA	146.77	APO	310.74
RC	140.134	GL	9.81	GP	1.30	ZAL	109.14	ZAP	171.66	ETS	169.75	ZAE	153.50	ETE	1.07	ZAC	90.50	ETC	255.97

V1	30.175	V2	22.547	CLP	171.76														

PLANETOCENTRIC CONIC

C3	25.082	VHL	5.008	DLA	12.10	RAL	176.78	RAD	6568.0	VEL	12.102	PTH	2.17	VHP	9.535	DPA	-.48	RAP	187.52
ECC	1.4128																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 49	2654.39	-27.25	71.28	46.26	98.01	18 1 3	2054.4	-25.86	62.89
90.00	8 25 46	4528.21	10.43	190.50	40.18	63.52	9 41 14	3928.2	6.79	183.71
100.00	18 44 20	2372.14	-28.55	50.30	46.03	99.27	19 23 52	1772.1	-26.97	41.85
100.00	9 40 56	4285.69	11.59	172.07	39.57	62.25	10 52 22	3685.7	7.79	165.34
110.00	20 6 31	2114.97	-31.99	29.99	45.26	102.75	20 41 46	1515.0	-29.90	21.40
110.00	10 35 14	4115.63	14.64	157.39	37.80	58.76	11 43 50	3515.6	10.40	150.86

DIFFERENTIAL CORRECTIONS

TDE	.6443	TRA	-1.8109	TC3	1.2724	BAU	.4269				
RDE	-.4105	RRA	-.1782	RC3	-.0445	FAU	.07171				
FDE	-.2372	FRA	1.2597	FC3	-2.4751	BSP	8703				
BDE	.7639	BRA	1.8197	BC3	1.2732	FSP	704				

MID-COURSE EXECUTION ACCURACY

SGT	2580.1	SGR	515.7	SG3	250.3						
RRT	.0291	RRF	-.0464	RTF	-.8673						
SGB	2631.2	R23	-.0201	R13	-.8673						
SG1	2580.2	SG2	515.5	THA	.35						

ORBIT DETERMINATION ACCURACY

ST	974.1	SR	473.7	SS	431.7						
CRT	-.6641	CRS	-.4022	CST	.9479						
LSA	1103.9	MSA	374.0	SSA	34.4						
EL1	1030.1	EL2	334.9	ALF	159.88						

LAUNCH DATE NOV 25 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 422.003 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	34.800	GAL	-3.06	AZL	88.61	HCA	133.45	SMA	226.21	ECC	.35088	INC	1.3906
RP	243.12	LAP	1.01	LOP	196.22	VP	22.474	GAP	20.11	AZP	90.96	TAL	348.20	TAP	121.65	RCA	146.84	APO	305.59
RC	142.373	GL	9.93	GP	1.35	ZAL	108.33	ZAP	171.12	ETS	169.98	ZAE	153.53	ETE	1.31	ZAC	90.63	ETC	255.96

V1	30.175	V2	22.572	CLP	171.22														

PLANETOCENTRIC CONIC

C3	23.928	VHL	4.892	DLA	12.53	RAL	176.08	RAD	6568.0	VEL	12.054	PTH	2.15	VHP	9.316	DPA	-.60	RAP	187.88
ECC	1.3938																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 23	2657.37	-27.28	71.49	44.87	97.91	17 54 40	2057.4	-25.90	63.10
90.00	8 26 37	4502.09	9.63	189.00	38.78	63.24	9 41 39	3902.1	5.96	182.24
100.00	18 38 10	2374.26	-28.57	50.45	44.65	99.19	19 17 44	1774.3	-27.00	42.00
100.00	9 41 31	4260.44	10.79	170.62	38.17	61.95	10 52 31	3660.4	6.95	163.93
110.00	20 0 56	2115.26	-31.99	30.02	43.88	102.74	20 36 11	1515.3	-29.91	21.42
110.00	10 35 14	4092.20	13.81	156.08	36.40	58.42	11 43 26	3492.2	9.53	149.60

DIFFERENTIAL CORRECTIONS

TDE	.6229	TRA	-1.7785	TC3	1.3702	BAU	.4385				
RDE	-.3955	RRA	-.1722	RC3	-.0428	FAU	.07405				
FDE	-.2262	FRA	1.2715	FC3	-2.6792	BSP	8854				
BDE	.7378	BRA	1.7869	BC3	1.3709	FSP	745				

MID-COURSE EXECUTION ACCURACY

SGT	2623.6	SGR	509.0	SG3	263.0						
RRT	.0350	RRF	-.0533	RTF	-.8717						
SGB	2672.5	R23	-.0216	R13	-.8718						
SG1	2623.6	SG2	508.7	THA	.40						

ORBIT DETERMINATION ACCURACY

ST	971.5	SR	467.4	SS	430.3						
CRT	-.6571	CRS	-.3780	CST	.9424						
LSA	1097.9	MSA	375.3	SSA	35.0						
EL1	1025.0	EL2	333.9	ALF	160.28						

LAUNCH DATE NOV 25 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 424.653 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	34.710	GAL	-2.90	AZL	88.62	HCA	134.37	SMA	223.84	ECC	.34368	INC	1.3773
RP	242.87	LAP	.98	LOP	197.14	VP	22.361	GAP	19.52	AZP	90.96	TAL	348.64	TAP	123.01	RCA	146.91	APO	300.77
RC	144.629	GL	10.04	GP	1.40	ZAL	107.51	ZAP	170.57	ETS	170.17	ZAE	153.60	ETE	1.56	ZAC	90.76	ETC	255.95

V1	30.175	V2	22.598	CLP	170.68														

PLANETOCENTRIC CONIC

C3	22.850	VHL	4.780	DLA	12.96	RAL	175.36	RAD	6567.9	VEL	12.010	PTH	2.14	VHP	9.101	DPA	-.71	RAP	188.24
ECC	1.3761																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 48	2660.84	-27.31	71.74	43.48	97.79	17 48 9	2060.8	-25.95	63.34
90.00	8 27 26	4476.12	8.83	187.51	37.39	62.99	9 42 2	3876.1	5.14	180.78
100.00	18 31 51	2376.84	-28.60	50.64	43.26	99.10	19 11 28	1776.8	-27.04	42.18
100.00	9 42 3	4235.35	9.98	169.20	36.77	61.68	10 52 39	3635.4	6.12	162.54
110.00	19 55 14	2115.97	-32.00	30.07	42.51	102.71	20 30 30	1516.0	-29.92	21.47
110.00	10 35 11	4068.99	12.98	154.80	35.00	58.10	11 43 0	3469.0	8.67	148.35

DIFFERENTIAL CORRECTIONS

TDE	.6086	TRA	-1.7376	TC3	1.4874	BAU	.4546				
RDE	-.3813	RRA	-.1667	RC3	-.0409	FAU	.07641				
FDE	-.2115	FRA	1.2850	FC3	-2.8949	BSP	8815				
BDE	.7182	BRA	1.7455	BC3	1.4880	FSP	793				

MID-COURSE EXECUTION ACCURACY

SGT	2668.6	SGR	502.4	SG3	276.2						
RRT	.0366	RRF	-.0622	RTF	-.8788						
SGB	2715.5	R23	-.0289	R13	-.8789						
SG1	2668.6	SG2	502.1	THA	.41						

ORBIT DETERMINATION ACCURACY

ST	972.1	SR	461.2	SS	427.8						
CRT	-.6559	CRS	-.3460	CST	.9312						
LSA	1094.2	MSA	376.9	SSA	35.0						
EL1	1023.9	EL2	330.5	ALF	160.62						

LAUNCH DATE NOV 25 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 427.380 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.624 GAL -2.75 AZL 88.64 HCA 135.29 SMA 221.62 ECC .33680 INC 1.3636 V1 30.175
RP 242.60 LAP .96 LOP 198.06 VP 22.254 GAP 18.95 AZP 90.97 TAL 349.08 TAP 124.37 RCA 146.98 APO 296.26 V2 22.624
RC 146.900 GL 10.14 GP 1.45 ZAL 106.67 ZAP 170.02 ETS 170.33 ZAE 153.71 ETE 1.82 ZAC 90.90 ETC 255.93 CLP 170.12

PLANETOCENTRIC CONIC

C3 21.846 VHL 4.674 DLA 13.39 RAL 174.61 RAD 6567.9 VEL 11.968 PTH 2.13 VHP 8.892 DPA -.81 RAP 188.60 ECC 1.3595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 7	2664.71	-27.35	72.02	42.10	97.65	17 41 32	2064.7	-26.00	63.61
90.00	8 28 12	4450.45	8.03	186.04	36.01	62.76	9 42 23	3850.4	4.32	179.33
100.00	18 25 28	2379.80	-28.63	50.85	41.89	98.99	19 5 7	1779.8	-27.09	42.39
100.00	9 42 33	4210.58	9.18	167.80	35.39	61.43	10 52 43	3610.6	5.29	161.16
110.00	19 49 26	2117.03	-32.02	30.15	41.14	102.66	20 24 43	1517.0	-29.95	21.55
110.00	10 35 3	4046.12	12.16	153.54	33.62	57.80	11 42 30	3446.1	7.82	147.13

DIFFERENTIAL CORRECTIONS
TDE .5812 TRA-1.7098 TC3 1.5860 BAU .4633
RDE -.3674 RRA -.1611 RC3 -.0379 FAU .07906
FDE -.1994 FRA 1.2941 FC3-3.1332 BSP 9101
BDE .6876 BRA 1.7173 BC3 1.5864 FSP 836

MID-COURSE EXECUTION ACCURACY
SGT 2710.6 SGR 495.2 SG3 290.4
RRT .0477 RRF -.0704 RTF -.8813
SGB 2755.5 R23 -.0270 R13 -.8814
SG1 2710.7 SG2 494.7 THA .52

ORBIT DETERMINATION ACCURACY
ST 963.0 SR 454.4 SS 425.6
CRT -.6433 CRS -.3194 CST .9266
LSA 1081.8 MSA 378.8 SSA 35.9
EL1 1012.1 EL2 331.0 ALF 161.00

LAUNCH DATE NOV 25 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 430.178 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.542 GAL -2.59 AZL 88.65 HCA 136.21 SMA 219.54 ECC .33023 INC 1.3493 V1 30.175
RP 242.34 LAP .93 LOP 198.98 VP 22.154 GAP 18.37 AZP 90.97 TAL 349.53 TAP 125.73 RCA 147.04 APO 292.04 V2 22.651
RC 149.184 GL 10.24 GP 1.51 ZAL 105.82 ZAP 169.45 ETS 170.47 ZAE 153.86 ETE 2.09 ZAC 91.03 ETC 255.92 CLP 169.56

PLANETOCENTRIC CONIC

C3 20.908 VHL 4.573 DLA 13.82 RAL 173.85 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 8.688 DPA -.91 RAP 188.95 ECC 1.3441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 20	2668.98	-27.38	72.33	40.72	97.50	17 34 49	2069.0	-26.06	63.91
90.00	8 28 55	4425.04	7.24	184.60	34.64	62.55	9 42 40	3825.0	3.50	177.91
100.00	18 18 57	2383.15	-28.66	51.10	40.51	98.87	18 58 40	1783.2	-27.14	42.62
100.00	9 42 59	4186.11	8.38	166.42	34.02	61.20	10 52 45	3586.1	4.47	159.81
110.00	19 43 33	2118.45	-32.04	30.25	39.77	102.60	20 18 52	1518.5	-29.97	21.65
110.00	10 34 52	4023.57	11.33	152.31	32.25	57.53	11 41 56	3423.6	6.97	145.94

DIFFERENTIAL CORRECTIONS
TDE .5563 TRA-1.6793 TC3 1.6918 BAU .4729
RDE -.3540 RRA -.1558 RC3 -.0343 FAU .08179
FDE -.1856 FRA 1.3035 FC3-3.3867 BSP 9323
BDE .6594 BRA 1.6865 BC3 1.6920 FSP 884

MID-COURSE EXECUTION ACCURACY
SGT 2752.2 SGR 488.0 SG3 305.2
RRT .0582 RRF -.0801 RTF -.8845
SGB 2795.1 R23 -.0270 R13 -.8845
SG1 2752.4 SG2 487.1 THA .61

ORBIT DETERMINATION ACCURACY
ST 954.3 SR 447.6 SS 422.9
CRT -.6321 CRS -.2887 CST .9198
LSA 1069.4 MSA 380.7 SSA 36.6
EL1 1000.8 EL2 330.7 ALF 161.38

LAUNCH DATE NOV 25 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 433.041 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.464 GAL -2.45 AZL 88.67 HCA 137.13 SMA 217.59 ECC .32395 INC 1.3345 V1 30.175
RP 242.06 LAP .91 LOP 199.90 VP 22.059 GAP 17.80 AZP 90.98 TAL 349.98 TAP 127.11 RCA 147.10 APO 288.08 V2 22.678
RC 151.478 GL 10.32 GP 1.57 ZAL 104.95 ZAP 168.88 ETS 170.59 ZAE 154.05 ETE 2.37 ZAC 91.17 ETC 255.91 CLP 168.98

PLANETOCENTRIC CONIC

C3 20.033 VHL 4.476 DLA 14.24 RAL 173.07 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 8.489 DPA -1.00 RAP 189.29 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 26	2673.63	-27.43	72.66	39.35	97.34	17 28 0	2073.6	-26.13	64.24
90.00	8 29 35	4399.96	6.45	183.18	33.28	62.37	9 42 55	3800.0	2.70	176.51
100.00	18 12 22	2386.85	-28.70	51.36	39.14	98.73	18 52 8	1786.9	-27.20	42.88
100.00	9 43 21	4161.97	7.58	165.07	32.66	61.00	10 52 43	3562.0	3.66	158.48
110.00	19 37 35	2120.19	-32.07	30.38	38.41	102.53	20 12 55	1520.2	-30.01	21.77
110.00	10 34 37	4001.39	10.52	151.11	30.89	57.29	11 41 18	3401.4	6.14	144.76

DIFFERENTIAL CORRECTIONS
TDE .5328 TRA-1.6466 TC3 1.8032 BAU .4830
RDE -.3411 RRA -.1508 RC3 -.0299 FAU .08464
FDE -.1706 FRA 1.3119 FC3-3.6579 BSP 9494
BDE .6326 BRA 1.6535 BC3 1.8034 FSP 933

MID-COURSE EXECUTION ACCURACY
SGT 2792.8 SGR 480.6 SG3 320.6
RRT .0687 RRF -.0910 RTF -.8879
SGB 2833.9 R23 -.0281 R13 -.8879
SG1 2793.0 SG2 479.5 THA .70

ORBIT DETERMINATION ACCURACY
ST 945.1 SR 440.7 SS 419.8
CRT -.6215 CRS -.2552 CST .9112
LSA 1056.3 MSA 382.7 SSA 37.3
EL1 989.3 EL2 329.8 ALF 161.74

LAUNCH DATE NOV 25 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 435.965 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.388 GAL -2.31 AZL 88.68 HCA 138.06 SMA 215.76 ECC .31795 INC 1.3192 V1 30.175
RP 241.79 LAP .88 LOP 200.83 VP 21.970 GAP 17.24 AZP 90.98 TAL 350.43 TAP 128.49 RCA 147.16 APO 284.35 V2 22.706
RC 153.781 GL 10.40 GP 1.63 ZAL 104.07 ZAP 168.29 ETS 170.68 ZAE 154.28 ETE 2.67 ZAC 91.30 ETC 255.90 CLP 168.40

PLANETOCENTRIC CONIC

C3 19.217 VHL 4.384 DLA 14.66 RAL 172.27 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 8.294 DPA -1.08 RAP 189.63 ECC 1.3163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 28	2678.61	-27.47	73.02	37.98	97.17	17 21 6	2078.6	-26.19	64.59
90.00	8 30 11	4375.25	5.67	181.79	31.93	62.21	9 43 6	3775.2	1.90	175.13
100.00	18 5 41	2390.86	-28.74	51.66	37.78	98.58	18 45 32	1790.9	-27.26	43.17
100.00	9 43 38	4138.22	6.80	163.74	31.31	60.82	10 52 37	3538.2	2.86	157.17
110.00	19 31 33	2122.22	-32.10	30.53	37.06	102.45	20 6 55	1522.2	-30.05	21.92
110.00	10 34 16	3979.63	9.72	149.94	29.54	57.07	11 40 36	3379.6	5.31	143.62

DIFFERENTIAL CORRECTIONS
TDE .5094 TRA-1.6137 TC3 1.9206 BAU .4935
RDE -.3287 RRA -.1461 RC3 -.0247 FAU .08764
FDE -.1534 FRA 1.3200 FC3-3.9481 BSP 9652
BDE .6062 BRA 1.6203 BC3 1.9207 FSP 986

MID-COURSE EXECUTION ACCURACY
SGT 2834.0 SGR 473.2 SG3 336.9
RRT .0805 RRF -.1035 RTF -.8914
SGB 2873.3 R23 -.0299 R13 -.8915
SG1 2834.3 SG2 471.7 THA .79

ORBIT DETERMINATION ACCURACY
ST 934.6 SR 433.6 SS 416.1
CRT -.6102 CRS -.2164 CST .9003
LSA 1041.6 MSA 385.3 SSA 37.9
EL1 976.4 EL2 328.9 ALF 162.10

LAUNCH DATE NOV 25 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 438.946 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.316 GAL -2.17 AZL 88.70 HCA 138.99 SMA 214.03 ECC .31222 INC 1.3033 V1 30.175
RP 241.51 LAP .86 LOP 201.76 VP 21.886 GAP 16.68 AZP 90.98 TAL 350.88 TAP 129.87 RCA 147.21 APO 280.86 V2 22.734
RC 156.092 GL 10.46 GP 1.70 ZAL 103.18 ZAP 167.69 ETS 170.76 ZAE 154.54 ETE 2.98 ZAC 91.44 ETC 255.89 CLP 167.81

PLANETOCENTRIC CONIC

C3 18.455 VHL 4.296 DLA 15.08 RAL 171.46 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 8.104 DPA -1.16 RAP 189.96 ECC 1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 26	2683.86	-27.51	73.40	36.62	96.98	17 14 9	2083.9	-26.26	64.95
90.00	8 30 42	4350.97	4.89	180.42	30.59	62.07	9 43 13	3751.0	1.12	173.77
100.00	17 58 57	2395.14	-28.79	51.97	36.42	98.42	18 38 52	1795.1	-27.32	43.47
100.00	9 43 51	4114.92	6.02	162.45	29.97	60.67	10 52 26	3514.9	2.07	155.89
110.00	19 25 27	2124.49	-32.13	30.70	35.71	102.35	20 0 52	1524.5	-30.10	22.08
110.00	10 33 51	3958.33	8.93	148.79	28.20	56.87	11 39 49	3358.3	4.50	142.50

DIFFERENTIAL CORRECTIONS
TDE .4865 TRA-1.5801 TC3 2.0406 BAU .5035
RDE -.3167 RRA -.1416 RC3 -.0184 FAU .09078
FDE -.1356 FRA 1.3272 FC3-4.2586 BSP 9814
BDE .5805 BRA 1.5865 BC3 2.0407 FSP 1042

MID-COURSE EXECUTION ACCURACY
SGT 2873.7 SGR 465.8 SG3 353.9
RRT .0933 RRF -.1175 RTF -.8948
SGB 2911.3 R23 -.0319 R13 -.8949
SG1 2874.1 SG2 463.7 THA .89

ORBIT DETERMINATION ACCURACY
ST 923.3 SR 426.5 SS 412.6
CRT -.5986 CRS -.1758 CST .8882
LSA 1026.0 MSA 387.9 SSA 38.5
EL1 962.8 EL2 327.6 ALF 162.45

LAUNCH DATE NOV 25 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 441.980 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.247 GAL -2.03 AZL 88.71 HCA 139.92 SMA 212.41 ECC .30675 INC 1.2868 V1 30.175
RP 241.22 LAP .83 LOP 202.69 VP 21.807 GAP 16.12 AZP 90.98 TAL 351.34 TAP 131.26 RCA 147.26 APO 277.57 V2 22.762
RC 158.408 GL 10.51 GP 1.77 ZAL 102.28 ZAP 167.08 ETS 170.82 ZAE 154.84 ETE 3.31 ZAC 91.59 ETC 255.88 CLP 167.20

PLANETOCENTRIC CONIC

C3 17.745 VHL 4.212 DLA 15.48 RAL 170.62 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 7.918 DPA -1.23 RAP 190.29 ECC 1.2920

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 20	2689.33	-27.56	73.79	35.26	96.79	17 7 10	2089.3	-26.33	65.34
90.00	8 31 8	4327.16	4.13	179.08	29.27	61.96	9 43 15	3727.2	.35	172.45
100.00	17 52 10	2399.62	-28.83	52.29	35.06	98.26	18 32 10	1799.6	-27.39	43.79
100.00	9 43 59	4092.11	5.26	161.18	28.65	60.53	10 52 11	3492.1	1.29	154.64
110.00	19 19 19	2126.96	-32.17	30.89	34.37	102.25	19 54 46	1527.0	-30.14	22.25
110.00	10 33 20	3937.53	8.15	147.68	26.87	56.69	11 38 57	3337.5	3.71	141.41

DIFFERENTIAL CORRECTIONS
TDE .4636 TRA-1.5449 TC3 2.1645 BAU .5135
RDE -.3053 RRA -.1373 RC3 -.0112 FAU .09407
FDE -.1163 FRA 1.3325 FC3-4.5896 BSP 9965
BDE .5551 BRA 1.5510 BC3 2.1645 FSP 1102

MID-COURSE EXECUTION ACCURACY
SGT 2911.6 SGR 458.3 SG3 371.8
RRT .1075 RRF -.1330 RTF -.8981
SGB 2947.4 R23 -.0342 R13 -.8982
SG1 2912.0 SG2 455.6 THA .99

ORBIT DETERMINATION ACCURACY
ST 910.2 SR 419.3 SS 408.7
CRT -.5865 CRS -.1315 CST .8739
LSA 1008.5 MSA 390.7 SSA 39.1
EL1 947.6 EL2 326.2 ALF 162.78

LAUNCH DATE NOV 25 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 445.063 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.181 GAL -1.90 AZL 88.73 HCA 140.85 SMA 210.89 ECC .30152 INC 1.2695 V1 30.175
RP 240.93 LAP .80 LOP 203.62 VP 21.734 GAP 15.57 AZP 90.98 TAL 351.80 TAP 132.65 RCA 147.30 APO 274.47 V2 22.791
RC 160.729 GL 10.55 GP 1.85 ZAL 101.37 ZAP 166.46 ETS 170.86 ZAE 155.17 ETE 3.66 ZAC 91.73 ETC 255.88 CLP 166.58

PLANETOCENTRIC CONIC

C3 17.082 VHL 4.133 DLA 15.88 RAL 169.77 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 7.737 DPA -1.29 RAP 190.60 ECC 1.2811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 13	2694.99	-27.60	74.20	33.90	96.59	17 0 8	2095.0	-26.40	65.74
90.00	8 31 28	4303.87	3.39	177.78	27.95	61.87	9 43 12	3703.9	-.40	171.15
100.00	17 45 21	2404.28	-28.88	52.63	33.71	98.08	18 25 26	1804.3	-27.46	44.12
100.00	9 44 1	4069.81	4.51	159.95	27.33	60.42	10 51 51	3469.8	.54	153.42
110.00	19 13 9	2129.60	-32.20	31.08	33.03	102.14	19 48 38	1529.6	-30.20	22.44
110.00	10 32 43	3917.26	7.39	146.60	25.55	56.53	11 38 0	3317.3	2.94	140.35

DIFFERENTIAL CORRECTIONS
TDE .4491 TRA-1.5026 TC3 2.3096 BAU .5275
RDE -.2943 RRA -.1333 RC3 -.0030 FAU .09753
FDE -.0957 FRA 1.3375 FC3-4.9427 BSP 9897
BDE .5370 BRA 1.5085 BC3 2.3096 FSP 1164

MID-COURSE EXECUTION ACCURACY
SGT 2953.5 SGR 451.0 SG3 390.5
RRT .1181 RRF -.1502 RTF -.9033
SGB 2987.7 R23 -.0413 R13 -.9034
SG1 2954.0 SG2 447.8 THA 1.06

ORBIT DETERMINATION ACCURACY
ST 901.7 SR 412.1 SS 405.0
CRT -.5829 CRS -.0834 CST .8519
LSA 995.1 MSA 393.9 SSA 39.2
EL1 937.7 EL2 322.0 ALF 163.02

LAUNCH DATE NOV 25 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 448.191 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.118 GAL -1.77 AZL 88.75 HCA 141.79 SMA 209.45 ECC .29653 INC 1.2514 V1 30.175
RP 240.64 LAP .77 LOP 204.56 VP 21.666 GAP 15.03 AZP 90.98 TAL 352.25 TAP 134.04 RCA 147.34 APO 271.56 V2 22.821
RC 163.052 GL 10.58 GP 1.93 ZAL 100.45 ZAP 165.82 ETS 170.89 ZAE 155.54 ETE 4.03 ZAC 91.88 ETC 255.87 CLP 165.95

PLANETOCENTRIC CONIC

C3 16.464 VHL 4.058 DLA 16.27 RAL 168.91 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 7.560 DPA -1.34 RAP 190.92 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 6	2700.70	-27.65	74.61	32.55	96.39	16 53 7	2100.7	-26.47	66.14
90.00	8 31 42	4281.25	2.66	176.51	26.65	61.80	9 43 3	3681.2	-1.13	169.89
100.00	17 38 33	2408.99	-28.92	52.97	32.37	97.91	18 18 42	1809.0	-27.52	44.45
100.00	9 43 56	4048.19	3.78	158.76	26.02	60.33	10 51 24	3448.2	-.19	152.23
110.00	19 6 59	2132.30	-32.24	31.28	31.70	102.02	19 42 32	1532.3	-30.25	22.63
110.00	10 31 59	3897.64	6.65	145.56	24.25	56.39	11 36 57	3297.6	2.19	139.32

DIFFERENTIAL CORRECTIONS
TDE .4193 TRA-1.4759 TC3 2.4206 BAU .5328
RDE -.2836 RRA -.1293 RC3 .0071 FAU .10119
FDE -.0751 FRA 1.3407 FC3-5.3207 BSP 10234
BDE .5062 BRA 1.4816 BC3 2.4206 FSP 1230

MID-COURSE EXECUTION ACCURACY
SGT 2987.1 SGR 443.4 SG3 410.2
RRT .1412 RRF -.1697 RTF -.9043
SGB 3019.8 R23 -.0396 R13 -.9045
SG1 2987.8 SG2 438.8 THA 1.23

ORBIT DETERMINATION ACCURACY
ST 882.1 SR 404.5 SS 401.6
CRT -.5603 CRS -.0349 CST .8402
LSA 971.5 MSA 397.1 SSA 40.3
EL1 915.1 EL2 323.0 ALF 163.48

LAUNCH DATE NOV 25 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 451.363 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.058 GAL -1.64 AZL 88.77 HCA 142.72 SMA 208.10 ECC .29176 INC 1.2326 V1 30.175
RP 240.34 LAP .75 LOP 205.49 VP 21.602 GAP 14.49 AZP 90.98 TAL 352.71 TAP 135.44 RCA 147.38 APO 268.81 V2 22.851
RC 165.375 GL 10.59 GP 2.02 ZAL 99.53 ZAP 165.17 ETS 170.91 ZAE 155.94 ETE 4.44 ZAC 92.02 ETC 255.86 CLP 165.31

PLANETOCENTRIC CONIC

C3 15.888 VHL 3.986 DLA 16.64 RAL 168.03 RAD 6567.6 VEL 11.716 PTH 2.06 VHP 7.386 DPA -1.38 RAP 191.22 ECC 1.2615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 0	2706.45	-27.69	75.03	31.21	96.18	16 46 6	2106.5	-26.54	66.55
90.00	8 31 48	4259.26	1.95	175.29	25.35	61.74	9 42 48	3659.3	-1.84	168.66
100.00	17 31 46	2413.75	-28.96	53.32	31.04	97.73	18 11 59	1813.7	-27.59	44.79
100.00	9 43 43	4027.20	3.08	157.60	24.73	60.25	10 50 51	3427.2	-.91	151.08
110.00	19 0 50	2135.06	-32.28	31.49	30.37	101.91	19 36 25	1535.1	-30.30	22.83
110.00	10 31 9	3878.65	5.94	144.56	22.95	56.27	11 35 47	3278.6	1.47	138.33

DIFFERENTIAL CORRECTIONS
TDE .3970 TRA-1.4411 TC3 2.5480 BAU .5412
RDE -.2734 RRA -.1256 RC3 .0183 FAU .10498
FDE -.0528 FRA 1.3426 FC3-5.7202 BSP 10383
BDE .4820 BRA 1.4466 BC3 2.5481 FSP 1299

MID-COURSE EXECUTION ACCURACY
SGT 3021.0 SGR 436.1 SG3 430.8
RRT .1615 RRF -.1915 RTF -.9070
SGB 3052.3 R23 -.0425 R13 -.9072
SG1 3021.8 SG2 430.2 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 866.1 SR 397.0 SS 398.4
CRT -.5455 CRS .0178 CST .8205
LSA 950.9 MSA 400.7 SSA 40.9
EL1 896.9 EL2 321.3 ALF 163.83

LAUNCH DATE NOV 25 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 454.575 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 34.000 GAL -1.52 AZL 88.79 HCA 143.66 SMA 206.82 ECC .28721 INC 1.2129 V1 30.175
RP 240.04 LAP .72 LOP 206.43 VP 21.543 GAP 13.96 AZP 90.98 TAL 353.17 TAP 136.83 RCA 147.42 APO 266.22 V2 22.881
RC 167.697 GL 10.58 GP 2.11 ZAL 98.61 ZAP 164.51 ETS 170.91 ZAE 156.38 ETE 4.88 ZAC 92.18 ETC 255.85 CLP 164.65

PLANETOCENTRIC CONIC

C3 15.351 VHL 3.918 DLA 17.00 RAL 167.14 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 7.217 DPA -1.42 RAP 191.52 ECC 1.2526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 56	2712.16	-27.73	75.44	29.88	95.98	16 39 8	2112.2	-26.61	66.95
90.00	8 31 46	4238.01	1.27	174.10	24.07	61.71	9 42 24	3638.0	-2.53	167.47
100.00	17 25 0	2418.45	-29.01	53.66	29.70	97.56	18 5 19	1818.5	-27.66	45.12
100.00	9 43 23	4006.94	2.39	156.49	23.45	60.19	10 50 10	3406.9	-1.59	149.97
110.00	18 54 42	2137.81	-32.32	31.69	29.05	101.79	19 30 20	1537.8	-30.36	23.03
110.00	10 30 10	3860.36	5.25	143.60	21.67	56.17	11 34 31	3260.4	.77	137.38

DIFFERENTIAL CORRECTIONS
TDE .3755 TRA-1.4060 TC3 2.6803 BAU .5501
RDE -.2636 RRA -.1221 RC3 .0311 FAU .10899
FDE -.0292 FRA 1.3438 FC3-6.1466 BSP 10512
BDE .4587 BRA 1.4113 BC3 2.6805 FSP 1372

MID-COURSE EXECUTION ACCURACY
SGT 3055.5 SGR 429.0 SG3 452.5
RRT .1839 RRF -.2157 RTF -.9098
SGB 3085.5 R23 -.0459 R13 -.9100
SG1 3056.5 SG2 421.6 THA 1.51

ORBIT DETERMINATION ACCURACY
ST 849.4 SR 389.5 SS 395.7
CRT -.5303 CRS .0735 CST .7981
LSA 929.7 MSA 404.7 SSA 41.5
EL1 878.2 EL2 319.4 ALF 164.19

LAUNCH DATE NOV 25 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 457.825 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.944 GAL -1.40 AZL 88.81 HCA 144.61 SMA 205.61 ECC .28286 INC 1.1922 V1 30.175
RP 239.73 LAP .69 LOP 207.37 VP 21.488 GAP 13.43 AZP 90.97 TAL 353.62 TAP 138.23 RCA 147.45 APO 263.77 V2 22.912
RC 170.016 GL 10.56 GP 2.21 ZAL 97.68 ZAP 163.83 ETS 170.90 ZAE 156.85 ETE 5.35 ZAC 92.33 ETC 255.85 CLP 163.98

PLANETOCENTRIC CONIC

C3 14.849 VHL 3.853 DLA 17.35 RAL 166.24 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 7.052 DPA -1.44 RAP 191.80 ECC 1.2444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 55	2717.75	-27.77	75.84	28.55	95.78	16 32 12	2117.8	-26.68	67.35
90.00	8 31 35	4217.52	.60	172.96	22.80	61.69	9 41 52	3617.5	-3.18	166.33
100.00	17 18 17	2423.07	-29.05	54.00	28.38	97.38	17 58 40	1823.1	-27.72	45.45
100.00	9 42 53	3987.44	1.73	155.42	22.17	60.15	10 49 21	3387.4	-2.25	148.90
110.00	18 48 36	2140.49	-32.36	31.89	27.73	101.68	19 24 17	1540.5	-30.41	23.22
110.00	10 29 4	3842.79	4.58	142.67	20.40	56.09	11 33 6	3242.8	.09	136.46

DIFFERENTIAL CORRECTIONS
TDE .3659 TRA-1.3589 TC3 2.8422 BAU .5643
RDE -.2543 RRA -.1189 RC3 .0453 FAU .11324
FDE -.0063 FRA 1.3412 FC3-6.6020 BSP 10337
BDE .4456 BRA 1.3641 BC3 2.8426 FSP 1445

MID-COURSE EXECUTION ACCURACY
SGT 3094.4 SGR 422.5 SG3 475.2
RRT .2012 RRF -.2415 RTF -.9150
SGB 3123.1 R23 -.0552 R13 -.9152
SG1 3095.5 SG2 413.7 THA 1.60

ORBIT DETERMINATION ACCURACY
ST 838.8 SR 382.1 SS 393.1
CRT -.5314 CRS .1275 CST .7635
LSA 914.0 MSA 408.7 SSA 41.3
EL1 866.9 EL2 313.2 ALF 164.29

LAUNCH DATE NOV 25 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 461.110 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.891 GAL -1.29 AZL 88.83 HCA 145.55 SMA 204.47 ECC .27872 INC 1.1705 V1 30.175
RP 239.42 LAP .66 LOP 208.32 VP 21.437 GAP 12.91 AZP 90.97 TAL 354.07 TAP 139.62 RCA 147.48 APO 261.46 V2 22.943
RC 172.331 GL 10.52 GP 2.31 ZAL 96.76 ZAP 163.14 ETS 170.88 ZAE 157.35 ETE 5.87 ZAC 92.49 ETC 255.84 CLP 163.30

PLANETOCENTRIC CONIC

C3 14.382 VHL 3.792 DLA 17.67 RAL 165.33 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 6.890 DPA -1.45 RAP 192.08 ECC 1.2367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 2	2723.04	-27.80	76.23	27.23	95.59	16 25 25	2123.0	-26.74	67.72
90.00	8 31 13	4198.03	-.02	171.87	21.53	61.68	9 41 11	3598.0	-3.81	165.24
100.00	17 11 42	2427.40	-29.09	54.32	27.06	97.22	17 52 10	1827.4	-27.78	45.76
100.00	9 42 13	3968.90	1.10	154.40	20.91	60.13	10 48 22	3368.9	-2.88	147.88
110.00	18 42 37	2142.96	-32.39	32.08	26.43	101.58	19 18 20	1543.0	-30.46	23.40
110.00	10 27 48	3826.11	3.94	141.80	19.14	56.02	11 31 34	3226.1	-.54	135.59

DIFFERENTIAL CORRECTIONS
TDE .3324 TRA-1.3374 TC3 2.9429 BAU .5660
RDE -.2451 RRA -.1157 RC3 .0622 FAU .11764
FDE .0201 FRA 1.3412 FC3-7.0811 BSP 10740
BDE .4130 BRA 1.3424 BC3 2.9435 FSP 1526

MID-COURSE EXECUTION ACCURACY
SGT 3119.5 SGR 415.9 SG3 499.1
RRT .2376 RRF -.2725 RTF -.9147
SGB 3147.1 R23 -.0529 R13 -.9149
SG1 3121.1 SG2 403.8 THA 1.85

ORBIT DETERMINATION ACCURACY
ST 813.3 SR 374.3 SS 392.2
CRT -.4955 CRS .1889 CST .7493
LSA 884.8 MSA 413.1 SSA 42.7
EL1 837.8 EL2 315.6 ALF 164.97

LAUNCH DATE NOV 25 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 464.429 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.840 GAL -1.18 AZL 88.85 HCA 146.50 SMA 203.39 ECC .27477 INC 1.1477 V1 30.175
RP 239.11 LAP .63 LOP 209.27 VP 21.391 GAP 12.40 AZP 90.96 TAL 354.52 TAP 141.02 RCA 147.51 APO 259.28 V2 22.975
RC 174.639 GL 10.46 GP 2.42 ZAL 95.83 ZAP 162.43 ETS 170.84 ZAE 157.88 ETE 6.44 ZAC 92.66 ETC 255.84 CLP 162.60

PLANETOCENTRIC CONIC

C3 13.946 VHL 3.734 DLA 17.98 RAL 164.41 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 6.733 DPA -1.45 RAP 192.35 ECC 1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 15	2728.03	-27.84	76.59	25.91	95.41	16 18 43	2128.0	-26.80	68.08
90.00	8 30 39	4179.47	-.62	170.84	20.28	61.69	9 40 19	3579.5	-4.40	164.20
100.00	17 5 13	2431.47	-29.12	54.61	25.75	97.07	17 45 45	1831.5	-27.84	46.05
100.00	9 41 22	3951.27	.50	153.43	19.65	60.11	10 47 14	3351.3	-3.48	146.91
110.00	18 36 42	2145.23	-32.42	32.25	25.12	101.48	19 12 27	1545.2	-30.50	23.56
110.00	10 26 23	3810.27	3.34	140.97	17.88	55.96	11 29 53	3210.3	-1.15	134.76

DIFFERENTIAL CORRECTIONS
TDE .3124 TRA-1.3020 TC3 3.0717 BAU .5729
RDE -.2364 RRA -.1127 RC3 .0808 FAU .12224
FDE .0458 FRA 1.3368 FC3-7.5883 BSP 10896
BDE .3918 BRA 1.3069 BC3 3.0728 FSP 1614

MID-COURSE EXECUTION ACCURACY
SGT 3147.1 SGR 410.1 SG3 524.0
RRT .2684 RRF -.3053 RTF -.9168
SGB 3173.7 R23 -.0574 R13 -.9171
SG1 3149.0 SG2 394.8 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 794.7 SR 366.7 SS 391.2
CRT -.4782 CRS .2476 CST .7215
LSA 861.9 MSA 417.4 SSA 43.3
EL1 817.2 EL2 313.2 ALF 165.36

LAUNCH DATE NOV 25 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 467.779 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.792 GAL -1.07 AZL 88.88 HCA 147.45 SMA 202.37 ECC .27099 INC 1.1237 V1 30.175
RP 238.79 LAP .60 LOP 210.21 VP 21.349 GAP 11.89 AZP 90.95 TAL 354.97 TAP 142.41 RCA 147.53 APO 257.21 V2 23.007
RC 176.939 GL 10.37 GP 2.54 ZAL 94.91 ZAP 161.71 ETS 170.80 ZAE 158.44 ETE 7.07 ZAC 92.82 ETC 255.83 CLP 161.88

PLANETOCENTRIC CONIC

C3 13.540 VHL 3.680 DLA 18.26 RAL 163.48 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 6.579 DPA -1.44 RAP 192.62 ECC 1.2228

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 38	2732.58	-27.87	76.92	24.60	95.25	16 12 11	2132.6	-26.85	68.40
90.00	8 29 52	4161.98	-1.19	169.86	19.04	61.71	9 39 14	3562.0	-4.96	163.21
100.00	16 58 53	2435.13	-29.15	54.88	24.44	96.93	17 39 28	1835.1	-27.89	46.31
100.00	9 40 19	3934.66	-.06	152.52	18.41	60.11	10 45 54	3334.7	-4.04	145.99
110.00	18 30 54	2147.20	-32.45	32.40	23.82	101.40	19 6 42	1547.2	-30.54	23.70
110.00	10 24 47	3795.36	2.77	140.19	16.64	55.92	11 28 2	3195.4	-1.72	133.99

DIFFERENTIAL CORRECTIONS
TDE .2938 TRA-1.2663 TC3 3.2034 BAU .5802
RDE -.2280 RRA -.1100 RC3 .1017 FAU .12711
FDE .0718 FRA 1.3313 FC3-8.1275 BSP 10983
BDE .3718 BRA 1.2711 BC3 3.2050 FSP 1703

MID-COURSE EXECUTION ACCURACY
SGT 3174.6 SGR 405.1 SG3 550.2
RRT .3019 RRF -.3414 RTF -.9192
SGB 3200.3 R23 -.0626 R13 -.9195
SG1 3177.0 SG2 385.9 THA 2.24

ORBIT DETERMINATION ACCURACY
ST 776.0 SR 359.1 SS 391.2
CRT -.4612 CRS .3057 CST .6918
LSA 839.2 MSA 422.0 SSA 43.8
EL1 796.8 EL2 310.3 ALF 165.75

LAUNCH DATE NOV 25 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 471.160 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.745 GAL -.97 AZL 88.90 HCA 148.40 SMA 201.41 ECC .26740 INC 1.0982 V1 30.175
RP 238.47 LAP .58 LOP 211.17 VP 21.310 GAP 11.38 AZP 90.94 TAL 355.41 TAP 143.81 RCA 147.55 APO 255.26 V2 23.040
RC 179.231 GL 10.27 GP 2.67 ZAL 94.00 ZAP 160.96 ETS 170.74 ZAE 159.03 ETE 7.77 ZAC 93.00 ETC 255.83 CLP 161.15

PLANETOCENTRIC CONIC

C3 13.161 VHL 3.628 DLA 18.52 RAL 162.55 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 6.428 DPA -1.41 RAP 192.87 ECC 1.2166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 13	2736.58	-27.89	77.21	23.30	95.11	16 5 49	2136.6	-26.89	68.69
90.00	8 28 51	4145.64	-1.72	168.95	17.80	61.73	9 37 56	3545.6	-5.48	162.29
100.00	16 52 43	2438.30	-29.18	55.11	23.14	96.81	17 33 21	1838.3	-27.93	46.53
100.00	9 39 2	3919.15	-.59	151.67	17.17	60.11	10 44 21	3319.2	-4.56	145.14
110.00	18 25 15	2148.78	-32.47	32.51	22.53	101.33	19 1 4	1548.8	-30.57	23.81
110.00	10 22 59	3781.44	2.24	139.46	15.40	55.88	11 26 1	3181.4	-2.25	133.26

DIFFERENTIAL CORRECTIONS
TDE .2797 TRA-1.2277 TC3 3.3413 BAU .5883
RDE -.2199 RRA -.1073 RC3 .1251 FAU .13227
FDE .0962 FRA 1.3219 FC3-8.7011 BSP 10964
BDE .3558 BRA 1.2324 BC3 3.3436 FSP 1790

MID-COURSE EXECUTION ACCURACY
SGT 3202.2 SGR 401.0 SG3 577.8
RRT .3365 RRF -.3801 RTF -.9218
SGB 3227.2 R23 -.0696 R13 -.9221
SG1 3205.0 SG2 377.3 THA 2.45

ORBIT DETERMINATION ACCURACY
ST 759.5 SR 351.5 SS 390.9
CRT -.4509 CRS .3587 CST .6583
LSA 818.4 MSA 425.9 SSA 44.1
EL1 778.9 EL2 305.9 ALF 166.02

LAUNCH DATE NOV 25 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 474.569 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.701 GAL -.87 AZL 88.93 HCA 149.35 SMA 200.49 ECC .26397 INC 1.0713 V1 30.175
RP 238.14 LAP .55 LOP 212.12 VP 21.276 GAP 10.89 AZP 90.92 TAL 355.85 TAP 145.20 RCA 147.57 APO 253.42 V2 23.073
RC 181.513 GL 10.14 GP 2.81 ZAL 93.09 ZAP 160.20 ETS 170.67 ZAE 159.65 ETE 8.55 ZAC 93.18 ETC 255.82 CLP 160.40

PLANETOCENTRIC CONIC

C3 12.807 VHL 3.579 DLA 18.75 RAL 161.61 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 6.281 DPA -1.37 RAP 193.11 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 2	2739.88	-27.91	77.45	22.00	94.99	15 59 42	2139.9	-26.93	68.92
90.00	8 27 33	4130.60	-2.20	168.11	16.57	61.76	9 36 24	3530.6	-5.96	161.45
100.00	16 46 46	2440.83	-29.20	55.30	21.85	96.71	17 27 27	1840.8	-27.96	46.72
100.00	9 37 30	3904.88	-1.07	150.89	15.94	60.12	10 42 35	3304.9	-5.04	144.35
110.00	18 19 46	2149.86	-32.48	32.60	21.24	101.28	18 55 36	1549.9	-30.59	23.89
110.00	10 20 59	3768.62	1.75	138.79	14.18	55.86	11 23 48	3168.6	-2.74	132.59

DIFFERENTIAL CORRECTIONS
TDE .2556 TRA-1.1980 TC3 3.4563 BAU .5923
RDE -.2122 RRA -.1049 RC3 .1515 FAU .13760
FDE .1265 FRA 1.3150 FC3-9.3015 BSP 11201
BDE .3322 BRA 1.2026 BC3 3.4596 FSP 1894

MID-COURSE EXECUTION ACCURACY
SGT 3223.4 SGR 398.2 SG3 606.7
RRT .3804 RRF -.4237 RTF -.9229
SGB 3247.9 R23 -.0735 R13 -.9234
SG1 3227.0 SG2 367.9 THA 2.73

ORBIT DETERMINATION ACCURACY
ST 736.4 SR 343.9 SS 393.5
CRT -.4204 CRS .4209 CST .6316
LSA 792.0 MSA 431.3 SSA 44.9
EL1 753.3 EL2 305.0 ALF 166.67

LAUNCH DATE NOV 25 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 478.005 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.658 GAL -.77 AZL 88.96 HCA 150.31 SMA 199.63 ECC .26070 INC 1.0428 V1 30.175
RP 237.81 LAP .52 LOP 213.08 VP 21.244 GAP 10.40 AZP 90.91 TAL 356.28 TAP 146.59 RCA 147.59 APO 251.67 V2 23.106
RC 183.786 GL 9.99 GP 2.96 ZAL 92.19 ZAP 159.42 ETS 170.58 ZAE 160.30 ETE 9.43 ZAC 93.37 ETC 255.82 CLP 159.63

PLANETOCENTRIC CONIC

C3 12.477 VHL 3.532 DLA 18.95 RAL 160.67 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 6.137 DPA -1.31 RAP 193.35 ECC 1.2053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 7	2742.37	-27.92	77.63	20.71	94.90	15 53 50	2142.4	-26.95	69.10
90.00	8 25 57	4116.94	-2.64	167.35	15.35	61.80	9 34 34	3516.9	-6.39	160.67
100.00	16 41 4	2442.64	-29.21	55.43	20.56	96.65	17 21 47	1842.6	-27.98	46.84
100.00	9 35 41	3891.90	-1.51	150.18	14.72	60.14	10 40 33	3291.9	-5.47	143.63
110.00	18 14 29	2150.38	-32.49	32.63	19.96	101.26	18 50 19	1550.4	-30.60	23.93
110.00	10 18 46	3756.93	1.30	138.18	12.96	55.84	11 21 23	3156.9	-3.19	131.98

DIFFERENTIAL CORRECTIONS
TDE .2393 TRA-1.1622 TC3 3.5767 BAU .5974
RDE -.2047 RRA -.1025 RC3 .1809 FAU .14317
FDE .1524 FRA 1.3018 FC3-9.9345 BSP 11288
BDE .3149 BRA 1.1667 BC3 3.5813 FSP 1998

MID-COURSE EXECUTION ACCURACY
SGT 3241.7 SGR 396.8 SG3 636.7
RRT .4232 RRF -.4689 RTF -.9247
SGB 3265.9 R23 -.0803 R13 -.9251
SG1 3246.1 SG2 359.0 THA 3.00

ORBIT DETERMINATION ACCURACY
ST 716.9 SR 336.2 SS 394.7
CRT -.4026 CRS .4723 CST .6007
LSA 769.1 MSA 435.0 SSA 45.5
EL1 732.3 EL2 301.3 ALF 167.08

LAUNCH DATE NOV 25 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 481.467 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.618 GAL -.68 AZL 88.99 HCA 151.27 SMA 198.81 ECC .25759 INC 1.0126 V1 30.175
RP 237.48 LAP .49 LOP 214.04 VP 21.217 GAP 9.91 AZP 90.89 TAL 356.70 TAP 147.97 RCA 147.60 APO 250.02 V2 23.140
RC 186.049 GL 9.80 GP 3.13 ZAL 91.30 ZAP 158.62 ETS 170.49 ZAE 160.97 ETE 10.41 ZAC 93.56 ETC 255.81 CLP 158.84

PLANETOCENTRIC CONIC

C3 12.168 VHL 3.488 DLA 19.12 RAL 159.73 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 5.997 DPA -1.23 RAP 193.57 ECC 1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 31	2743.92	-27.93	77.74	19.42	94.84	15 48 15	2143.9	-26.97	69.21
90.00	8 24 1	4104.77	-3.03	166.67	14.14	61.83	9 32 26	3504.8	-6.78	159.99
100.00	16 35 39	2443.60	-29.22	55.50	19.28	96.61	17 16 23	1843.6	-28.00	46.91
100.00	9 33 34	3880.33	-1.90	149.54	13.51	60.16	10 38 15	3280.3	-5.86	142.99
110.00	18 9 25	2150.23	-32.49	32.62	18.68	101.27	18 45 15	1550.2	-30.59	23.92
110.00	10 16 18	3746.46	.90	137.64	11.76	55.83	11 18 44	3146.5	-3.58	131.43

DIFFERENTIAL CORRECTIONS
TDE .2246 TRA-1.1280 TC3 3.6953 BAU .6022
RDE -.1975 RRA -.1003 RC3 .2136 FAU .14901
FDE .1774 FRA 1.2886 FC-10.6018 BSP 11352
BDE .2991 BRA 1.1325 BC3 3.7015 FSP 2106

MID-COURSE EXECUTION ACCURACY
SGT 3260.1 SGR 397.3 SG3 668.2
RRT .4683 RRF -.5167 RTF -.9263
SGB 3284.2 R23 -.0881 R13 -.9268
SG1 3265.4 SG2 350.4 THA 3.30

ORBIT DETERMINATION ACCURACY
ST 698.7 SR 328.6 SS 396.6
CRT -.3857 CRS .5196 CST .5703
LSA 747.7 MSA 438.5 SSA 45.9
EL1 712.6 EL2 297.2 ALF 167.51

LAUNCH DATE NOV 25 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 484.953 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.579 GAL -.58 AZL 89.02 HCA 152.23 SMA 198.04 ECC .25462 INC .9800 V1 30.175
RP 237.15 LAP .46 LOP 215.00 VP 21.193 GAP 9.44 AZP 90.87 TAL 357.12 TAP 149.35 RCA 147.61 APO 248.46 V2 23.174
RC 188.300 GL 9.59 GP 3.30 ZAL 90.42 ZAP 157.80 ETS 170.38 ZAE 161.67 ETE 11.53 ZAC 93.77 ETC 255.81 CLP 158.03

PLANETOCENTRIC CONIC

C3 11.881 VHL 3.447 DLA 19.26 RAL 158.78 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 5.860 DPA -1.13 RAP 193.78 ECC 1.1955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 17	2744.36	-27.94	77.77	18.14	94.83	15 43 1	2144.4	-26.97	69.24
90.00	8 21 43	4094.24	-3.37	166.08	12.93	61.87	9 29 57	3494.2	-7.11	159.39
100.00	16 30 33	2443.56	-29.22	55.50	18.00	96.61	17 11 17	1843.6	-28.00	46.91
100.00	9 31 7	3870.27	-2.24	148.99	12.30	60.18	10 35 38	3270.3	-6.19	142.43
110.00	18 4 37	2149.30	-32.48	32.55	17.40	101.31	18 40 26	1549.3	-30.58	23.85
110.00	10 13 34	3737.29	.55	137.16	10.55	55.82	11 15 51	3137.3	-3.93	130.95

DIFFERENTIAL CORRECTIONS
TDE .2120 TRA-1.0927 TC3 3.8192 BAU .6079
RDE -.1905 RRA -.0982 RC3 .2505 FAU .15531
FDE .2013 FRA 1.2710 FC-11.3177 BSP 11400
BDE .2850 BRA 1.0971 BC3 3.8274 FSP 2219

MID-COURSE EXECUTION ACCURACY
SGT 3279.9 SGR 400.0 SG3 701.9
RRT .5151 RRF -.5664 RTF -.9281
SGB 3304.2 R23 -.0969 R13 -.9288
SG1 3286.4 SG2 342.1 THA 3.63

ORBIT DETERMINATION ACCURACY
ST 680.9 SR 320.9 SS 397.9
CRT -.3718 CRS .5630 CST .5385
LSA 726.6 MSA 441.3 SSA 46.4
EL1 693.6 EL2 292.4 ALF 167.87

LAUNCH DATE NOV 25 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 488.464 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.542 GAL -.50 AZL 89.05 HCA 153.20 SMA 197.30 ECC .25179 INC .9457 V1 30.175
RP 236.81 LAP .43 LOP 215.96 VP 21.171 GAP 8.97 AZP 90.84 TAL 357.53 TAP 150.73 RCA 147.62 APO 246.98 V2 23.209
RC 190.540 GL 9.35 GP 3.49 ZAL 89.56 ZAP 156.95 ETS 170.25 ZAE 162.38 ETE 12.81 ZAC 93.99 ETC 255.80 CLP 157.20

PLANETOCENTRIC CONIC

C3 11.611 VHL 3.408 DLA 19.36 RAL 157.83 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 5.727 DPA -1.01 RAP 193.98 ECC 1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 25	2743.58	-27.93	77.72	16.86	94.85	15 38 8	2143.6	-26.97	69.18
90.00	8 19 1	4085.41	-3.65	165.58	11.72	61.90	9 27 6	3485.4	-7.38	158.89
100.00	16 25 48	2442.43	-29.21	55.42	16.72	96.65	17 6 31	1842.4	-27.98	46.83
100.00	9 28 18	3861.80	-2.53	148.52	11.09	60.20	10 32 40	3261.8	-6.48	141.96
110.00	18 0 4	2147.52	-32.45	32.42	16.12	101.38	18 35 51	1547.5	-30.54	23.72
110.00	10 10 32	3729.48	.26	136.75	9.36	55.82	11 12 41	3129.5	-4.23	130.54

DIFFERENTIAL CORRECTIONS
TDE .2114 TRA-1.0462 TC3 3.9657 BAU .6173
RDE -.1837 RRA -.0962 RC3 .2913 FAU .16184
FDE .2207 FRA 1.2475 FC-12.0667 BSP 11112
BDE .2801 BRA 1.0506 BC3 3.9764 FSP 2326

MID-COURSE EXECUTION ACCURACY
SGT 3302.6 SGR 405.2 SG3 736.7
RRT .5576 RRF -.6159 RTF -.9318
SGB 3327.3 R23 -.1095 R13 -.9325
SG1 3310.4 SG2 335.6 THA 3.96

ORBIT DETERMINATION ACCURACY
ST 667.7 SR 313.2 SS 396.9
CRT -.3852 CRS .5986 CST .4876
LSA 708.2 MSA 444.8 SSA 46.1
EL1 680.9 EL2 283.5 ALF 167.57

LAUNCH DATE NOV 25 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 491.993 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.506	GAL	-.41	AZL	89.09	HCA	154.17	SMA	196.61	ECC	.24911	INC	.9086	V1	30.175
RP	236.46	LAP	.40	LOP	216.93	VP	21.154	GAP	8.50	AZP	90.82	TAL	357.93	TAP	152.10	RCA	147.63	APO	245.58	V2	23.244
RC	192.768	GL	9.07	GP	3.70	ZAL	88.71	ZAP	156.08	ETS	170.11	ZAE	163.12	ETE	14.28	ZAC	94.21	ETC	255.80	CLP	156.35

PLANETOCENTRIC CONIC

C3	11.360	VHL	3.370	DLA	19.41	RAL	156.89	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	5.597	DPA	-.87	RAP	194.18	ECC	1.1870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 3	2741.28	-27.92	77.55	15.59	94.94	15 33 44	2141.3	-26.94	69.02
90.00	8 15 51	4078.62	-3.87	165.20	10.52	61.93	9 23 50	3478.6	-7.60	158.50
100.00	16 21 30	2439.93	-29.19	55.23	15.45	96.75	17 2 10	1839.9	-27.95	46.65
100.00	9 25 5	3855.20	-2.75	148.16	9.90	60.22	10 29 21	3255.2	-6.70	141.59
110.00	17 55 53	2144.65	-32.41	32.21	14.84	101.50	18 31 38	1544.6	-30.49	23.52
110.00	10 7 12	3723.25	.02	136.43	8.17	55.82	11 9 15	3123.2	-4.47	130.21

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1844	TRA	-1.0279	TC3	4.0148	BAU	.6119	SGT	3294.7	SGR	413.8	SG3	771.9	ST	643.3	SR	305.6	SS	402.2
RDE	-.1772	RRA	-.0944	RC3	.3366	FAU	.16824	RRT	.6124	RRF	-.6674	RTF	-.9300	CRT	-.3333	CRS	.6436	CST	.4834
FDE	.2495	FRA	1.2331	FC	-12.8209	BSP	11493	SGB	3320.6	R23	-.1166	R13	-.9309	LSA	684.1	MSA	445.8	SSA	47.5
BDE	.2558	BRA	1.0322	BC3	4.0289	FSP	2463	SG1	3304.5	SG2	326.1	THA	4.44	EL1	653.2	EL2	283.8	ALF	168.88

LAUNCH DATE NOV 25 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 495.546 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.472	GAL	-.33	AZL	89.13	HCA	155.14	SMA	195.95	ECC	.24655	INC	.8687	V1	30.175
RP	236.12	LAP	.37	LOP	217.90	VP	21.139	GAP	8.04	AZP	90.79	TAL	358.32	TAP	153.46	RCA	147.64	APO	244.26	V2	23.279
RC	194.983	GL	8.75	GP	3.93	ZAL	87.88	ZAP	155.19	ETS	169.96	ZAE	163.88	ETE	15.98	ZAC	94.46	ETC	255.79	CLP	155.48

PLANETOCENTRIC CONIC

C3	11.125	VHL	3.335	DLA	19.42	RAL	155.94	RAD	6567.4	VEL	11.511	PTH	2.01	VHP	5.470	DPA	-.71	RAP	194.36	ECC	1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 9	2737.43	-27.90	77.27	14.32	95.08	15 29 47	2137.4	-26.90	68.75
90.00	8 12 13	4073.82	-4.02	164.93	9.32	61.95	9 20 7	3473.8	-7.75	158.23
100.00	16 17 37	2436.04	-29.16	54.95	14.17	96.89	16 58 13	1836.0	-27.90	46.37
100.00	9 21 26	3850.44	-2.91	147.90	8.70	60.24	10 25 37	3250.4	-6.85	141.33
110.00	17 52 1	2140.68	-32.36	31.91	13.56	101.67	18 27 42	1540.7	-30.41	23.23
110.00	10 3 31	3718.57	-.16	136.18	6.98	55.82	11 5 30	3118.6	-4.65	129.97

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1747	TRA	-.9969	TC3	4.1122	BAU	.6143	SGT	3303.4	SGR	426.0	SG3	809.8	ST	627.4	SR	297.9	SS	402.7
RDE	-.1708	RRA	-.0927	RC3	.3875	FAU	.17525	RRT	.6592	RRF	-.7163	RTF	-.9309	CRT	-.3202	CRS	.6748	CST	.4568
FDE	.2691	FRA	1.2110	FC	-13.6380	BSP	11580	SGB	3330.7	R23	-.1288	R13	-.9320	LSA	665.7	MSA	446.2	SSA	48.1
BDE	.2444	BRA	1.0012	BC3	4.1304	FSP	2600	SG1	3315.4	SG2	319.1	THA	4.90	EL1	636.3	EL2	278.2	ALF	169.28

LAUNCH DATE NOV 25 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 499.119 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.440	GAL	-.25	AZL	89.17	HCA	156.11	SMA	195.32	ECC	.24411	INC	.8256	V1	30.175
RP	235.77	LAP	.33	LOP	218.88	VP	21.127	GAP	7.59	AZP	90.75	TAL	358.71	TAP	154.82	RCA	147.64	APO	243.01	V2	23.315
RC	197.185	GL	8.39	GP	4.17	ZAL	87.06	ZAP	154.27	ETS	169.79	ZAE	164.64	ETE	17.96	ZAC	94.71	ETC	255.79	CLP	154.58

PLANETOCENTRIC CONIC

C3	10.905	VHL	3.302	DLA	19.39	RAL	155.00	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	5.346	DPA	-.51	RAP	194.53	ECC	1.1795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 48	2731.78	-27.86	76.86	13.05	95.28	15 26 20	2131.8	-26.84	68.34
90.00	8 8 2	4071.26	-4.11	164.79	8.11	61.96	9 15 54	3471.3	-7.83	158.08
100.00	16 14 14	2430.53	-29.11	54.55	12.89	97.10	16 54 44	1830.5	-27.82	45.98
100.00	9 17 18	3847.74	-3.00	147.75	7.50	60.25	10 21 26	3247.7	-6.94	141.18
110.00	17 48 33	2135.42	-32.29	31.52	12.28	101.89	18 24 9	1535.4	-30.31	22.86
110.00	9 59 28	3715.62	-.27	136.03	5.80	55.82	11 1 24	3115.6	-4.76	129.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1704	TRA	-.9670	TC3	4.1922	BAU	.6146	SGT	3304.1	SGR	442.0	SG3	848.8	ST	615.7	SR	289.6	SS	398.3
RDE	-.1643	RRA	-.0911	RC3	.4441	FAU	.18245	RRT	.7023	RRF	-.7620	RTF	-.9312	CRT	-.3183	CRS	.6925	CST	.4341
FDE	.2781	FRA	1.1863	FC	-14.4846	BSP	11664	SGB	3333.5	R23	-.1434	R13	-.9325	LSA	650.9	MSA	442.1	SSA	48.9
BDE	.2367	BRA	.9713	BC3	4.2157	FSP	2745	SG1	3318.8	SG2	313.3	THA	5.42	EL1	624.2	EL2	270.8	ALF	169.48

LAUNCH DATE NOV 25 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 502.712 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.409	GAL	-.18	AZL	89.22	HCA	157.09	SMA	194.73	ECC	.24179	INC	.7787	V1	30.175
RP	235.42	LAP	.30	LOP	219.85	VP	21.118	GAP	7.15	AZP	90.72	TAL	359.08	TAP	156.17	RCA	147.65	APO	241.82	V2	23.351
RC	199.372	GL	7.98	GP	4.44	ZAL	86.26	ZAP	153.32	ETS	169.60	ZAE	165.41	ETE	20.28	ZAC	94.99	ETC	255.78	CLP	153.66

PLANETOCENTRIC CONIC

C3	10.699	VHL	3.271	DLA	19.29	RAL	154.06	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	5.226	DPA	-.29	RAP	194.69	ECC	1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 3	2724.15	-27.81	76.31	11.77	95.55	15 23 27	2124.2	-26.75	67.80
90.00	8 3 17	4071.10	-4.11	164.78	6.91	61.96	9 11 8	3471.1	-7.83	158.08
100.00	16 11 22	2423.22	-29.05	54.01	11.61	97.38	16 51 46	1823.2	-27.72	45.46
100.00	9 12 39	3847.26	-3.02	147.72	6.31	60.25	10 16 46	3247.3	-6.96	141.15
110.00	17 45 30	2128.73	-32.19	31.02	10.99	102.17	18 20 59	1528.7	-30.18	22.38
110.00	9 55 0	3714.52	-.32	135.97	4.62	55.82	10 56 55	3114.5	-4.80	129.75

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1535	TRA	-.9307	TC3	4.2858	BAU	.6173	SGT	3304.0	SGR	463.8	SG3	891.2	ST	589.8	SR	282.2	SS	398.8
RDE	-.1585	RRA	-.0892	RC3	.5085	FAU	.19039	RRT	.7465	RRF	-.8052	RTF	-.9329	CRT	-.2888	CRS	.7289	CST	.4115
FDE	.3021	FRA	1.1481	FC	-15.4063	BSP	11643	SGB	3336.4	R23	-.1544	R13	-.9345	LSA	623.9	MSA	441.4	SSA	49.8
BDE	.2206	BRA	.9350	BC3	4.3159	FSP	2883	SG1	3322.2	SG2	306.9	THA	6.03	EL1	596.9	EL2	267.0	ALF	170.14

LAUNCH DATE NOV 25 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 506.323 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.380 GAL -.11 AZL 89.27 HCA 158.07 SMA 194.17 ECC .23959 INC .7283 V1 30.175
RP 235.06 LAP .27 LOP 220.83 VP 21.111 GAP 6.71 AZP 90.68 TAL 359.45 TAP 157.52 RCA 147.65 APO 240.69 V2 23.387
RC 201.544 GL 7.52 GP 4.74 ZAL 85.48 ZAP 152.34 ETS 169.39 ZAE 166.18 ETE 23.02 ZAC 95.29 ETC 255.77 CLP 152.72

PLANETOCENTRIC CONIC

C3 10.506 VHL 3.241 DLA 19.14 RAL 153.12 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.109 DPA -.03 RAP 194.85 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 57	2714.31	-27.74	75.60	10.49	95.90	15 21 11	2114.3	-26.64	67.10
90.00	7 57 53	4073.54	-4.03	164.92	5.70	61.95	9 5 46	3473.5	-7.76	158.21
100.00	16 9 6	2413.92	-28.97	53.33	10.33	97.72	16 49 20	1813.9	-27.60	44.80
100.00	9 7 25	3849.16	-2.96	147.83	5.11	60.24	10 11 34	3249.2	-6.90	141.26
110.00	17 42 55	2120.43	-32.07	30.40	9.68	102.52	18 18 15	1520.4	-30.01	21.79
110.00	9 50 5	3715.42	-.28	136.02	3.44	55.82	10 52 1	3115.4	-4.76	129.80

DIFFERENTIAL CORRECTIONS
TDE .1419 TRA -.9025 TC3 4.3618 BAU .6180
RDE -.1526 RRA -.0877 RC3 .5799 FAU .19838
FDE .3196 FRA 1.1170 FC-16.3480 BSP 11768
BDE .2084 BRA .9067 BC3 4.4002 FSP 3049

MID-COURSE EXECUTION ACCURACY
SGT 3303.0 SGR 490.9 SG3 934.5
RRT .7846 RRF -.8435 RTF -.9336
SGB 3339.2 R23 -.1691 R13 -.9354
SG1 3325.5 SG2 302.3 THA 6.71

ORBIT DETERMINATION ACCURACY
ST 571.7 SR 274.5 SS 398.1
CRT -.2664 CRS .7549 CST .3934
LSA 604.7 MSA 438.7 SSA 50.6
EL1 577.5 EL2 261.9 ALF 170.80

LAUNCH DATE NOV 25 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 509.952 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.351 GAL -.04 AZL 89.33 HCA 159.05 SMA 193.64 ECC .23750 INC .6731 V1 30.175
RP 234.71 LAP .24 LOP 221.81 VP 21.108 GAP 6.28 AZP 90.63 TAL 359.80 TAP 158.85 RCA 147.65 APO 239.63 V2 23.424
RC 203.699 GL 7.00 GP 5.07 ZAL 84.72 ZAP 151.33 ETS 169.15 ZAE 166.93 ETE 26.26 ZAC 95.61 ETC 255.77 CLP 151.74

PLANETOCENTRIC CONIC

C3 10.325 VHL 3.213 DLA 18.93 RAL 152.18 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 4.995 DPA .26 RAP 194.99 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 33	2702.04	-27.66	74.71	9.20	96.34	15 19 35	2102.0	-26.49	66.24
90.00	7 51 47	4078.80	-3.87	165.21	4.49	61.93	8 59 46	3478.8	-7.59	158.51
100.00	16 7 28	2402.40	-28.86	52.49	9.03	98.15	16 47 30	1802.4	-27.43	43.98
100.00	9 1 33	3853.67	-2.80	148.08	3.91	60.23	10 5 47	3253.7	-6.75	141.51
110.00	17 40 49	2110.32	-31.92	29.65	8.37	102.94	18 15 59	1510.3	-29.81	21.07
110.00	9 44 41	3718.52	-.16	136.18	2.26	55.82	10 46 40	3118.5	-4.65	129.96

DIFFERENTIAL CORRECTIONS
TDE .1162 TRA -.8680 TC3 4.2883 BAU .5987
RDE -.1477 RRA -.0858 RC3 .6522 FAU .20420
FDE .3555 FRA 1.0726 FC-17.1230 BSP 12552
BDE .1879 BRA .8722 BC3 4.3376 FSP 3320

MID-COURSE EXECUTION ACCURACY
SGT 3211.7 SGR 520.8 SG3 968.2
RRT .8163 RRF -.8750 RTF -.9309
SGB 3253.6 R23 -.1879 R13 -.9332
SG1 3239.9 SG2 298.2 THA 7.60

ORBIT DETERMINATION ACCURACY
ST 539.2 SR 268.1 SS 404.6
CRT -.2054 CRS .7980 CST .3833
LSA 576.9 MSA 436.8 SSA 51.1
EL1 542.8 EL2 260.6 ALF 172.41

LAUNCH DATE NOV 25 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 513.600 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.325 GAL .03 AZL 89.39 HCA 160.04 SMA 193.14 ECC .23551 INC .6119 V1 30.175
RP 234.35 LAP .21 LOP 222.80 VP 21.106 GAP 5.86 AZP 90.58 TAL .15 TAP 160.18 RCA 147.65 APO 238.62 V2 23.461
RC 205.837 GL 6.42 GP 5.44 ZAL 83.99 ZAP 150.29 ETS 168.89 ZAE 167.64 ETE 30.11 ZAC 95.96 ETC 255.76 CLP 150.74

PLANETOCENTRIC CONIC

C3 10.155 VHL 3.187 DLA 18.63 RAL 151.24 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.884 DPA .60 RAP 195.13 ECC 1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 54	2687.08	-27.54	73.63	7.90	96.87	15 18 41	2087.1	-26.30	65.18
90.00	7 44 56	4087.11	-3.60	165.68	3.28	61.89	8 53 3	3487.1	-7.33	158.99
100.00	16 6 31	2388.42	-28.72	51.48	7.72	98.67	16 46 19	1788.4	-27.22	43.00
100.00	8 55 0	3861.00	-2.56	148.48	2.70	60.21	9 59 21	3261.0	-6.50	141.92
110.00	17 39 17	2098.19	-31.73	28.75	7.04	103.44	18 14 15	1498.2	-29.56	20.22
110.00	9 38 44	3724.00	.05	136.47	1.07	55.82	10 40 48	3124.0	-4.44	130.25

DIFFERENTIAL CORRECTIONS
TDE .1730 TRA -.7232 TC3 4.6196 BAU .6356
RDE -.1376 RRA -.0764 RC3 .7599 FAU .21812
FDE .2532 FRA .8373 FC-18.5947 BSP 10720
BDE .2210 BRA .7272 BC3 4.6817 FSP 3225

MID-COURSE EXECUTION ACCURACY
SGT 3263.2 SGR 562.8 SG3 1033.8
RRT .8429 RRF -.9032 RTF -.9458
SGB 3311.4 R23 -.1843 R13 -.9484
SG1 3297.8 SG2 299.7 THA 8.34

ORBIT DETERMINATION ACCURACY
ST 523.5 SR 251.6 SS 316.0
CRT -.4385 CRS .7352 CST .2195
LSA 539.7 MSA 377.7 SSA 56.9
EL1 537.4 EL2 220.2 ALF 165.64

LAUNCH DATE NOV 25 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 517.263 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.299 GAL .09 AZL 89.45 HCA 161.02 SMA 192.66 ECC .23362 INC .5454 V1 30.175
RP 233.98 LAP .18 LOP 223.79 VP 21.108 GAP 5.44 AZP 90.52 TAL .48 TAP 161.51 RCA 147.65 APO 237.67 V2 23.498
RC 207.958 GL 5.75 GP 5.84 ZAL 83.27 ZAP 149.21 ETS 168.60 ZAE 168.31 ETE 34.69 ZAC 96.35 ETC 255.75 CLP 149.71

PLANETOCENTRIC CONIC

C3 9.996 VHL 3.162 DLA 18.26 RAL 150.30 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.777 DPA .99 RAP 195.26 ECC 1.1645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 4	2669.13	-27.39	72.34	6.58	97.50	15 18 33	2069.1	-26.06	63.92
90.00	7 37 15	4098.77	-3.22	166.33	2.05	61.85	8 45 33	3498.8	-6.96	159.65
100.00	16 6 18	2371.69	-28.54	50.27	6.38	99.29	16 45 50	1771.7	-26.96	41.82
100.00	8 47 41	3871.44	-2.20	149.05	1.48	60.18	9 52 13	3271.4	-6.16	142.50
110.00	17 38 20	2083.78	-31.50	27.70	5.68	104.03	18 13 4	1483.8	-29.25	19.21
110.00	9 32 9	3732.12	.36	136.89	359.88	55.82	10 34 21	3132.1	-4.13	130.68

DIFFERENTIAL CORRECTIONS
TDE .1722 TRA -.8011 TC3 4.4975 BAU .6117
RDE -.1305 RRA -.0818 RC3 .8501 FAU .22374
FDE .2338 FRA .9666 FC-19.3767 BSP 10825
BDE .2160 BRA .8053 BC3 4.5771 FSP 3415

MID-COURSE EXECUTION ACCURACY
SGT 3243.8 SGR 607.7 SG3 1071.2
RRT .8592 RRF -.9258 RTF -.9333
SGB 3300.3 R23 -.2280 R13 -.9368
SG1 3286.0 SG2 307.0 THA 9.22

ORBIT DETERMINATION ACCURACY
ST 561.2 SR 241.7 SS 325.2
CRT -.3756 CRS .6935 CST .3460
LSA 580.6 MSA 372.5 SSA 57.0
EL1 569.8 EL2 220.6 ALF 169.17

LAUNCH DATE NOV 25 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 520.942 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.275	GAL	.15	AZL	89.53	HCA	162.02	SMA	192.21	ECC	.23183	INC	.4695	V1	30.175
RP	233.62	LAP	.15	LOP	224.78	VP	21.111	GAP	5.03	AZP	90.45	TAL	.80	TAP	162.82	RCA	147.65	APO	236.77	V2	23.536
RC	210.060	GL	5.00	GP	6.29	ZAL	82.58	ZAP	148.09	ETS	168.28	ZAE	168.88	ETE	40.10	ZAC	96.78	ETC	255.73	CLP	148.66

PLANETOCENTRIC CONIC

C3	9.848	VHL	3.138	DLA	17.79	RAL	149.35	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.674	DPA	1.43	RAP	195.38	ECC	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 8	2647.88	-27.19	70.81	5.23	98.24	15 19 16	2047.9	-25.77	62.43
90.00	7 28 38	4114.09	-2.73	167.19	.81	61.80	8 37 12	3514.1	-6.48	160.51
100.00	16 6 55	2351.89	-28.32	48.84	5.03	100.00	16 46 7	1751.9	-26.64	40.44
100.00	8 39 32	3885.30	-1.73	149.81	.26	60.15	9 44 17	3285.3	-5.69	143.26
110.00	17 38 2	2066.79	-31.21	26.46	4.29	104.71	18 12 29	1466.8	-28.88	18.03
110.00	9 24 54	3743.17	.78	137.47	358.69	55.82	10 27 17	3143.2	-3.71	131.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1685	TRA	-.7664	TC3	4.5639	BAU	.6143	SGT	3234.1	SGR	665.8	SG3	1124.8	ST	544.4	SR	230.3	SS	302.4
RDE	-.1232	RRA	-.0790	RC3	.9687	FAU	.23380	RRT	.8801	RRF	-.9448	RTF	-.9347	CRT	-.3797	CRS	.6751	CST	.3502
FDE	.2093	FRA	.8953	FC-20.5526		BSP	11359	SGB	3301.9	R23	-.2410	R13	-.9390	LSA	562.3	MSA	347.9	SSA	60.6
BDE	.2087	BRA	.7705	BC3	4.6656	FSP	3674	SG1	3287.3	SG2	311.0	THA	10.36	EL1	552.6	EL2	209.9	ALF	169.32

LAUNCH DATE NOV 25 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 524.637 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.252	GAL	.21	AZL	89.61	HCA	163.01	SMA	191.78	ECC	.23013	INC	.3871	V1	30.175
RP	233.25	LAP	.11	LOP	225.77	VP	21.117	GAP	4.62	AZP	90.37	TAL	1.11	TAP	164.12	RCA	147.65	APO	235.91	V2	23.574
RC	212.144	GL	4.14	GP	6.81	ZAL	81.92	ZAP	146.94	ETS	167.93	ZAE	169.34	ETE	46.40	ZAC	97.26	ETC	255.72	CLP	147.56

PLANETOCENTRIC CONIC

C3	9.710	VHL	3.116	DLA	17.21	RAL	148.40	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	4.574	DPA	1.93	RAP	195.51	ECC	1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 9	2622.92	-26.93	69.03	3.85	99.09	15 20 52	2022.9	-25.40	60.70
90.00	7 19 0	4133.46	-2.11	168.27	359.56	61.76	8 27 54	3533.5	-5.87	161.61
100.00	16 8 24	2328.65	-28.03	47.17	3.63	100.84	16 47 13	1728.6	-26.25	38.82
100.00	8 30 26	3902.97	-1.13	150.78	359.02	60.13	9 35 29	3303.0	-5.10	144.24
110.00	17 38 28	2046.87	-30.86	25.01	2.87	105.50	18 12 35	1446.9	-28.42	16.66
110.00	9 16 52	3757.52	1.33	138.21	357.48	55.84	10 19 29	3157.5	-3.16	132.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1765	TRA	-.7374	TC3	4.5940	BAU	.6133	SGT	3212.0	SGR	732.5	SG3	1177.5	ST	542.2	SR	216.1	SS	272.7
RDE	-.1145	RRA	-.0766	RC3	1.1007	FAU	.24352	RRT	.8946	RRF	-.9594	RTF	-.9347	CRT	-.4073	CRS	.6015	CST	.3910
FDE	.1554	FRA	.8305	FC-21.7107		BSP	11194	SGB	3294.5	R23	-.2568	R13	-.9401	LSA	560.2	MSA	311.4	SSA	65.5
BDE	.2104	BRA	.7414	BC3	4.7240	FSP	3839	SG1	3278.9	SG2	320.7	THA	11.64	EL1	550.3	EL2	194.4	ALF	169.45

LAUNCH DATE NOV 25 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 528.347 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.230	GAL	.26	AZL	89.71	HCA	164.01	SMA	191.37	ECC	.22851	INC	.2947	V1	30.175
RP	232.88	LAP	.08	LOP	226.77	VP	21.125	GAP	4.22	AZP	90.28	TAL	1.41	TAP	165.42	RCA	147.64	APO	235.10	V2	23.612
RC	214.210	GL	3.16	GP	7.38	ZAL	81.28	ZAP	145.73	ETS	167.53	ZAE	169.62	ETE	53.57	ZAC	97.79	ETC	255.70	CLP	146.44

PLANETOCENTRIC CONIC

C3	9.583	VHL	3.096	DLA	16.50	RAL	147.43	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	4.477	DPA	2.51	RAP	195.63	ECC	1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 13	2593.81	-26.60	66.97	2.43	100.08	15 23 27	1993.8	-24.94	58.69
90.00	7 8 14	4157.39	-1.34	169.60	358.30	61.71	8 17 31	3557.4	-5.11	162.95
100.00	16 10 52	2301.49	-27.67	45.23	2.20	101.80	16 49 14	1701.5	-25.76	36.95
100.00	8 20 16	3924.94	-.39	151.99	357.77	60.11	9 25 41	3324.9	-4.36	145.46
110.00	17 39 41	2023.59	-30.42	23.34	1.41	106.40	18 13 25	1423.6	-27.87	15.07
110.00	9 7 56	3775.61	2.02	139.16	356.26	55.87	10 10 52	3175.6	-2.47	132.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1893	TRA	-.7086	TC3	4.5898	BAU	.6094	SGT	3173.2	SGR	809.6	SG3	1229.3	ST	546.3	SR	198.9	SS	242.5
RDE	-.1042	RRA	-.0736	RC3	1.2491	FAU	.25302	RRT	.9048	RRF	-.9706	RTF	-.9339	CRT	-.4427	CRS	.4528	CST	.4823
FDE	.0782	FRA	.7564	FC-22.8568		BSP	11224	SGB	3274.9	R23	-.2724	R13	-.9407	LSA	566.2	MSA	266.3	SSA	72.7
BDE	.2161	BRA	.7125	BC3	4.7568	FSP	4045	SG1	3257.6	SG2	335.8	THA	13.14	EL1	554.1	EL2	175.8	ALF	169.81

LAUNCH DATE NOV 25 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 532.073 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.209	GAL	.31	AZL	89.81	HCA	165.01	SMA	190.99	ECC	.22698	INC	.1856	V1	30.175
RP	232.51	LAP	.05	LOP	227.77	VP	21.135	GAP	3.83	AZP	90.18	TAL	1.70	TAP	166.70	RCA	147.64	APO	234.34	V2	23.650
RC	216.258	GL	2.04	GP	8.04	ZAL	80.66	ZAP	144.48	ETS	167.08	ZAE	169.69	ETE	61.43	ZAC	98.40	ETC	255.68	CLP	145.28

PLANETOCENTRIC CONIC

C3	9.468	VHL	3.077	DLA	15.64	RAL	146.45	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	4.385	DPA	3.17	RAP	195.76	ECC	1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 27	2559.97	-26.18	64.58	.96	101.20	15 27 7	1960.0	-24.37	56.38
90.00	6 56 10	4186.48	-.40	171.23	357.01	61.69	8 5 56	3586.5	-4.18	164.59
100.00	16 14 24	2269.87	-27.21	43.00	.72	102.89	16 52 14	1669.9	-25.16	34.79
100.00	8 8 53	3951.81	.52	153.46	356.50	60.11	9 14 45	3351.8	-3.46	146.94
110.00	17 41 48	1996.42	-29.88	21.40	359.89	107.43	18 15 4	1396.4	-27.21	13.23
110.00	8 57 59	3798.02	2.87	140.33	355.03	55.92	10 1 17	3198.0	-1.62	134.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2041	TRA	-.6767	TC3	4.5703	BAU	.6058	SGT	3125.2	SGR	900.5	SG3	1283.0	ST	552.8	SR	177.5	SS	222.8
RDE	-.0918	RRA	-.0693	RC3	1.4201	FAU	.26291	RRT	.9126	RRF	-.9791	RTF	-.9330	CRT	-.4784	CRS	.1780	CST	.6350
FDE	-.0265	FRA	.6597	FC-24.0401		BSP	11188	SGB	3252.4	R23	-.2846	R13	-.9417	LSA	577.8	MSA	214.0	SSA	84.4
BDE	.2238	BRA	.6802	BC3	4.7859	FSP	4234	SG1	3232.9	SG2	355.9	THA	14.92	EL1	559.8	EL2	153.9	ALF	170.55

LAUNCH DATE NOV 25 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 535.812 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.189	GAL	.36	AZL	89.93	HCA	166.01	SMA	190.63	ECC	.22553	INC	.0641	V1	30.175
RP	232.14	LAP	.02	LOP	228.78	VP	21.147	GAP	3.45	AZP	90.07	TAL	1.97	TAP	167.98	RCA	147.64	APO	233.62	V2	23.689
RC	218.287	GL	.74	GP	8.79	ZAL	80.08	ZAP	143.17	ETS	166.57	ZAE	169.48	ETE	69.64	ZAC	99.09	ETC	255.66	CLP	144.09

PLANETOCENTRIC CONIC

C3	9.366	VHL	3.060	DLA	14.60	RAL	145.44	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	4.298	DPA	3.94	RAP	195.90	ECC	1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 58	2520.67	-25.63	61.83	359.43	102.48	15 31 58	1920.7	-23.65	53.72
90.00	6 42 36	4221.53	.73	173.18	355.71	61.69	7 52 57	3621.5	-3.06	166.55
100.00	16 19 9	2233.06	-26.62	40.42	359.17	104.13	16 56 22	1633.1	-24.42	32.31
100.00	7 56 6	3984.37	1.63	155.25	355.22	60.15	9 2 31	3384.4	-2.36	148.73
110.00	17 44 55	1964.70	-29.22	19.18	358.31	108.59	18 17 39	1364.7	-26.40	11.12
110.00	8 46 50	3825.49	3.92	141.77	353.79	56.02	9 50 35	3225.5	-.57	135.56

DIFFERENTIAL CORRECTIONS

TDE	.2190	TRA	-.6539	TC3	4.5431	BAU	.6038
RDE	-.0771	RRA	-.0653	RC3	1.6168	FAU	.27292
FDE	-.1511	FRA	.5732	FC-25.2279		BSP	11101
BDE	.2322	BRA	.6572	BC3	4.8222	FSP	4429

MID-COURSE EXECUTION ACCURACY

SGT	3082.3	SGR	1008.0	SG3	1337.8		
RRT	.9180	RRF	-.9854	RTF	-.9315		
SGB	3243.0	R23	-.2946	R13	-.9428		
SG1	3220.3	SG2	382.6	THA	16.96		

ORBIT DETERMINATION ACCURACY

ST	564.9	SR	152.2	SS	236.4		
CRT	-.4926	CRS	-.1497	CST	.7811		
LSA	600.5	MSA	166.1	SSA	99.8		
EL1	570.1	EL2	131.3	ALF	172.01		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 539.565 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.170	GAL	.41	AZL	90.07	HCA	167.02	SMA	190.28	ECC	.22416	INC	.0747	V1	30.175
RP	231.76	LAP	-.02	LOP	229.78	VP	21.162	GAP	3.07	AZP	89.93	TAL	2.23	TAP	169.25	RCA	147.63	APO	232.94	V2	23.728
RC	220.299	GL	-.78	GP	9.67	ZAL	79.53	ZAP	141.80	ETS	165.99	ZAE	168.97	ETE	77.75	ZAC	99.89	ETC	255.62	CLP	142.86

PLANETOCENTRIC CONIC

C3	9.279	VHL	3.046	DLA	13.35	RAL	144.40	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	4.215	DPA	4.82	RAP	196.06	ECC	1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 56	2475.00	-24.92	58.68	357.83	103.91	15 38 11	1875.0	-22.76	50.67
90.00	6 27 18	4263.60	2.09	175.53	354.40	61.75	7 38 21	3663.6	-1.70	168.90
100.00	16 25 15	2190.18	-25.87	37.45	357.56	105.52	17 1 45	1590.2	-23.49	29.46
100.00	7 41 40	4023.64	2.96	157.41	353.92	60.24	8 48 44	3423.6	-1.03	150.88
110.00	17 49 10	1927.60	-28.38	16.61	356.66	109.90	18 21 18	1327.6	-25.41	8.70
110.00	8 34 14	3858.99	5.19	143.53	352.53	56.17	9 38 33	3259.0	.71	137.30

DIFFERENTIAL CORRECTIONS

TDE	.2445	TRA	-.6267	TC3	4.4816	BAU	.6011
RDE	-.0575	RRA	-.0594	RC3	1.8414	FAU	.28253
FDE	-.3294	FRA	.4630	FC-26.3590		BSP	11064
BDE	.2512	BRA	.6295	BC3	4.8452	FSP	4630

MID-COURSE EXECUTION ACCURACY

SGT	3022.3	SGR	1132.9	SG3	1390.7		
RRT	.9207	RRF	-.9900	RTF	-.9295		
SGB	3227.6	R23	-.3008	R13	-.9443		
SG1	3200.5	SG2	417.5	THA	19.38		

ORBIT DETERMINATION ACCURACY

ST	591.8	SR	118.3	SS	302.1		
CRT	-.4918	CRS	-.4230	CST	.8595		
LSA	652.1	MSA	141.0	SSA	102.4		
EL1	594.8	EL2	102.5	ALF	174.21		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 543.331 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.152	GAL	.45	AZL	90.23	HCA	168.03	SMA	189.96	ECC	.22286	INC	.2335	V1	30.175
RP	231.38	LAP	-.05	LOP	230.79	VP	21.178	GAP	2.70	AZP	89.77	TAL	2.47	TAP	170.50	RCA	147.63	APO	232.29	V2	23.768
RC	222.292	GL	-2.57	GP	10.69	ZAL	79.02	ZAP	140.35	ETS	165.32	ZAE	168.12	ETE	85.28	ZAC	100.83	ETC	255.58	CLP	141.59

PLANETOCENTRIC CONIC

C3	9.214	VHL	3.035	DLA	11.82	RAL	143.30	RAD	6567.3	VEL	11.428	PTH	1.98	VHP	4.138	DPA	5.86	RAP	196.25	ECC	1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 35	2421.76	-24.00	55.05	356.15	105.50	15 45 57	1821.8	-21.64	47.17
90.00	6 9 55	4314.10	3.71	178.35	353.08	61.91	7 21 49	3714.1	-.07	171.72
100.00	16 32 56	2140.05	-24.92	34.03	355.86	107.07	17 8 36	1540.1	-22.34	26.18
100.00	7 25 15	4071.04	4.55	160.02	352.62	60.42	8 33 6	3471.0	.58	153.48
110.00	17 54 45	1884.03	-27.34	13.65	354.92	111.37	18 26 9	1284.0	-24.19	5.90
110.00	8 19 55	3899.82	6.74	145.68	351.27	56.41	9 24 55	3299.8	2.27	139.43

DIFFERENTIAL CORRECTIONS

TDE	.2723	TRA	-.5995	TC3	4.4035	BAU	.6012
RDE	-.0316	RRA	-.0510	RC3	2.1038	FAU	.29230
FDE	-.5570	FRA	.3287	FC-27.4637		BSP	11027
BDE	.2741	BRA	.6017	BC3	4.8803	FSP	4813

MID-COURSE EXECUTION ACCURACY

SGT	2957.6	SGR	1282.4	SG3	1444.5		
RRT	.9221	RRF	-.9933	RTF	-.9272		
SGB	3223.7	R23	-.3021	R13	-.9467		
SG1	3190.7	SG2	459.9	THA	22.28		

ORBIT DETERMINATION ACCURACY

ST	625.2	SR	76.8	SS	421.8		
CRT	-.3620	CRS	-.4193	CST	.8764		
LSA	734.7	MSA	173.5	SSA	69.5		
EL1	625.8	EL2	71.5	ALF	177.42		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 547.112 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.135	GAL	.49	AZL	90.43	HCA	169.04	SMA	189.65	ECC	.22163	INC	.4268	V1	30.175
RP	231.01	LAP	-.08	LOP	231.81	VP	21.195	GAP	2.33	AZP	89.58	TAL	2.71	TAP	171.75	RCA	147.62	APO	231.69	V2	23.807
RC	224.266	GL	-4.69	GP	11.89	ZAL	78.55	ZAP	138.82	ETS	164.56	ZAE	166.90	ETE	91.90	ZAC	101.94	ETC	255.53	CLP	140.28

PLANETOCENTRIC CONIC

C3	9.178	VHL	3.030	DLA	9.96	RAL	142.14	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	4.068	DPA	7.08	RAP	196.49	ECC	1.1511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 13	2359.38	-22.80	50.87	354.38	107.26	15 55 33	1759.4	-20.22	43.14
90.00	5 49 59	4374.97	5.66	181.77	351.75	62.21	7 2 54	3775.0	1.89	175.11
100.00	16 42 29	2081.16	-23.68	30.09	354.07	108.80	17 17 10	1481.2	-20.90	22.40
100.00	7 6 24	4128.42	6.47	163.20	351.31	60.75	8 15 13	3528.4	2.52	156.63
110.00	18 1 55	1832.61	-26.01	10.24	353.08	113.00	18 32 27	1232.6	-22.67	2.68
110.00	8 3 28	3949.74	8.61	148.33	350.00	56.79	9 9 18	3349.7	4.18	142.05

DIFFERENTIAL CORRECTIONS

TDE	.3182	TRA	-.5609	TC3	4.3559	BAU	.6113
RDE	.0056	RRA	-.0373	RC3	2.4178	FAU	.30283
FDE	-.8732	FRA	.1471	FC-28.5640		BSP	10768
BDE	.3182	BRA	.5621	BC3	4.9819	FSP	4942

MID-COURSE EXECUTION ACCURACY

SGT	2913.4	SGR	1466.8	SG3	1502.4		
RRT	.9244	RRF	-.9956	RTF	-.9273		
SGB	3261.8	R23	-.2921	R13	-.9520		
SG1	3222.3	SG2	505.9	THA	25.63		

ORBIT DETERMINATION ACCURACY

ST	687.5	SR	50.1	SS	609.2		
CRT	.4878	CRS	.4853	CST	.8914		
LSA	894.0	MSA	212.4	SSA	43.3		
EL1	688.0	EL2	43.7	ALF	2.04		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 550.904 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.119	GAL	.53	AZL	90.66	HCA	170.06	SMA	189.36	ECC	.22046	INC	.6611	V1	30.175
RP	230.62	LAP	-.11	LOP	232.82	VP	21.215	GAP	1.97	AZP	89.35	TAL	2.93	TAP	172.99	RCA	147.62	APO	231.11	V2	23.847
RC	226.222	GL	-7.25	GP	13.33	ZAL	78.14	ZAP	137.18	ETS	163.67	ZAE	165.31	ETE	97.42	ZAC	103.27	ETC	255.45	CLP	138.92

PLANETOCENTRIC CONIC

C3	9.186	VHL	3.031	DLA	7.68	RAL	140.88	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	4.007	DPA	8.53	RAP	196.79	ECC	1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 19	2285.59	-21.23	46.03	352.51	109.19	16 7 24	1685.6	-18.41	38.48
90.00	5 26 51	4449.07	7.99	185.97	350.46	62.74	6 41 0	3849.1	4.27	179.26
100.00	16 54 21	2011.32	-22.07	25.53	352.18	110.69	17 27 52	1411.3	-19.06	18.03
100.00	6 44 30	4198.57	8.79	167.12	350.04	61.31	7 54 29	3598.6	4.89	160.50
110.00	18 11 1	1771.36	-24.32	6.28	351.16	114.79	18 40 33	1171.4	-20.78	358.93
110.00	7 44 19	4011.30	10.89	151.65	348.77	57.39	8 51 10	3411.3	6.51	145.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3537	TRA	-.5387	TC3	4.2027	BAU	.6180	SGT	2827.2	SGR	1681.3	SG3	1547.9	ST	740.3	SR	114.0	SS	826.7
RDE	.0537	RRA	-.0220	RC3	2.7677	FAU	.31094	RRT	.9225	RRF	-.9972	RTF	-.9232	CRT	.8959	CRS	.9658	CST	.9010
FDE	-1.2312	FRA	-.0253	FC	-29.3050	BSP	10999	SGB	3289.4	R23	-.2834	R13	-.9561	LSA	1087.8	MSA	245.8	SSA	28.6
BDE	.3578	BRA	.5392	BC3	5.0322	FSP	5138	SG1	3240.3	SG2	566.2	THA	29.75	EL1	747.3	EL2	50.2	ALF	7.89

LAUNCH DATE NOV 25 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 554.708 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.103	GAL	.56	AZL	90.95	HCA	171.08	SMA	189.09	ECC	.21937	INC	.9475	V1	30.175
RP	230.24	LAP	-.15	LOP	233.85	VP	21.236	GAP	1.62	AZP	89.06	TAL	3.13	TAP	174.21	RCA	147.61	APO	230.57	V2	23.887
RC	228.159	GL	-10.38	GP	15.09	ZAL	77.81	ZAP	135.39	ETS	162.62	ZAE	163.30	ETE	101.82	ZAC	104.89	ETC	255.35	CLP	137.51

PLANETOCENTRIC CONIC

C3	9.261	VHL	3.043	DLA	4.84	RAL	139.49	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	3.958	DPA	10.27	RAP	197.18	ECC	1.1524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 29	2197.36	-19.15	40.39	350.57	111.27	16 22 7	1597.4	-16.09	33.05
90.00	4 59 34	4540.46	10.80	191.21	349.25	63.66	6 15 15	3940.5	7.17	184.41
100.00	17 9 7	1927.65	-19.97	20.21	350.21	112.72	17 41 14	1327.7	-16.71	12.92
100.00	6 18 38	4285.40	11.58	172.05	348.84	62.25	7 30 4	3685.4	7.78	165.33
110.00	18 22 34	1697.73	-22.14	1.68	349.14	116.73	18 50 52	1097.7	-18.38	354.57
110.00	7 21 40	4088.08	13.67	155.86	347.62	58.36	8 29 48	3488.1	9.38	149.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4027	TRA	-.5133	TC3	4.0047	BAU	.6324	SGT	2730.7	SGR	1943.7	SG3	1586.9	ST	815.4	SR	242.1	SS	1115.0
RDE	.1249	RRA	.0016	RC3	3.1701	FAU	.31774	RRT	.9191	RRF	-.9982	RTF	-.9182	CRT	.9230	CRS	.9965	CST	.9158
FDE	-1.7061	FRA	-.2448	FC	-29.7030	BSP	11170	SGB	3351.8	R23	-.2667	R13	-.9620	LSA	1375.9	MSA	270.9	SSA	18.9
BDE	.4216	BRA	.5133	BC3	5.1076	FSP	5259	SG1	3291.0	SG2	635.6	THA	34.67	EL1	845.9	EL2	89.8	ALF	15.50

LAUNCH DATE NOV 25 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 558.523 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.089	GAL	.60	AZL	91.31	HCA	172.10	SMA	188.83	ECC	.21833	INC	1.3102	V1	30.175
RP	229.86	LAP	-.18	LOP	234.87	VP	21.259	GAP	1.28	AZP	88.70	TAL	3.32	TAP	175.43	RCA	147.61	APO	230.06	V2	23.927
RC	230.076	GL	-14.26	GP	17.25	ZAL	77.58	ZAP	133.42	ETS	161.38	ZAE	160.80	ETE	105.14	ZAC	106.90	ETC	255.21	CLP	136.03

PLANETOCENTRIC CONIC

C3	9.448	VHL	3.074	DLA	1.27	RAL	137.90	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.925	DPA	12.42	RAP	197.72	ECC	1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 48	2090.24	-16.37	33.76	348.58	113.43	16 40 39	1490.2	-13.06	26.65
90.00	4 26 38	4655.38	14.18	197.96	348.22	65.23	5 44 14	4055.4	10.72	190.99
100.00	17 27 45	1825.96	-17.17	13.95	348.20	114.85	17 58 10	1226.0	-13.68	6.90
100.00	5 47 23	4394.89	14.97	178.42	347.83	63.82	7 0 38	3794.9	11.33	171.52
110.00	18 37 21	1608.08	-19.30	356.28	347.07	118.78	19 4 9	1008.1	-15.31	349.43
110.00	6 54 16	4185.52	17.07	161.35	346.66	59.93	8 4 2	3585.5	12.95	154.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4621	TRA	-.4935	TC3	3.7459	BAU	.6576	SGT	2625.2	SGR	2264.0	SG3	1610.2	ST	907.1	SR	433.1	SS	1465.8
RDE	.2294	RRA	.0337	RC3	3.6151	FAU	.32160	RRT	.9133	RRF	-.9989	RTF	-.9112	CRT	.9358	CRS	.9994	CST	.9307
FDE	-2.2961	FRA	-.4817	FC	-29.4688	BSP	11656	SGB	3466.6	R23	-.2425	R13	-.9690	LSA	1753.8	MSA	288.3	SSA	12.7
BDE	.5159	BRA	.4947	BC3	5.2059	FSP	5385	SG1	3392.4	SG2	713.5	THA	40.38	EL1	995.5	EL2	139.1	ALF	24.59

LAUNCH DATE NOV 25 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 562.351 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.075	GAL	.62	AZL	91.78	HCA	173.13	SMA	188.59	ECC	.21735	INC	1.7819	V1	30.175
RP	229.47	LAP	-.21	LOP	235.90	VP	21.283	GAP	.93	AZP	88.23	TAL	3.50	TAP	176.63	RCA	147.60	APO	229.58	V2	23.968
RC	231.973	GL	-19.14	GP	19.99	ZAL	77.51	ZAP	131.19	ETS	159.90	ZAE	157.71	ETE	107.48	ZAC	109.45	ETC	254.99	CLP	134.49

PLANETOCENTRIC CONIC

C3	9.832	VHL	3.136	DLA	-3.26	RAL	136.05	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.916	DPA	15.10	RAP	198.46	ECC	1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 3	1957.45	-12.61	25.82	346.66	115.56	17 4 40	1357.5	-9.07	18.93
90.00	3 45 34	4803.87	18.20	207.00	347.59	67.93	5 5 38	4203.9	15.05	199.74
100.00	17 51 52	1699.97	-13.42	6.48	346.25	116.96	18 20 12	1100.0	-9.69	359.67
100.00	5 8 26	4536.59	19.03	186.98	347.22	66.50	6 24 3	3936.6	15.69	179.78
110.00	18 56 37	1497.27	-15.55	349.88	345.04	120.83	19 21 34	897.3	-11.34	343.30
110.00	6 20 11	4312.05	21.22	168.82	346.11	62.55	7 32 3	3712.1	17.38	161.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5400	TRA	-.4686	TC3	3.4309	BAU	.7019	SGT	2517.6	SGR	2667.9	SG3	1613.4	ST	1021.8	SR	720.3	SS	1894.7
RDE	.3911	RRA	.0847	RC3	4.0911	FAU	.32183	RRT	.9071	RRF	-.9993	RTF	-.9040	CRT	.9486	CRS	.9999	CST	.9453
FDE	-3.0419	FRA	-.7776	FC	-28.3367	BSP	12372	SGB	3668.3	R23	-.2081	R13	-.9775	LSA	2250.2	MSA	299.1	SSA	8.5
BDE	.6668	BRA	.4762	BC3	5.3393	FSP	5438	SG1	3582.3	SG2	789.3	THA	46.83	EL1	1235.9	EL2	188.4	ALF	34.69

LAUNCH DATE NOV 25 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 566.190 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.062 GAL .65 AZL 92.42 HCA 174.16 SMA 188.36 ECC .21643 INC 2.4184 V1 30.175
RP 229.09 LAP -.25 LOP 236.93 VP 21.309 GAP .60 AZP 87.59 TAL 3.66 TAP 177.82 RCA 147.60 APO 229.13 V2 24.009
RC 233.848 GL -25.39 GP 23.52 ZAL 77.70 ZAP 128.57 ETS 158.12 ZAE 153.83 ETE 108.96 ZAC 112.75 ETC 254.66 CLP 132.84

PLANETOCENTRIC CONIC

C3 10.591 VHL 3.254 DLA -9.10 RAL 133.77 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 3.948 DPA 18.53 RAP 199.52 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 43	1787.53	-7.44	16.02	345.09	117.40	17 37 31	1187.5	-3.71	9.32
90.00	2 51 45	5003.62	22.80	219.84	347.77	72.74	4 15 8	4403.6	20.23	212.11
100.00	18 24 37	1539.45	-8.29	357.32	344.63	118.82	18 50 17	939.4	-4.38	350.71
100.00	4 17 32	4726.94	23.72	199.16	347.44	71.25	5 36 19	4126.9	20.94	191.47
110.00	19 22 45	1357.45	-10.52	342.16	343.28	122.71	19 45 22	757.4	-6.14	335.81
110.00	5 35 54	4481.70	26.15	179.52	346.43	67.16	6 50 36	3881.7	22.82	171.94

DIFFERENTIAL CORRECTIONS
TDE .6487 TRA -.4385 TC3 3.0203 BAU .7738
RDE .6602 RRA .1743 RC3 4.5541 FAU .31692
FDE-4.0104 FRA-1.1719 FC-25.9049 BSP 13336
BDE .9256 BRA .4719 BC3 5.4646 FSP 5296

MID-COURSE EXECUTION ACCURACY
SGT 2404.2 SGR 3199.1 SG3 1589.7
RRT .8987 RRF -.9996 RTF -.8947
SGB 4001.8 R23 -.1669 R13 -.9856
SG1 3907.5 SG2 863.4 THA 53.93

ORBIT DETERMINATION ACCURACY
ST 1167.4 SR 1169.5 SS 2424.0
CRT .9602 CRS 1.0000 CST .9579
LSA 2917.4 MSA 307.8 SSA 5.7
EL1 1635.9 EL2 233.2 ALF 45.05

LAUNCH DATE NOV 25 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 570.038 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.050 GAL .68 AZL 93.33 HCA 175.19 SMA 188.15 ECC .21556 INC 3.3311 V1 30.175
RP 228.70 LAP -.28 LOP 237.96 VP 21.336 GAP .27 AZP 86.68 TAL 3.82 TAP 179.01 RCA 147.59 APO 228.71 V2 24.049
RC 235.703 GL -33.46 GP 28.19 ZAL 78.28 ZAP 125.36 ETS 156.03 ZAE 148.83 ETE 109.73 ZAC 117.11 ETC 254.11 CLP 131.04

PLANETOCENTRIC CONIC

C3 12.133 VHL 3.483 DLA -16.66 RAL 130.84 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 4.053 DPA 23.03 RAP 201.08 ECC 1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 37	1555.60	-.03	3.01	344.62	118.32	18 27 32	955.6	3.76	356.37
90.00	1 34 28	5291.86	27.19	239.77	349.53	81.76	3 2 40	4691.9	25.77	231.39
100.00	19 13 31	1323.57	-1.06	345.38	344.04	119.88	19 35 35	723.6	2.93	338.85
100.00	3 5 14	4999.12	28.35	218.02	349.32	80.11	4 28 34	4399.1	26.70	209.61
110.00	20 0 55	1175.10	-3.68	332.48	342.41	124.01	20 20 30	575.1	.81	326.27
110.00	4 34 20	4720.36	31.37	196.10	348.57	75.67	5 53 0	4120.4	29.09	187.65

DIFFERENTIAL CORRECTIONS
TDE .7904 TRA -.4108 TC3 2.4652 BAU .8805
RDE 1.1115 RRA .3219 RC3 4.8364 FAU .30032
FDE-5.1163 FRA-1.6022 FC-21.4289 BSP 15015
BDE 1.3639 BRA .5219 BC3 5.4285 FSP 5009

MID-COURSE EXECUTION ACCURACY
SGT 2266.5 SGR 3873.0 SG3 1499.6
RRT .8856 RRF -.9997 RTF -.8805
SGB 4487.5 R23 -.1258 R13 -.9919
SG1 4390.3 SG2 928.8 THA 61.20

ORBIT DETERMINATION ACCURACY
ST 1318.2 SR 1838.6 SS 2965.3
CRT .9684 CRS 1.0000 CST .9666
LSA 3716.5 MSA 315.0 SSA 3.8
EL1 2246.3 EL2 269.0 ALF 54.64

LAUNCH DATE NOV 25 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 573.895 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.039 GAL .70 AZL 94.75 HCA 176.22 SMA 187.95 ECC .21475 INC 4.7475 V1 30.175
RP 228.31 LAP -.31 LOP 239.00 VP 21.365 GAP -.05 AZP 85.26 TAL 3.96 TAP 180.18 RCA 147.59 APO 228.31 V2 24.090
RC 237.537 GL -43.88 GP 34.52 ZAL 79.47 ZAP 121.19 ETS 153.69 ZAE 142.24 ETE 110.05 ZAC 123.00 ETC 253.13 CLP 128.94

PLANETOCENTRIC CONIC

C3 15.551 VHL 3.944 DLA -26.38 RAL 126.77 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 4.307 DPA 29.05 RAP 203.45 ECC 1.2559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 9	1134.79	13.12	339.08	348.15	115.32	20 17 4	534.8	16.43	331.96
90.00	23 1 33	5821.23	26.39	278.09	352.72	100.66	24 38 34	5221.2	27.59	269.63
100.00	20 50 6	967.01	10.83	325.58	346.98	118.03	21 6 13	367.0	14.50	318.71
100.00	0 56 13	5464.23	28.92	252.29	353.18	97.92	2 27 17	4864.2	29.71	243.58
110.00	21 7 34	912.17	6.34	318.72	344.27	123.66	21 22 47	312.2	10.72	312.37
110.00	2 55 14	5091.84	34.12	224.55	353.72	92.17	4 20 6	4491.8	34.05	215.31

DIFFERENTIAL CORRECTIONS
TDE 1.0039 TRA -.3725 TC3 1.7727 BAU 1.0389
RDE 1.9268 RRA .5914 RC3 4.6718 FAU .26469
FDE-6.2195 FRA-2.0418 FC-14.7354 BSP 17534
BDE 2.1726 BRA .6990 BC3 4.9968 FSP 4425

MID-COURSE EXECUTION ACCURACY
SGT 2108.8 SGR 4725.8 SG3 1303.7
RRT .8685 RRF -.9998 RTF -.8620
SGB 5175.0 R23 -.0899 R13 -.9958
SG1 5082.9 SG2 971.9 THA 67.97

ORBIT DETERMINATION ACCURACY
ST 1470.3 SR 2816.3 SS 3385.3
CRT .9745 CRS 1.0000 CST .9729
LSA 4631.6 MSA 319.5 SSA 2.7
EL1 3163.4 EL2 293.6 ALF 62.78

LAUNCH DATE NOV 25 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 577.759 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.028 GAL .72 AZL 97.23 HCA 177.26 SMA 187.76 ECC .21398 INC 7.2315 V1 30.175
RP 227.92 LAP -.35 LOP 240.04 VP 21.395 GAP -.37 AZP 82.77 TAL 4.09 TAP 181.35 RCA 147.58 APO 227.94 V2 24.132
RC 239.350 GL -57.09 GP 43.14 ZAL 81.49 ZAP 115.49 ETS 151.57 ZAE 133.39 ETE 110.53 ZAC 130.92 ETC 251.27 CLP 126.14

PLANETOCENTRIC CONIC

C3 24.533 VHL 4.953 DLA -38.51 RAL 120.50 RAD 6568.0 VEL 12.079 PTH 2.16 VHP 4.917 DPA 37.21 RAP 207.18 ECC 1.4037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.72	17 55 43	1535.19	24.48	15.53	355.58	120.71	18 21 18	935.2	28.36	8.14
117.28	0 17 51	5636.51	24.49	263.60	355.59	120.70	1 51 47	5036.5	28.37	256.20
62.72	17 55 43	1535.19	24.48	15.53	355.58	120.71	18 21 18	935.2	28.36	8.14
117.28	0 17 51	5636.51	24.49	263.60	355.59	120.70	1 51 47	5036.5	28.37	256.20
62.72	17 55 43	1535.19	24.48	15.53	355.58	120.71	18 21 18	935.2	28.36	8.14
117.28	0 17 51	5636.51	24.49	263.60	355.59	120.70	1 51 47	5036.5	28.37	256.20

DIFFERENTIAL CORRECTIONS
TDE 1.3526 TRA -.3153 TC3 1.0118 BAU 1.3232
RDE 3.6102 RRA 1.2296 RC3 3.9055 FAU .20901
FDE-6.9251 FRA-2.5075 FC3-7.3757 BSP 19246
BDE 3.8553 BRA 1.2694 BC3 4.0344 FSP 3009

MID-COURSE EXECUTION ACCURACY
SGT 1915.8 SGR 5976.1 SG3 990.0
RRT .8354 RRF -.9998 RTF -.8259
SGB 6275.6 R23 -.0622 R13 -.9980
SG1 6192.8 SG2 1016.0 THA 74.58

ORBIT DETERMINATION ACCURACY
ST 1571.2 SR 4213.3 SS 3437.3
CRT .9761 CRS 1.0000 CST .9743
LSA 5650.1 MSA 334.1 SSA 2.0
EL1 4485.3 EL2 320.8 ALF 69.89

LAUNCH DATE NOV 25 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 601.336 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.977 GAL .76 AZL 81.41 HCA 183.64 SMA 186.87 ECC .21028 INC 8.5858 V1 30.175
RP 225.58 LAP -.54 LOP 246.37 VP 21.598 GAP -2.12 AZP 98.57 TAL 4.37 TAP 188.01 RCA 147.58 APO 226.17 V2 24.381
RC 249.803 GL 62.66 GP -38.62 ZAL 82.18 ZAP 110.94 ETS 196.18 ZAE 135.53 ETE 229.48 ZAC 50.98 ETC 252.09 CLP 117.22

PLANETOCENTRIC CONIC

C3 30.713 VHL 5.542 DLA 70.56 RAL 190.07 RAD 6568.2 VEL 12.332 PTH 2.22 VHP 4.094 DPA -34.76 RAP 165.34 ECC 1.5055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
18.29	10 42 22	4365.68	-46.56	234.64	117.88	23.69	11 55 7	3765.7	-53.77	229.63
18.29	5 59 17	4692.95	-25.66	243.00	56.64	17.85	7 17 30	4093.0	-33.25	240.49
22.22	8 29 4	4520.06	-35.42	235.07	85.53	24.11	9 44 24	3920.1	-42.65	231.05
157.78	18 59 32	2763.39	-35.42	84.34	85.52	24.11	19 45 35	2163.4	-42.64	80.32
22.22	8 29 4	4520.06	-35.42	235.07	85.53	24.11	9 44 24	3920.1	-42.65	231.05
157.78	18 59 32	2763.39	-35.42	84.34	85.52	24.11	19 45 35	2163.4	-42.64	80.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8571 TRA -.1875 TC3 .0971 BAU 1.2538 SGT 1065.9 SGR 5922.5 SG3 1451.6 ST 903.2 SR 2963.0 SS 3002.6
RDE 2.6132 RRA 1.3012 RC3-3.0521 FAU .31359 RRT -.0514 RRF .9998 RTF -.0381 CRT .8153 CRS -.9999 CST -.8234
FDE 7.5328 FRA 3.6088 FC3-8.8395 BSP 20264 SGB 6017.7 R23 -.0150 R13 .9998 LSA 4283.7 MSA 510.7 SSA 2.5
BDE 2.7502 BRA 1.3147 BC3 3.0536 FSP 4939 SG1 5922.8 SG2 1064.5 THA 90.55 EL1 3055.8 EL2 507.1 ALF 75.64

LAUNCH DATE NOV 25 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 605.276 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.971 GAL .76 AZL 82.96 HCA 184.70 SMA 186.76 ECC .20980 INC 7.0446 V1 30.175
RP 225.19 LAP -.58 LOP 247.43 VP 21.635 GAP -2.40 AZP 97.02 TAL 4.39 TAP 189.10 RCA 147.58 APO 225.94 V2 24.423
RC 251.477 GL 56.71 GP -32.56 ZAL 81.01 ZAP 111.61 ETS 193.15 ZAE 139.20 ETE 223.33 ZAC 56.76 ETC 253.40 CLP 115.92

PLANETOCENTRIC CONIC

C3 23.398 VHL 4.837 DLA 66.63 RAL 177.72 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 3.684 DPA -29.39 RAP 168.67 ECC 1.3851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.78	7 49 46	4439.15	-38.35	227.46	67.74	30.38	9 3 46	3839.2	-45.12	222.15
153.22	18 0 18	2709.34	-38.34	81.62	67.72	30.38	18 45 27	2109.3	-45.11	76.31
26.78	7 49 46	4439.15	-38.35	227.46	67.74	30.38	9 3 46	3839.2	-45.12	222.15
153.22	18 0 18	2709.34	-38.34	81.62	67.72	30.38	18 45 27	2109.3	-45.11	76.31
26.78	7 49 46	4439.15	-38.35	227.46	67.74	30.38	9 3 46	3839.2	-45.12	222.15
153.22	18 0 18	2709.34	-38.34	81.62	67.72	30.38	18 45 27	2109.3	-45.11	76.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7132 TRA -.2274 TC3 .0516 BAU 1.0525 SGT 1085.1 SGR 5160.1 SG3 1829.5 ST 869.0 SR 2975.7 SS 3882.8
RDE 2.4078 RRA .9413 RC3-3.3642 FAU .38076 RRT .0604 RRF .9998 RTF .0705 CRT .8652 CRS-1.0000 CST -.8694
FDE 9.8946 FRA 3.7475 FC-14.0885 BSP 17609 SGB 5273.0 R23 -.0074 R13 .9998 LSA 4950.1 MSA 427.1 SSA 3.0
BDE 2.5112 BRA .9684 BC3 3.3646 FSP 6225 SG1 5160.6 SG2 1083.0 THA 89.24 EL1 3071.1 EL2 422.1 ALF 75.54

LAUNCH DATE NOV 25 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 609.231 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.965 GAL .76 AZL 83.93 HCA 185.77 SMA 186.65 ECC .20936 INC 6.0681 V1 30.175
RP 224.80 LAP -.61 LOP 248.50 VP 21.673 GAP -2.67 AZP 96.04 TAL 4.40 TAP 190.17 RCA 147.58 APO 225.73 V2 24.465
RC 253.132 GL 52.12 GP -28.04 ZAL 80.15 ZAP 111.30 ETS 190.56 ZAE 141.04 ETE 217.23 ZAC 61.01 ETC 254.17 CLP 114.31

PLANETOCENTRIC CONIC

C3 19.488 VHL 4.415 DLA 63.13 RAL 170.69 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.445 DPA -25.19 RAP 170.60 ECC 1.3207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.90	7 31 14	4380.29	-39.53	220.59	55.98	35.88	8 44 14	3780.3	-45.83	214.29
149.10	17 22 45	2680.20	-39.52	79.40	55.97	35.87	18 7 25	2080.2	-45.82	73.09
30.90	7 31 14	4380.29	-39.53	220.59	55.98	35.88	8 44 14	3780.3	-45.83	214.29
149.10	17 22 45	2680.20	-39.52	79.40	55.97	35.87	18 7 25	2080.2	-45.82	73.09
30.90	7 31 14	4380.29	-39.53	220.59	55.98	35.88	8 44 14	3780.3	-45.83	214.29
149.10	17 22 45	2680.20	-39.52	79.40	55.97	35.87	18 7 25	2080.2	-45.82	73.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6774 TRA -.2367 TC3 -.0731 BAU .9040 SGT 1113.0 SGR 4559.1 SG3 2116.6 ST 902.5 SR 2723.4 SS 4320.7
RDE 2.0404 RRA .7299 RC3-3.4688 FAU .42871 RRT .2171 RRF .9997 RTF .2256 CRT .8952 CRS-1.0000 CST -.8983
FDE10.8935 FRA 3.7749 FC-19.0450 BSP 15715 SGB 4693.0 R23 .0046 R13 .9998 LSA 5171.6 MSA 393.6 SSA 3.4
BDE 2.1499 BRA .7673 BC3 3.4696 FSP 7291 SG1 4565.9 SG2 1084.9 THA 86.78 EL1 2843.1 EL2 385.3 ALF 73.16

LAUNCH DATE NOV 25 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 613.197 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.959 GAL .76 AZL 84.61 HCA 186.84 SMA 186.56 ECC .20896 INC 5.3927 V1 30.175
RP 224.41 LAP -.64 LOP 249.58 VP 21.712 GAP -2.93 AZP 95.35 TAL 4.38 TAP 191.23 RCA 147.58 APO 225.54 V2 24.506
RC 254.766 GL 48.48 GP -24.60 ZAL 79.51 ZAP 110.41 ETS 188.44 ZAE 141.62 ETE 211.66 ZAC 64.20 ETC 254.67 CLP 112.56

PLANETOCENTRIC CONIC

C3 17.114 VHL 4.137 DLA 60.16 RAL 166.26 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 3.289 DPA -21.84 RAP 171.73 ECC 1.2817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.42	7 22 11	4334.80	-39.82	214.76	47.69	40.39	8 34 26	3734.8	-45.69	207.76
145.58	16 56 27	2664.93	-39.81	77.76	47.67	40.38	17 40 52	2064.9	-45.68	70.76
34.42	7 22 11	4334.80	-39.82	214.76	47.69	40.39	8 34 26	3734.8	-45.69	207.76
145.58	16 56 27	2664.93	-39.81	77.76	47.67	40.38	17 40 52	2064.9	-45.68	70.76
34.42	7 22 11	4334.80	-39.82	214.76	47.69	40.39	8 34 26	3734.8	-45.69	207.76
145.58	16 56 27	2664.93	-39.81	77.76	47.67	40.38	17 40 52	2064.9	-45.68	70.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6849 TRA -.2358 TC3 -.2702 BAU .8012 SGT 1174.9 SGR 4063.5 SG3 2330.5 ST 968.8 SR 2414.5 SS 4483.7
RDE 1.7072 RRA .5768 RC3-3.4914 FAU .46897 RRT .3844 RRF .9996 RTF .3914 CRT .9185 CRS-1.0000 CST -.9211
FDE11.1702 FRA 3.6466 FC-23.7231 BSP 13873 SGB 4230.0 R23 .0238 R13 .9994 LSA 5170.4 MSA 373.1 SSA 4.0
BDE 1.8395 BRA .6231 BC3 3.5018 FSP 7945 SG1 4090.4 SG2 1077.5 THA 83.18 EL1 2576.8 EL2 358.9 ALF 69.35

LAUNCH DATE NOV 25 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 617.173 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.954 GAL .75 AZL 85.10 HCA 187.92 SMA 186.47 ECC .20859 INC 4.8989 V1 30.175
RP 224.02 LAP -.67 LOP 250.66 VP 21.752 GAP -3.19 AZP 94.85 TAL 4.35 TAP 192.27 RCA 147.58 APO 225.37 V2 24.548
RC 256.380 GL 45.55 GP -21.90 ZAL 79.04 ZAP 109.17 ETS 186.71 ZAE 141.37 ETE 206.79 ZAC 66.66 ETC 255.02 CLP 110.72

PLANETOCENTRIC CONIC

C3 15.542 VHL 3.942 DLA 57.66 RAL 163.26 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.179 DPA -19.12 RAP 172.35 ECC 1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.42	7 18 0	4298.01	-39.68	209.86	41.59	44.04	8 29 38	3698.0	-45.18	202.39
142.58	16 36 44	2657.72	-39.67	76.63	41.57	44.03	17 21 1	2057.7	-45.16	69.16
37.42	7 18 0	4298.01	-39.68	209.86	41.59	44.04	8 29 38	3698.0	-45.18	202.39
142.58	16 36 44	2657.72	-39.67	76.63	41.57	44.03	17 21 1	2057.7	-45.16	69.16
37.42	7 18 0	4298.01	-39.68	209.86	41.59	44.04	8 29 38	3698.0	-45.18	202.39
142.58	16 36 44	2657.72	-39.67	76.63	41.57	44.03	17 21 1	2057.7	-45.16	69.16

DIFFERENTIAL CORRECTIONS
TDE .7174 TRA -.2295 TC3 -.5214 BAU .7192
RDE 1.4585 RRA .4841 RC3-3.4221 FAU .49774
FDE11.2487 FRA 3.6015 FC-27.7262 BSP 12722
BDE 1.6254 BRA .5358 BC3 3.4616 FSP 8610

MID-COURSE EXECUTION ACCURACY
SGT 1282.5 SGR 3674.7 SG3 2505.4
RRT .5303 RRF .9995 RTF .5359
SGB 3892.0 R23 .0506 R13 .9983
SG1 3742.8 SG2 1067.5 THA 78.57

ORBIT DETERMINATION ACCURACY
ST 1059.3 SR 2157.7 SS 4565.9
CRT .9351 CRS-1.0000 CST -.9373
LSA 5147.1 MSA 363.7 SSA 4.7
EL1 2379.4 EL2 340.5 ALF 64.79

LAUNCH DATE NOV 25 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 621.161 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.950 GAL .74 AZL 85.48 HCA 189.00 SMA 186.39 ECC .20824 INC 4.5208 V1 30.175
RP 223.63 LAP -.71 LOP 251.74 VP 21.792 GAP -3.44 AZP 94.47 TAL 4.31 TAP 193.31 RCA 147.58 APO 225.21 V2 24.590
RC 257.974 GL 43.13 GP -19.74 ZAL 78.70 ZAP 107.69 ETS 185.28 ZAE 140.54 ETE 202.65 ZAC 68.58 ETC 255.28 CLP 108.83

PLANETOCENTRIC CONIC

C3 14.432 VHL 3.799 DLA 55.54 RAL 161.13 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 3.097 DPA -16.85 RAP 172.63 ECC 1.2375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.00	7 16 29	4267.31	-39.32	205.73	36.95	47.00	8 27 36	3667.3	-44.50	197.94
140.00	16 21 16	2655.30	-39.31	75.88	36.93	46.99	17 5 31	2055.3	-44.49	68.10
40.00	7 16 29	4267.31	-39.32	205.73	36.95	47.00	8 27 36	3667.3	-44.50	197.94
140.00	16 21 16	2655.30	-39.31	75.88	36.93	46.99	17 5 31	2055.3	-44.49	68.10
40.00	7 16 29	4267.31	-39.32	205.73	36.95	47.00	8 27 36	3667.3	-44.50	197.94
140.00	16 21 16	2655.30	-39.31	75.88	36.93	46.99	17 5 31	2055.3	-44.49	68.10

DIFFERENTIAL CORRECTIONS
TDE .7624 TRA -.2191 TC3 -.8197 BAU .6630
RDE 1.2558 RRA .4092 RC3-3.3372 FAU .52362
FDE11.1035 FRA 3.4817 FC-31.4104 BSP 11717
BDE 1.4691 BRA .4642 BC3 3.4364 FSP 9044

MID-COURSE EXECUTION ACCURACY
SGT 1432.2 SGR 3347.5 SG3 2643.5
RRT .6508 RRF .9993 RTF .6550
SGB 3641.0 R23 .0857 R13 .9957
SG1 3488.3 SG2 1043.5 THA 72.86

ORBIT DETERMINATION ACCURACY
ST 1163.3 SR 1923.5 SS 4547.1
CRT .9483 CRS-1.0000 CST -.9502
LSA 5060.0 MSA 354.9 SSA 5.5
EL1 2225.1 EL2 319.2 ALF 59.47

LAUNCH DATE NOV 25 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 625.158 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.946 GAL .73 AZL 85.78 HCA 190.09 SMA 186.32 ECC .20793 INC 4.2232 V1 30.175
RP 223.24 LAP -.74 LOP 252.82 VP 21.833 GAP -3.69 AZP 94.16 TAL 4.25 TAP 194.33 RCA 147.58 APO 225.07 V2 24.632
RC 259.547 GL 41.12 GP -17.97 ZAL 78.47 ZAP 106.06 ETS 184.10 ZAE 139.32 ETE 199.15 ZAC 70.12 ETC 255.49 CLP 106.91

PLANETOCENTRIC CONIC

C3 13.610 VHL 3.689 DLA 53.73 RAL 159.57 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 3.034 DPA -14.90 RAP 172.68 ECC 1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.22	7 16 35	4240.92	-38.86	202.21	33.35	49.44	8 27 16	3640.9	-43.77	194.21
137.78	16 8 43	2655.90	-38.85	75.42	33.33	49.42	16 52 59	2055.9	-43.76	67.43
42.22	7 16 35	4240.92	-38.86	202.21	33.35	49.44	8 27 16	3640.9	-43.77	194.21
137.78	16 8 43	2655.90	-38.85	75.42	33.33	49.42	16 32 59	2055.9	-43.76	67.43
42.22	7 16 35	4240.92	-38.86	202.21	33.35	49.44	8 27 16	3640.9	-43.77	194.21
137.78	16 8 43	2655.90	-38.85	75.42	33.33	49.42	16 52 59	2055.9	-43.76	67.43

DIFFERENTIAL CORRECTIONS
TDE .8145 TRA -.2053 TC3-1.1584 BAU .6205
RDE 1.1067 RRA .3622 RC3-3.2074 FAU .54118
FDE10.9891 FRA 3.4583 FC-34.4235 BSP 11215
BDE 1.3741 BRA .4163 BC3 3.4102 FSP 9558

MID-COURSE EXECUTION ACCURACY
SGT 1619.0 SGR 3075.5 SG3 2757.8
RRT .7399 RRF .9991 RTF .7431
SGB 3475.6 R23 .1250 R13 .9912
SG1 3326.6 SG2 1006.9 THA 66.43

ORBIT DETERMINATION ACCURACY
ST 1275.4 SR 1743.7 SS 4535.5
CRT .9576 CRS-1.0000 CST -.9593
LSA 5011.5 MSA 350.2 SSA 6.2
EL1 2139.6 EL2 299.4 ALF 54.18

LAUNCH DATE NOV 25 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 629.165 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.942 GAL .72 AZL 86.02 HCA 191.18 SMA 186.26 ECC .20765 INC 3.9816 V1 30.175
RP 222.85 LAP -.77 LOP 253.91 VP 21.875 GAP -3.93 AZP 93.91 TAL 4.17 TAP 195.35 RCA 147.58 APO 224.94 V2 24.674
RC 261.100 GL 39.41 GP -16.49 ZAL 78.32 ZAP 104.32 ETS 183.11 ZAE 137.83 ETE 196.22 ZAC 71.37 ETC 255.67 CLP 104.95

PLANETOCENTRIC CONIC

C3 12.979 VHL 3.603 DLA 52.17 RAL 158.41 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 2.985 DPA -13.21 RAP 172.57 ECC 1.2136

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.16	7 17 42	4217.83	-38.37	199.18	30.50	51.46	8 28 0	3617.8	-43.05	191.03
135.84	15 58 19	2658.39	-38.35	75.17	30.48	51.45	16 42 37	2058.4	-43.04	67.03
44.16	7 17 42	4217.83	-38.37	199.18	30.50	51.46	8 28 0	3617.8	-43.05	191.03
135.84	15 58 19	2658.39	-38.35	75.17	30.48	51.45	16 42 37	2058.4	-43.04	67.03
44.16	7 17 42	4217.83	-38.37	199.18	30.50	51.46	8 28 0	3617.8	-43.05	191.03
135.84	15 58 19	2658.39	-38.35	75.17	30.48	51.45	16 42 37	2058.4	-43.04	67.03

DIFFERENTIAL CORRECTIONS
TDE .8694 TRA -.1920 TC3-1.5261 BAU .5979
RDE .9826 RRA .3231 RC3-3.0893 FAU .55852
FDE10.7775 FRA 3.4051 FC-37.2553 BSP 10839
BDE 1.3120 BRA .3758 BC3 3.4457 FSP 9881

MID-COURSE EXECUTION ACCURACY
SGT 1835.4 SGR 2845.8 SG3 2855.6
RRT .8024 RRF .9987 RTF .8048
SGB 3386.3 R23 .1642 R13 .9851
SG1 3247.4 SG2 959.8 THA 59.72

ORBIT DETERMINATION ACCURACY
ST 1391.1 SR 1584.1 SS 4477.6
CRT .9644 CRS-1.0000 CST -.9659
LSA 4936.9 MSA 347.3 SSA 7.0
EL1 2089.7 EL2 278.8 ALF 48.85

LAUNCH DATE NOV 25 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 633.181 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.939	GAL	.70	AZL	86.22	HCA	192.27	SMA	186.20	ECC	.20740	INC	3.7817
RP	222.47	LAP	-.80	LOP	255.01	VP	21.917	GAP	-4.17	AZP	93.70	TAL	4.08	TAP	196.35	RCA	147.59	APO	224.82
RC	262.633	GL	37.95	GP	-15.23	ZAL	78.24	ZAP	102.51	ETS	182.27	ZAE	136.14	ETE	193.75	ZAC	72.40	ETC	255.82

V1 30.175 V2 24.716 CLP 102.98

PLANETOCENTRIC CONIC

C3	12.478	VHL	3.532	DLA	50.81	RAL	157.54	RAD	6567.5	VEL	11.570	PTH	2.02	VHP	2.945	DPA	-11.72	RAP	172.33

ECC 1.2054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.88	7 19 31	4197.25	-37.86	196.52	28.21	53.17	8 29 29	3597.3	-42.35	188.27
134.12	15 49 32	2662.11	-37.85	75.07	28.20	53.16	16 33 54	2062.1	-42.34	66.82
45.88	7 19 31	4197.25	-37.86	196.52	28.21	53.17	8 29 29	3597.3	-42.35	188.27
134.12	15 49 32	2662.11	-37.85	75.07	28.20	53.16	16 33 54	2062.1	-42.34	66.82
45.88	7 19 31	4197.25	-37.86	196.52	28.21	53.17	8 29 29	3597.3	-42.35	188.27
134.12	15 49 32	2662.11	-37.85	75.07	28.20	53.16	16 33 54	2062.1	-42.34	66.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9255	TRA	-.1759	TC3	-1.9240	BAU	.5895	SGT	2074.9	SGR	2645.5	SG3	2935.9	ST	1507.8	SR	1451.3	SS	4412.9
RDE	.8831	RRA	.2918	RC3	-2.9643	FAU	.57244	RRT	.8488	RRF	.9983	RTF	.8505	CRT	.9699	CRS	-1.0000	CST	-.9713
FDE	10.5595	FRA	3.3518	FC	-39.7163	BSP	10731	SGB	3362.1	R23	.1971	R13	.9786	LSA	4871.9	MSA	343.1	SSA	7.9
BDE	1.2792	BRA	.3407	BC3	3.5340	FSP	10154	SG1	3240.6	SG2	895.7	THA	53.06	EL1	2077.0	EL2	256.5	ALF	43.87

LAUNCH DATE NOV 25 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 637.207 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.936	GAL	.68	AZL	86.39	HCA	193.36	SMA	186.16	ECC	.20717	INC	3.6137
RP	222.08	LAP	-.83	LOP	256.10	VP	21.960	GAP	-4.40	AZP	93.52	TAL	3.97	TAP	197.34	RCA	147.59	APO	224.72
RC	264.145	GL	36.69	GP	-14.16	ZAL	78.22	ZAP	100.65	ETS	181.56	ZAE	134.31	ETE	191.67	ZAC	73.26	ETC	255.95

V1 30.175 V2 24.758 CLP 100.99

PLANETOCENTRIC CONIC

C3	12.071	VHL	3.474	DLA	49.60	RAL	156.88	RAD	6567.5	VEL	11.552	PTH	2.02	VHP	2.914	DPA	-10.38	RAP	172.00

ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.41	7 21 51	4178.61	-37.37	194.16	26.36	54.64	8 31 30	3578.6	-41.69	185.84
132.59	15 42 1	2666.68	-37.36	75.09	26.35	54.63	16 26 28	2066.7	-41.68	66.76
47.41	7 21 51	4178.61	-37.37	194.16	26.36	54.64	8 31 30	3578.6	-41.69	185.84
132.59	15 42 1	2666.68	-37.36	75.09	26.35	54.63	16 26 28	2066.7	-41.68	66.76
47.41	7 21 51	4178.61	-37.37	194.16	26.36	54.64	8 31 30	3578.6	-41.69	185.84
132.59	15 42 1	2666.68	-37.36	75.09	26.35	54.63	16 26 28	2066.7	-41.68	66.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9841	TRA	-.1590	TC3	-2.3450	BAU	.5939	SGT	2335.0	SGR	2469.8	SG3	3002.5	ST	1628.1	SR	1338.4	SS	4341.6
RDE	.8012	RRA	.2695	RC3	-2.8363	FAU	.58338	RRT	.8806	RRF	.9977	RTF	.8821	CRT	.9738	CRS	-1.0000	CST	-.9750
FDE	10.3282	FRA	3.3422	FC	-41.8395	BSP	10883	SGB	3398.9	R23	.2220	R13	.9727	LSA	4814.0	MSA	342.2	SSA	8.8
BDE	1.2689	BRA	.3129	BC3	3.6802	FSP	10390	SG1	3296.2	SG2	829.2	THA	46.82	EL1	2094.3	EL2	236.6	ALF	39.28

LAUNCH DATE NOV 25 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 641.242 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.933	GAL	.66	AZL	86.53	HCA	194.47	SMA	186.11	ECC	.20697	INC	3.4703
RP	221.70	LAP	-.87	LOP	257.20	VP	22.004	GAP	-4.63	AZP	93.36	TAL	3.85	TAP	198.32	RCA	147.59	APO	224.63
RC	265.639	GL	35.59	GP	-13.21	ZAL	78.26	ZAP	98.75	ETS	180.94	ZAE	132.39	ETE	189.91	ZAC	73.99	ETC	256.08

V1 30.175 V2 24.799 CLP 98.99

PLANETOCENTRIC CONIC

C3	11.733	VHL	3.425	DLA	48.52	RAL	156.41	RAD	6567.4	VEL	11.538	PTH	2.01	VHP	2.889	DPA	-9.16	RAP	171.60

ECC 1.1931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.79	7 24 33	4161.57	-36.90	192.05	24.85	55.91	8 33 54	3561.6	-41.06	183.67
131.21	15 35 32	2671.80	-36.89	75.18	24.84	55.90	16 20 3	2071.8	-41.06	66.81
48.79	7 24 33	4161.57	-36.90	192.05	24.85	55.91	8 33 54	3561.6	-41.06	183.67
131.21	15 35 32	2671.80	-36.89	75.18	24.84	55.90	16 20 3	2071.8	-41.06	66.81
48.79	7 24 33	4161.57	-36.90	192.05	24.85	55.91	8 33 54	3561.6	-41.06	183.67
131.21	15 35 32	2671.80	-36.89	75.18	24.84	55.90	16 20 3	2071.8	-41.06	66.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0421	TRA	-.1393	TC3	-2.7870	BAU	.6100	SGT	2609.2	SGR	2313.1	SG3	3056.3	ST	1747.3	SR	1240.9	SS	4262.7
RDE	.7324	RRA	.2495	RC3	-2.7122	FAU	.59250	RRT	.9049	RRF	.9970	RTF	.9062	CRT	.9772	CRS	-1.0000	CST	-.9783
FDE	10.0830	FRA	3.3102	FC	-43.7173	BSP	11226	SGB	3486.9	R23	.2356	R13	.9688	LSA	4759.1	MSA	338.6	SSA	9.7
BDE	1.2738	BRA	.2858	BC3	3.8889	FSP	10597	SG1	3404.3	SG2	754.5	THA	41.20	EL1	2132.2	EL2	215.7	ALF	35.17

LAUNCH DATE NOV 25 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 645.287 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.931	GAL	.64	AZL	86.65	HCA	195.57	SMA	186.08	ECC	.20679	INC	3.3461
RP	221.32	LAP	-.90	LOP	258.31	VP	22.047	GAP	-4.85	AZP	93.22	TAL	3.72	TAP	199.29	RCA	147.60	APO	224.56
RC	267.114	GL	34.62	GP	-12.39	ZAL	78.35	ZAP	96.83	ETS	180.40	ZAE	130.39	ETE	188.41	ZAC	74.60	ETC	256.20

V1 30.175 V2 24.841 CLP 96.99

PLANETOCENTRIC CONIC

C3	11.448	VHL	3.383	DLA	47.55	RAL	156.08	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	2.871	DPA	-8.04	RAP	171.16

ECC 1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.06	7 27 33	4145.77	-36.44	190.13	23.61	57.03	8 36 38	3545.8	-40.47	181.72
129.94	15 29 52	2677.32	-36.43	75.34	23.60	57.02	16 14 30	2077.3	-40.47	66.93
50.06	7 27 33	4145.77	-36.44	190.13	23.61	57.03	8 36 38	3545.8	-40.47	181.72
129.94	15 29 52	2677.32	-36.43	75.34	23.60	57.02	16 14 30	2077.3	-40.47	66.93
50.06	7 27 33	4145.77	-36.44	190.13	23.61	57.03	8 36 38	3545.8	-40.47	181.72
129.94	15 29 52	2677.32	-36.43	75.34	23.60	57.02	16 14 30	2077.3	-40.47	66.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0984	TRA	-.1207	TC3	-3.2531	BAU	.6365	SGT	2897.8	SGR	2172.1	SG3	3098.7	ST	1863.4	SR	1154.8	SS	4173.6
RDE	.6733	RRA	.2339	RC3	-2.5908	FAU	.59968	RRT	.9218	RRF	.9961	RTF	.9233	CRT	.9796	CRS	-.9999	CST	-.9805
FDE	9.8130	FRA	3.2959	FC	-45.3499	BSP	11705	SGB	3621.5	R23	.2413	R13	.9666	LSA	4702.2	MSA	337.7	SSA	10.7
BDE	1.2883	BRA	.2633	BC3	4.1587	FSP	10714	SG1	3555.9	SG2	686.2	THA	36.20	EL1	2183.3	EL2	197.9	ALF	31.55

LAUNCH DATE NOV 25 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 649.340 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.929 GAL .61 AZL 86.76 HCA 196.68 SMA 186.05 ECC .20664 INC 3.2378 V1 30.175
RP 220.94 LAP -.93 LOP 259.42 VP 22.092 GAP -5.07 AZP 93.10 TAL 3.57 TAP 200.24 RCA 147.60 APO 224.49 V2 24.883
RC 268.570 GL 33.76 GP -11.65 ZAL 78.49 ZAP 94.90 ETS 179.93 ZAE 128.34 ETE 187.13 ZAC 75.13 ETC 256.31 CLP 95.00

PLANETOCENTRIC CONIC

C3 11.203 VHL 3.347 DLA 46.67 RAL 155.86 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 2.857 DPA -7.01 RAP 170.67 ECC 1.1844

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.22	7 30 47	4131.04	-36.00	188.37	22.60	58.02	8 39 38	3531.0	-39.92	179.93
128.78	15 24 55	2683.10	-35.99	75.55	22.60	58.01	16 9 38	2083.1	-39.91	67.12
51.22	7 30 47	4131.04	-36.00	188.37	22.60	58.02	8 39 38	3531.0	-39.92	179.93
128.78	15 24 55	2683.10	-35.99	75.55	22.60	58.01	16 9 38	2083.1	-39.91	67.12
51.22	7 30 47	4131.04	-36.00	188.37	22.60	58.02	8 39 38	3531.0	-39.92	179.93
128.78	15 24 55	2683.10	-35.99	75.55	22.60	58.01	16 9 38	2083.1	-39.91	67.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1551 TRA -.0994 TC3-3.7271 BAU .6700 SGT 3193.1 SGR 2045.8 SG3 3132.6 ST 1980.0 SR 1080.5 SS 4085.3
RDE .6230 RRA .2221 RC3-2.4732 FAU .60510 RRT .9341 RRF .9951 RTF .9359 CRT .9816 CRS -.9999 CST -.9823
FDE 9.5429 FRA 3.3040 FC-46.7600 BSP 12354 SGB 3792.3 R23 .2402 R13 .9658 LSA 4654.4 MSA 337.4 SSA 11.7
BDE 1.3124 BRA .2433 BC3 4.4730 FSP 10797 SG1 3740.7 SG2 623.4 THA 31.89 EL1 2248.3 EL2 181.8 ALF 28.38

LAUNCH DATE NOV 25 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 653.403 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.928 GAL .58 AZL 86.86 HCA 197.79 SMA 186.02 ECC .20652 INC 3.1425 V1 30.175
RP 220.56 LAP -.96 LOP 260.53 VP 22.136 GAP -5.28 AZP 92.99 TAL 3.40 TAP 201.19 RCA 147.61 APO 224.44 V2 24.924
RC 270.009 GL 32.99 GP -10.98 ZAL 78.66 ZAP 92.95 ETS 179.52 ZAE 126.26 ETE 186.02 ZAC 75.59 ETC 256.43 CLP 93.01

PLANETOCENTRIC CONIC

C3 10.990 VHL 3.315 DLA 45.85 RAL 155.75 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 2.849 DPA -6.05 RAP 170.16 ECC 1.1809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.30	7 34 15	4117.11	-35.58	186.74	21.78	58.91	8 42 52	3517.1	-39.39	178.28
127.70	15 20 33	2689.14	-35.57	75.80	21.77	58.90	16 5 22	2089.1	-39.38	67.35
52.30	7 34 15	4117.11	-35.58	186.74	21.78	58.91	8 42 52	3517.1	-39.39	178.28
127.70	15 20 33	2689.14	-35.57	75.80	21.77	58.90	16 5 22	2089.1	-39.38	67.35
52.30	7 34 15	4117.11	-35.58	186.74	21.78	58.91	8 42 52	3517.1	-39.39	178.28
127.70	15 20 33	2689.14	-35.57	75.80	21.77	58.90	16 5 22	2089.1	-39.38	67.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2100 TRA -.0760 TC3-4.2175 BAU .7099 SGT 3496.9 SGR 1929.6 SG3 3155.7 ST 2093.6 SR 1015.7 SS 3997.3
RDE .5799 RRA .2116 RC3-2.3575 FAU .60846 RRT .9437 RRF .9938 RTF .9460 CRT .9833 CRS -.9999 CST -.9838
FDE 9.2725 FRA 3.3062 FC-47.9295 BSP 13114 SGB 3994.0 R23 .2325 R13 .9666 LSA 4613.1 MSA 335.7 SSA 12.6
BDE 1.3418 BRA .2248 BC3 4.8316 FSP 10842 SG1 3953.9 SG2 564.5 THA 28.13 EL1 2321.0 EL2 166.6 ALF 25.64

LAUNCH DATE NOV 25 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 657.474 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.927 GAL .55 AZL 86.94 HCA 198.91 SMA 186.01 ECC .20642 INC 3.0578 V1 30.175
RP 220.18 LAP -.99 LOP 261.64 VP 22.181 GAP -5.49 AZP 92.89 TAL 3.22 TAP 202.13 RCA 147.61 APO 224.40 V2 24.965
RC 271.430 GL 32.30 GP -10.38 ZAL 78.88 ZAP 91.01 ETS 179.16 ZAE 124.16 ETE 185.07 ZAC 76.00 ETC 256.53 CLP 91.03

PLANETOCENTRIC CONIC

C3 10.803 VHL 3.287 DLA 45.10 RAL 155.72 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 2.844 DPA -5.15 RAP 169.64 ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.31	7 37 55	4103.86	-35.17	185.21	21.12	59.72	8 46 19	3503.9	-38.89	176.75
126.69	15 16 41	2695.36	-35.16	76.08	21.11	59.71	16 1 36	2095.4	-38.88	67.62
53.31	7 37 55	4103.86	-35.17	185.21	21.12	59.72	8 46 19	3503.9	-38.89	176.75
126.69	15 16 41	2695.36	-35.16	76.08	21.11	59.71	16 1 36	2095.4	-38.88	67.62
53.31	7 37 55	4103.86	-35.17	185.21	21.12	59.72	8 46 19	3503.9	-38.89	176.75
126.69	15 16 41	2695.36	-35.16	76.08	21.11	59.71	16 1 36	2095.4	-38.88	67.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2651 TRA -.0495 TC3-4.7138 BAU .7539 SGT 3805.3 SGR 1822.5 SG3 3168.2 ST 2207.6 SR 959.4 SS 3912.7
RDE .5429 RRA .2043 RC3-2.2416 FAU .60925 RRT .9504 RRF .9923 RTF .9536 CRT .9847 CRS -.9999 CST -.9849
FDE 9.0062 FRA 3.3412 FC-48.8220 BSP 14009 SGB 4219.2 R23 .2216 R13 .9678 LSA 4581.6 MSA 335.7 SSA 13.6
BDE 1.3767 BRA .2102 BC3 5.2196 FSP 10937 SG1 4187.7 SG2 514.9 THA 24.88 EL1 2402.2 EL2 153.6 ALF 23.27

LAUNCH DATE NOV 25 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 661.554 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.926 GAL .52 AZL 87.02 HCA 200.03 SMA 185.99 ECC .20634 INC 2.9817 V1 30.175
RP 219.81 LAP -1.02 LOP 262.76 VP 22.226 GAP -5.69 AZP 92.80 TAL 3.02 TAP 203.05 RCA 147.62 APO 224.37 V2 25.006
RC 272.833 GL 31.68 GP -9.84 ZAL 79.14 ZAP 89.08 ETS 178.83 ZAE 122.05 ETE 184.24 ZAC 76.35 ETC 256.64 CLP 89.07

PLANETOCENTRIC CONIC

C3 10.638 VHL 3.262 DLA 44.39 RAL 155.77 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 2.844 DPA -4.31 RAP 169.10 ECC 1.1751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.27	7 41 47	4091.13	-34.78	183.77	20.60	60.47	8 49 58	3491.1	-38.41	175.30
125.73	15 13 14	2701.79	-34.77	76.40	20.59	60.45	15 58 15	2101.8	-38.40	67.93
54.27	7 41 47	4091.13	-34.78	183.77	20.60	60.47	8 49 58	3491.1	-38.41	175.30
125.73	15 13 14	2701.79	-34.77	76.40	20.59	60.45	15 58 15	2101.8	-38.40	67.93
54.27	7 41 47	4091.13	-34.78	183.77	20.60	60.47	8 49 58	3491.1	-38.41	175.30
125.73	15 13 14	2701.79	-34.77	76.40	20.59	60.45	15 58 15	2101.8	-38.40	67.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3155 TRA -.0239 TC3-5.2276 BAU .8029 SGT 4119.7 SGR 1723.2 SG3 3172.4 ST 2313.3 SR 906.4 SS 3810.8
RDE .5087 RRA .1975 RC3-2.1326 FAU .60933 RRT .9551 RRF .9904 RTF .9594 CRT .9857 CRS -.9999 CST -.9857
FDE 8.6977 FRA 3.3630 FC-49.5900 BSP 14894 SGB 4465.6 R23 .2084 R13 .9693 LSA 4536.7 MSA 336.5 SSA 14.6
BDE 1.4104 BRA .1990 BC3 5.6458 FSP 10909 SG1 4440.4 SG2 473.9 THA 22.04 EL1 2480.4 EL2 142.2 ALF 21.19

LAUNCH DATE NOV 25 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 665.642 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.926 GAL .48 AZL 87.09 HCA 201.15 SMA 185.99 ECC .20629 INC 2.9133 V1 30.175
RP 219.44 LAP -1.05 LOP 263.89 VP 22.271 GAP -5.89 AZP 92.72 TAL 2.81 TAP 203.96 RCA 147.62 APO 224.35 V2 25.047
RC 274.220 GL 31.11 GP -9.34 ZAL 79.44 ZAP 87.16 ETS 178.55 ZAE 119.94 ETE 183.52 ZAC 76.67 ETC 256.74 CLP 87.12

PLANETOCENTRIC CONIC

C3 10.489 VHL 3.239 DLA 43.72 RAL 155.90 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 2.847 DPA -3.52 RAP 168.57 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.18	7 45 51	4078.84	-34.40	182.40	20.19	61.15	8 53 49	3478.8	-37.94	173.93
124.82	15 10 9	2708.39	-34.39	76.74	20.18	61.14	15 55 17	2108.4	-37.93	68.26
55.18	7 45 51	4078.84	-34.40	182.40	20.19	61.15	8 53 49	3478.8	-37.94	173.93
124.82	15 10 9	2708.39	-34.39	76.74	20.18	61.14	15 55 17	2108.4	-37.93	68.26
55.18	7 45 51	4078.84	-34.40	182.40	20.19	61.15	8 53 49	3478.8	-37.94	173.93
124.82	15 10 9	2708.39	-34.39	76.74	20.18	61.14	15 55 17	2108.4	-37.93	68.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3647 TRA .0050 TC3-5.7438 BAU .8541 SGT 4435.2 SGR 1631.8 SG3 3169.1 ST 2416.8 SR 861.1 SS 3719.0
RDE .4797 RRA .1921 RC3-2.0256 FAU .60755 RRT .9584 RRF .9882 RTF .9643 CRT .9867 CRS -.9998 CST -.9864
FDE 8.4107 FRA 3.3935 FC-50.1434 BSP 15853 SGB 4725.8 R23 .1924 R13 .9712 LSA 4505.6 MSA 336.4 SSA 15.6
BDE 1.4465 BRA .1921 BC3 6.0905 FSP 10835 SG1 4705.4 SG2 439.1 THA 19.60 EL1 2562.2 EL2 131.8 ALF 19.42

LAUNCH DATE NOV 25 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 669.739 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.926 GAL .44 AZL 87.15 HCA 202.28 SMA 185.99 ECC .20626 INC 2.8513 V1 30.175
RP 219.07 LAP -1.08 LOP 265.02 VP 22.317 GAP -6.09 AZP 92.64 TAL 2.59 TAP 204.87 RCA 147.63 APO 224.35 V2 25.088
RC 275.589 GL 30.59 GP -8.88 ZAL 79.77 ZAP 85.26 ETS 178.30 ZAE 117.83 ETE 182.89 ZAC 76.95 ETC 256.84 CLP 85.20

PLANETOCENTRIC CONIC

C3 10.356 VHL 3.218 DLA 43.09 RAL 156.08 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 2.854 DPA -2.78 RAP 168.04 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.05	7 50 6	4066.86	-34.03	181.08	19.89	61.79	8 57 53	3466.9	-37.50	172.61
123.95	15 7 23	2715.20	-34.02	77.10	19.88	61.77	15 52 38	2115.2	-37.49	68.63
56.05	7 50 6	4066.86	-34.03	181.08	19.89	61.79	8 57 53	3466.9	-37.50	172.61
123.95	15 7 23	2715.20	-34.02	77.10	19.88	61.77	15 52 38	2115.2	-37.49	68.63
56.05	7 50 6	4066.86	-34.03	181.08	19.89	61.79	8 57 53	3466.9	-37.50	172.61
123.95	15 7 23	2715.20	-34.02	77.10	19.88	61.77	15 52 38	2115.2	-37.49	68.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4118 TRA .0367 TC3-6.2645 BAU .9071 SGT 4752.1 SGR 1545.2 SG3 3155.0 ST 2516.7 SR 820.3 SS 3624.1
RDE .4537 RRA .1876 RC3-1.9192 FAU .60361 RRT .9604 RRF .9856 RTF .9682 CRT .9876 CRS -.9998 CST -.9869
FDE 8.1144 FRA 3.4295 FC-50.4608 BSP 16860 SGB 4997.0 R23 .1750 R13 .9731 LSA 4475.2 MSA 336.5 SSA 16.5
BDE 1.4829 BRA .1912 BC3 6.5519 FSP 10803 SG1 4980.1 SG2 411.1 THA 17.46 EL1 2644.1 EL2 122.4 ALF 17.88

LAUNCH DATE NOV 25 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 673.844 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.926 GAL .40 AZL 87.21 HCA 203.41 SMA 185.99 ECC .20625 INC 2.7947 V1 30.175
RP 218.70 LAP -1.11 LOP 266.15 VP 22.363 GAP -6.28 AZP 92.57 TAL 2.35 TAP 205.76 RCA 147.63 APO 224.35 V2 25.128
RC 276.940 GL 30.12 GP -8.45 ZAL 80.14 ZAP 83.38 ETS 178.08 ZAE 115.74 ETE 182.34 ZAC 77.21 ETC 256.94 CLP 83.30

PLANETOCENTRIC CONIC

C3 10.235 VHL 3.199 DLA 42.48 RAL 156.33 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 2.865 DPA -2.08 RAP 167.52 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.90	7 54 33	4055.11	-33.66	179.81	19.68	62.39	9 2 8	3455.1	-37.06	171.34
123.10	15 4 53	2722.23	-33.65	77.49	19.68	62.37	15 50 15	2122.2	-37.05	69.02
56.90	7 54 33	4055.11	-33.66	179.81	19.68	62.39	9 2 8	3455.1	-37.06	171.34
123.10	15 4 53	2722.23	-33.65	77.49	19.68	62.37	15 50 15	2122.2	-37.05	69.02
56.90	7 54 33	4055.11	-33.66	179.81	19.68	62.39	9 2 8	3455.1	-37.06	171.34
123.10	15 4 53	2722.23	-33.65	77.49	19.68	62.37	15 50 15	2122.2	-37.05	69.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4554 TRA .0696 TC3-6.7901 BAU .9619 SGT 5069.4 SGR 1465.3 SG3 3136.3 ST 2610.3 SR 782.7 SS 3522.9
RDE .4302 RRA .1834 RC3-1.8196 FAU .59931 RRT .9614 RRF .9825 RTF .9715 CRT .9884 CRS -.9997 CST -.9873
FDE 7.8036 FRA 3.4531 FC-50.6921 BSP 17867 SGB 5276.9 R23 .1565 R13 .9749 LSA 4441.2 MSA 336.0 SSA 17.6
BDE 1.5176 BRA .1961 BC3 7.0297 FSP 10703 SG1 5262.6 SG2 388.5 THA 15.62 EL1 2722.7 EL2 113.7 ALF 16.54

LAUNCH DATE NOV 25 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 677.955 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.927 GAL .36 AZL 87.26 HCA 204.54 SMA 186.00 ECC .20626 INC 2.7429 V1 30.175
RP 218.34 LAP -1.14 LOP 267.28 VP 22.409 GAP -6.47 AZP 92.50 TAL 2.09 TAP 206.64 RCA 147.63 APO 224.36 V2 25.168
RC 278.273 GL 29.68 GP -8.05 ZAL 80.54 ZAP 81.52 ETS 177.88 ZAE 113.66 ETE 181.85 ZAC 77.45 ETC 257.03 CLP 81.44

PLANETOCENTRIC CONIC

C3 10.125 VHL 3.182 DLA 41.90 RAL 156.63 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 2.878 DPA -1.43 RAP 167.02 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.73	7 59 13	4043.48	-33.31	178.57	19.56	62.95	9 6 37	3443.5	-36.63	170.10
122.27	15 2 37	2729.53	-33.29	77.91	19.56	62.94	15 48 7	2129.5	-36.62	69.44
57.73	7 59 13	4043.48	-33.31	178.57	19.56	62.95	9 6 37	3443.5	-36.63	170.10
122.27	15 2 37	2729.53	-33.29	77.91	19.56	62.94	15 48 7	2129.5	-36.62	69.44
57.73	7 59 13	4043.48	-33.31	178.57	19.56	62.95	9 6 37	3443.5	-36.63	170.10
122.27	15 2 37	2729.53	-33.29	77.91	19.56	62.94	15 48 7	2129.5	-36.62	69.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5036 TRA .1125 TC3-7.2949 BAU 1.0141 SGT 5381.1 SGR 1388.9 SG3 3100.6 ST 2712.2 SR 755.3 SS 3462.3
RDE .4125 RRA .1842 RC3-1.7062 FAU .58872 RRT .9597 RRF .9788 RTF .9736 CRT .9891 CRS -.9996 CST -.9873
FDE 7.5762 FRA 3.5926 FC-50.3377 BSP 19081 SGB 5557.5 R23 .1414 R13 .9762 LSA 4449.4 MSA 341.7 SSA 18.3
BDE 1.5591 BRA .2159 BC3 7.4918 FSP 10779 SG1 5544.6 SG2 378.8 THA 13.98 EL1 2813.4 EL2 107.4 ALF 15.42

LAUNCH DATE NOV 25 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 682.078 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.927	GAL	.31	AZL	87.30	HCA	205.68	SMA	186.01	ECC	.20629	INC	2.6954	V1	30.175
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.455	GAP	-6.65	AZP	92.43	TAL	1.82	TAP	207.51	RCA	147.64	APO	224.38	V2	25.208
RC	279.589	GL	29.28	GP	-7.68	ZAL	80.98	ZAP	79.69	ETS	177.70	ZAE	111.60	ETE	181.42	ZAC	77.66	ETC	257.12	CLP	79.60

PLANETOCENTRIC CONIC

C3	10.025	VHL	3.166	DLA	41.33	RAL	156.98	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	2.895	DPA	-.81	RAP	166.53	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.54	8 4 5	4031.93	-32.95	177.35	19.52	63.49	9 11 17	3431.9	-36.21	168.89
121.46	15 0 32	2737.11	-32.94	78.35	19.51	63.48	15 46 9	2137.1	-36.20	69.90
58.54	8 4 5	4031.93	-32.95	177.35	19.52	63.49	9 11 17	3431.9	-36.21	168.89
121.46	15 0 32	2737.11	-32.94	78.35	19.51	63.48	15 46 9	2137.1	-36.20	69.90
58.54	8 4 5	4031.93	-32.95	177.35	19.52	63.49	9 11 17	3431.9	-36.21	168.89
121.46	15 0 32	2737.11	-32.94	78.35	19.51	63.48	15 46 9	2137.1	-36.20	69.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5385	TRA	.1486	TC3	-7.8264	BAU	1.0711	SGT	5695.7	SGR	1319.0	SG3	3070.9	ST	2790.0	SR	721.1	SS	3337.1
RDE	.3916	RRA	.1800	RC3	-1.6178	FAU	.58347	RRT	.9591	RRF	.9746	RTF	.9759	CRT	.9898	CRS	-.9995	CST	-.9874
FDE	7.2120	FRA	3.5917	FC	-50.3871	BSP	20046	SGB	5846.4	R23	.1227	R13	.9777	LSA	4395.9	MSA	340.7	SSA	19.4
BDE	1.5875	BRA	.2334	BC3	7.9919	FSP	10525	SG1	5835.1	SG2	364.5	THA	12.57	EL1	2879.9	EL2	99.7	ALF	14.37

LAUNCH DATE NOV 25 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 686.209 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.928	GAL	.26	AZL	87.35	HCA	206.83	SMA	186.03	ECC	.20635	INC	2.6514	V1	30.175
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.501	GAP	-6.83	AZP	92.37	TAL	1.54	TAP	208.37	RCA	147.64	APO	224.41	V2	25.248
RC	280.887	GL	28.90	GP	-7.34	ZAL	81.44	ZAP	77.89	ETS	177.54	ZAE	109.57	ETE	181.05	ZAC	77.86	ETC	257.21	CLP	77.79

PLANETOCENTRIC CONIC

C3	9.934	VHL	3.152	DLA	40.78	RAL	157.37	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	2.915	DPA	-.23	RAP	166.07	ECC	1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.34	8 9 9	4020.40	-32.60	176.15	19.54	64.00	9 16 10	3420.4	-35.79	167.69
120.66	14 58 37	2744.99	-32.59	78.83	19.53	63.99	15 44 22	2145.0	-35.78	70.37
59.34	8 9 9	4020.40	-32.60	176.15	19.54	64.00	9 16 10	3420.4	-35.79	167.69
120.66	14 58 37	2744.99	-32.59	78.83	19.53	63.99	15 44 22	2145.0	-35.78	70.37
59.34	8 9 9	4020.40	-32.60	176.15	19.54	64.00	9 16 10	3420.4	-35.79	167.69
120.66	14 58 37	2744.99	-32.59	78.83	19.53	63.99	15 44 22	2145.0	-35.78	70.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5709	TRA	.1875	TC3	-8.3570	BAU	1.1283	SGT	6009.0	SGR	1252.6	SG3	3032.9	ST	2863.4	SR	691.6	SS	3221.7
RDE	.3737	RRA	.1762	RC3	-1.5288	FAU	.57620	RRT	.9575	RRF	.9696	RTF	.9780	CRT	.9905	CRS	-.9993	CST	-.9876
FDE	6.8722	FRA	3.5867	FC	-50.2166	BSP	21023	SGB	6138.2	R23	.1035	R13	.9793	LSA	4352.2	MSA	338.1	SSA	20.4
BDE	1.6148	BRA	.2573	BC3	8.4957	FSP	10302	SG1	6128.0	SG2	354.3	THA	11.33	EL1	2944.2	EL2	92.5	ALF	13.47

LAUNCH DATE NOV 25 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 690.347 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.930	GAL	.21	AZL	87.39	HCA	207.97	SMA	186.05	ECC	.20642	INC	2.6107	V1	30.175
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.547	GAP	-7.01	AZP	92.31	TAL	1.24	TAP	209.22	RCA	147.65	APO	224.46	V2	25.287
RC	282.167	GL	28.55	GP	-7.02	ZAL	81.95	ZAP	76.12	ETS	177.40	ZAE	107.56	ETE	180.71	ZAC	78.05	ETC	257.30	CLP	76.02

PLANETOCENTRIC CONIC

C3	9.850	VHL	3.138	DLA	40.23	RAL	157.82	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	2.937	DPA	.32	RAP	165.63	ECC	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.13	8 14 29	4008.74	-32.24	174.95	19.63	64.50	9 21 18	3408.7	-35.38	166.51
119.87	14 56 49	2753.29	-32.23	79.33	19.62	64.49	15 42 42	2153.3	-35.37	70.89
60.13	8 14 29	4008.74	-32.24	174.95	19.63	64.50	9 21 18	3408.7	-35.38	166.51
119.87	14 56 49	2753.29	-32.23	79.33	19.62	64.49	15 42 42	2153.3	-35.37	70.89
60.13	8 14 29	4008.74	-32.24	174.95	19.63	64.50	9 21 18	3408.7	-35.38	166.51
119.87	14 56 49	2753.29	-32.23	79.33	19.62	64.49	15 42 42	2153.3	-35.37	70.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6023	TRA	.2332	TC3	-8.8734	BAU	1.1837	SGT	6315.8	SGR	1189.8	SG3	2984.6	ST	2934.7	SR	666.3	SS	3115.8
RDE	.3581	RRA	.1756	RC3	-1.4354	FAU	.56560	RRT	.9535	RRF	.9637	RTF	.9793	CRT	.9910	CRS	-.9990	CST	-.9872
FDE	6.5493	FRA	3.6613	FC	-49.7115	BSP	22065	SGB	6426.9	R23	.0898	R13	.9802	LSA	4318.2	MSA	342.6	SSA	21.3
BDE	1.6418	BRA	.2919	BC3	8.9887	FSP	10162	SG1	6417.2	SG2	353.0	THA	10.21	EL1	3008.1	EL2	86.9	ALF	12.69

LAUNCH DATE NOV 25 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 694.493 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.931	GAL	.16	AZL	87.43	HCA	209.12	SMA	186.08	ECC	.20652	INC	2.5728	V1	30.175
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.593	GAP	-7.18	AZP	92.25	TAL	.93	TAP	210.06	RCA	147.65	APO	224.50	V2	25.327
RC	283.431	GL	28.22	GP	-6.72	ZAL	82.48	ZAP	74.39	ETS	177.28	ZAE	105.59	ETE	180.42	ZAC	78.23	ETC	257.37	CLP	74.28

PLANETOCENTRIC CONIC

C3	9.774	VHL	3.126	DLA	39.70	RAL	158.30	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	2.963	DPA	.82	RAP	165.22	ECC	1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.93	8 20 3	3996.91	-31.89	173.75	19.78	64.98	9 26 40	3396.9	-34.97	165.32
119.07	14 55 6	2762.03	-31.88	79.87	19.77	64.97	15 41 8	2162.0	-34.96	71.44
60.93	8 20 3	3996.91	-31.89	173.75	19.78	64.98	9 26 40	3396.9	-34.97	165.32
119.07	14 55 6	2762.03	-31.88	79.87	19.77	64.97	15 41 8	2162.0	-34.96	71.44
60.93	8 20 3	3996.91	-31.89	173.75	19.78	64.98	9 26 40	3396.9	-34.97	165.32
119.07	14 55 6	2762.03	-31.88	79.87	19.77	64.97	15 41 8	2162.0	-34.96	71.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6300	TRA	.2794	TC3	-9.3882	BAU	1.2394	SGT	6619.9	SGR	1133.2	SG3	2940.4	ST	2999.2	SR	643.4	SS	3008.7
RDE	.3442	RRA	.1733	RC3	-1.3533	FAU	.55686	RRT	.9499	RRF	.9571	RTF	.9808	CRT	.9918	CRS	-.9987	CST	-.9872
FDE	6.2311	FRA	3.6744	FC	-49.3264	BSP	23083	SGB	6716.2	R23	.0730	R13	.9815	LSA	4283.1	MSA	340.9	SSA	22.3
BDE	1.6659	BRA	.3288	BC3	9.4852	FSP	9923	SG1	6707.1	SG2	349.7	THA	9.26	EL1	3066.3	EL2	80.6	ALF	12.02

LAUNCH DATE NOV 25 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 698.646 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.933 GAL .10 AZL 87.46 HCA 210.28 SMA 186.11 ECC .20664 INC 2.5374 V1 30.175
RP 216.57 LAP -1.28 LOP 273.02 VP 22.639 GAP -7.35 AZP 92.19 TAL .61 TAP 210.88 RCA 147.65 APO 224.56 V2 25.365
RC 284.679 GL 27.91 GP -6.43 ZAL 83.05 ZAP 72.70 ETS 177.16 ZAE 103.64 ETE 180.16 ZAC 78.39 ETC 257.45 CLP 72.58

PLANETOCENTRIC CONIC

C3 9.704 VHL 3.115 DLA 39.17 RAL 158.82 RAD 6567.3 VEL 11.450 PTH 1.99 VHP 2.990 DPA 1.30 RAP 164.84 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.72	8 25 53	3984.85	-31.53	172.55	19.98	65.44	9 32 18	3384.9	-34.55	164.12
118.28	14 53 27	2771.27	-31.52	80.46	19.98	65.43	15 39 38	2171.3	-34.54	72.03
61.72	8 25 53	3984.85	-31.53	172.55	19.98	65.44	9 32 18	3384.9	-34.55	164.12
118.28	14 53 27	2771.27	-31.52	80.46	19.98	65.43	15 39 38	2171.3	-34.54	72.03
61.72	8 25 53	3984.85	-31.53	172.55	19.98	65.44	9 32 18	3384.9	-34.55	164.12
118.28	14 53 27	2771.27	-31.52	80.46	19.98	65.43	15 39 38	2171.3	-34.54	72.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6540 TRA .3305 TC3-9.8981 BAU 1.2946 SGT 6920.8 SGR 1078.8 SG3 2885.4 ST 3057.0 SR 622.5 SS 2901.6
RDE .3315 RRA .1729 RC3-1.2675 FAU .54524 RRT .9438 RRF .9493 RTF .9818 CRT .9923 CRS -.9982 CST -.9866
FDE 5.9113 FRA 3.7368 FC-48.6448 BSP 24065 SGB 7004.4 R23 .0613 R13 .9823 LSA 4246.4 MSA 344.8 SSA 23.2
BDE 1.6869 BRA .3730 BC3 9.9789 FSP 9678 SG1 6995.5 SG2 352.7 THA 8.39 EL1 3118.8 EL2 75.4 ALF 11.43

LAUNCH DATE NOV 25 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 702.807 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.935 GAL .05 AZL 87.50 HCA 211.44 SMA 186.14 ECC .20678 INC 2.5042 V1 30.175
RP 216.22 LAP -1.31 LOP 274.17 VP 22.685 GAP -7.51 AZP 92.14 TAL .26 TAP 211.70 RCA 147.65 APO 224.63 V2 25.404
RC 285.910 GL 27.61 GP -6.16 ZAL 83.65 ZAP 71.04 ETS 177.07 ZAE 101.74 ETE 179.92 ZAC 78.55 ETC 257.52 CLP 70.92

PLANETOCENTRIC CONIC

C3 9.640 VHL 3.105 DLA 38.64 RAL 159.39 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.021 DPA 1.74 RAP 164.49 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.53	8 32 1	3972.43	-31.17	171.32	20.24	65.90	9 38 14	3372.4	-34.13	162.91
117.47	14 51 49	2781.10	-31.16	81.08	20.24	65.89	15 38 10	2181.1	-34.12	72.67
62.53	8 32 1	3972.43	-31.17	171.32	20.24	65.90	9 38 14	3372.4	-34.13	162.91
117.47	14 51 49	2781.10	-31.16	81.08	20.24	65.89	15 38 10	2181.1	-34.12	72.67
62.53	8 32 1	3972.43	-31.17	171.32	20.24	65.90	9 38 14	3372.4	-34.13	162.91
117.47	14 51 49	2781.10	-31.16	81.08	20.24	65.89	15 38 10	2181.1	-34.12	72.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6738 TRA .3786 TC-10.4066 BAU 1.3501 SGT 7218.0 SGR 1030.7 SG3 2840.6 ST 3106.3 SR 602.5 SS 2784.2
RDE .3197 RRA .1704 RC3-1.1966 FAU .53721 RRT .9388 RRF .9408 RTF .9830 CRT .9930 CRS -.9977 CST -.9864
FDE 5.5799 FRA 3.7243 FC-48.2428 BSP 25052 SGB 7291.3 R23 .0457 R13 .9833 LSA 4200.7 MSA 343.0 SSA 24.2
BDE 1.7040 BRA .4152 BC310.4751 FSP 9392 SG1 7282.8 SG2 351.9 THA 7.65 EL1 3163.5 EL2 69.6 ALF 10.91

LAUNCH DATE NOV 25 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 706.975 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.937 GAL -.02 AZL 87.53 HCA 212.60 SMA 186.18 ECC .20694 INC 2.4732 V1 30.175
RP 215.88 LAP -1.33 LOP 275.34 VP 22.731 GAP -7.67 AZP 92.08 TAL 359.91 TAP 212.51 RCA 147.65 APO 224.71 V2 25.442
RC 287.127 GL 27.33 GP -5.91 ZAL 84.28 ZAP 69.42 ETS 176.98 ZAE 99.86 ETE 179.72 ZAC 78.71 ETC 257.59 CLP 69.30

PLANETOCENTRIC CONIC

C3 9.583 VHL 3.096 DLA 38.11 RAL 159.99 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.053 DPA 2.16 RAP 164.17 ECC 1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.35	8 38 25	3959.69	-30.80	170.08	20.55	66.35	9 44 25	3359.7	-33.71	161.68
116.65	14 50 12	2791.49	-30.79	81.75	20.55	66.33	15 36 44	2191.5	-33.70	73.36
63.35	8 38 25	3959.69	-30.80	170.08	20.55	66.35	9 44 25	3359.7	-33.71	161.68
116.65	14 50 12	2791.49	-30.79	81.75	20.55	66.33	15 36 44	2191.5	-33.70	73.36
63.35	8 38 25	3959.69	-30.80	170.08	20.55	66.35	9 44 25	3359.7	-33.71	161.68
116.65	14 50 12	2791.49	-30.79	81.75	20.55	66.33	15 36 44	2191.5	-33.70	73.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7305 TRA .4460 TC-10.8833 BAU 1.4015 SGT 7534.1 SGR 1003.9 SG3 2798.7 ST 3224.7 SR 623.8 SS 2999.0
RDE .3302 RRA .1746 RC3-1.1021 FAU .51923 RRT .9237 RRF .9324 RTF .9857 CRT .9945 CRS -.9979 CST -.9889
FDE 5.9388 FRA 3.9195 FC-46.9073 BSP 26594 SGB 7600.7 R23 .0511 R13 .9861 LSA 4435.6 MSA 327.1 SSA 24.3
BDE 1.7618 BRA .4790 BC310.9389 FSP 9981 SG1 7591.1 SG2 381.8 THA 7.03 EL1 3283.9 EL2 64.3 ALF 10.89

LAUNCH DATE NOV 25 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 711.151 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.939 GAL -.08 AZL 87.56 HCA 213.76 SMA 186.22 ECC .20712 INC 2.4439 V1 30.175
RP 215.54 LAP -1.36 LOP 276.50 VP 22.776 GAP -7.83 AZP 92.03 TAL 359.54 TAP 213.30 RCA 147.65 APO 224.79 V2 25.480
RC 288.329 GL 27.06 GP -5.68 ZAL 84.95 ZAP 67.84 ETS 176.90 ZAE 98.02 ETE 179.54 ZAC 78.86 ETC 257.65 CLP 67.72

PLANETOCENTRIC CONIC

C3 9.532 VHL 3.087 DLA 37.58 RAL 160.62 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.088 DPA 2.54 RAP 163.88 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.19	8 45 11	3946.38	-30.42	168.80	20.91	66.78	9 50 57	3346.4	-33.28	160.41
115.81	14 48 32	2802.69	-30.41	82.48	20.90	66.77	15 35 15	2202.7	-33.27	74.10
64.19	8 45 11	3946.38	-30.42	168.80	20.91	66.78	9 50 57	3346.4	-33.28	160.41
115.81	14 48 32	2802.69	-30.41	82.48	20.90	66.77	15 35 15	2202.7	-33.27	74.10
64.19	8 45 11	3946.38	-30.42	168.80	20.91	66.78	9 50 57	3346.4	-33.28	160.41
115.81	14 48 32	2802.69	-30.41	82.48	20.90	66.77	15 35 15	2202.7	-33.27	74.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7079 TRA .5064 TC-11.3492 BAU 1.4520 SGT 7782.1 SGR 936.0 SG3 2691.4 ST 3196.3 SR 574.8 SS 2610.7
RDE .3025 RRA .1735 RC3-1.0190 FAU .50367 RRT .9157 RRF .9180 RTF .9839 CRT .9943 CRS -.9958 CST -.9844
FDE 5.0361 FRA 3.9389 FC-45.7469 BSP 27100 SGB 7838.2 R23 .0373 R13 .9841 LSA 4151.5 MSA 357.3 SSA 25.6
BDE 1.7344 BRA .5353 BC311.3949 FSP 9151 SG1 7829.3 SG2 373.8 THA 6.30 EL1 3247.0 EL2 60.5 ALF 10.14

LAUNCH DATE NOV 25 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 715.334 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.942 GAL -.15 AZL 87.58 HCA 214.93 SMA 186.27 ECC .20732 INC 2.4162 V1 30.175
RP 215.21 LAP -1.38 LOP 277.67 VP 22.822 GAP -7.98 AZP 91.98 TAL 359.15 TAP 214.08 RCA 147.65 APO 224.88 V2 25.517
RC 289.516 GL 26.80 GP -5.45 ZAL 85.65 ZAP 66.29 ETS 176.83 ZAE 96.22 ETE 179.37 ZAC 79.00 ETC 257.70 CLP 66.18

PLANETOCENTRIC CONIC

C3 9.486 VHL 3.080 DLA 37.05 RAL 161.30 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.125 DPA 2.89 RAP 163.63 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.04	8 52 15	3932.55	-30.04	167.48	21.31	67.22	9 57 48	3332.6	-32.85	159.11
114.96	14 46 48	2814.64	-30.03	83.27	21.30	67.20	15 33 43	2214.6	-32.84	74.90
65.04	8 52 15	3932.55	-30.04	167.48	21.31	67.22	9 57 48	3332.6	-32.85	159.11
114.96	14 46 48	2814.64	-30.03	83.27	21.30	67.20	15 33 43	2214.6	-32.84	74.90
65.04	8 52 15	3932.55	-30.04	167.48	21.31	67.22	9 57 48	3332.6	-32.85	159.11
114.96	14 46 48	2814.64	-30.03	83.27	21.30	67.20	15 33 43	2214.6	-32.84	74.90

DIFFERENTIAL CORRECTIONS
TDE 1.7152 TRA .5698 TC-11.8208 BAU 1.5039
RDE .2939 RRA .1725 RC3 -.9503 FAU .49211
FDE 4.7260 FRA 3.9521 FC-44.9120 BSP 28052
BDE 1.7402 BRA .5953 BC311.8589 FSP 8886

MID-COURSE EXECUTION ACCURACY
SGT 8060.0 SGR 896.3 SG3 2631.3
RRT .9054 RRF .9051 RTF .9848
SGB 8109.7 R23 .0270 R13 .9849
SG1 8100.9 SG2 378.5 THA 5.76

ORBIT DETERMINATION ACCURACY
ST 3223.0 SR 560.2 SS 2498.7
CRT .9950 CRS -.9945 CST -.9836
LSA 4100.8 MSA 357.2 SSA 26.5
EL1 3270.8 EL2 55.0 ALF 9.82

LAUNCH DATE NOV 25 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 719.525 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.945 GAL -.21 AZL 87.61 HCA 216.10 SMA 186.31 ECC .20755 INC 2.3901 V1 30.175
RP 214.88 LAP -1.41 LOP 278.84 VP 22.867 GAP -8.14 AZP 91.93 TAL 358.76 TAP 214.86 RCA 147.65 APO 224.98 V2 25.554
RC 290.691 GL 26.55 GP -5.24 ZAL 86.37 ZAP 64.79 ETS 176.77 ZAE 94.46 ETE 179.23 ZAC 79.15 ETC 257.75 CLP 64.68

PLANETOCENTRIC CONIC

C3 9.446 VHL 3.073 DLA 36.51 RAL 162.00 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.165 DPA 3.22 RAP 163.41 ECC 1.1555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.92	8 59 44	3917.95	-29.65	166.11	21.75	67.64	10 5 2	3317.9	-32.40	157.76
114.08	14 44 56	2827.59	-29.64	84.12	21.75	67.63	15 32 4	2227.6	-32.39	75.78
65.92	8 59 44	3917.95	-29.65	166.11	21.75	67.64	10 5 2	3317.9	-32.40	157.76
114.08	14 44 56	2827.59	-29.64	84.12	21.75	67.63	15 32 4	2227.6	-32.39	75.78
65.92	8 59 44	3917.95	-29.65	166.11	21.75	67.64	10 5 2	3317.9	-32.40	157.76
114.08	14 44 56	2827.59	-29.64	84.12	21.75	67.63	15 32 4	2227.6	-32.39	75.78

DIFFERENTIAL CORRECTIONS
TDE 1.7191 TRA .6371 TC-12.2710 BAU 1.5536
RDE .2863 RRA .1719 RC3 -.8784 FAU .47807
FDE 4.4246 FRA 3.9684 FC-43.8154 BSP 28990
BDE 1.7428 BRA .6599 BC312.3024 FSP 8657

MID-COURSE EXECUTION ACCURACY
SGT 8327.6 SGR 857.5 SG3 2560.3
RRT .8924 RRF .8899 RTF .9855
SGB 8371.7 R23 .0192 R13 .9856
SG1 8362.8 SG2 385.4 THA 5.26

ORBIT DETERMINATION ACCURACY
ST 3243.2 SR 547.2 SS 2388.7
CRT .9958 CRS -.9928 CST -.9827
LSA 4049.0 MSA 357.8 SSA 27.3
EL1 3288.7 EL2 49.6 ALF 9.54

LAUNCH DATE NOV 25 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 723.722 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.948 GAL -.29 AZL 87.63 HCA 217.28 SMA 186.37 ECC .20779 INC 2.3653 V1 30.175
RP 214.56 LAP -1.43 LOP 280.02 VP 22.912 GAP -8.29 AZP 91.88 TAL 358.34 TAP 215.62 RCA 147.64 APO 225.09 V2 25.590
RC 291.851 GL 26.31 GP -5.04 ZAL 87.13 ZAP 63.33 ETS 176.71 ZAE 92.73 ETE 179.10 ZAC 79.29 ETC 257.79 CLP 63.22

PLANETOCENTRIC CONIC

C3 9.412 VHL 3.068 DLA 35.96 RAL 162.73 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.206 DPA 3.51 RAP 163.23 ECC 1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.84	9 7 35	3902.59	-29.25	164.69	22.24	68.07	10 12 38	3302.6	-31.95	156.36
113.16	14 42 56	2841.54	-29.24	85.06	22.24	68.06	15 30 18	2241.5	-31.94	76.72
66.84	9 7 35	3902.59	-29.25	164.69	22.24	68.07	10 12 38	3302.6	-31.95	156.36
113.16	14 42 56	2841.54	-29.24	85.06	22.24	68.06	15 30 18	2241.5	-31.94	76.72
66.84	9 7 35	3902.59	-29.25	164.69	22.24	68.07	10 12 38	3302.6	-31.95	156.36
113.16	14 42 56	2841.54	-29.24	85.06	22.24	68.06	15 30 18	2241.5	-31.94	76.72

DIFFERENTIAL CORRECTIONS
TDE 1.7206 TRA .7113 TC-12.7142 BAU 1.6031
RDE .2797 RRA .1725 RC3 -.8130 FAU .46537
FDE 4.1372 FRA 4.0252 FC-42.8059 BSP 29920
BDE 1.7432 BRA .7319 BC312.7402 FSP 8416

MID-COURSE EXECUTION ACCURACY
SGT 8595.2 SGR 824.7 SG3 2497.9
RRT .8780 RRF .8739 RTF .9858
SGB 8634.7 R23 .0137 R13 .9859
SG1 8625.7 SG2 393.4 THA 4.83

ORBIT DETERMINATION ACCURACY
ST 3259.2 SR 536.0 SS 2285.6
CRT .9964 CRS -.9904 CST -.9811
LSA 4000.1 MSA 363.8 SSA 28.0
EL1 3302.7 EL2 44.8 ALF 9.31

LAUNCH DATE NOV 25 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 727.926 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.951 GAL -.36 AZL 87.66 HCA 218.46 SMA 186.42 ECC .20806 INC 2.3418 V1 30.175
RP 214.24 LAP -1.46 LOP 281.20 VP 22.957 GAP -8.43 AZP 91.83 TAL 357.91 TAP 216.37 RCA 147.63 APO 225.21 V2 25.626
RC 292.998 GL 26.07 GP -4.85 ZAL 87.93 ZAP 61.91 ETS 176.66 ZAE 91.04 ETE 178.99 ZAC 79.42 ETC 257.83 CLP 61.80

PLANETOCENTRIC CONIC

C3 9.384 VHL 3.063 DLA 35.41 RAL 163.50 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.249 DPA 3.78 RAP 163.08 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.79	9 15 56	3886.16	-28.84	163.20	22.77	68.49	10 20 42	3286.2	-31.49	154.88
112.21	14 40 41	2856.79	-28.82	86.08	22.76	68.48	15 28 18	2256.8	-31.48	77.77
67.79	9 15 56	3886.16	-28.84	163.20	22.77	68.49	10 20 42	3286.2	-31.49	154.88
112.21	14 40 41	2856.79	-28.82	86.08	22.76	68.48	15 28 18	2256.8	-31.48	77.77
67.79	9 15 56	3886.16	-28.84	163.20	22.77	68.49	10 20 42	3286.2	-31.49	154.88
112.21	14 40 41	2856.79	-28.82	86.08	22.76	68.48	15 28 18	2256.8	-31.48	77.77

DIFFERENTIAL CORRECTIONS
TDE 1.7170 TRA .7855 TC-13.1396 BAU 1.6511
RDE .2738 RRA .1723 RC3 -.7467 FAU .45117
FDE 3.8581 FRA 4.0447 FC-41.6243 BSP 30802
BDE 1.7387 BRA .8042 BC313.1608 FSP 8159

MID-COURSE EXECUTION ACCURACY
SGT 8852.5 SGR 792.4 SG3 2426.2
RRT .8611 RRF .8553 RTF .9863
SGB 8887.9 R23 .0083 R13 .9864
SG1 8878.8 SG2 401.7 THA 4.42

ORBIT DETERMINATION ACCURACY
ST 3265.6 SR 525.9 SS 2181.9
CRT .9970 CRS -.9875 CST -.9796
LSA 3945.5 MSA 366.0 SSA 28.8
EL1 3307.4 EL2 40.1 ALF 9.12

LAUNCH DATE NOV 25 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 732.136 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.954 GAL -.44 AZL 87.68 HCA 219.64 SMA 186.48 ECC .20835 INC 2.3193 V1 30.175
RP 213.93 LAP -1.48 LOP 282.38 VP 23.001 GAP -8.57 AZP 91.79 TAL 357.47 TAP 217.11 RCA 147.63 APO 225.33 V2 25.662
RC 294.131 GL 25.84 GP -4.67 ZAL 88.75 ZAP 60.52 ETS 176.61 ZAE 89.38 ETE 178.89 ZAC 79.56 ETC 257.86 CLP 60.41

PLANETOCENTRIC CONIC

C3 9.362 VHL 3.060 DLA 34.85 RAL 164.29 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.294 DPA 4.02 RAP 162.97 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.78	9 24 46	3868.61	-28.41	161.62	23.34	68.91	10 29 15	3268.6	-31.01	153.33
111.22	14 38 11	2873.41	-28.40	87.21	23.33	68.90	15 26 4	2273.4	-31.00	78.91
68.78	9 24 46	3868.61	-28.41	161.62	23.34	68.91	10 29 15	3268.6	-31.01	153.33
111.22	14 38 11	2873.41	-28.40	87.21	23.33	68.90	15 26 4	2273.4	-31.00	78.91
68.78	9 24 46	3868.61	-28.41	161.62	23.34	68.91	10 29 15	3268.6	-31.01	153.33
111.22	14 38 11	2873.41	-28.40	87.21	23.33	68.90	15 26 4	2273.4	-31.00	78.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7078 TRA .8660 TC-13.5516 BAU 1.6982 SGT 9105.0 SGR 763.4 SG3 2356.3 ST 3262.1 SR 516.4 SS 2075.2
RDE .2684 RRA .1726 RC3 -.6837 FAU .43724 RRT .8424 RRF .8350 RTF .9867 CRT .9975 CRS -.9836 CST -.9775
FDE 3.5746 FRA 4.0807 FC-40.4355 BSP 31644 SGB 9136.9 R23 .0040 R13 .9867 LSA 3882.7 MSA 371.6 SSA 29.5
BDE 1.7288 BRA .8831 BC313.5688 FSP 7900 SG1 9127.7 SG2 410.4 THA 4.05 EL1 3302.5 EL2 35.9 ALF 8.98

LAUNCH DATE NOV 25 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 736.349 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.958 GAL -.52 AZL 87.70 HCA 220.83 SMA 186.54 ECC .20866 INC 2.2979 V1 30.175
RP 213.62 LAP -1.50 LOP 283.57 VP 23.045 GAP -8.71 AZP 91.74 TAL 357.02 TAP 217.84 RCA 147.62 APO 225.46 V2 25.697
RC 295.251 GL 25.61 GP -4.50 ZAL 89.61 ZAP 59.18 ETS 176.57 ZAE 87.77 ETE 178.80 ZAC 79.70 ETC 257.89 CLP 59.07

PLANETOCENTRIC CONIC

C3 9.345 VHL 3.057 DLA 34.28 RAL 165.12 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.341 DPA 4.24 RAP 162.89 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.82	9 34 12	3849.64	-27.97	159.94	23.94	69.33	10 38 22	3249.6	-30.52	151.67
110.18	14 35 20	2891.70	-27.96	88.45	23.94	69.32	15 23 32	2291.7	-30.51	80.18
69.82	9 34 12	3849.64	-27.97	159.94	23.94	69.33	10 38 22	3249.6	-30.52	151.67
110.18	14 35 20	2891.70	-27.96	88.45	23.94	69.32	15 23 32	2291.7	-30.51	80.18
69.82	9 34 12	3849.64	-27.97	159.94	23.94	69.33	10 38 22	3249.6	-30.52	151.67
110.18	14 35 20	2891.70	-27.96	88.45	23.94	69.32	15 23 32	2291.7	-30.51	80.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7178 TRA .9716 TC-13.8637 BAU 1.7338 SGT 9331.0 SGR 739.7 SG3 2278.2 ST 3296.5 SR 512.6 SS 2024.0
RDE .2659 RRA .1750 RC3 -.6145 FAU .41938 RRT .8206 RRF .8139 RTF .9868 CRT .9980 CRS -.9795 CST -.9760
FDE 3.3959 FRA 4.1950 FC-38.8510 BSP 33023 SGB 9360.3 R23 .0042 R13 .9868 LSA 3883.7 MSA 377.9 SSA 29.8
BDE 1.7382 BRA .9872 BC313.8773 FSP 7843 SG1 9350.8 SG2 421.8 THA 3.73 EL1 3336.0 EL2 32.3 ALF 8.82

LAUNCH DATE NOV 25 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 740.574 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.962 GAL -.60 AZL 87.72 HCA 222.02 SMA 186.60 ECC .20900 INC 2.2775 V1 30.175
RP 213.31 LAP -1.52 LOP 284.76 VP 23.089 GAP -8.85 AZP 91.69 TAL 356.55 TAP 218.56 RCA 147.60 APO 225.60 V2 25.731
RC 296.356 GL 25.38 GP -4.34 ZAL 90.49 ZAP 57.87 ETS 176.54 ZAE 86.18 ETE 178.72 ZAC 79.83 ETC 257.91 CLP 57.76

PLANETOCENTRIC CONIC

C3 9.335 VHL 3.055 DLA 33.69 RAL 165.96 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.389 DPA 4.44 RAP 162.85 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.93	9 44 16	3829.03	-27.52	158.15	24.58	69.75	10 48 5	3229.0	-30.02	149.89
109.07	14 32 2	2911.90	-27.51	89.84	24.58	69.73	15 20 33	2311.9	-30.01	81.58
70.93	9 44 16	3829.03	-27.52	158.15	24.58	69.75	10 48 5	3229.0	-30.02	149.89
109.07	14 32 2	2911.90	-27.51	89.84	24.58	69.73	15 20 33	2311.9	-30.01	81.58
110.00	15 21 27	2760.81	-30.74	79.28	25.78	74.26	16 7 27	2160.8	-32.59	70.55
110.00	13 54 1	3028.13	-24.38	97.44	23.14	65.27	14 44 30	2428.1	-27.51	89.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6932 TRA 1.0528 TC-14.2720 BAU 1.7826 SGT 9579.8 SGR 715.4 SG3 2213.3 ST 3264.4 SR 503.5 SS 1903.4
RDE .2609 RRA .1746 RC3 -.5609 FAU .40748 RRT .7991 RRF .7898 RTF .9871 CRT .9981 CRS -.9729 CST -.9728
FDE 3.0973 FRA 4.1912 FC-37.7887 BSP 33657 SGB 9606.5 R23 -.0010 R13 .9872 LSA 3792.7 MSA 383.8 SSA 30.5
BDE 1.7132 BRA 1.0671 BC314.2830 FSP 7517 SG1 9596.9 SG2 429.3 THA 3.42 EL1 3302.9 EL2 30.8 ALF 8.75

LAUNCH DATE NOV 25 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 744.805 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.966 GAL -.68 AZL 87.74 HCA 223.21 SMA 186.67 ECC .20936 INC 2.2578 V1 30.175
RP 213.01 LAP -1.55 LOP 285.95 VP 23.133 GAP -8.99 AZP 91.65 TAL 356.06 TAP 219.27 RCA 147.59 APO 225.75 V2 25.765
RC 297.448 GL 25.16 GP -4.18 ZAL 91.40 ZAP 56.59 ETS 176.51 ZAE 84.64 ETE 178.65 ZAC 79.97 ETC 257.93 CLP 56.49

PLANETOCENTRIC CONIC

C3 9.332 VHL 3.055 DLA 33.10 RAL 166.83 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.440 DPA 4.61 RAP 162.84 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.10	9 55 4	3806.45	-27.06	156.21	25.26	70.17	10 58 31	3206.4	-29.51	147.98
107.90	14 28 11	2934.36	-27.05	91.38	25.25	70.15	15 17 5	2334.4	-29.50	83.15
72.10	9 55 4	3806.45	-27.06	156.21	25.26	70.17	10 58 31	3206.4	-29.51	147.98
107.90	14 28 11	2934.36	-27.05	91.38	25.25	70.15	15 17 5	2334.4	-29.50	83.15
110.00	15 46 12	2694.75	-31.86	74.46	26.89	76.92	16 31 7	2094.7	-33.34	65.54
110.00	13 36 13	3094.05	-22.44	101.57	23.09	63.51	14 27 47	2494.1	-25.81	94.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6664 TRA 1.1390 TC-14.6539 BAU 1.8294 SGT 9819.9 SGR 693.3 SG3 2145.3 ST 3228.9 SR 496.0 SS 1792.8
RDE .2569 RRA .1744 RC3 -.5073 FAU .39476 RRT .7750 RRF .7636 RTF .9875 CRT .9979 CRS -.9648 CST -.9692
FDE 2.8229 FRA 4.1873 FC-36.6209 BSP 34306 SGB 9844.3 R23 -.0051 R13 .9875 LSA 3705.8 MSA 389.3 SSA 31.2
BDE 1.6861 BRA 1.1523 BC314.6627 FSP 7217 SG1 9834.6 SG2 437.5 THA 3.14 EL1 3266.6 EL2 31.6 ALF 8.72

LAUNCH DATE NOV 25 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 749.041 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.970 GAL -.77 AZL 87.76 HCA 224.41 SMA 186.74 ECC .20974 INC 2.2391 V1 30.175
RP 212.72 LAP -1.57 LOP 287.15 VP 23.175 GAP -9.12 AZP 91.60 TAL 355.56 TAP 219.97 RCA 147.57 APO 225.91 V2 25.798
RC 298.526 GL 24.93 GP -4.04 ZAL 92.35 ZAP 55.36 ETS 176.48 ZAE 83.12 ETE 178.59 ZAC 80.10 ETC 257.94 CLP 55.26

PLANETOCENTRIC CONIC

C3 9.336 VHL 3.055 DLA 32.49 RAL 167.73 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.491 DPA 4.76 RAP 162.86 ECC 1.1536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.36	10 6 46	3781.41	-26.58	154.10	25.97	70.59	11 9 47	3181.4	-28.98	145.88
106.64	14 23 39	2959.54	-26.57	93.13	25.97	70.57	15 12 58	2359.5	-28.97	84.92
73.36	10 6 46	3781.41	-26.58	154.10	25.97	70.59	11 9 47	3181.4	-28.98	145.88
106.64	14 23 39	2959.54	-26.57	93.13	25.97	70.57	15 12 58	2359.5	-28.97	84.92
110.00	16 5 52	2644.26	-32.58	70.70	27.84	79.03	16 49 56	2044.3	-33.75	61.66
110.00	13 23 43	3144.69	-20.87	104.66	23.25	62.29	14 16 8	2544.7	-24.41	97.30

DIFFERENTIAL CORRECTIONS
TDE 1.6388 TRA 1.2333 TC-15.0045 BAU 1.8736
RDE .2538 RRA .1745 RC3 -.4551 FAU .38178
FDE 2.5726 FRA 4.1962 FC-35.4031 BSP 35020
BDE 1.6584 BRA 1.2456 BC315.0114 FSP 6960

MID-COURSE EXECUTION ACCURACY
SGT10051.6 SGR 674.1 SG3 2077.8
RRT .7492 RRF .7361 RTF .9878
SGB10074.2 R23 -.0082 R13 .9877
SG110064.3 SG2 445.9 THA 2.88

ORBIT DETERMINATION ACCURACY
ST 3193.2 SR 490.1 SS 1693.8
CRT .9974 CRS -.9548 CST -.9652
LSA 3626.0 MSA 395.7 SSA 31.8
EL1 3230.4 EL2 35.1 ALF 8.70

LAUNCH DATE NOV 25 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 753.282 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.974 GAL -.86 AZL 87.78 HCA 225.61 SMA 186.81 ECC .21015 INC 2.2210 V1 30.175
RP 212.43 LAP -1.59 LOP 288.35 VP 23.218 GAP -9.25 AZP 91.55 TAL 355.05 TAP 220.65 RCA 147.56 APO 226.07 V2 25.831
RC 299.592 GL 24.71 GP -3.90 ZAL 93.32 ZAP 54.16 ETS 176.45 ZAE 81.64 ETE 178.54 ZAC 80.24 ETC 257.94 CLP 54.06

PLANETOCENTRIC CONIC

C3 9.347 VHL 3.057 DLA 31.87 RAL 168.65 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.545 DPA 4.88 RAP 162.92 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.72	10 19 33	3753.22	-26.09	151.75	26.72	71.01	11 22 6	3153.2	-28.43	143.57
105.28	14 18 12	2988.18	-26.08	95.12	26.71	70.99	15 8 0	2388.2	-28.43	86.93
74.72	10 19 33	3753.22	-26.09	151.75	26.72	71.01	11 22 6	3153.2	-28.43	143.57
105.28	14 18 12	2988.18	-26.08	95.12	26.71	70.99	15 8 0	2388.2	-28.43	86.93
110.00	16 23 6	2601.20	-33.09	67.44	28.73	80.90	17 6 28	2001.2	-33.99	58.32
110.00	13 13 49	3188.20	-19.47	107.26	23.55	61.33	14 6 57	2588.2	-23.15	100.05

DIFFERENTIAL CORRECTIONS
TDE 1.6077 TRA 1.3320 TC-15.3323 BAU 1.9165
RDE .2514 RRA .1747 RC3 -.4044 FAU .36864
FDE 2.3370 FRA 4.2018 FC-34.1455 BSP 35730
BDE 1.6272 BRA 1.3434 BC315.3376 FSP 6707

MID-COURSE EXECUTION ACCURACY
SGT10276.5 SGR 657.1 SG3 2009.7
RRT .7214 RRF .7067 RTF .9880
SGB10297.4 R23 -.0107 R13 .9880
SG110287.4 SG2 454.6 THA 2.65

ORBIT DETERMINATION ACCURACY
ST 3151.9 SR 485.2 SS 1600.6
CRT .9963 CRS -.9425 CST -.9607
LSA 3545.3 MSA 402.1 SSA 32.4
EL1 3188.8 EL2 41.2 ALF 8.72

LAUNCH DATE NOV 25 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 757.529 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.978 GAL -.95 AZL 87.80 HCA 226.81 SMA 186.89 ECC .21058 INC 2.2036 V1 30.175
RP 212.15 LAP -1.61 LOP 289.55 VP 23.260 GAP -9.38 AZP 91.51 TAL 354.52 TAP 221.33 RCA 147.53 APO 226.24 V2 25.863
RC 300.645 GL 24.48 GP -3.77 ZAL 94.33 ZAP 52.99 ETS 176.42 ZAE 80.20 ETE 178.49 ZAC 80.37 ETC 257.94 CLP 52.90

PLANETOCENTRIC CONIC

C3 9.365 VHL 3.060 DLA 31.24 RAL 169.59 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.600 DPA 4.99 RAP 163.00 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.23	10 33 42	3720.96	-25.58	149.12	27.50	71.43	11 35 43	3121.0	-27.87	140.95
103.77	14 11 33	3021.20	-25.57	97.43	27.49	71.42	15 1 54	2421.2	-27.87	89.26
76.23	10 33 42	3720.96	-25.58	149.12	27.50	71.43	11 35 43	3121.0	-27.87	140.95
103.77	14 11 33	3021.20	-25.57	97.43	27.49	71.42	15 1 54	2421.2	-27.87	89.26
110.00	16 38 54	2562.65	-33.47	64.50	29.58	82.60	17 21 37	1962.7	-34.13	55.32
110.00	13 5 31	3227.51	-18.17	109.57	23.94	60.54	13 59 19	2627.5	-21.96	102.48

DIFFERENTIAL CORRECTIONS
TDE 1.5723 TRA 1.4373 TC-15.6359 BAU 1.9581
RDE .2492 RRA .1752 RC3 -.3557 FAU .35564
FDE 2.0994 FRA 4.2155 FC-32.8780 BSP 36445
BDE 1.5919 BRA 1.4479 BC315.6400 FSP 6465

MID-COURSE EXECUTION ACCURACY
SGT10495.3 SGR 642.0 SG3 1942.7
RRT .6922 RRF .6758 RTF .9882
SGB10515.0 R23 -.0132 R13 .9881
SG110504.8 SG2 462.9 THA 2.43

ORBIT DETERMINATION ACCURACY
ST 3104.8 SR 480.6 SS 1507.1
CRT .9945 CRS -.9260 CST -.9544
LSA 3459.9 MSA 412.7 SSA 32.8
EL1 3141.4 EL2 49.6 ALF 8.75

LAUNCH DATE NOV 25 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 761.781 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 32.983 GAL -1.05 AZL 87.81 HCA 228.02 SMA 186.97 ECC .21104 INC 2.1869 V1 30.175
RP 211.87 LAP -1.63 LOP 290.76 VP 23.301 GAP -9.51 AZP 91.46 TAL 353.98 TAP 221.99 RCA 147.51 APO 226.42 V2 25.895
RC 301.687 GL 24.25 GP -3.65 ZAL 95.36 ZAP 51.86 ETS 176.40 ZAE 78.78 ETE 178.45 ZAC 80.51 ETC 257.94 CLP 51.77

PLANETOCENTRIC CONIC

C3 9.391 VHL 3.064 DLA 30.59 RAL 170.55 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.656 DPA 5.07 RAP 163.12 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.92	10 49 42	3683.07	-25.06	146.08	28.31	71.86	11 51 5	3083.1	-27.30	137.94
102.08	14 3 14	3060.17	-25.04	100.16	28.30	71.84	14 54 14	2460.2	-27.29	92.02
77.92	10 49 42	3683.07	-25.06	146.08	28.31	71.86	11 51 5	3083.1	-27.30	137.94
102.08	14 3 14	3060.17	-25.04	100.16	28.30	71.84	14 54 14	2460.2	-27.29	92.02
110.00	16 53 44	2527.19	-33.75	61.77	30.42	84.20	17 35 51	1927.2	-34.18	52.55
110.00	12 58 22	3264.05	-16.94	111.68	24.41	59.85	13 52 46	2664.1	-20.81	104.70

DIFFERENTIAL CORRECTIONS
TDE 1.5345 TRA 1.5472 TC-15.9124 BAU 1.9981
RDE .2478 RRA .1755 RC3 -.3088 FAU .34271
FDE 1.8868 FRA 4.2208 FC-31.5944 BSP 37169
BDE 1.5543 BRA 1.5571 BC315.9154 FSP 6240

MID-COURSE EXECUTION ACCURACY
SGT10706.7 SGR 629.1 SG3 1876.0
RRT .6615 RRF .6438 RTF .9884
SGB10725.2 R23 -.0152 R13 .9884
SG110714.8 SG2 471.4 THA 2.23

ORBIT DETERMINATION ACCURACY
ST 3055.0 SR 477.3 SS 1424.8
CRT .9919 CRS -.9069 CST -.9480
LSA 3378.2 MSA 421.0 SSA 33.2
EL1 3091.4 EL2 59.9 ALF 8.81

LAUNCH DATE NOV 25 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 766.038 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.987	GAL	-1.15	AZL	87.83	HCA	229.22	SMA	187.05	ECC	.21152	INC	2.1707
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.342	GAP	-9.63	AZP	91.42	TAL	353.42	TAP	222.64	RCA	147.48	APO	226.61
RC	302.717	GL	24.01	GP	-3.53	ZAL	96.42	ZAP	50.76	ETS	176.38	ZAE	77.40	ETE	178.41	ZAC	80.65	ETC	257.92

V1	30.175	CLP	50.67																
V2	25.926																		

PLANETOCENTRIC CONIC

C3	9.425	VHL	3.070	DLA	29.92	RAL	171.54	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.714	DPA	5.14	RAP	163.27
ECC	1.1551																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.90	11 8 20	3636.95	-24.51	142.45	29.15	72.28	12 8 57	3036.9	-26.71	134.33
100.10	13 52 25	3107.73	-24.50	103.52	29.15	72.27	14 44 13	2507.7	-26.70	95.40
79.90	11 8 20	3636.95	-24.51	142.45	29.15	72.28	12 8 57	3036.9	-26.71	134.33
100.10	13 52 25	3107.73	-24.50	103.52	29.15	72.27	14 44 13	2507.7	-26.70	95.40
110.00	17 7 52	2493.98	-33.95	59.19	31.25	85.71	17 49 26	1894.0	-34.17	49.95
110.00	12 52 4	3298.69	-15.74	113.66	24.95	59.26	13 47 3	2698.7	-19.70	106.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4929	TRA	1.6632	TC-16.1630	BAU	2.0369	SGT10912.4	SGR	618.1	SG3	1810.0	ST	3001.0	SR	474.6	SS	1347.6
RDE	.2469	RRA	.1760	RC3 -.2635	FAU	.32979	RRT .6296	RRF	.6108	RTF	.9885	CRT	.9881	CRS	-.8829	CST	-.9401
FDE	1.6820	FRA	4.2321	FC-30.2923	BSP	37874	SGB10929.9	R23	-.0164	R13	.9885	LSA	3295.4	MSA	431.8	SSA	33.5
BDE	1.5132	BRA	1.6725	BC316.1651	FSP	6017	SG110919.3	SG2	480.0	THA	2.05	EL1	3037.5	EL2	72.1	ALF	8.89

LAUNCH DATE NOV 25 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 770.300 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.992	GAL	-1.25	AZL	87.84	HCA	230.44	SMA	187.13	ECC	.21204	INC	2.1551
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.383	GAP	-9.75	AZP	91.37	TAL	352.85	TAP	223.29	RCA	147.45	APO	226.81
RC	303.736	GL	23.77	GP	-3.42	ZAL	97.51	ZAP	49.69	ETS	176.36	ZAE	76.05	ETE	178.38	ZAC	80.79	ETC	257.91

V1	30.175	CLP	49.61				
V2	25.956						

PLANETOCENTRIC CONIC

C3	9.468	VHL	3.077	DLA	29.25	RAL	172.53	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	3.773	DPA	5.18	RAP	163.45
ECC	1.1558																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.37	11 31 31	3576.35	-23.96	137.76	30.03	72.71	12 31 7	2976.4	-26.10	129.67
97.63	13 37 12	3170.10	-23.95	107.95	30.02	72.69	14 30 2	2570.1	-26.09	99.86
100.00	14 47 55	2943.42	-27.44	92.19	31.05	77.64	15 36 59	2343.4	-28.86	83.68
100.00	13 3 29	3278.27	-20.56	114.64	28.71	67.81	13 58 7	2678.3	-23.39	106.98
110.00	17 21 27	2462.52	-34.08	56.74	32.08	87.15	18 2 30	1862.5	-34.10	47.50
110.00	12 46 26	3331.94	-14.58	115.53	25.55	58.73	13 41 58	2731.9	-18.61	108.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4467	TRA	1.7833	TC-16.3934	BAU	2.0753	SGT11114.0	SGR	608.7	SG3	1745.7	ST	2941.4	SR	472.5	SS	1274.5
RDE	.2464	RRA	.1764	RC3 -.2206	FAU	.31735	RRT .5969	RRF	.5769	RTF	.9886	CRT	.9829	CRS	-.8537	CST	-.9310
FDE	1.4851	FRA	4.2353	FC-29.0172	BSP	38578	SGB11130.7	R23	-.0179	R13	.9886	LSA	3209.7	MSA	443.1	SSA	33.8
BDE	1.4676	BRA	1.7920	BC316.3949	FSP	5807	SG111119.9	SG2	488.2	THA	1.88	EL1	2977.9	EL2	85.9	ALF	8.98

LAUNCH DATE NOV 25 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 774.567 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	32.997	GAL	-1.35	AZL	87.86	HCA	231.65	SMA	187.21	ECC	.21258	INC	2.1400
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.423	GAP	-9.88	AZP	91.33	TAL	352.26	TAP	223.92	RCA	147.42	APO	227.01
RC	304.746	GL	23.53	GP	-3.31	ZAL	98.62	ZAP	48.66	ETS	176.34	ZAE	74.73	ETE	178.35	ZAC	80.93	ETC	257.89

V1	30.175	CLP	48.57				
V2	25.986						

PLANETOCENTRIC CONIC

C3	9.521	VHL	3.086	DLA	28.55	RAL	173.55	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.833	DPA	5.21	RAP	163.66
ECC	1.1567																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.19	12 6 37	3477.26	-23.39	130.28	30.94	73.14	13 4 35	2877.3	-25.48	122.22
93.81	13 10 11	3271.35	-23.37	115.20	30.93	73.12	14 4 43	2671.4	-25.47	107.14
100.00	15 14 50	2870.10	-28.40	86.96	32.25	80.24	16 2 40	2270.1	-29.45	78.31
100.00	12 44 40	3353.75	-18.55	119.34	29.01	66.13	13 40 34	2753.7	-21.62	111.89
110.00	17 34 38	2432.44	-34.16	54.40	32.91	88.54	18 15 11	1832.4	-33.98	45.16
110.00	12 41 21	3364.17	-13.43	117.32	26.21	58.27	13 37 25	2764.2	-17.53	110.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3967	TRA	1.9091	TC-16.5967	BAU	2.1126	SGT11309.8	SGR	600.8	SG3	1682.1	ST	2878.6	SR	470.8	SS	1206.3
RDE	.2463	RRA	.1767	RC3 -.1796	FAU	.30509	RRT .5635	RRF	.5422	RTF	.9888	CRT	.9759	CRS	-.8181	CST	-.9204
FDE	1.2958	FRA	4.2348	FC-27.7427	BSP	39264	SGB11325.7	R23	-.0194	R13	.9887	LSA	3123.2	MSA	455.8	SSA	34.0
BDE	1.4182	BRA	1.9172	BC316.5977	FSP	5597	SG111314.9	SG2	496.1	THA	1.72	EL1	2915.1	EL2	101.5	ALF	9.08

LAUNCH DATE NOV 25 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 778.837 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.002	GAL	-1.46	AZL	87.87	HCA	232.87	SMA	187.30	ECC	.21315	INC	2.1253
RP	210.82	LAP	-1.69	LOP	295.61	VP	23.462	GAP	-10.00	AZP	91.28	TAL	351.66	TAP	224.53	RCA	147.38	APO	227.22
RC	305.746	GL	23.28	GP	-3.21	ZAL	99.76	ZAP	47.65	ETS	176.32	ZAE	73.43	ETE	178.33	ZAC	81.07	ETC	257.87

V1	30.175	CLP	47.57				
V2	26.015						

PLANETOCENTRIC CONIC

C3	9.583	VHL	3.096	DLA	27.84	RAL	174.58	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.895	DPA	5.22	RAP	163.90
ECC	1.1577																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 2	3227.59	-25.70	112.67	32.69	77.69	14 21 50	2627.6	-27.14	104.30
90.00	11 57 0	3523.58	-19.94	132.41	30.85	69.47	12 55 44	2923.6	-22.56	124.72
100.00	15 36 36	2813.15	-28.98	82.82	33.34	82.34	16 23 29	2213.1	-29.74	74.10
100.00	12 31 7	3413.25	-16.87	122.96	29.49	64.95	13 28 1	2813.3	-20.11	115.66
110.00	17 47 29	2403.51	-34.18	52.14	33.75	89.87	18 27 33	1803.5	-33.82	42.91
110.00	12 36 43	3395.65	-12.29	119.05	26.91	57.85	13 33 19	2795.7	-16.45	112.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3443	TRA	2.0417	TC-16.7649	BAU	2.1478	SGT11497.2	SGR	594.5	SG3	1619.4	ST	2816.3	SR	470.0	SS	1147.8
RDE	.2467	RRA	.1771	RC3 -.1400	FAU	.29284	RRT .5296	RRF	.5076	RTF	.9888	CRT	.9667	CRS	-.7767	CST	-.9088
FDE	1.1213	FRA	4.2384	FC-26.4564	BSP	39980	SGB11512.6	R23	-.0202	R13	.9888	LSA	3041.1	MSA	469.5	SSA	34.1
BDE	1.3667	BRA	2.0493	BC316.7655	FSP	5400	SG111501.6	SG2	504.1	THA	1.57	EL1	2852.8	EL2	118.7	ALF	9.18

LAUNCH DATE NOV 25 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 783.113 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.007 GAL -1.57 AZL 87.89 HCA 234.09 SMA 187.39 ECC .21375 INC 2.1111 V1 30.175
RP 210.58 LAP -1.71 LOP 296.84 VP 23.500 GAP -10.12 AZP 91.24 TAL 351.05 TAP 225.14 RCA 147.33 APO 227.44 V2 26.043
RC 306.737 GL 23.03 GP -3.11 ZAL 100.92 ZAP 46.67 ETS 176.30 ZAE 72.17 ETE 178.31 ZAC 81.21 ETC 257.84 CLP 46.59

PLANETOCENTRIC CONIC

C3 9.655 VHL 3.107 DLA 27.12 RAL 175.62 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.958 DPA 5.21 RAP 164.16 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 56	3141.09	-26.82	106.58	33.99	80.55	14 51 17	2541.1	-27.85	98.07
90.00	11 34 25	3613.04	-17.71	138.03	31.17	67.53	12 34 38	3013.0	-20.60	130.55
100.00	15 55 47	2764.39	-29.37	79.25	34.37	84.18	16 41 52	2164.4	-29.87	70.48
100.00	12 20 15	3464.97	-15.36	126.05	30.07	64.03	13 18 0	2865.0	-18.72	118.88
110.00	18 0 3	2375.55	-34.17	49.96	34.60	91.17	18 39 39	1775.5	-33.63	40.75
110.00	12 32 29	3426.57	-11.17	120.74	27.66	57.48	13 29 36	2826.6	-15.38	114.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2824 TRA 2.1740 TC-16.9308 BAU 2.1854 SGT11686.8 SGR 589.0 SG3 1559.4 ST 2741.7 SR 469.2 SS 1089.5
RDE .2473 RRA .1772 RC3 -.1034 FAU .28151 RRT .4951 RRF .4719 RTF .9889 CRT .9545 CRS -.7253 CST -.8945
FDE .9439 FRA 4.2256 FC-25.2427 BSP 40551 SGB11701.6 R23 -.0216 R13 .9889 LSA 2947.5 MSA 485.0 SSA 34.1
BDE 1.3061 BRA 2.1813 BC316.9311 FSP 5184 SG111690.4 SG2 511.6 THA 1.43 EL1 2778.2 EL2 138.0 ALF 9.30

LAUNCH DATE NOV 25 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 787.392 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.012 GAL -1.69 AZL 87.90 HCA 235.32 SMA 187.48 ECC .21438 INC 2.0973 V1 30.175
RP 210.34 LAP -1.72 LOP 298.06 VP 23.538 GAP -10.23 AZP 91.19 TAL 350.42 TAP 225.73 RCA 147.29 APO 227.67 V2 26.071
RC 307.719 GL 22.77 GP -3.02 ZAL 102.11 ZAP 45.72 ETS 176.29 ZAE 70.93 ETE 178.29 ZAC 81.36 ETC 257.81 CLP 45.64

PLANETOCENTRIC CONIC

C3 9.738 VHL 3.121 DLA 26.38 RAL 176.68 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.023 DPA 5.19 RAP 164.45 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 22 41	3077.65	-27.45	102.05	35.14	82.74	15 13 58	2477.6	-28.17	93.45
90.00	11 19 6	3679.87	-15.92	142.12	31.70	66.27	12 20 26	3079.9	-19.00	134.79
100.00	16 13 24	2720.73	-29.63	76.03	35.38	85.86	16 58 44	2120.7	-29.89	67.24
100.00	12 11 5	3512.01	-13.93	128.82	30.74	63.28	13 9 37	2912.0	-17.41	121.76
110.00	18 12 23	2348.42	-34.11	47.84	35.46	92.42	18 51 31	1748.4	-33.40	38.67
110.00	12 28 34	3457.09	-10.05	122.39	28.46	57.15	13 26 12	2857.1	-14.30	115.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2199 TRA 2.3156 TC-17.0544 BAU 2.2203 SGT11867.3 SGR 585.0 SG3 1499.7 ST 2673.1 SR 469.1 SS 1042.2
RDE .2485 RRA .1775 RC3 -.0679 FAU .27002 RRT .4608 RRF .4367 RTF .9890 CRT .9391 CRS -.6671 CST -.8797
FDE .7817 FRA 4.2192 FC-24.0054 BSP 41172 SGB11881.7 R23 -.0224 R13 .9890 LSA 2863.4 MSA 501.6 SSA 34.1
BDE 1.2450 BRA 2.3224 BC317.0546 FSP 4986 SG111870.4 SG2 519.1 THA 1.30 EL1 2709.3 EL2 159.1 ALF 9.39

LAUNCH DATE NOV 25 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 791.674 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.017 GAL -1.80 AZL 87.92 HCA 236.54 SMA 187.57 ECC .21504 INC 2.0838 V1 30.175
RP 210.10 LAP -1.74 LOP 299.29 VP 23.575 GAP -10.35 AZP 91.15 TAL 349.77 TAP 226.32 RCA 147.24 APO 227.91 V2 26.098
RC 308.691 GL 22.50 GP -2.93 ZAL 103.32 ZAP 44.80 ETS 176.27 ZAE 69.71 ETE 178.28 ZAC 81.50 ETC 257.77 CLP 44.72

PLANETOCENTRIC CONIC

C3 9.833 VHL 3.136 DLA 25.63 RAL 177.74 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.089 DPA 5.15 RAP 164.77 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 15	3024.48	-27.84	98.21	36.23	84.63	15 33 39	2424.5	-28.30	89.57
90.00	11 7 3	3736.86	-14.33	145.55	32.35	65.31	12 9 20	3136.9	-17.54	138.34
100.00	16 29 54	2680.64	-29.79	73.06	36.38	87.41	17 14 34	2080.6	-29.83	64.26
100.00	12 3 5	3555.93	-12.57	131.38	31.47	62.66	13 2 21	2955.9	-16.14	124.40
110.00	18 24 31	2322.03	-34.01	45.78	36.34	93.63	19 3 13	1722.0	-33.14	36.65
110.00	12 24 57	3487.31	-8.93	124.02	29.31	56.87	13 23 5	2887.3	-13.23	117.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1529 TRA 2.4617 TC-17.1532 BAU 2.2549 SGT12043.6 SGR 582.0 SG3 1441.7 ST 2604.2 SR 469.5 SS 1001.7
RDE .2501 RRA .1776 RC3 -.0345 FAU .25892 RRT .4266 RRF .4017 RTF .9890 CRT .9196 CRS -.6010 CST -.8641
FDE .6273 FRA 4.2076 FC-22.7970 BSP 41794 SGB12057.7 R23 -.0232 R13 .9890 LSA 2781.1 MSA 519.4 SSA 34.0
BDE 1.1797 BRA 2.4681 BC317.1532 FSP 4801 SG112046.2 SG2 526.3 THA 1.18 EL1 2639.9 EL2 182.0 ALF 9.46

LAUNCH DATE NOV 25 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 795.960 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.023 GAL -1.93 AZL 87.93 HCA 237.77 SMA 187.67 ECC .21574 INC 2.0707 V1 30.175
RP 209.88 LAP -1.75 LOP 300.52 VP 23.612 GAP -10.47 AZP 91.10 TAL 349.12 TAP 226.89 RCA 147.18 APO 228.15 V2 26.124
RC 309.654 GL 22.23 GP -2.85 ZAL 104.55 ZAP 43.90 ETS 176.25 ZAE 68.53 ETE 178.26 ZAC 81.65 ETC 257.73 CLP 43.82

PLANETOCENTRIC CONIC

C3 9.940 VHL 3.153 DLA 24.86 RAL 178.82 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.156 DPA 5.09 RAP 165.11 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 54	2977.46	-28.10	94.79	37.30	86.32	15 51 32	2377.5	-28.31	86.13
90.00	10 56 59	3788.17	-12.85	148.59	33.08	64.55	12 0 7	3188.2	-16.17	141.49
100.00	16 45 34	2643.24	-29.87	70.29	37.38	88.87	17 29 37	2043.2	-29.71	61.48
100.00	11 56 0	3597.63	-11.26	133.77	32.26	62.13	12 55 58	2997.6	-14.90	126.88
110.00	18 36 28	2296.30	-33.88	43.78	37.23	94.81	19 14 44	1696.3	-32.85	34.70
110.00	12 21 36	3517.33	-7.81	125.62	30.19	56.61	13 20 13	2917.3	-12.14	119.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0822 TRA 2.6139 TC-17.2260 BAU 2.2891 SGT12217.0 SGR 579.9 SG3 1385.4 ST 2537.9 SR 470.3 SS 968.5
RDE .2520 RRA .1776 RC3 -.0030 FAU .24819 RRT .3929 RRF .3670 RTF .9890 CRT .8952 CRS -.5267 CST -.8479
FDE .4796 FRA 4.1935 FC-21.6170 BSP 42395 SGB12230.8 R23 -.0243 R13 .9890 LSA 2703.4 MSA 538.8 SSA 33.8
BDE 1.1112 BRA 2.6199 BC317.2260 FSP 4618 SG112219.1 SG2 533.2 THA 1.07 EL1 2572.8 EL2 206.8 ALF 9.48

LAUNCH DATE NOV 25 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 800.248 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.028 GAL -2.05 AZL 87.94 HCA 239.00 SMA 187.76 ECC .21647 INC 2.0579 V1 30.175
RP 209.66 LAP -1.76 LOP 301.75 VP 23.647 GAP -10.58 AZP 91.06 TAL 348.44 TAP 227.45 RCA 147.12 APO 228.41 V2 26.149
RC 310.607 GL 21.94 GP -2.77 ZAL 105.80 ZAP 43.03 ETS 176.24 ZAE 67.36 ETE 178.25 ZAC 81.80 ETC 257.69 CLP 42.95

PLANETOCENTRIC CONIC

C3 10.059 VHL 3.172 DLA 24.08 RAL 179.91 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.224 DPA 5.02 RAP 165.47 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 17	2934.65	-28.24	91.67	38.35	87.88	16 8 11	2334.7	-28.24	83.00
90.00	10 48 16	3835.76	-11.44	151.37	33.88	63.92	11 52 12	3235.8	-14.85	144.36
100.00	17 0 36	2607.95	-29.89	67.66	38.38	90.25	17 44 4	2007.9	-29.54	58.88
100.00	11 49 37	3637.69	-9.97	136.05	33.11	61.67	12 50 15	3037.7	-13.68	129.23
110.00	18 48 15	2271.19	-33.72	41.84	38.13	95.95	19 26 6	1671.2	-32.53	32.81
110.00	12 18 28	3547.21	-6.68	127.20	31.12	56.40	13 17 35	2947.2	-11.05	120.84

DIFFERENTIAL CORRECTIONS
TDE 1.0078 TRA 2.7718 TC-17.2683 BAU 2.3224
RDE .2544 RRA .1775 RC3 .0267 FAU .23772
FDE .3424 FRA 4.1757 FC-20.4589 BSP 42993
BDE 1.0395 BRA 2.7775 BC317.2684 FSP 4441

MID-COURSE EXECUTION ACCURACY
SGT12384.7 SGR 578.7 SG3 1330.3
RRT .3597 RRF .3329 RTF .9890
SGB12398.2 R23 -.0251 R13 .9890
SG112386.5 SG2 539.9 THA .96

ORBIT DETERMINATION ACCURACY
ST 2475.9 SR 471.6 SS 943.1
CRT .8651 CRS -.4475 CST -.8334
LSA 2632.3 MSA 558.0 SSA 33.5
EL1 2509.5 EL2 233.3 ALF 9.44

LAUNCH DATE NOV 25 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 804.539 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.034 GAL -2.18 AZL 87.95 HCA 240.24 SMA 187.86 ECC .21723 INC 2.0454 V1 30.175
RP 209.44 LAP -1.78 LOP 302.99 VP 23.682 GAP -10.70 AZP 91.02 TAL 347.75 TAP 227.99 RCA 147.05 APO 228.67 V2 26.174
RC 311.551 GL 21.66 GP -2.69 ZAL 107.07 ZAP 42.18 ETS 176.22 ZAE 66.22 ETE 178.24 ZAC 81.96 ETC 257.64 CLP 42.11

PLANETOCENTRIC CONIC

C3 10.193 VHL 3.193 DLA 23.28 RAL 181.00 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.293 DPA 4.93 RAP 165.86 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 42	2894.96	-28.31	88.77	39.40	89.33	16 23 57	2295.0	-28.10	80.11
90.00	10 40 33	3880.72	-10.08	153.98	34.74	63.40	11 45 14	3280.7	-13.57	147.04
100.00	17 15 8	2574.39	-29.86	65.17	39.38	91.57	17 58 2	1974.4	-29.32	56.40
100.00	11 43 49	3676.52	-8.71	138.24	34.01	61.29	12 45 5	3076.5	-12.48	131.48
110.00	18 59 53	2246.66	-33.53	39.95	39.06	97.05	19 37 20	1646.7	-32.20	30.97
110.00	12 15 33	3577.02	-5.56	128.78	32.08	56.22	13 15 10	2977.0	-9.96	122.45

DIFFERENTIAL CORRECTIONS
TDE .9291 TRA 2.9349 TC-17.2821 BAU 2.3550
RDE .2572 RRA .1773 RC3 .0547 FAU .22749
FDE .2108 FRA 4.1556 FC-19.3215 BSP 43567
BDE .9640 BRA 2.9402 BC317.2822 FSP 4265

MID-COURSE EXECUTION ACCURACY
SGT12547.2 SGR 578.2 SG3 1276.5
RRT .3268 RRF .2993 RTF .9890
SGB12560.6 R23 -.0259 R13 .9890
SG112548.7 SG2 546.4 THA .86

ORBIT DETERMINATION ACCURACY
ST 2418.4 SR 473.2 SS 924.6
CRT .8285 CRS -.3624 CST -.8200
LSA 2567.4 MSA 578.6 SSA 33.2
EL1 2450.4 EL2 261.5 ALF 9.31

LAUNCH DATE NOV 25 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 808.832 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.040 GAL -2.31 AZL 87.97 HCA 241.48 SMA 187.96 ECC .21804 INC 2.0333 V1 30.175
RP 209.24 LAP -1.79 LOP 304.22 VP 23.717 GAP -10.81 AZP 90.97 TAL 347.05 TAP 228.53 RCA 146.98 APO 228.94 V2 26.198
RC 312.486 GL 21.36 GP -2.62 ZAL 108.36 ZAP 41.35 ETS 176.20 ZAE 65.10 ETE 178.24 ZAC 82.11 ETC 257.60 CLP 41.29

PLANETOCENTRIC CONIC

C3 10.341 VHL 3.216 DLA 22.48 RAL 182.10 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.364 DPA 4.84 RAP 166.27 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 24	2857.70	-28.31	86.04	40.45	90.70	16 39 1	2257.7	-27.91	77.40
90.00	10 33 37	3923.77	-8.76	156.45	35.65	62.96	11 39 1	3323.8	-12.32	149.58
100.00	17 29 13	2542.30	-29.77	62.79	40.40	92.82	18 11 35	1942.3	-29.06	54.05
100.00	11 38 29	3714.40	-7.47	140.37	34.96	60.97	12 40 24	3114.4	-11.28	133.66
110.00	19 11 23	2222.67	-33.32	38.11	40.00	98.12	19 48 25	1622.7	-31.84	29.20
110.00	12 12 49	3606.80	-4.43	130.34	33.09	56.07	13 12 56	3006.8	-8.85	124.05

DIFFERENTIAL CORRECTIONS
TDE .8476 TRA 3.1047 TC-17.2667 BAU 2.3871
RDE .2605 RRA .1771 RC3 .0809 FAU .21753
FDE .0896 FRA 4.1332 FC-18.2118 BSP 44147
BDE .8867 BRA 3.1097 BC317.2669 FSP 4098

MID-COURSE EXECUTION ACCURACY
SGT12705.9 SGR 578.5 SG3 1224.1
RRT .2948 RRF .2667 RTF .9889
SGB12719.1 R23 -.0266 R13 .9889
SG112707.0 SG2 552.7 THA .77

ORBIT DETERMINATION ACCURACY
ST 2370.1 SR 475.2 SS 913.2
CRT .7851 CRS -.2767 CST -.8105
LSA 2513.6 MSA 598.2 SSA 32.8
EL1 2399.7 EL2 290.7 ALF 9.08

LAUNCH DATE NOV 25 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 813.128 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.045 GAL -2.44 AZL 87.98 HCA 242.72 SMA 188.06 ECC .21888 INC 2.0213 V1 30.175
RP 209.04 LAP -1.80 LOP 305.46 VP 23.750 GAP -10.92 AZP 90.93 TAL 346.34 TAP 229.05 RCA 146.90 APO 229.23 V2 26.221
RC 313.411 GL 21.06 GP -2.55 ZAL 109.66 ZAP 40.55 ETS 176.19 ZAE 64.00 ETE 178.23 ZAC 82.27 ETC 257.55 CLP 40.49

PLANETOCENTRIC CONIC

C3 10.504 VHL 3.241 DLA 21.66 RAL 183.20 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.436 DPA 4.72 RAP 166.70 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 29	2822.44	-28.25	83.46	41.51	91.99	16 53 32	2222.4	-27.68	74.84
90.00	10 27 19	3965.36	-7.46	158.82	36.62	62.61	11 33 25	3365.4	-11.08	152.00
100.00	17 42 55	2511.49	-29.65	60.50	41.43	94.01	18 24 47	1911.5	-28.78	51.81
100.00	11 33 35	3751.54	-6.23	142.44	35.95	60.71	12 36 6	3151.5	-10.09	135.77
110.00	19 22 44	2199.21	-33.08	36.32	40.96	99.15	19 59 24	1599.2	-31.46	27.47
110.00	12 10 15	3636.59	-3.29	131.90	34.13	55.96	13 10 51	3036.6	-7.74	125.64

DIFFERENTIAL CORRECTIONS
TDE .7614 TRA 3.2796 TC-17.2279 BAU 2.4193
RDE .2641 RRA .1766 RC3 .1052 FAU .20794
FDE -.0248 FRA 4.1051 FC-17.1385 BSP 44697
BDE .8059 BRA 3.2844 BC317.2282 FSP 3937

MID-COURSE EXECUTION ACCURACY
SGT12862.1 SGR 579.2 SG3 1173.2
RRT .2634 RRF .2345 RTF .9889
SGB12875.2 R23 -.0274 R13 .9889
SG112863.0 SG2 558.7 THA .68

ORBIT DETERMINATION ACCURACY
ST 2329.5 SR 477.7 SS 907.1
CRT .7337 CRS -.1901 CST -.8048
LSA 2469.0 MSA 616.8 SSA 32.3
EL1 2356.2 EL2 320.9 ALF 8.72

LAUNCH DATE NOV 25 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 817.424 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.051	GAL	-2.58	AZL	87.99	HCA	243.96	SMA	188.17	ECC	.21976	INC	2.0096	V1	30.175
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.783	GAP	-11.04	AZP	90.88	TAL	345.60	TAP	229.56	RCA	146.82	APO	229.52	V2	26.243
RC	314.329	GL	20.75	GP	-2.48	ZAL	110.97	ZAP	39.77	ETS	176.17	ZAE	62.93	ETE	178.23	ZAC	82.42	ETC	257.49	CLP	39.71

PLANETOCENTRIC CONIC

C3	10.683	VHL	3.269	DLA	20.84	RAL	184.31	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	4.510	DPA	4.60	RAP	167.16	ECC	1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 5	2788.86	-28.15	81.01	42.58	93.22	17 7 34	2188.9	-27.41	72.42
90.00	10 21 33	4005.81	-6.19	161.11	37.63	62.31	11 28 19	3405.8	-9.85	154.34
100.00	17 56 19	2481.82	-29.49	58.31	42.47	95.15	18 37 40	1881.8	-28.46	49.66
100.00	11 29 1	3788.08	-5.01	144.46	36.98	60.49	12 32 9	3188.1	-8.91	137.84
110.00	19 33 59	2176.26	-32.82	34.58	41.94	100.15	20 10 15	1576.3	-31.07	25.80
110.00	12 7 50	3666.40	-2.16	133.46	35.21	55.88	13 8 57	3066.4	-6.62	127.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6733	TRA	3.4625	TC-17.1556	BAU	2.4504	SGT13013.1	SGR	580.5	SG3	1123.8	ST	2302.6	SR	480.4	SS	906.9
RDE	.2682	RRA	.1760	RC3 .1279	FAU	.19856	RRT .2331	RRF	.2035	RTF	.9887	CRT	.6753	CRS	-.1049	CST	-.8027
FDE	-.1325	FRA	4.0774	FC-16.0904	BSP	45277	SGB13026.0	R23	-.0283	R13	.9887	LSA	2439.6	MSA	634.8	SSA	31.8
BDE	.7248	BRA	3.4670	BC317.1561	FSP	3782	SG113013.8	SG2	564.5	THA	.60	EL1	2325.9	EL2	350.8	ALF	8.21

LAUNCH DATE NOV 25 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 821.722 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.057	GAL	-2.72	AZL	88.00	HCA	245.20	SMA	188.27	ECC	.22068	INC	1.9981	V1	30.175
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.814	GAP	-11.15	AZP	90.84	TAL	344.86	TAP	230.06	RCA	146.72	APO	229.82	V2	26.264
RC	315.238	GL	20.43	GP	-2.42	ZAL	112.30	ZAP	39.01	ETS	176.15	ZAE	61.87	ETE	178.22	ZAC	82.58	ETC	257.44	CLP	38.95

PLANETOCENTRIC CONIC

C3	10.880	VHL	3.298	DLA	20.00	RAL	185.41	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	4.584	DPA	4.46	RAP	167.63	ECC	1.1791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 16	2756.75	-28.00	78.67	43.66	94.38	17 21 13	2156.7	-27.10	70.12
90.00	10 16 13	4045.36	-4.93	163.34	38.68	62.08	11 23 38	3445.4	-8.63	156.61
100.00	18 9 24	2453.18	-29.29	56.21	43.52	96.25	18 50 17	1853.2	-28.12	47.60
100.00	11 24 46	3824.16	-3.80	146.45	38.06	60.33	12 28 30	3224.2	-7.72	139.86
110.00	19 45 5	2153.84	-32.54	32.89	42.95	101.11	20 20 59	1553.8	-30.66	24.18
110.00	12 5 34	3696.27	-1.01	135.02	36.32	55.83	13 7 10	3096.3	-5.49	128.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5814	TRA	3.6511	TC-17.0558	BAU	2.4810	SGT13159.4	SGR	582.2	SG3	1075.4	ST	2287.7	SR	483.5	SS	910.5
RDE	.2727	RRA	.1753	RC3 .1490	FAU	.18939	RRT .2036	RRF	.1734	RTF	.9886	CRT	.6095	CRS	-.0244	CST	-.8059
FDE	-.2310	FRA	4.0461	FC-15.0697	BSP	45837	SGB13172.3	R23	-.0288	R13	.9886	LSA	2423.5	MSA	649.4	SSA	31.3
BDE	.6422	BRA	3.6553	BC317.0564	FSP	3631	SG113159.9	SG2	570.0	THA	.52	EL1	2307.1	EL2	380.1	ALF	7.55

LAUNCH DATE NOV 25 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 826.020 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.063	GAL	-2.87	AZL	88.01	HCA	246.45	SMA	188.38	ECC	.22164	INC	1.9869	V1	30.175
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.845	GAP	-11.27	AZP	90.79	TAL	344.10	TAP	230.55	RCA	146.63	APO	230.13	V2	26.285
RC	316.140	GL	20.10	GP	-2.36	ZAL	113.64	ZAP	38.28	ETS	176.14	ZAE	60.84	ETE	178.22	ZAC	82.75	ETC	257.38	CLP	38.22

PLANETOCENTRIC CONIC

C3	11.095	VHL	3.331	DLA	19.15	RAL	186.52	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	4.660	DPA	4.31	RAP	168.12	ECC	1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 4	2725.93	-27.82	76.44	44.75	95.49	17 34 30	2125.9	-26.77	67.93
90.00	10 11 16	4084.20	-3.69	165.51	39.78	61.90	11 19 20	3484.2	-7.42	158.82
100.00	18 22 14	2425.50	-29.07	54.18	44.60	97.29	19 2 40	1825.5	-27.76	45.62
100.00	11 20 47	3859.86	-2.59	148.42	39.17	60.21	12 25 7	3259.9	-6.54	141.85
110.00	19 56 4	2131.93	-32.24	31.26	43.97	102.04	20 31 36	1531.9	-30.24	22.61
110.00	12 3 26	3726.20	.13	136.58	37.47	55.82	13 5 32	3126.2	-4.36	130.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4862	TRA	3.8459	TC-16.9309	BAU	2.5114	SGT13302.6	SGR	584.3	SG3	1028.8	ST	2286.5	SR	486.9	SS	917.3
RDE	.2776	RRA	.1744	RC3 .1682	FAU	.18058	RRT .1749	RRF	.1440	RTF	.9884	CRT	.5375	CRS	.0524	CST	-.8126
FDE	-.3237	FRA	4.0111	FC-14.0907	BSP	46374	SGB13315.4	R23	-.0297	R13	.9884	LSA	2422.4	MSA	661.7	SSA	30.7
BDE	.5599	BRA	3.8499	BC316.9318	FSP	3484	SG113303.0	SG2	575.3	THA	.44	EL1	2301.9	EL2	407.9	ALF	6.74

LAUNCH DATE NOV 25 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 830.319 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.069	GAL	-3.01	AZL	88.02	HCA	247.70	SMA	188.49	ECC	.22265	INC	1.9758	V1	30.175
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.875	GAP	-11.38	AZP	90.75	TAL	343.32	TAP	231.02	RCA	146.52	APO	230.45	V2	26.304
RC	317.035	GL	19.77	GP	-2.30	ZAL	114.99	ZAP	37.56	ETS	176.12	ZAE	59.82	ETE	178.22	ZAC	82.91	ETC	257.33	CLP	37.50

PLANETOCENTRIC CONIC

C3	11.329	VHL	3.366	DLA	18.30	RAL	187.63	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	4.737	DPA	4.15	RAP	168.63	ECC	1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 32	2696.30	-27.61	74.29	45.87	96.54	17 47 29	2096.3	-26.42	65.83
90.00	10 6 38	4122.45	-2.46	167.65	40.92	61.78	11 15 21	3522.5	-6.22	160.99
100.00	18 34 49	2398.72	-28.82	52.23	45.69	98.29	19 14 48	1798.7	-27.38	43.72
100.00	11 17 2	3895.26	-1.40	150.36	40.33	60.14	12 21 58	3295.3	-5.36	143.82
110.00	20 6 56	2110.53	-31.92	29.67	45.01	102.93	20 42 6	1510.5	-29.81	21.09
110.00	12 1 25	3756.21	1.28	138.15	38.66	55.84	13 4 1	3156.2	-3.21	131.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3873	TRA	4.0469	TC-16.7818	BAU	2.5418	SGT13442.6	SGR	586.7	SG3	983.3	ST	2299.5	SR	490.6	SS	926.6
RDE	.2829	RRA	.1733	RC3 .1858	FAU	.17199	RRT .1470	RRF	.1154	RTF	.9882	CRT	.4602	CRS	.1244	CST	-.8224
FDE	-.4103	FRA	3.9728	FC-13.1437	BSP	46907	SGB13455.4	R23	-.0305	R13	.9882	LSA	2436.5	MSA	670.7	SSA	30.0
BDE	.4796	BRA	4.0506	BC316.7829	FSP	3339	SG113442.9	SG2	580.3	THA	.37	EL1	2311.0	EL2	433.4	ALF	5.81

LAUNCH DATE NOV 25 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 834.617 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.076	GAL	-3.17	AZL	88.04	HCA	248.95	SMA	188.60	ECC	.22371	INC	1.9649	V1	30.175
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.905	GAP	-11.49	AZP	90.71	TAL	342.53	TAP	231.48	RCA	146.41	APO	230.79	V2	26.323
RC	317.924	GL	19.43	GP	-2.25	ZAL	116.34	ZAP	36.86	ETS	176.10	ZAE	58.83	ETE	178.21	ZAC	83.08	ETC	257.27	CLP	36.80

PLANETOCENTRIC CONIC

C3	11.583	VHL	3.403	DLA	17.44	RAL	188.74	RAD	6567.4	VEL	11.531	PTH	2.01	VHP	4.816	DPA	3.98	RAP	169.16	ECC	1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 43	2667.76	-27.37	72.24	46.99	97.55	18 0 10	2067.8	-26.05	63.82
90.00	10 2 18	4160.23	-1.25	169.76	42.10	61.71	11 11 38	3560.2	-5.02	163.11
100.00	18 47 11	2372.79	-28.55	50.35	46.80	99.25	19 26 43	1772.8	-26.98	41.90
100.00	11 13 31	3930.42	-.20	152.29	41.52	60.11	12 19 2	3330.4	-4.18	145.76
110.00	20 17 40	2089.67	-31.59	28.13	46.08	103.79	20 52 30	1489.7	-29.38	19.62
110.00	11 59 31	3786.31	2.43	139.72	39.88	55.89	13 2 37	3186.3	-2.06	133.51

DIFFERENTIAL CORRECTIONS

TDE	.2859	TRA	4.2560	TC-16.6051	BAU	2.5716	
RDE	.2888	RRA	.1720	RC3 .2018	FAU	.16364	
FDE	-.4881	FRA	3.9329	FC-12.2302	BSP	47439	
BDE	.4064	BRA	4.2595	BC316.6063	FSP	3203	

MID-COURSE EXECUTION ACCURACY

SGT13579.0	SGR	589.3	SG3	939.1			
RRT	.1202	RRF	.0880	RTF	.9880		
SGB13591.8	R23	-.0311	R13	.9880			
SG113579.2	SG2	585.1	THA	.30			

ORBIT DETERMINATION ACCURACY

ST	2328.8	SR	494.6	SS	937.1		
CRT	.3801	CRS	.1893	CST	-.8351		
LSA	2467.6	MSA	675.4	SSA	29.4		
EL1	2336.7	EL2	455.9	ALF	4.80		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 838.915 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.082	GAL	-3.32	AZL	88.05	HCA	250.20	SMA	188.71	ECC	.22481	INC	1.9542	V1	30.175
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.933	GAP	-11.61	AZP	90.66	TAL	341.73	TAP	231.93	RCA	146.28	APO	231.13	V2	26.341
RC	318.808	GL	19.09	GP	-2.19	ZAL	117.70	ZAP	36.18	ETS	176.08	ZAE	57.85	ETE	178.21	ZAC	83.25	ETC	257.21	CLP	36.12

PLANETOCENTRIC CONIC

C3	11.859	VHL	3.444	DLA	16.58	RAL	189.85	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	4.896	DPA	3.79	RAP	169.71	ECC	1.1952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 36	2640.23	-27.11	70.27	48.14	98.50	18 12 37	2040.2	-25.66	61.90
90.00	9 58 14	4197.60	-.04	171.85	43.32	61.68	11 8 11	3597.6	-3.82	165.21
100.00	18 59 19	2347.69	-28.27	48.54	47.92	100.16	19 38 27	1747.7	-26.57	40.14
100.00	11 10 12	3965.38	.98	154.21	42.75	60.12	12 16 17	3365.4	-3.00	147.68
110.00	20 28 17	2069.34	-31.25	26.64	47.17	104.61	21 2 46	1469.3	-28.93	18.21
110.00	11 57 43	3816.50	3.58	141.30	41.13	55.98	13 1 20	3216.5	-.91	135.09

DIFFERENTIAL CORRECTIONS

TDE	.1826	TRA	4.4716	TC-16.4030	BAU	2.6009	
RDE	.2950	RRA	.1705	RC3 .2162	FAU	.15552	
FDE	-.5607	FRA	3.8892	FC-11.3533	BSP	47976	
BDE	.3469	BRA	4.4749	BC316.4044	FSP	3071	

MID-COURSE EXECUTION ACCURACY

SGT13710.7	SGR	592.2	SG3	896.2			
RRT	.0943	RRF	.0614	RTF	.9877		
SGB13723.5	R23	-.0321	R13	.9877			
SG113710.8	SG2	589.5	THA	.23			

ORBIT DETERMINATION ACCURACY

ST	2372.9	SR	498.8	SS	948.4		
CRT	.2995	CRS	.2494	CST	-.8482		
LSA	2513.8	MSA	677.5	SSA	28.7		
EL1	2377.8	EL2	474.9	ALF	3.75		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 843.211 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.088	GAL	-3.49	AZL	88.06	HCA	251.45	SMA	188.82	ECC	.22596	INC	1.9436	V1	30.175
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.960	GAP	-11.73	AZP	90.62	TAL	340.91	TAP	232.36	RCA	146.15	APO	231.49	V2	26.357
RC	319.685	GL	18.74	GP	-2.14	ZAL	119.07	ZAP	35.52	ETS	176.06	ZAE	56.88	ETE	178.21	ZAC	83.42	ETC	257.15	CLP	35.46

PLANETOCENTRIC CONIC

C3	12.158	VHL	3.487	DLA	15.72	RAL	190.95	RAD	6567.5	VEL	11.556	PTH	2.02	VHP	4.977	DPA	3.60	RAP	170.27	ECC	1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 15	2613.68	-26.83	68.38	49.30	99.41	18 24 48	2013.7	-25.26	60.06
90.00	9 54 23	4234.65	1.16	173.91	44.58	61.70	11 4 58	3634.6	-2.63	167.28
100.00	19 11 16	2323.39	-27.96	46.79	49.07	101.03	19 49 59	1723.4	-26.16	38.46
100.00	11 7 3	4000.17	2.16	156.12	44.02	60.18	12 13 43	3400.2	-1.82	149.60
110.00	20 38 47	2049.55	-30.91	25.20	48.28	105.39	21 12 56	1449.6	-28.48	16.84
110.00	11 56 1	3846.77	4.73	142.88	42.42	56.11	13 0 8	3246.8	.25	136.67

DIFFERENTIAL CORRECTIONS

TDE	.0748	TRA	4.6939	TC-16.1820	BAU	2.6305	
RDE	.3017	RRA	.1688	RC3 .2290	FAU	.14769	
FDE	-.6265	FRA	3.8422	FC-10.5162	BSP	48491	
BDE	.3108	BRA	4.6969	BC316.1837	FSP	2941	

MID-COURSE EXECUTION ACCURACY

SGT13840.7	SGR	595.2	SG3	854.7			
RRT	.0690	RRF	.0355	RTF	.9873		
SGB13853.4	R23	-.0328	R13	.9873			
SG113840.7	SG2	593.8	THA	.17			

ORBIT DETERMINATION ACCURACY

ST	2430.6	SR	503.2	SS	959.5		
CRT	.2184	CRS	.3039	CST	-.8624		
LSA	2573.8	MSA	675.7	SSA	28.1		
EL1	2433.2	EL2	490.5	ALF	2.70		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 847.506 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.095	GAL	-3.65	AZL	88.07	HCA	252.71	SMA	188.93	ECC	.22717	INC	1.9331	V1	30.175
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.986	GAP	-11.84	AZP	90.57	TAL	340.07	TAP	232.78	RCA	146.01	APO	231.86	V2	26.373
RC	320.558	GL	18.38	GP	-2.09	ZAL	120.43	ZAP	34.88	ETS	176.04	ZAE	55.94	ETE	178.21	ZAC	83.60	ETC	257.09	CLP	34.82

PLANETOCENTRIC CONIC

C3	12.481	VHL	3.533	DLA	14.85	RAL	192.05	RAD	6567.5	VEL	11.570	PTH	2.02	VHP	5.059	DPA	3.39	RAP	170.85	ECC	1.2054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 38	2588.05	-26.53	66.56	50.49	100.27	18 36 46	1988.1	-24.84	58.30
90.00	9 50 45	4271.41	2.34	175.96	45.87	61.77	11 1 57	3671.4	-1.45	169.34
100.00	19 23 0	2299.87	-27.64	45.12	50.24	101.85	20 1 20	1699.9	-25.73	36.84
100.00	11 4 5	4034.82	3.33	158.02	45.32	60.28	12 11 19	3434.8	-.65	151.50
110.00	20 49 9	2030.33	-30.55	23.82	49.41	106.14	21 22 59	1430.3	-28.04	15.53
110.00	11 54 25	3877.13	5.88	144.48	43.74	56.27	12 59 2	3277.1	1.41	138.25

DIFFERENTIAL CORRECTIONS

TDE	-.0353	TRA	4.9228	TC-15.9399	BAU	2.6601	
RDE	.3088	RRA	.1669	RC3 .2402	FAU	.14011	
FDE	-.6871	FRA	3.7923	FC3-9.7184	BSP	48983	
BDE	.3108	BRA	4.9256	BC315.9418	FSP	2814	

MID-COURSE EXECUTION ACCURACY

SGT13966.9	SGR	598.3	SG3	814.5			
RRT	.0445	RRF	.0103	RTF	.9870		
SGB13979.7	R23	-.0338	R13	.9870			
SG113966.9	SG2	597.7	THA	.11			

ORBIT DETERMINATION ACCURACY

ST	2501.4	SR	507.8	SS	970.3		
CRT	.1399	CRS	.3537	CST	-.8758		
LSA	2646.6	MSA	671.8	SSA	27.4		
EL1	2502.5	EL2	502.6	ALF	1.70		

LAUNCH DATE NOV 25 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 851.798 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.101	GAL	-3.82	AZL	88.08	HCA	253.97	SMA	189.05	ECC	.22843	INC	1.9229	V1	30.175
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.012	GAP	-11.96	AZP	90.53	TAL	339.23	TAP	233.19	RCA	145.87	APO	232.23	V2	26.388
RC	321.425	GL	18.02	GP	-2.05	ZAL	121.80	ZAP	34.25	ETS	176.02	ZAE	55.01	ETE	178.21	ZAC	83.77	ETC	257.02	CLP	34.20

PLANETOCENTRIC CONIC

C3	12.830	VHL	3.582	DLA	13.98	RAL	193.14	RAD	6567.5	VEL	11.585	PTH	2.03	VHP	5.143	DPA	3.18	RAP	171.45	ECC	1.2111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 48	2563.33	-26.22	64.82	51.69	101.09	18 48 32	1963.3	-24.43	56.61
90.00	9 47 19	4307.92	3.52	178.01	47.20	61.88	10 59 6	3707.9	-.27	171.37
100.00	19 34 33	2277.13	-27.32	43.51	51.43	102.64	20 12 30	1677.1	-25.30	35.29
100.00	11 1 15	4069.35	4.50	159.93	46.66	60.42	12 9 4	3469.4	.52	153.39
110.00	20 59 23	2011.68	-30.19	22.49	50.57	106.85	21 32 55	1411.7	-27.59	14.26
110.00	11 52 54	3907.57	7.03	146.09	45.10	56.46	12 58 2	3307.6	2.57	139.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1463	TRA	5.1606	TC-15.6731	BAU	2.6887	SGT14088.5	SGR	601.6	SG3	775.4	ST	2584.8	SR	512.6	SS	979.6
RDE	.3164	RRA	.1647	RC3 .2501	FAU	.13269	RRT .0212	RRF	-.0139	RTF	.9865	CRT	.0661	CRS	.3980	CST	-.8883
FDE	-.7403	FRA	3.7399	FC3-8.9538	BSP	49504	SGB14101.3	R23	-.0348	R13	.9865	LSA	2731.2	MSA	665.8	SSA	26.8
BDE	.3486	BRA	5.1632	BC315.6751	FSP	2694	SG114088.5	SG2	601.5	THA	.05	EL1	2585.0	EL2	511.5	ALF	.78

LAUNCH DATE NOV 25 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 856.088 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.108	GAL	-3.99	AZL	88.09	HCA	255.22	SMA	189.17	ECC	.22974	INC	1.9127	V1	30.175
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.036	GAP	-12.08	AZP	90.49	TAL	338.36	TAP	233.59	RCA	145.71	APO	232.63	V2	26.402
RC	322.286	GL	17.66	GP	-2.00	ZAL	123.17	ZAP	33.64	ETS	176.00	ZAE	54.10	ETE	178.21	ZAC	83.95	ETC	256.96	CLP	33.59

PLANETOCENTRIC CONIC

C3	13.206	VHL	3.634	DLA	13.11	RAL	194.23	RAD	6567.5	VEL	11.601	PTH	2.03	VHP	5.229	DPA	2.95	RAP	172.06	ECC	1.2173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 45	2539.48	-25.90	63.14	52.91	101.87	19 0 5	1939.5	-24.00	54.99
90.00	9 44 2	4344.22	4.68	180.04	48.57	62.04	10 56 27	3744.2	.90	173.40
100.00	19 45 55	2255.16	-26.98	41.96	52.64	103.39	20 23 30	1655.2	-24.87	33.80
100.00	10 58 34	4103.78	5.65	161.83	48.04	60.60	12 6 58	3503.8	1.69	155.28
110.00	21 9 30	1993.62	-29.83	21.21	51.75	107.53	21 42 43	1393.6	-27.14	13.05
110.00	11 51 28	3938.09	8.17	147.71	46.49	56.69	12 57 6	3338.1	3.73	141.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2616	TRA	5.4048	TC-15.3918	BAU	2.7178	SGT14208.1	SGR	604.9	SG3	737.6	ST	2678.2	SR	517.6	SS	988.0
RDE	.3244	RRA	.1622	RC3 .2585	FAU	.12552	RRT -.0017	RRF	-.0376	RTF	.9860	CRT	-.0044	CRS	.4390	CST	-.8997
FDE	-.7896	FRA	3.6838	FC3-8.2290	BSP	50000	SGB14221.0	R23	.0359	R13	-.9860	LSA	2825.4	MSA	658.4	SSA	26.1
BDE	.4168	BRA	5.4073	BC315.3940	FSP	2575	SG114208.1	SG2	604.9	THA	180.00	EL1	2678.2	EL2	517.5	ALF	179.95

LAUNCH DATE NOV 25 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 860.374 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.114	GAL	-4.17	AZL	88.10	HCA	256.48	SMA	189.28	ECC	.23111	INC	1.9026	V1	30.175
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.060	GAP	-12.21	AZP	90.44	TAL	337.49	TAP	233.97	RCA	145.54	APO	233.03	V2	26.416
RC	323.141	GL	17.29	GP	-1.96	ZAL	124.53	ZAP	33.04	ETS	175.98	ZAE	53.20	ETE	178.21	ZAC	84.13	ETC	256.90	CLP	32.99

PLANETOCENTRIC CONIC

C3	13.611	VHL	3.689	DLA	12.24	RAL	195.31	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	5.315	DPA	2.72	RAP	172.69	ECC	1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 29	2516.49	-25.57	61.54	54.16	102.61	19 11 26	1916.5	-23.57	53.44
90.00	9 40 56	4380.33	5.83	182.07	49.98	62.24	10 53 56	3780.3	2.07	175.41
100.00	19 57 6	2233.95	-26.64	40.48	53.88	104.10	20 34 20	1634.0	-24.43	32.37
100.00	10 56 1	4138.11	6.79	163.74	49.45	60.82	12 4 59	3538.1	2.85	157.17
110.00	21 19 29	1976.15	-29.46	19.98	52.95	108.18	21 52 25	1376.2	-26.70	11.88
110.00	11 50 7	3968.67	9.31	149.35	47.91	56.96	12 56 15	3368.7	4.90	143.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3799	TRA	5.6563	TC-15.0966	BAU	2.7474	SGT14325.7	SGR	608.2	SG3	701.0	ST	2780.6	SR	522.6	SS	994.4
RDE	.3329	RRA	.1595	RC3 .2655	FAU	.11862	RRT -.0240	RRF	-.0609	RTF	.9854	CRT	-.0702	CRS	.4762	CST	-.9099
FDE	-.8335	FRA	3.6237	FC3-7.5451	BSP	50483	SGB14338.6	R23	.0372	R13	-.9854	LSA	2927.6	MSA	649.8	SSA	25.5
BDE	.5051	BRA	5.6585	BC315.0989	FSP	2458	SG114325.7	SG2	608.0	THA	179.94	EL1	2780.9	EL2	521.3	ALF	179.22

LAUNCH DATE NOV 25 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 864.657 EARTH TO MARS

RL	147.65	LAL	-.00	LOL	62.76	VL	33.121	GAL	-4.35	AZL	88.11	HCA	257.75	SMA	189.40	ECC	.23255	INC	1.8926	V1	30.175
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.082	GAP	-12.33	AZP	90.40	TAL	336.59	TAP	234.34	RCA	145.36	APO	233.45	V2	26.428
RC	323.990	GL	16.92	GP	-1.92	ZAL	125.89	ZAP	32.47	ETS	175.96	ZAE	52.32	ETE	178.21	ZAC	84.31	ETC	256.84	CLP	32.41

PLANETOCENTRIC CONIC

C3	14.046	VHL	3.748	DLA	11.38	RAL	196.38	RAD	6567.6	VEL	11.637	PTH	2.04	VHP	5.404	DPA	2.47	RAP	173.33	ECC	1.2312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 1	2494.35	-25.23	60.01	55.42	103.31	19 22 35	1894.3	-23.15	51.96
90.00	9 37 58	4416.27	6.96	184.10	51.41	62.48	10 51 34	3816.3	3.22	177.42
100.00	20 8 6	2213.50	-26.29	39.06	55.13	104.77	20 44 59	1613.5	-24.00	31.00
100.00	10 53 34	4172.35	7.93	165.65	50.89	61.08	12 3 7	3572.4	4.01	159.05
110.00	21 29 20	1959.30	-29.10	18.80	54.17	108.79	22 1 59	1359.3	-26.26	10.77
110.00	11 48 50	3999.32	10.44	151.00	49.37	57.27	12 55 29	3399.3	6.06	144.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4989	TRA	5.9164	TC-14.7837	BAU	2.7765	SGT14439.5	SGR	611.6	SG3	665.5	ST	2890.2	SR	527.8	SS	998.3
RDE	.3419	RRA	.1564	RC3 .2713	FAU	.11187	RRT -.0454	RRF	-.0832	RTF	.9848	CRT	-.1298	CRS	.5093	CST	-.9188
FDE	-.8707	FRA	3.5612	FC3-6.8950	BSP	50966	SGB14452.5	R23	.0384	R13	-.9848	LSA	3036.0	MSA	640.7	SSA	24.9
BDE	.6048	BRA	5.9185	BC314.7862	FSP	2348	SG114439.6	SG2	610.9	THA	179.89	EL1	2891.1	EL2	523.2	ALF	178.60

LAUNCH DATE NOV 25 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 868.934 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.128 GAL -4.54 AZL 88.12 HCA 259.01 SMA 189.52 ECC .23404 INC 1.8827 V1 30.175
RP 207.16 LAP -1.85 LOP 321.77 VP 24.104 GAP -12.46 AZP 90.36 TAL 335.69 TAP 234.69 RCA 145.17 APO 233.88 V2 26.439
RC 324.833 GL 16.55 GP -1.88 ZAL 127.24 ZAP 31.90 ETS 175.93 ZAE 51.45 ETE 178.21 ZAC 84.50 ETC 256.78 CLP 31.85

PLANETOCENTRIC CONIC

C3 14.513 VHL 3.810 DLA 10.52 RAL 197.45 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 5.494 DPA 2.22 RAP 173.98 ECC 1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 21	2473.04	-24.89	58.54	56.71	103.97	19 33 34	1873.0	-22.72	50.54
90.00	9 35 9	4452.05	8.08	186.14	52.89	62.77	10 49 21	3852.1	4.37	179.42
100.00	20 18 56	2193.81	-25.94	37.70	56.40	105.40	20 55 30	1593.8	-23.57	29.70
100.00	10 51 15	4206.52	9.04	167.57	52.37	61.39	12 1 22	3606.5	5.16	160.94
110.00	21 39 3	1943.07	-28.74	17.67	55.42	109.36	22 11 27	1343.1	-25.83	9.70
110.00	11 47 37	4030.02	11.57	152.66	50.86	57.61	12 54 47	3430.0	7.21	146.28

DIFFERENTIAL CORRECTIONS
TDE -.6222 TRA 6.1826 TC-14.4623 BAU 2.8066
RDE .3513 RRA .1531 RC3 .2758 FAU .10539
FDE -.9046 FRA 3.4950 FC3-6.2868 BSP 51410
BDE .7145 BRA 6.1845 BC314.4650 FSP 2237

MID-COURSE EXECUTION ACCURACY
SGT14551.3 SGR 614.9 SG3 631.2
RRT -.0665 RRF -.1053 RTE .9841
SGB14564.3 R23 .0399 R13 -.9841
SG114551.4 SG2 613.6 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 3005.8 SR 533.0 SS 1000.6
CRT -.1855 CRS .5402 CST -.9266
LSA 3149.8 MSA 631.2 SSA 24.3
EL1 3007.5 EL2 523.4 ALF 178.06

LAUNCH DATE NOV 25 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 873.206 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.134 GAL -4.73 AZL 88.13 HCA 260.27 SMA 189.65 ECC .23561 INC 1.8728 V1 30.175
RP 207.08 LAP -1.85 LOP 323.03 VP 24.125 GAP -12.58 AZP 90.32 TAL 334.76 TAP 235.04 RCA 144.96 APO 234.33 V2 26.449
RC 325.671 GL 16.17 GP -1.84 ZAL 128.59 ZAP 31.35 ETS 175.91 ZAE 50.59 ETE 178.21 ZAC 84.69 ETC 256.72 CLP 31.30

PLANETOCENTRIC CONIC

C3 15.015 VHL 3.875 DLA 9.66 RAL 198.51 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 5.585 DPA 1.96 RAP 174.65 ECC 1.2471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 30	2452.56	-24.54	57.14	58.01	104.59	19 44 22	1852.6	-22.30	49.19
90.00	9 32 27	4487.68	9.19	188.17	54.40	63.10	10 47 14	3887.7	5.50	181.43
100.00	20 29 35	2174.87	-25.59	36.40	57.70	106.00	21 5 50	1574.9	-23.15	28.45
100.00	10 49 2	4240.59	10.15	169.49	53.88	61.73	11 59 43	3640.6	6.29	162.83
110.00	21 48 39	1927.48	-28.38	16.60	56.68	109.91	22 20 46	1327.5	-25.40	8.69
110.00	11 46 28	4060.76	12.69	154.35	52.38	57.99	12 54 9	3460.8	8.37	147.91

DIFFERENTIAL CORRECTIONS
TDE -.7467 TRA 6.4573 TC-14.1280 BAU 2.8366
RDE .3611 RRA .1495 RC3 .2792 FAU .09909
FDE -.9329 FRA 3.4256 FC3-5.7135 BSP 51860
BDE .8295 BRA 6.4591 BC314.1307 FSP 2129

MID-COURSE EXECUTION ACCURACY
SGT14659.7 SGR 618.2 SG3 598.0
RRT -.0868 RRF -.1268 RTF .9832
SGB14672.7 R23 .0414 R13 -.9832
SG114659.8 SG2 615.9 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 3125.6 SR 538.3 SS 1000.3
CRT -.2355 CRS .5681 CST -.9331
LSA 3266.9 MSA 621.9 SSA 23.7
EL1 3128.3 EL2 522.7 ALF 177.61

LAUNCH DATE NOV 25 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 877.473 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.141 GAL -4.93 AZL 88.14 HCA 261.54 SMA 189.77 ECC .23724 INC 1.8631 V1 30.175
RP 207.00 LAP -1.84 LOP 324.30 VP 24.144 GAP -12.71 AZP 90.27 TAL 333.83 TAP 235.37 RCA 144.75 APO 234.79 V2 26.459
RC 326.503 GL 15.80 GP -1.81 ZAL 129.93 ZAP 30.82 ETS 175.89 ZAE 49.75 ETE 178.21 ZAC 84.88 ETC 256.65 CLP 30.77

PLANETOCENTRIC CONIC

C3 15.553 VHL 3.944 DLA 8.82 RAL 199.56 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 5.678 DPA 1.69 RAP 175.33 ECC 1.2560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 27	2432.89	-24.20	55.80	59.34	105.17	19 55 0	1832.9	-21.88	47.90
90.00	9 29 52	4523.17	10.27	190.21	55.94	63.47	10 45 15	3923.2	6.63	183.43
100.00	20 40 5	2156.70	-25.24	35.16	59.01	106.56	21 16 2	1556.7	-22.73	27.26
100.00	10 46 55	4274.60	11.24	171.43	55.43	62.12	11 58 9	3674.6	7.42	164.72
110.00	21 58 6	1912.53	-28.03	15.58	57.97	110.42	22 29 59	1312.5	-24.99	7.72
110.00	11 45 23	4091.53	13.79	156.05	53.94	58.41	12 53 34	3491.5	9.51	149.56

DIFFERENTIAL CORRECTIONS
TDE -.8746 TRA 6.7398 TC-13.7867 BAU 2.8673
RDE .3715 RRA .1455 RC3 .2815 FAU .09299
FDE -.9572 FRA 3.3527 FC3-5.1759 BSP 52278
BDE .9502 BRA 6.7413 BC313.7896 FSP 2025

MID-COURSE EXECUTION ACCURACY
SGT14766.4 SGR 621.6 SG3 565.9
RRT -.1068 RRF -.1480 RTF .9823
SGB14779.5 R23 .0431 R13 -.9823
SG114766.6 SG2 618.0 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 3249.2 SR 543.5 SS 997.7
CRT -.2815 CRS .5939 CST -.9387
LSA 3387.1 MSA 612.5 SSA 23.2
EL1 3252.9 EL2 521.0 ALF 177.23

LAUNCH DATE NOV 25 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 881.732 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.148 GAL -5.13 AZL 88.15 HCA 262.80 SMA 189.89 ECC .23894 INC 1.8534 V1 30.175
RP 206.93 LAP -1.84 LOP 325.56 VP 24.163 GAP -12.85 AZP 90.23 TAL 332.88 TAP 235.68 RCA 144.52 APO 235.26 V2 26.467
RC 327.330 GL 15.42 GP -1.77 ZAL 131.25 ZAP 30.30 ETS 175.86 ZAE 48.93 ETE 178.21 ZAC 85.07 ETC 256.60 CLP 30.25

PLANETOCENTRIC CONIC

C3 16.129 VHL 4.016 DLA 7.97 RAL 200.60 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 5.773 DPA 1.41 RAP 176.02 ECC 1.2655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 13	2414.04	-23.86	54.53	60.68	105.73	20 5 27	1814.0	-21.47	46.67
90.00	9 27 24	4558.52	11.34	192.26	57.51	63.88	10 43 22	3958.5	7.74	185.43
100.00	20 50 25	2139.28	-24.90	33.98	60.35	107.10	21 26 4	1539.3	-22.32	26.13
100.00	10 44 53	4308.52	12.31	173.38	57.01	62.54	11 56 42	3708.5	8.54	166.62
110.00	22 7 26	1898.24	-27.69	14.61	59.28	110.90	22 39 4	1298.2	-24.59	6.81
110.00	11 44 21	4122.33	14.88	157.77	55.53	58.87	12 53 4	3522.3	10.65	151.22

DIFFERENTIAL CORRECTIONS
TDE-1.0037 TRA 7.0303 TC-13.4374 BAU 2.8982
RDE .3823 RRA .1412 RC3 .2828 FAU .08708
FDE -.9766 FRA 3.2757 FC3-4.6737 BSP 52686
BDE 1.0740 BRA 7.0318 BC313.4403 FSP 1922

MID-COURSE EXECUTION ACCURACY
SGT14869.9 SGR 624.8 SG3 534.7
RRT -.1262 RRF -.1688 RTF .9813
SGB14883.0 R23 .0451 R13 -.9813
SG114870.1 SG2 619.8 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 3374.4 SR 548.8 SS 992.3
CRT -.3228 CRS .6175 CST -.9433
LSA 3508.2 MSA 603.6 SSA 22.6
EL1 3379.1 EL2 518.7 ALF 176.92

LAUNCH DATE NOV 25 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 885.984 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.155 GAL -5.34 AZL 88.16 HCA 264.07 SMA 190.02 ECC .24071 INC 1.8437 V1 30.175
RP 206.86 LAP -1.83 LOP 326.83 VP 24.180 GAP -12.98 AZP 90.19 TAL 331.91 TAP 235.98 RCA 144.28 APO 235.76 V2 26.474
RC 328.152 GL 15.04 GP -1.74 ZAL 132.57 ZAP 29.79 ETS 175.84 ZAE 48.11 ETE 178.21 ZAC 85.27 ETC 256.54 CLP 29.74

PLANETOCENTRIC CONIC

C3 16.747 VHL 4.092 DLA 7.14 RAL 201.63 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 5.870 DPA 1.13 RAP 176.73 ECC 1.2756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 49	2395.99	-23.52	53.31	62.05	106.24	20 15 45	1796.0	-21.07	45.50
90.00	9 25 2	4593.74	12.39	194.32	59.13	64.33	10 41 35	3993.7	8.83	187.44
100.00	21 0 34	2122.61	-24.56	32.86	61.70	107.59	21 35 57	1522.6	-21.92	25.05
100.00	10 42 57	4342.36	13.37	175.34	58.63	63.01	11 55 20	3742.4	9.64	168.53
110.00	22 16 38	1884.60	-27.35	13.69	60.61	111.35	22 48 2	1284.6	-24.20	5.94
110.00	11 43 23	4153.13	15.96	159.50	57.16	59.36	12 52 36	3553.1	11.77	152.90

DIFFERENTIAL CORRECTIONS
TDE-1.1353 TRA 7.3295 TC-13.0827 BAU 2.9297
RDE .3935 RRA .1365 RC3 .2831 FAU .08133
FDE -.9919 FRA 3.1964 FC3-4.2045 BSP 53093
BDE 1.2016 BRA 7.3308 BC313.0857 FSP 1824

MID-COURSE EXECUTION ACCURACY
SGT14971.3 SGR 628.0 SG3 504.6
RRT -.1451 RRF -.1891 RTF .9801
SGB14984.5 R23 .0471 R13 -.9801
SG114971.6 SG2 621.3 THA 179.65

ORBIT DETERMINATION ACCURACY
ST 3500.9 SR 554.1 SS 984.7
CRT -.3602 CRS .6392 CST -.9472
LSA 3630.2 MSA 595.0 SSA 22.1
EL1 3506.7 EL2 516.0 ALF 176.66

LAUNCH DATE NOV 25 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 890.227 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.162 GAL -5.55 AZL 88.17 HCA 265.34 SMA 190.14 ECC .24257 INC 1.8341 V1 30.175
RP 206.81 LAP -1.83 LOP 328.10 VP 24.196 GAP -13.12 AZP 90.15 TAL 330.93 TAP 236.27 RCA 144.02 APO 236.27 V2 26.480
RC 328.970 GL 14.67 GP -1.71 ZAL 133.88 ZAP 29.30 ETS 175.82 ZAE 47.31 ETE 178.21 ZAC 85.46 ETC 256.48 CLP 29.25

PLANETOCENTRIC CONIC

C3 17.407 VHL 4.172 DLA 6.32 RAL 202.65 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 5.968 DPA .83 RAP 177.45 ECC 1.2865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 14	2378.75	-23.18	52.16	63.44	106.73	20 25 52	1778.7	-20.67	44.38
90.00	9 22 46	4628.83	13.41	196.38	60.77	64.83	10 39 54	4028.8	9.91	189.46
100.00	21 10 34	2106.70	-24.23	31.79	63.08	108.06	21 45 41	1506.7	-21.53	24.03
100.00	10 41 6	4376.10	14.40	177.31	60.28	63.52	11 54 2	3776.1	10.73	170.44
110.00	22 25 41	1871.63	-27.03	12.82	61.95	111.77	22 56 53	1271.6	-23.83	5.12
110.00	11 42 29	4183.94	17.02	161.26	58.81	59.90	12 52 12	3583.9	12.89	154.59

DIFFERENTIAL CORRECTIONS
TDE-1.2705 TRA 7.6359 TC-12.7262 BAU 2.9623
RDE .4053 RRA .1315 RC3 .2826 FAU .07578
FDE-1.0035 FRA 3.1125 FC3-3.7691 BSP 53449
BDE 1.3335 BRA 7.6370 BC312.7294 FSP 1725

MID-COURSE EXECUTION ACCURACY
SGT15070.5 SGR 631.2 SG3 475.5
RRT -.1639 RRF -.2094 RTF .9788
SGB15083.7 R23 .0494 R13 -.9788
SG115070.8 SG2 622.6 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3628.1 SR 559.3 SS 974.6
CRT -.3947 CRS .6597 CST -.9505
LSA 3752.5 MSA 586.6 SSA 21.7
EL1 3634.9 EL2 512.9 ALF 176.45

LAUNCH DATE NOV 25 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 894.461 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.169 GAL -5.77 AZL 88.18 HCA 266.60 SMA 190.27 ECC .24450 INC 1.8245 V1 30.175
RP 206.77 LAP -1.82 LOP 329.37 VP 24.212 GAP -13.27 AZP 90.11 TAL 329.94 TAP 236.54 RCA 143.75 APO 236.79 V2 26.486
RC 329.784 GL 14.29 GP -1.68 ZAL 135.17 ZAP 28.82 ETS 175.79 ZAE 46.53 ETE 178.20 ZAC 85.66 ETC 256.42 CLP 28.77

PLANETOCENTRIC CONIC

C3 18.113 VHL 4.256 DLA 5.50 RAL 203.66 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 6.068 DPA .53 RAP 178.18 ECC 1.2981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 28	2362.29	-22.86	51.06	64.84	107.18	20 35 51	1762.3	-20.29	43.33
90.00	9 20 35	4663.78	14.41	198.46	62.45	65.36	10 38 19	4063.8	10.97	191.48
100.00	21 20 25	2091.54	-23.91	30.78	64.47	108.50	21 55 16	1491.5	-21.16	23.06
100.00	10 39 20	4409.76	15.41	179.30	61.96	64.07	11 52 49	3809.8	11.80	172.37
110.00	22 34 37	1859.33	-26.71	12.00	63.32	112.17	23 5 36	1259.3	-23.47	4.34
110.00	11 41 37	4214.74	18.06	163.04	60.51	60.47	12 51 52	3614.7	13.99	156.29

DIFFERENTIAL CORRECTIONS
TDE-1.4059 TRA 7.9519 TC-12.3644 BAU 2.9949
RDE .4175 RRA .1261 RC3 .2813 FAU .07037
FDE-1.0104 FRA 3.0261 FC3-3.3635 BSP 53802
BDE 1.4666 BRA 7.9529 BC312.3675 FSP 1630

MID-COURSE EXECUTION ACCURACY
SGT15166.1 SGR 634.2 SG3 447.3
RRT -.1819 RRF -.2291 RTF .9772
SGB15179.4 R23 .0519 R13 -.9773
SG115166.6 SG2 623.6 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 3753.9 SR 564.4 SS 961.8
CRT -.4253 CRS .6783 CST -.9531
LSA 3873.0 MSA 578.7 SSA 21.2
EL1 3761.7 EL2 509.7 ALF 176.27

LAUNCH DATE NOV 25 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 898.685 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.176 GAL -6.00 AZL 88.19 HCA 267.87 SMA 190.40 ECC .24652 INC 1.8150 V1 30.175
RP 206.73 LAP -1.81 LOP 330.63 VP 24.226 GAP -13.41 AZP 90.07 TAL 328.93 TAP 236.80 RCA 143.46 APO 237.33 V2 26.490
RC 330.595 GL 13.92 GP -1.65 ZAL 136.45 ZAP 28.35 ETS 175.77 ZAE 45.75 ETE 178.20 ZAC 85.86 ETC 256.37 CLP 28.30

PLANETOCENTRIC CONIC

C3 18.868 VHL 4.344 DLA 4.70 RAL 204.66 RAD 6567.8 VEL 11.843 PTH 2.10 VHP 6.170 DPA .23 RAP 178.92 ECC 1.3105

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 33	2346.62	-22.54	50.02	66.26	107.61	20 45 40	1746.6	-19.92	42.33
90.00	9 18 29	4698.60	15.39	200.55	64.16	65.94	10 36 48	4098.6	12.01	193.50
100.00	21 30 6	2077.13	-23.59	29.83	65.88	108.91	22 4 43	1477.1	-20.79	22.15
100.00	10 37 38	4443.32	16.40	181.30	63.68	64.65	11 51 41	3843.3	12.85	174.30
110.00	22 43 24	1847.70	-26.41	11.23	64.71	112.53	23 14 12	1247.7	-23.12	3.61
110.00	11 40 49	4245.52	19.08	164.84	62.23	61.09	12 51 34	3645.5	15.08	158.01

DIFFERENTIAL CORRECTIONS
TDE-1.5447 TRA 8.2756 TC-12.0050 BAU 3.0291
RDE .4301 RRA .1203 RC3 .2793 FAU .06515
FDE-1.0143 FRA 2.9352 FC3-2.9893 BSP 54122
BDE 1.6035 BRA 8.2765 BC312.0082 FSP 1536

MID-COURSE EXECUTION ACCURACY
SGT15260.5 SGR 637.2 SG3 420.0
RRT -.1998 RRF -.2489 RTF .9755
SGB15273.8 R23 .0547 R13 -.9755
SG115261.0 SG2 624.3 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 3878.9 SR 569.4 SS 946.8
CRT -.4534 CRS .6961 CST -.9551
LSA 3992.4 MSA 571.3 SSA 20.7
EL1 3887.6 EL2 506.4 ALF 176.13

LAUNCH DATE NOV 25 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 902.897 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.183 GAL -6.23 AZL 88.19 HCA 269.14 SMA 190.53 ECC .24862 INC 1.8054 V1 30.175
RP 206.70 LAP -1.81 LOP 331.90 VP 24.240 GAP -13.56 AZP 90.03 TAL 327.91 TAP 237.05 RCA 143.16 APO 237.90 V2 26.493
RC 331.403 GL 13.55 GP -1.62 ZAL 137.72 ZAP 27.89 ETS 175.74 ZAE 44.99 ETE 178.20 ZAC 86.07 ETC 256.32 CLP 27.85

PLANETOCENTRIC CONIC

C3 19.675 VHL 4.436 DLA 3.90 RAL 205.65 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 6.274 DPA -.09 RAP 179.67 ECC 1.3238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 28	2331.72	-22.23	49.04	67.70	108.01	20 55 20	1731.7	-19.56	41.38
90.00	9 16 29	4733.29	16.34	202.65	65.90	66.55	10 35 22	4133.3	13.03	195.54
100.00	21 39 38	2063.46	-23.29	28.92	67.31	109.29	22 14 1	1463.5	-20.44	21.28
100.00	10 36 0	4476.79	17.36	183.32	65.42	65.28	11 50 37	3876.8	13.89	176.25
110.00	22 52 4	1836.74	-26.12	10.51	66.11	112.87	23 22 41	1236.7	-22.80	2.93
110.00	11 40 3	4276.27	20.09	166.66	63.99	61.74	12 51 19	3676.3	16.15	159.75

DIFFERENTIAL CORRECTIONS
TDE-1.6864 TRA 8.6072 TC-11.6478 BAU 3.0647
RDE .4432 RRA .1141 RC3 .2766 FAU .06010
FDE-1.0147 FRA 2.8408 FC3-2.6447 BSP 54398
BDE 1.7436 BRA 8.6079 BC311.6511 FSP 1444

MID-COURSE EXECUTION ACCURACY
SGT15352.6 SGR 640.2 SG3 393.6
RRT -.2174 RRF -.2685 RTF .9736
SGB15366.0 R23 .0578 R13 -.9736
SG115353.3 SG2 624.8 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4002.2 SR 574.3 SS 929.6
CRT -.4792 CRS .7129 CST -.9567
LSA 4110.1 MSA 564.1 SSA 20.3
EL1 4011.8 EL2 502.9 ALF 176.00

LAUNCH DATE NOV 25 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 907.097 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.190 GAL -6.46 AZL 88.20 HCA 270.41 SMA 190.66 ECC .25081 INC 1.7958 V1 30.175
RP 206.68 LAP -1.80 LOP 333.17 VP 24.252 GAP -13.72 AZP 89.99 TAL 326.87 TAP 237.28 RCA 142.84 APO 238.48 V2 26.495
RC 332.208 GL 13.18 GP -1.59 ZAL 138.97 ZAP 27.45 ETS 175.71 ZAE 44.24 ETE 178.19 ZAC 86.27 ETC 256.27 CLP 27.41

PLANETOCENTRIC CONIC

C3 20.536 VHL 4.532 DLA 3.12 RAL 206.63 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 6.380 DPA -.41 RAP 180.43 ECC 1.3380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 13	2317.59	-21.93	48.11	69.16	108.38	21 4 51	1717.6	-19.21	40.49
90.00	9 14 33	4767.83	17.27	204.77	67.68	67.20	10 34 1	4167.8	14.03	197.59
100.00	21 49 1	2050.52	-22.99	28.08	68.76	109.65	22 23 11	1450.5	-20.11	20.47
100.00	10 34 26	4510.14	18.30	185.35	67.21	65.95	11 49 36	3910.1	14.90	178.21
110.00	23 0 36	1826.45	-25.85	9.84	67.53	113.19	23 31 3	1226.4	-22.49	2.29
110.00	11 39 20	4306.97	21.06	168.51	65.79	62.43	12 51 7	3707.0	17.21	161.51

DIFFERENTIAL CORRECTIONS
TDE-1.8290 TRA 8.9490 TC-11.2900 BAU 3.1006
RDE .4568 RRA .1074 RC3 .2733 FAU .05517
FDE-1.0113 FRA 2.7432 FC3-2.3256 BSP 54657
BDE 1.8852 BRA 8.9496 BC311.2933 FSP 1355

MID-COURSE EXECUTION ACCURACY
SGT15441.9 SGR 643.0 SG3 368.0
RRT -.2346 RRF -.2878 RTF .9713
SGB15455.3 R23 .0613 R13 -.9713
SG115442.7 SG2 625.0 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4122.9 SR 579.0 SS 909.9
CRT -.5023 CRS .7286 CST -.9578
LSA 4224.9 MSA 557.4 SSA 19.9
EL1 4133.3 EL2 499.4 ALF 175.90

LAUNCH DATE NOV 25 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 911.284 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.198 GAL -6.71 AZL 88.21 HCA 271.68 SMA 190.79 ECC .25310 INC 1.7863 V1 30.175
RP 206.67 LAP -1.79 LOP 334.44 VP 24.263 GAP -13.88 AZP 89.95 TAL 325.82 TAP 237.50 RCA 142.50 APO 239.08 V2 26.497
RC 333.009 GL 12.82 GP -1.56 ZAL 140.21 ZAP 27.02 ETS 175.69 ZAE 43.50 ETE 178.19 ZAC 86.48 ETC 256.22 CLP 26.98

PLANETOCENTRIC CONIC

C3 21.456 VHL 4.632 DLA 2.35 RAL 207.60 RAD 6567.9 VEL 11.951 PTH 2.13 VHP 6.488 DPA -.73 RAP 181.20 ECC 1.3531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 49	2304.21	-21.64	47.24	70.64	108.72	21 14 13	1704.2	-18.88	39.65
90.00	9 12 42	4802.24	18.16	206.90	69.48	67.90	10 32 44	4202.2	15.01	199.64
100.00	21 58 15	2038.30	-22.71	27.28	70.23	109.98	22 32 13	1438.3	-19.78	19.71
100.00	10 32 57	4543.38	19.21	187.40	69.02	66.65	11 48 40	3943.4	15.89	180.18
110.00	23 9 1	1816.82	-25.59	9.21	68.97	113.48	23 39 17	1216.8	-22.19	1.70
110.00	11 38 40	4337.63	22.02	170.38	67.62	63.17	12 50 58	3737.6	18.24	163.28

DIFFERENTIAL CORRECTIONS
TDE-1.9739 TRA 9.3001 TC-10.9351 BAU 3.1376
RDE .4708 RRA .1004 RC3 .2696 FAU .05037
FDE-1.0042 FRA 2.6418 FC3-2.0326 BSP 54922
BDE 2.0293 BRA 9.3007 BC310.9384 FSP 1268

MID-COURSE EXECUTION ACCURACY
SGT15528.9 SGR 645.7 SG3 343.3
RRT -.2514 RRF -.3069 RTF .9687
SGB15542.3 R23 .0650 R13 -.9687
SG115529.7 SG2 625.0 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 4240.8 SR 583.6 SS 887.9
CRT -.5234 CRS .7434 CST -.9586
LSA 4337.0 MSA 551.0 SSA 19.5
EL1 4252.0 EL2 496.0 ALF 175.82

LAUNCH DATE NOV 25 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 915.456 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.205 GAL -6.95 AZL 88.22 HCA 272.95 SMA 190.92 ECC .25549 INC 1.7767 V1 30.175
RP 206.67 LAP -1.77 LOP 335.71 VP 24.273 GAP -14.04 AZP 89.91 TAL 324.76 TAP 237.70 RCA 142.14 APO 239.70 V2 26.497
RC 333.807 GL 12.46 GP -1.54 ZAL 141.43 ZAP 26.60 ETS 175.66 ZAE 42.77 ETE 178.18 ZAC 86.69 ETC 256.17 CLP 26.56

PLANETOCENTRIC CONIC

C3 22.437 VHL 4.737 DLA 1.60 RAL 208.56 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 6.599 DPA -1.06 RAP 181.99 ECC 1.3693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 15	2291.57	-21.36	46.42	72.13	109.04	21 23 27	1691.6	-18.56	38.86
90.00	9 10 55	4836.50	19.03	209.04	71.32	68.62	10 31 31	4236.5	15.95	201.71
100.00	22 7 20	2026.80	-22.44	26.53	71.71	110.28	22 41 7	1426.8	-19.48	18.99
100.00	10 31 31	4576.51	20.09	189.46	70.87	67.39	11 47 47	3976.5	16.85	182.17
110.00	23 17 17	1807.85	-25.35	8.63	70.43	113.74	23 47 25	1207.9	-21.92	1.15
110.00	11 38 3	4368.22	22.95	172.27	69.48	63.94	12 50 51	3768.2	19.25	165.08

DIFFERENTIAL CORRECTIONS
TDE-2.1214 TRA 9.6604 TC-10.5851 BAU 3.1761
RDE .4853 RRA .0929 RC3 .2654 FAU .04571
FDE -.9943 FRA 2.5368 FC3-1.7639 BSP 55129
BDE 2.1762 BRA 9.6608 BC310.5884 FSP 1182

MID-COURSE EXECUTION ACCURACY
SGT15613.8 SGR 648.4 SG3 319.3
RRT -.2680 RRF -.3259 RTF .9656
SGB15627.3 R23 .0692 R13 -.9656
SG115614.8 SG2 624.6 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 4355.9 SR 588.0 SS 864.1
CRT -.5428 CRS .7578 CST -.9590
LSA 4446.3 MSA 544.9 SSA 19.1
EL1 4367.7 EL2 492.5 ALF 175.75

LAUNCH DATE NOV 25 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 919.613 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.212 GAL -7.21 AZL 88.23 HCA 274.22 SMA 191.05 ECC .25798 INC 1.7671 V1 30.175
RP 206.68 LAP -1.76 LOP 336.98 VP 24.282 GAP -14.21 AZP 89.87 TAL 323.68 TAP 237.89 RCA 141.77 APO 240.34 V2 26.496
RC 334.601 GL 12.10 GP -1.52 ZAL 142.63 ZAP 26.20 ETS 175.64 ZAE 42.05 ETE 178.17 ZAC 86.90 ETC 256.13 CLP 26.16

PLANETOCENTRIC CONIC

C3 23.483 VHL 4.846 DLA .86 RAL 209.51 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 6.711 DPA -1.40 RAP 182.78 ECC 1.3865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 32	2279.67	-21.09	45.65	73.64	109.34	21 32 32	1679.7	-18.26	38.12
90.00	9 9 12	4870.61	19.86	211.20	73.19	69.39	10 30 22	4270.6	16.88	203.79
100.00	22 16 17	2016.00	-22.19	25.83	73.21	110.56	22 49 53	1416.0	-19.19	18.32
100.00	10 30 8	4609.51	20.94	191.55	72.74	68.17	11 46 58	4009.5	17.79	184.17
110.00	23 25 26	1799.53	-25.12	8.09	71.90	113.99	23 55 26	1199.5	-21.66	.64
110.00	11 37 28	4398.75	23.85	174.18	71.37	64.75	12 50 47	3798.7	20.24	166.89

DIFFERENTIAL CORRECTIONS
TDE-2.2709 TRA10.0289 TC-10.2410 BAU 3.2162
RDE .5002 RRA .0849 RC3 .2608 FAU .04119
FDE -.9811 FRA 2.4279 FC3-1.5184 BSP 55292
BDE 2.3253 BRA10.0293 BC310.2443 FSP 1099

MID-COURSE EXECUTION ACCURACY
SGT15695.8 SGR 651.0 SG3 296.2
RRT -.2844 RRF -.3449 RTF .9620
SGB15709.3 R23 .0739 R13 -.9621
SG115696.9 SG2 624.0 THA 179.32

ORBIT DETERMINATION ACCURACY
ST 4467.1 SR 592.2 SS 838.2
CRT -.5606 CRS .7715 CST -.9589
LSA 4551.6 MSA 539.0 SSA 18.8
EL1 4479.5 EL2 489.1 ALF 175.70

LAUNCH DATE NOV 25 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 923.752 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.219 GAL -7.47 AZL 88.24 HCA 275.49 SMA 191.19 ECC .26057 INC 1.7575 V1 30.175
RP 206.69 LAP -1.75 LOP 338.25 VP 24.290 GAP -14.39 AZP 89.83 TAL 322.58 TAP 238.07 RCA 141.37 APO 241.01 V2 26.494
RC 335.390 GL 11.75 GP -1.49 ZAL 143.82 ZAP 25.80 ETS 175.61 ZAE 41.35 ETE 178.17 ZAC 87.12 ETC 256.09 CLP 25.76

PLANETOCENTRIC CONIC

C3 24.600 VHL 4.960 DLA .13 RAL 210.45 RAD 6568.0 VEL 12.082 PTH 2.16 VHP 6.826 DPA -1.75 RAP 183.59 ECC 1.4048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 41	2268.47	-20.84	44.92	75.16	109.62	21 41 30	1668.5	-17.98	37.42
90.00	9 7 33	4904.57	20.66	213.37	75.09	70.19	10 29 17	4304.6	17.77	205.88
100.00	22 25 5	2005.89	-21.94	25.18	74.72	110.82	22 58 31	1405.9	-18.91	17.69
100.00	10 28 50	4642.38	21.76	193.65	74.65	68.98	11 46 12	4042.4	18.71	186.18
110.00	23 33 28	1791.85	-24.90	7.59	73.38	114.21	24 3 20	1191.9	-21.42	.17
110.00	11 36 56	4429.19	24.72	176.12	73.30	65.60	12 50 45	3829.2	21.21	168.72

DIFFERENTIAL CORRECTIONS
TDE-2.4221 TRA10.4087 TC3-9.9018 BAU 3.2576
RDE .5156 RRA .0765 RC3 .2558 FAU .03676
FDE -.9645 FRA 2.3153 FC3-1.2936 BSP 55448
BDE 2.4763 BRA10.4089 BC3 9.9051 FSP 1017

MID-COURSE EXECUTION ACCURACY
SGT15776.1 SGR 653.4 SG3 273.8
RRT -.3004 RRF -.3636 RTF .9578
SGB15789.6 R23 .0791 R13 -.9578
SG115777.3 SG2 623.2 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 4574.7 SR 596.2 SS 810.2
CRT -.5767 CRS .7847 CST -.9585
LSA 4653.5 MSA 533.5 SSA 18.4
EL1 4587.7 EL2 485.7 ALF 175.65

LAUNCH DATE NOV 25 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 927.873 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.227 GAL -7.74 AZL 88.25 HCA 276.76 SMA 191.32 ECC .26328 INC 1.7478 V1 30.175
RP 206.72 LAP -1.74 LOP 339.52 VP 24.297 GAP -14.57 AZP 89.79 TAL 321.47 TAP 238.23 RCA 140.95 APO 241.70 V2 26.491
RC 336.176 GL 11.41 GP -1.47 ZAL 144.99 ZAP 25.42 ETS 175.58 ZAE 40.65 ETE 178.16 ZAC 87.33 ETC 256.05 CLP 25.38

PLANETOCENTRIC CONIC

C3 25.790 VHL 5.078 DLA -.59 RAL 211.38 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 6.944 DPA -2.10 RAP 184.40 ECC 1.4244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 41	2257.97	-20.60	44.25	76.70	109.87	21 50 19	1658.0	-17.70	36.77
90.00	9 5 57	4938.37	21.42	215.55	77.02	71.03	10 28 16	4338.4	18.64	207.99
100.00	22 33 45	1996.46	-21.71	24.57	76.25	111.06	23 7 2	1396.5	-18.66	17.11
100.00	10 27 34	4675.11	22.54	195.76	76.59	69.83	11 45 29	4075.1	19.59	188.21
110.00	23 41 22	1784.80	-24.71	7.14	74.88	114.41	24 11 7	1184.8	-21.20	359.75
110.00	11 36 26	4459.54	25.55	178.08	75.27	66.48	12 50 46	3859.5	22.15	170.57

DIFFERENTIAL CORRECTIONS
TDE-2.5751 TRA10.7986 TC3-9.5685 BAU 3.3003
RDE .5314 RRA .0676 RC3 .2506 FAU .03245
FDE -.9455 FRA 2.1992 FC3-1.0894 BSP 55583
BDE 2.6293 BRA10.7989 BC3 9.5718 FSP 938

MID-COURSE EXECUTION ACCURACY
SGT15853.7 SGR 655.8 SG3 252.2
RRT -.3161 RRF -.3824 RTF .9527
SGB15867.2 R23 .0852 R13 -.9528
SG115855.0 SG2 622.1 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 4678.2 SR 600.0 SS 780.7
CRT -.5915 CRS .7976 CST -.9577
LSA 4751.4 MSA 528.2 SSA 18.1
EL1 4691.8 EL2 482.4 ALF 175.62

LAUNCH DATE NOV 25 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 931.974 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.234 GAL -8.02 AZL 88.26 HCA 278.03 SMA 191.46 ECC .26610 INC 1.7381 V1 30.175
RP 206.75 LAP -1.72 LOP 340.79 VP 24.303 GAP -14.75 AZP 89.76 TAL 320.35 TAP 238.38 RCA 140.51 APO 242.41 V2 26.488
RC 336.957 GL 11.06 GP -1.45 ZAL 146.15 ZAP 25.05 ETS 175.56 ZAE 39.97 ETE 178.15 ZAC 87.55 ETC 256.01 CLP 25.01

PLANETOCENTRIC CONIC

C3 27.059 VHL 5.202 DLA -1.29 RAL 212.30 RAD 6568.1 VEL 12.183 PTH 2.19 VHP 7.064 DPA -2.45 RAP 185.23 ECC 1.4453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 33	2248.15	-20.37	43.62	78.25	110.11	21 59 1	1648.1	-17.45	36.16
90.00	9 4 25	4972.01	22.15	217.75	78.97	71.89	10 27 17	4372.0	19.47	210.10
100.00	22 42 17	1987.69	-21.50	24.01	77.79	111.29	23 15 25	1387.7	-18.41	16.57
100.00	10 26 22	4707.70	23.29	197.89	78.55	70.72	11 44 50	4107.7	20.45	190.25
110.00	23 49 10	1778.37	-24.52	6.73	76.40	114.60	24 18 48	1178.4	-21.00	359.36
110.00	11 35 59	4489.79	26.36	180.06	77.26	67.41	12 50 49	3889.8	23.07	172.45

DIFFERENTIAL CORRECTIONS
TDE-2.7310 TRA11.1978 TC3-9.2437 BAU 3.3452
RDE .5476 RRA .0582 RC3 .2451 FAU .02825
FDE -.9235 FRA 2.0790 FC3 -.9037 BSP 55655
BDE 2.7854 BRA11.1979 BC3 9.2469 FSP 860

MID-COURSE EXECUTION ACCURACY
SGT15929.0 SGR 658.0 SG3 231.3
RRT -.3316 RRF -.4011 RTF .9466
SGB15942.5 R23 .0919 R13 -.9466
SG115930.5 SG2 620.7 THA 179.21

ORBIT DETERMINATION ACCURACY
ST 4778.0 SR 603.5 SS 749.4
CRT -.6053 CRS .8104 CST -.9564
LSA 4845.8 MSA 523.1 SSA 17.7
EL1 4792.1 EL2 479.0 ALF 175.58

LAUNCH DATE NOV 25 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 936.053 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.242 GAL -8.31 AZL 88.27 HCA 279.29 SMA 191.60 ECC .26904 INC 1.7284 V1 30.175
RP 206.79 LAP -1.71 LOP 342.06 VP 24.308 GAP -14.95 AZP 89.72 TAL 319.22 TAP 238.51 RCA 140.05 APO 243.15 V2 26.483
RC 337.733 GL 10.73 GP -1.43 ZAL 147.29 ZAP 24.69 ETS 175.53 ZAE 39.30 ETE 178.14 ZAC 87.77 ETC 255.98 CLP 24.65

PLANETOCENTRIC CONIC

C3 28.413 VHL 5.330 DLA -1.98 RAL 213.21 RAD 6568.1 VEL 12.239 PTH 2.20 VHP 7.187 DPA -2.81 RAP 186.06 ECC 1.4676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 16	2238.99	-20.15	43.03	79.81	110.32	22 7 35	1639.0	-17.21	35.60
90.00	9 2 57	5005.48	22.84	219.96	80.95	72.79	10 26 22	4405.5	20.27	212.23
100.00	22 50 42	1979.56	-21.30	23.49	79.34	111.49	23 23 41	1379.6	-18.19	16.07
100.00	10 25 13	4740.14	24.01	200.04	80.54	71.63	11 44 13	4140.1	21.27	192.31
110.00	0 0 46	1772.54	-24.36	6.36	77.92	114.76	0 30 18	1172.5	-20.81	359.00
110.00	11 35 34	4519.93	27.13	182.06	79.28	68.36	12 50 54	3919.9	23.95	174.34

DIFFERENTIAL CORRECTIONS
TDE-2.8877 TRA11.6090 TC3-8.9256 BAU 3.3916
RDE .5643 RRA .0483 RC3 .2395 FAU .02413
FDE -.8984 FRA 1.9550 FC3 -.7351 BSP 55716
BDE 2.9423 BRA11.6091 BC3 8.9288 FSP 785

MID-COURSE EXECUTION ACCURACY
SGT16002.3 SGR 660.1 SG3 211.1
RRT -.3468 RRF -.4195 RTF .9390
SGB16015.9 R23 .0996 R13 -.9391
SG116003.9 SG2 619.1 THA 179.18

ORBIT DETERMINATION ACCURACY
ST 4873.1 SR 606.8 SS 716.4
CRT -.6177 CRS .8229 CST -.9546
LSA 4935.5 MSA 518.2 SSA 17.4
EL1 4887.6 EL2 475.8 ALF 175.56

LAUNCH DATE NOV 25 1964 FLIGHT TIME 430.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 940.109 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.249 GAL -8.60 AZL 88.28 HCA 280.56 SMA 191.74 ECC .27211 INC 1.7186 V1 30.175
RP 206.84 LAP -1.69 LOP 343.33 VP 24.312 GAP -15.15 AZP 89.69 TAL 318.07 TAP 238.63 RCA 139.56 APO 243.91 V2 26.477
RC 338.506 GL 10.40 GP -1.41 ZAL 148.41 ZAP 24.34 ETS 175.51 ZAE 38.64 ETE 178.13 ZAC 87.99 ETC 255.95 CLP 24.30

PLANETOCENTRIC CONIC

C3 29.855 VHL 5.464 DLA -2.65 RAL 214.11 RAD 6568.2 VEL 12.298 PTH 2.21 VHP 7.312 DPA -3.18 RAP 186.91 ECC 1.4913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 52	2230.47	-19.95	42.49	81.39	110.52	22 16 3	1630.5	-16.98	35.07
90.00	9 1 32	5038.77	23.49	222.18	82.96	73.72	10 25 31	4438.8	21.04	214.37
100.00	22 58 59	1972.05	-21.11	23.01	80.91	111.67	23 31 51	1372.1	-17.98	15.61
100.00	10 24 7	4772.42	24.68	202.20	82.56	72.58	11 43 39	4172.4	22.06	194.38
110.00	0 8 19	1767.29	-24.21	6.02	79.46	114.91	0 37 47	1167.3	-20.65	358.69
110.00	11 35 11	4549.95	27.87	184.08	81.34	69.36	12 51 1	3949.9	24.81	176.25

DIFFERENTIAL CORRECTIONS
TDE-3.0470 TRA12.0301 TC3-8.6148 BAU 3.4397
RDE .5814 RRA .0379 RC3 .2337 FAU .02009
FDE -.8706 FRA 1.8270 FC3 -.5826 BSP 55736
BDE 3.1019 BRA12.0302 BC3 8.6180 FSP 712

MID-COURSE EXECUTION ACCURACY
SGT16072.1 SGR 662.1 SG3 191.6
RRT -.3617 RRF -.4378 RTF .9296
SGB16085.8 R23 .1084 R13 -.9297
SG116073.9 SG2 617.2 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 4964.0 SR 609.8 SS 681.9
CRT -.6293 CRS .8354 CST -.9523
LSA 5021.4 MSA 513.4 SSA 17.1
EL1 4978.9 EL2 472.5 ALF 175.54

LAUNCH DATE NOV 25 1964 FLIGHT TIME 432.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 944.140 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.257 GAL -8.90 AZL 88.29 HCA 281.83 SMA 191.88 ECC .27530 INC 1.7086 V1 30.175
RP 206.90 LAP -1.67 LOP 344.60 VP 24.315 GAP -15.35 AZP 89.65 TAL 316.90 TAP 238.73 RCA 139.05 APO 244.70 V2 26.470
RC 339.274 GL 10.07 GP -1.39 ZAL 149.52 ZAP 24.00 ETS 175.48 ZAE 37.99 ETE 178.11 ZAC 88.21 ETC 255.92 CLP 23.96

PLANETOCENTRIC CONIC

C3 31.392 VHL 5.603 DLA -3.31 RAL 215.00 RAD 6568.3 VEL 12.360 PTH 2.23 VHP 7.440 DPA -3.55 RAP 187.76 ECC 1.5166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 20	2222.56	-19.76	41.99	82.97	110.70	22 24 23	1622.6	-16.77	34.59
90.00	9 0 10	5071.89	24.11	224.41	84.99	74.68	10 24 42	4471.9	21.77	216.52
100.00	23 7 8	1965.15	-20.93	22.57	82.49	111.84	23 39 53	1365.2	-17.79	15.19
100.00	10 23 3	4804.53	25.32	204.37	84.61	73.55	11 43 8	4204.5	22.82	196.46
110.00	0 15 46	1762.61	-24.07	5.73	81.01	115.03	0 45 9	1162.6	-20.50	358.41
110.00	11 34 51	4579.84	28.57	186.13	83.42	70.38	12 51 11	3979.8	25.63	178.18

DIFFERENTIAL CORRECTIONS
TDE-3.2079 TRA12.4625 TC3-8.3124 BAU 3.4899
RDE .5988 RRA .0270 RC3 .2278 FAU .01614
FDE -.8404 FRA 1.6950 FC3 -.4450 BSP 55720
BDE 3.2633 BRA12.4626 BC3 8.3155 FSP 641

MID-COURSE EXECUTION ACCURACY
SGT16139.6 SGR 664.0 SG3 172.8
RRT -.3764 RRF -.4559 RTF .9177
SGB16153.2 R23 .1187 R13 -.9177
SG116141.5 SG2 615.1 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 5050.3 SR 612.5 SS 646.1
CRT -.6399 CRS .8481 CST -.9492
LSA 5102.8 MSA 508.8 SSA 16.8
EL1 5065.6 EL2 469.3 ALF 175.52

LAUNCH DATE NOV 25 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 948.138 EARTH TO MARS

RL 147.65 LAL -.00 LOL 62.76 VL 33.264 GAL -9.21 AZL 88.30 HCA 283.09 SMA 192.01 ECC .27864 INC 1.6987 V1 30.175
RP 206.97 LAP -1.65 LOP 345.86 VP 24.317 GAP -15.57 AZP 89.62 TAL 315.72 TAP 238.82 RCA 138.51 APO 245.52 V2 26.462
RC 340.039 GL 9.75 GP -1.37 ZAL 150.61 ZAP 23.67 ETS 175.46 ZAE 37.35 ETE 178.10 ZAC 88.44 ETC 255.90 CLP 23.64

PLANETOCENTRIC CONIC

C3 33.031 VHL 5.747 DLA -3.95 RAL 215.88 RAD 6568.3 VEL 12.426 PTH 2.25 VHP 7.572 DPA -3.92 RAP 188.63 ECC 1.5436

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 55 41	2215.25	-19.58	41.52	84.57	110.87	22 32 37	1615.2	-16.57	34.14
90.00	8 58 51	5104.83	24.68	226.66	87.04	75.66	10 23 56	4504.8	22.47	218.68
100.00	23 15 11	1958.82	-20.77	22.17	84.08	111.99	23 47 50	1358.8	-17.61	14.81
100.00	10 22 3	4836.49	25.92	206.56	86.68	74.56	11 42 39	4236.5	23.54	198.56
110.00	0 23 7	1758.47	-23.95	5.46	82.58	115.15	0 52 25	1158.5	-20.37	358.16
110.00	11 34 33	4609.60	29.23	188.19	85.53	71.44	12 51 22	4009.6	26.42	180.14

DIFFERENTIAL CORRECTIONS
TDE-3.3214 TRA12.9565 TC3-7.9595 BAU 3.5163
RDE .6161 RRA .0147 RC3 .2210 FAU .01167
FDE -.7959 FRA 1.5661 FC3 -.3059 BSP 56846
BDE 3.3781 BRA12.9565 BC3 7.9626 FSP 592

MID-COURSE EXECUTION ACCURACY
SGT16195.9 SGR 664.8 SG3 154.6
RRT -.3870 RRF -.4653 RTF .9008
SGB16209.5 R23 .1260 R13 -.9008
SG116197.9 SG2 612.9 THA 179.09

ORBIT DETERMINATION ACCURACY
ST 5111.4 SR 614.2 SS 603.2
CRT -.6429 CRS .8570 CST -.9450
LSA 5158.6 MSA 506.5 SSA 16.6
EL1 5126.8 EL2 469.0 ALF 175.54

LAUNCH DATE NOV 26 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 21 1965

HELIOCENTRIC CONIC DISTANCE 399.774 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 35.906 GAL -4.54 AZL 88.52 HCA 123.81 SMA 260.86 ECC .43991 INC 1.4812 V1 30.181
RP 245.33 LAP 1.23 LOP 187.59 VP 23.941 GAP 25.89 AZP 90.82 TAL 345.09 TAP 108.90 RCA 146.11 APO 375.62 V2 22.354
RC 122.260 GL 8.56 GP 1.03 ZAL 114.03 ZAP 176.02 ETS 163.79 ZAE 154.98 ETE 359.19 ZAC 89.51 ETC 256.11 CLP 176.15

PLANETOCENTRIC CONIC

C3 38.657 VHL 6.217 DLA 8.60 RAL 181.68 RAD 6568.5 VEL 12.650 PTH 2.30 VHP 11.686 DPA .66 RAP 184.39 ECC 1.6362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 54	2647.79	-27.19	70.81	57.79	98.24	18 45 1	2047.8	-25.77	62.43
90.00	8 12 58	4751.71	16.84	203.78	52.17	66.89	9 32 10	4151.7	13.57	196.63
100.00	19 26 25	2371.96	-28.54	50.29	57.55	99.28	20 5 57	1772.0	-26.97	41.84
100.00	9 30 8	4502.78	18.10	184.90	51.59	65.79	10 45 11	3902.8	14.68	177.78
110.00	20 44 11	2128.58	-32.19	31.01	56.75	102.18	21 19 40	1528.6	-30.18	22.37
110.00	10 28 51	4318.92	21.44	169.23	49.88	62.71	11 40 50	3718.9	17.61	162.20

DIFFERENTIAL CORRECTIONS
TDE .8022 TRA-2.0116 TC3 .6298 BAU .3262
RDE -.5644 RRA -.2438 RC3 -.0425 FAU .05529
FDE -.2765 FRA 1.0956 FC3-1.2383 BSP 6990
BDE .9809 BRA 2.0263 BC3 .6312 FSP 427

MID-COURSE EXECUTION ACCURACY
SGT 2162.2 SGR 570.0 SG3 161.1
RRT .0001 RRF -.0171 RTF -.8205
SGB 2236.0 R23 -.0170 R13 -.8205
SG1 2162.2 SG2 570.0 THA .00

ORBIT DETERMINATION ACCURACY
ST 929.2 SR 524.5 SS 405.0
CRT -.7103 CRS -.5309 CST .9706
LSA 1080.3 MSA 367.0 SSA 30.1
EL1 1011.7 EL2 339.1 ALF 155.18

LAUNCH DATE NOV 26 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 401.192 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 35.769 GAL -4.35 AZL 88.53 HCA 124.71 SMA 255.92 ECC .42870 INC 1.4705 V1 30.181
RP 245.12 LAP 1.21 LOP 188.49 VP 23.754 GAP 25.28 AZP 90.84 TAL 345.46 TAP 110.17 RCA 146.21 APO 365.64 V2 22.374
RC 124.216 GL 8.70 GP 1.06 ZAL 113.39 ZAP 175.54 ETS 164.97 ZAE 154.61 ETE 359.43 ZAC 89.64 ETC 256.09 CLP 175.67

PLANETOCENTRIC CONIC

C3 36.586 VHL 6.049 DLA 8.99 RAL 181.16 RAD 6568.4 VEL 12.568 PTH 2.28 VHP 11.412 DPA .51 RAP 184.78 ECC 1.6021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 44	2646.39	-27.17	70.71	56.39	98.29	18 39 50	2046.4	-25.75	62.33
90.00	8 13 56	4725.29	16.13	202.17	50.69	66.40	9 32 42	4125.3	12.80	195.07
100.00	19 21 28	2369.89	-28.52	50.14	56.15	99.35	20 0 58	1769.9	-26.93	41.69
100.00	9 30 54	4477.02	17.37	183.33	50.11	65.28	10 45 31	3877.0	13.89	176.26
110.00	20 39 42	2125.06	-32.14	30.74	55.35	102.33	21 15 7	1525.1	-30.11	22.12
110.00	10 29 9	4294.61	20.67	167.76	48.38	62.15	11 40 43	3694.6	16.78	160.80

DIFFERENTIAL CORRECTIONS
TDE .7807 TRA-1.9869 TC3 .6885 BAU .3374
RDE -.5445 RRA -.2354 RC3 -.0433 FAU .05690
FDE -.2738 FRA 1.1098 FC3-1.3464 BSP 7226
BDE .9518 BRA 2.0008 BC3 .6898 FSP 451

MID-COURSE EXECUTION ACCURACY
SGT 2207.2 SGR 565.4 SG3 169.6
RRT .0041 RRF -.0191 RTF -.8255
SGB 2278.5 R23 -.0155 R13 -.8255
SG1 2207.2 SG2 565.4 THA .06

ORBIT DETERMINATION ACCURACY
ST 935.1 SR 520.2 SS 408.5
CRT -.7047 CRS -.5208 CST .9696
LSA 1084.0 MSA 368.4 SSA 30.7
EL1 1014.5 EL2 340.2 ALF 155.69

LAUNCH DATE NOV 26 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 402.799 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 35.638 GAL -4.16 AZL 88.54 HCA 125.61 SMA 251.38 ECC .41800 INC 1.4596 V1 30.181
RP 244.91 LAP 1.19 LOP 189.39 VP 23.577 GAP 24.67 AZP 90.85 TAL 345.85 TAP 111.46 RCA 146.30 APO 356.46 V2 22.396
RC 126.220 GL 8.85 GP 1.09 ZAL 112.73 ZAP 175.06 ETS 165.92 ZAE 154.30 ETE 359.67 ZAC 89.76 ETC 256.07 CLP 175.18

PLANETOCENTRIC CONIC

C3 34.654 VHL 5.887 DLA 9.39 RAL 180.61 RAD 6568.4 VEL 12.491 PTH 2.26 VHP 11.145 DPA .37 RAP 185.17 ECC 1.5703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 23	2645.53	-27.16	70.65	54.99	98.32	18 34 29	2045.5	-25.73	62.27
90.00	8 14 54	4698.75	15.40	200.56	49.21	65.94	9 33 13	4098.7	12.02	193.51
100.00	19 16 20	2368.34	-28.50	50.02	54.75	99.41	19 55 48	1768.3	-26.91	41.58
100.00	9 31 38	4451.17	16.63	181.77	48.62	64.80	10 45 49	3851.2	13.10	174.76
110.00	20 35 3	2122.01	-32.09	30.52	53.95	102.46	21 10 25	1522.0	-30.05	21.90
110.00	10 29 25	4270.27	19.89	166.31	46.89	61.61	11 40 35	3670.3	15.94	159.41

DIFFERENTIAL CORRECTIONS
TDE .7595 TRA-1.9608 TC3 .7521 BAU .3490
RDE -.5252 RRA -.2273 RC3 -.0440 FAU .05854
FDE -.2695 FRA 1.1240 FC3-1.4626 BSP 7438
BDE .9234 BRA 1.9739 BC3 .7534 FSP 477

MID-COURSE EXECUTION ACCURACY
SGT 2252.1 SGR 560.6 SG3 178.4
RRT .0079 RRF -.0219 RTF -.8308
SGB 2320.8 R23 -.0149 R13 -.8308
SG1 2252.1 SG2 560.6 THA .12

ORBIT DETERMINATION ACCURACY
ST 940.1 SR 515.6 SS 410.9
CRT -.6991 CRS -.5080 CST .9678
LSA 1086.6 MSA 370.0 SSA 31.3
EL1 1016.6 EL2 340.9 ALF 156.18

LAUNCH DATE NOV 26 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 404.575 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 35.512 GAL -3.97 AZL 88.55 HCA 126.51 SMA 247.20 ECC .40778 INC 1.4484 V1 30.181
RP 244.68 LAP 1.16 LOP 190.30 VP 23.408 GAP 24.06 AZP 90.86 TAL 346.24 TAP 112.75 RCA 146.40 APO 348.00 V2 22.418
RC 128.267 GL 8.99 GP 1.13 ZAL 112.04 ZAP 174.57 ETS 166.69 ZAE 154.03 ETE 359.90 ZAC 89.89 ETC 256.06 CLP 174.69

PLANETOCENTRIC CONIC

C3 32.853 VHL 5.732 DLA 9.79 RAL 180.04 RAD 6568.3 VEL 12.419 PTH 2.24 VHP 10.885 DPA .23 RAP 185.56 ECC 1.5407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 52	2645.21	-27.16	70.62	53.58	98.33	18 28 57	2045.2	-25.73	62.25
90.00	8 15 50	4672.13	14.65	198.96	47.74	65.49	9 33 43	4072.1	11.22	191.96
100.00	19 11 2	2367.30	-28.49	49.95	53.34	99.45	19 50 30	1767.3	-26.89	41.51
100.00	9 32 22	4425.27	15.87	180.22	47.15	64.33	10 46 7	3825.3	12.29	173.26
110.00	20 30 15	2119.42	-32.05	30.33	52.54	102.56	21 5 34	1519.4	-29.99	21.72
110.00	10 29 38	4245.91	19.10	164.87	45.40	61.09	11 40 24	3645.9	15.09	158.03

DIFFERENTIAL CORRECTIONS
TDE .7391 TRA-1.9327 TC3 .8215 BAU .3613
RDE -.5066 RRA -.2195 RC3 -.0445 FAU .06027
FDE -.2644 FRA 1.1380 FC3-1.5882 BSP 7624
BDE .8960 BRA 1.9451 BC3 .8227 FSP 505

MID-COURSE EXECUTION ACCURACY
SGT 2297.0 SGR 555.6 SG3 187.6
RRT .0113 RRF -.0252 RTF -.8365
SGB 2363.2 R23 -.0152 R13 -.8365
SG1 2297.0 SG2 555.5 THA .17

ORBIT DETERMINATION ACCURACY
ST 944.7 SR 510.8 SS 412.9
CRT -.6940 CRS -.4941 CST .9655
LSA 1088.6 MSA 371.2 SSA 31.8
EL1 1018.4 EL2 341.2 ALF 156.66

LAUNCH DATE NOV 26 1964 FLIGHT TIME 154.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 406.505 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	35.392	GAL	-3.79	AZL	88.56	HCA	127.42	SMA	243.34	ECC	.39801	INC	1.4370
RP	244.46	LAP	1.14	LOP	191.20	VP	23.247	GAP	23.45	AZP	90.87	TAL	346.64	TAP	114.06	RCA	146.49	APO	340.19
RC	130.354	GL	9.13	GP	1.17	ZAL	111.33	ZAP	174.07	ETS	167.33	ZAE	153.81	ETE	.13	ZAC	90.01	ETC	256.04

V1	30.181	V2	22.440	CLP	174.19														

PLANETOCENTRIC CONIC

C3	31.172	VHL	5.583	DLA	10.20	RAL	179.44	RAD	6568.2	VEL	12.351	PTH	2.23	VHP	10.631	DPA	.10	RAP	185.95
ECC	1.5130																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 10	2645.43	-27.16	70.64	52.17	98.32	18 23 16	2045.4	-25.73	62.26
90.00	8 16 46	4645.48	13.89	197.37	46.27	65.08	9 34 12	4045.5	10.42	190.42
100.00	19 5 34	2366.78	-28.49	49.91	51.93	99.46	19 45 1	1766.8	-26.88	41.48
100.00	9 33 3	4399.36	15.10	178.68	45.67	63.89	10 46 23	3799.4	11.47	171.77
110.00	20 25 18	2117.31	-32.02	30.17	51.13	102.65	21 0 35	1517.3	-29.95	21.57
110.00	10 29 49	4221.60	18.29	163.44	43.92	60.61	11 40 11	3621.6	14.24	156.67

DIFFERENTIAL CORRECTIONS

TDE	.7191	TRA	-1.9036	TC3	.8954	BAU	.3736
RDE	-.4886	RRA	-.2120	RC3	-.0447	FAU	.06206
FDE	-.2584	FRA	1.1516	FC3	-1.7237	BSP	7801
BDE	.8694	BRA	1.9153	BC3	.8965	FSP	536

MID-COURSE EXECUTION ACCURACY

SGT	2341.8	SGR	550.3	SG3	197.3		
RRT	.0147	RRF	-.0290	RTF	-.8420		
SGB	2405.6	R23	-.0159	R13	-.8420		
SG1	2341.8	SG2	550.2	THA	.21		

ORBIT DETERMINATION ACCURACY

ST	948.7	SR	505.8	SS	414.3		
CRT	-.6889	CRS	-.4785	CST	.9627		
LSA	1089.9	MSA	372.4	SSA	32.3		
EL1	1019.6	EL2	341.1	ALF	157.13		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 408.574 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	35.277	GAL	-3.62	AZL	88.57	HCA	128.33	SMA	239.77	ECC	.38869	INC	1.4252
RP	244.23	LAP	1.12	LOP	192.11	VP	23.093	GAP	22.85	AZP	90.88	TAL	347.05	TAP	115.38	RCA	146.57	APO	332.96
RC	132.477	GL	9.26	GP	1.21	ZAL	110.60	ZAP	173.57	ETS	167.86	ZAE	153.64	ETE	.37	ZAC	90.14	ETC	256.02

V1	30.181	V2	22.463	CLP	173.68														

PLANETOCENTRIC CONIC

C3	29.604	VHL	5.441	DLA	10.62	RAL	178.82	RAD	6568.2	VEL	12.287	PTH	2.21	VHP	10.384	DPA	-.03	RAP	186.33
ECC	1.4872																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 19	2646.19	-27.17	70.69	50.75	98.30	18 17 25	2046.2	-25.74	62.32
90.00	8 17 41	4618.82	13.12	195.79	44.81	64.68	9 34 40	4018.8	9.60	188.88
100.00	18 59 57	2366.78	-28.49	49.91	50.52	99.46	19 39 23	1766.8	-26.88	41.47
100.00	9 33 44	4373.46	14.32	177.15	44.21	63.48	10 46 37	3773.5	10.64	170.29
110.00	20 20 12	2115.66	-32.00	30.05	49.72	102.72	20 55 27	1515.7	-29.92	21.45
110.00	10 29 58	4197.35	17.47	162.03	42.45	60.14	11 39 56	3597.3	13.37	155.33

DIFFERENTIAL CORRECTIONS

TDE	.6982	TRA	-1.8742	TC3	.9734	BAU	.3856
RDE	-.4712	RRA	-.2048	RC3	-.0447	FAU	.06393
FDE	-.2511	FRA	1.1650	FC3	-1.8697	BSP	7976
BDE	.8424	BRA	1.8854	BC3	.9744	FSP	568

MID-COURSE EXECUTION ACCURACY

SGT	2386.3	SGR	544.8	SG3	207.5		
RRT	.0187	RRF	-.0335	RTF	-.8473		
SGB	2447.7	R23	-.0167	R13	-.8473		
SG1	2386.4	SG2	544.7	THA	.26		

ORBIT DETERMINATION ACCURACY

ST	951.0	SR	500.6	SS	414.9		
CRT	-.6832	CRS	-.4608	CST	.9594		
LSA	1089.2	MSA	373.9	SSA	32.9		
EL1	1019.2	EL2	341.1	ALF	157.58		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 410.769 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	35.167	GAL	-3.44	AZL	88.59	HCA	129.24	SMA	236.46	ECC	.37977	INC	1.4131
RP	243.99	LAP	1.09	LOP	193.02	VP	22.948	GAP	22.25	AZP	90.89	TAL	347.46	TAP	116.70	RCA	146.66	APO	326.26
RC	134.631	GL	9.39	GP	1.25	ZAL	109.84	ZAP	173.06	ETS	168.31	ZAE	153.51	ETE	.60	ZAC	90.27	ETC	256.00

V1	30.181	V2	22.486	CLP	173.17														

PLANETOCENTRIC CONIC

C3	28.141	VHL	5.305	DLA	11.04	RAL	178.17	RAD	6568.1	VEL	12.228	PTH	2.20	VHP	10.143	DPA	-.16	RAP	186.71
ECC	1.4631																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 17	2647.49	-27.18	70.79	49.34	98.25	18 11 24	2047.5	-25.76	62.41
90.00	8 18 34	4592.19	12.34	194.23	43.35	64.31	9 35 6	3992.2	8.78	187.35
100.00	18 54 9	2367.29	-28.49	49.95	49.11	99.45	19 33 37	1767.3	-26.89	41.51
100.00	9 34 22	4347.62	13.53	175.64	42.75	63.09	10 46 50	3747.6	9.81	168.83
110.00	20 14 57	2114.48	-31.98	29.96	48.32	102.77	20 50 11	1514.5	-29.89	21.37
110.00	10 30 4	4173.20	16.65	160.65	40.99	59.71	11 39 38	3573.2	12.50	153.99

DIFFERENTIAL CORRECTIONS

TDE	.6775	TRA	-1.8437	TC3	1.0570	BAU	.3980
RDE	-.4544	RRA	-.1979	RC3	-.0443	FAU	.06592
FDE	-.2431	FRA	1.1773	FC3	-2.0281	BSP	8140
BDE	.8157	BRA	1.8543	BC3	1.0579	FSP	602

MID-COURSE EXECUTION ACCURACY

SGT	2430.9	SGR	539.0	SG3	218.2		
RRT	.0230	RRF	-.0383	RTF	-.8525		
SGB	2490.0	R23	-.0178	R13	-.8526		
SG1	2431.0	SG2	538.9	THA	.31		

ORBIT DETERMINATION ACCURACY

ST	952.4	SR	495.1	SS	414.9		
CRT	-.6773	CRS	-.4418	CST	.9555		
LSA	1087.4	MSA	375.2	SSA	33.4		
EL1	1017.8	EL2	340.8	ALF	158.01		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 413.079 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	35.062	GAL	-3.27	AZL	88.60	HCA	130.15	SMA	233.38	ECC	.37126	INC	1.4007
RP	243.75	LAP	1.07	LOP	193.93	VP	22.810	GAP	21.65	AZP	90.90	TAL	347.89	TAP	118.04	RCA	146.74	APO	320.02
RC	136.814	GL	9.52	GP	1.30	ZAL	109.06	ZAP	172.54	ETS	168.70	ZAE	153.43	ETE	.83	ZAC	90.40	ETC	255.99

V1	30.181	V2	22.510	CLP	172.65														

PLANETOCENTRIC CONIC

C3	26.777	VHL	5.175	DLA	11.46	RAL	177.51	RAD	6568.1	VEL	12.172	PTH	2.18	VHP	9.908	DPA	-.29	RAP	187.08
ECC	1.4407																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 5	2649.31	-27.20	70.92	47.93	98.19	18 5 15	2049.3	-25.79	62.53
90.00	8 19 26	4565.64	11.55	192.68	41.91	63.97	9 35 32	3965.6	7.96	185.84
100.00	18 48 13	2368.30	-28.50	50.02	47.70	99.41	19 27 41	1768.3	-26.91	41.58
100.00	9 34 59	4321.88	12.73	174.15	41.30	62.72	10 47 1	3721.9	8.97	167.37
110.00	20 9 34	2113.76	-31.97	29.91	46.91	102.80	20 44 48	1513.8	-29.88	21.32
110.00	10 30 8	4149.19	15.82	159.28	39.54	59.30	11 39 17	3549.2	11.63	152.68

DIFFERENTIAL CORRECTIONS

TDE	.6562	TRA	-1.8127	TC3	1.1440	BAU	.4098
RDE	-.4382	RRA	-.1913	RC3	-.0435	FAU	.06798
FDE	-.2340	FRA	1.1889	FC3	-2.1979	BSP	8307
BDE	.7891	BRA	1.8227	BC3	1.1448	FSP	637

MID-COURSE EXECUTION ACCURACY

SGT	2474.6	SGR	533.1	SG3	229.3		
RRT	.0278	RRF	-.0439	RTF	-.8575		
SGB	2531.3	R23	-.0189	R13	-.8575		
SG1	2474.6	SG2	532.8	THA	.36		

ORBIT DETERMINATION ACCURACY

ST	952.2	SR	489.5	SS	414.3		
CRT	-.6710	CRS	-.4208	CST	.9511		
LSA	1083.9	MSA	376.6	SSA	34.0		
EL1	1015.0	EL2	340.5	ALF	158.42		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 415.494 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.961	GAL	-3.10	AZL	88.61	HCA	131.06	SMA	230.52	ECC	.36313	INC	1.3879
RP	243.50	LAP	1.05	LOP	194.85	VP	22.679	GAP	21.06	AZP	90.91	TAL	348.32	TAP	119.38	RCA	146.81	APO	314.22
RC	139.022	GL	9.64	GP	1.34	ZAL	108.27	ZAP	172.01	ETS	169.02	ZAE	153.40	ETE	1.07	ZAC	90.53	ETC	255.98

V1	30.181	V2	22.535	CLP	172.12														

PLANETOCENTRIC CONIC

C3	25.505	VHL	5.050	DLA	11.89	RAL	176.81	RAD	6568.0	VEL	12.119	PTH	2.17	VHP	9.679	DPA	-.40	RAP	187.45

ECC	1.4197																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 45	2651.65	-27.22	71.08	46.51	98.11	17 58 56	2051.6	-25.82	62.70
90.00	8 20 16	4539.20	10.76	191.14	40.47	63.65	9 35 55	3939.2	7.13	184.34
100.00	18 42 8	2369.80	-28.52	50.13	46.29	99.35	19 21 38	1769.8	-26.93	41.69
100.00	9 35 34	4296.27	11.93	172.67	39.86	62.39	10 47 10	3696.3	8.14	165.93
110.00	20 4 3	2113.48	-31.97	29.88	45.51	102.81	20 39 17	1513.5	-29.87	21.30
110.00	10 30 8	4125.36	14.99	157.94	38.09	58.91	11 38 53	3525.4	10.76	151.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6347	TRA	-1.7817	TC3	1.2365	BAU	.4219	SGT	2519.0	SGR	526.9	SG3	241.1	ST	950.7	SR	483.7	SS	413.1
RDE	-.4226	RRA	-.1849	RC3	-.0424	FAU	.07016	RRT	.0333	RRF	-.0501	RTF	-.8623	CRT	-.6641	CRS	-.3975	CST	.9460
FDE	-.2238	FRA	1.2004	FC3	-2.3814	BSP	8477	SGB	2573.5	R23	-.0201	R13	-.8624	LSA	1079.1	MSA	378.1	SSA	34.5
BDE	.7625	BRA	1.7913	BC3	1.2372	FSP	675	SG1	2519.1	SG2	526.6	THA	.42	EL1	1011.1	EL2	340.1	ALF	158.82

LAUNCH DATE NOV 26 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 418.005 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.865	GAL	-2.94	AZL	88.63	HCA	131.98	SMA	227.85	ECC	.35536	INC	1.3747
RP	243.25	LAP	1.02	LOP	195.76	VP	22.555	GAP	20.47	AZP	90.92	TAL	348.75	TAP	120.73	RCA	146.88	APO	308.82
RC	141.251	GL	9.75	GP	1.39	ZAL	107.45	ZAP	171.48	ETS	169.30	ZAE	153.41	ETE	1.32	ZAC	90.66	ETC	255.96

V1	30.181	V2	22.560	CLP	171.59														

PLANETOCENTRIC CONIC

C3	24.318	VHL	4.931	DLA	12.32	RAL	176.10	RAD	6568.0	VEL	12.070	PTH	2.16	VHP	9.455	DPA	-.52	RAP	187.82

ECC	1.4002																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 16	2654.48	-27.25	71.29	45.10	98.01	17 52 30	2054.5	-25.86	62.90
90.00	8 21 4	4512.90	9.96	189.62	39.04	63.36	9 36 17	3912.9	6.30	182.85
100.00	18 35 55	2371.78	-28.54	50.27	44.88	99.28	19 15 27	1771.8	-26.96	41.83
100.00	9 36 5	4270.84	11.12	171.22	38.43	62.07	10 47 16	3670.8	7.30	164.51
110.00	19 58 25	2113.64	-31.97	29.90	44.11	102.80	20 33 38	1513.6	-29.88	21.31
110.00	10 30 5	4101.74	14.15	156.61	36.66	58.55	11 38 27	3501.7	9.89	150.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6130	TRA	-1.7498	TC3	1.3332	BAU	.4336	SGT	2562.6	SGR	520.5	SG3	253.4	ST	947.9	SR	477.7	SS	411.4
RDE	-.4075	RRA	-.1788	RC3	-.0407	FAU	.07244	RRT	.0393	RRF	-.0569	RTF	-.8670	CRT	-.6568	CRS	-.3727	CST	.9403
FDE	-.2129	FRA	1.2106	FC3	-2.5790	BSP	8634	SGB	2614.9	R23	-.0214	R13	-.8670	LSA	1072.7	MSA	379.7	SSA	35.1
BDE	.7361	BRA	1.7590	BC3	1.3338	FSP	714	SG1	2562.7	SG2	520.1	THA	.48	EL1	1005.7	EL2	339.5	ALF	159.21

LAUNCH DATE NOV 26 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 420.604 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.772	GAL	-2.78	AZL	88.64	HCA	132.90	SMA	225.36	ECC	.34792	INC	1.3610
RP	243.00	LAP	1.00	LOP	196.68	VP	22.437	GAP	19.88	AZP	90.93	TAL	349.20	TAP	122.09	RCA	146.95	APO	303.76
RC	143.499	GL	9.86	GP	1.44	ZAL	106.61	ZAP	170.93	ETS	169.53	ZAE	153.46	ETE	1.57	ZAC	90.79	ETC	255.95

V1	30.181	V2	22.585	CLP	171.05														

PLANETOCENTRIC CONIC

C3	23.210	VHL	4.818	DLA	12.76	RAL	175.36	RAD	6567.9	VEL	12.024	PTH	2.15	VHP	9.237	DPA	-.63	RAP	188.18

ECC	1.3820																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 37	2657.83	-27.28	71.53	43.69	97.89	17 45 55	2057.8	-25.91	63.13
90.00	8 21 49	4486.74	9.16	188.12	37.62	63.09	9 36 36	3886.7	5.47	181.37
100.00	18 29 33	2374.24	-28.57	50.45	43.47	99.19	19 9 7	1774.2	-27.00	42.00
100.00	9 36 35	4245.55	10.31	169.78	37.01	61.79	10 47 20	3645.6	6.46	163.10
110.00	19 52 38	2114.24	-31.98	29.94	42.71	102.78	20 27 53	1514.2	-29.89	21.35
110.00	10 29 58	4078.32	13.32	155.31	35.24	58.22	11 37 57	3478.3	9.02	148.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6062	TRA	-1.7021	TC3	1.4606	BAU	.4534	SGT	2609.2	SGR	514.4	SG3	266.1	ST	953.5	SR	471.9	SS	408.3
RDE	-.3932	RRA	-.1732	RC3	-.0390	FAU	.07467	RRT	.0360	RRF	-.0663	RTF	-.8765	CRT	-.6617	CRS	-.3362	CST	.9243
FDE	-.1968	FRA	1.2240	FC3	-2.7851	BSP	8435	SGB	2659.4	R23	-.0335	R13	-.8766	LSA	1073.4	MSA	381.0	SSA	34.8
BDE	.7225	BRA	1.7108	BC3	1.4611	FSP	764	SG1	2609.2	SG2	514.1	THA	.42	EL1	1010.1	EL2	334.0	ALF	159.53

LAUNCH DATE NOV 26 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 423.284 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.684	GAL	-2.63	AZL	88.65	HCA	133.82	SMA	223.03	ECC	.34084	INC	1.3470
RP	242.74	LAP	.97	LOP	197.60	VP	22.326	GAP	19.30	AZP	90.93	TAL	349.64	TAP	123.46	RCA	147.01	APO	299.05
RC	145.763	GL	9.96	GP	1.50	ZAL	105.76	ZAP	170.38	ETS	169.74	ZAE	153.55	ETE	1.83	ZAC	90.92	ETC	255.94

V1	30.181	V2	22.611	CLP	170.49														

PLANETOCENTRIC CONIC

C3	22.179	VHL	4.709	DLA	13.19	RAL	174.61	RAD	6567.9	VEL	11.982	PTH	2.14	VHP	9.024	DPA	-.73	RAP	188.54

ECC	1.3650																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 53	2661.58	-27.32	71.80	42.29	97.76	17 39 15	2061.6	-25.96	63.39
90.00	8 22 32	4460.90	8.36	186.64	36.21	62.85	9 36 53	3860.9	4.65	179.92
100.00	18 23 6	2377.09	-28.60	50.66	42.07	99.09	19 2 43	1777.1	-27.05	42.20
100.00	9 37 1	4220.62	9.50	168.36	35.60	61.53	10 47 21	3620.6	5.63	161.72
110.00	19 46 48	2115.20	-31.99	30.01	41.32	102.74	20 22 3	1515.2	-29.91	21.42
110.00	10 29 48	4055.28	12.49	154.05	33.83	57.92	11 37 23	3455.3	8.16	147.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5758	TRA	-1.6776	TC3	1.5516	BAU	.4602	SGT	2649.7	SGR	507.5	SG3	279.8	ST	942.4	SR	465.4	SS	406.0
RDE	-.3790	RRA	-.1674	RC3	-.0358	FAU	.07728	RRT	.0492	RRF	-.0739	RTF	-.8780	CRT	-.6466	CRS	-.3112	CST	.9215
FDE	-.1858	FRA	1.2305	FC3	-3.0165	BSP	8791	SGB	2697.8	R23	-.0291	R13	-.8780	LSA	1059.0	MSA	383.1	SSA	35.9
BDE	.6893	BRA	1.6859	BC3	1.5520	FSP	804	SG1	2649.8	SG2	506.8	THA	.56	EL1	995.9	EL2	335.9	ALF	159.91

LAUNCH DATE NOV 26 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 426.039 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.599	GAL	-2.48	AZL	88.67	HCA	134.74	SMA	220.85	ECC	.33406	INC	1.3325
RP	242.47	LAP	.95	LOP	198.52	VP	22.221	GAP	18.72	AZP	90.94	TAL	350.10	TAP	124.83	RCA	147.07	APO	294.63
RC	148.041	GL	10.05	GP	1.56	ZAL	104.89	ZAP	169.81	ETS	169.91	ZAE	153.69	ETE	2.09	ZAC	91.06	ETC	255.92

V1	30.181	V2	22.638	CLP	169.93														

PLANETOCENTRIC CONIC

C3	21.217	VHL	4.606	DLA	13.62	RAL	173.83	RAD	6567.9	VEL	11.941	PTH	2.13	VHP	8.816	DPA	-.83	RAP	188.89
ECC	1.3492																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 2	2665.75	-27.36	72.10	40.89	97.62	17 32 28	2065.7	-26.02	63.68
90.00	8 23 12	4435.33	7.56	185.18	34.82	62.63	9 37 7	3835.3	3.83	178.49
100.00	18 16 32	2380.34	-28.63	50.89	40.68	98.97	18 56 12	1780.3	-27.10	42.43
100.00	9 37 23	4195.97	8.70	166.97	34.20	61.29	10 47 19	3596.0	4.80	160.36
110.00	19 40 50	2116.52	-32.01	30.11	39.93	102.68	20 16 7	1516.5	-29.94	21.51
110.00	10 29 34	4032.55	11.66	152.80	32.43	57.64	11 36 46	3432.6	7.31	146.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5494	TRA	-1.6486	TC3	1.6546	BAU	.4694	SGT	2691.2	SGR	500.4	SG3	294.2	ST	932.6	SR	458.8	SS	403.0
RDE	-.3654	RRA	-.1619	RC3	-.0322	FAU	.07997	RRT	.0605	RRF	-.0831	RTF	-.8808	CRT	-.6341	CRS	-.2806	CST	.9151
FDE	-.1726	FRA	1.2375	FC3	-3.2632	BSP	9037	SGB	2737.3	R23	-.0280	R13	-.8809	LSA	1045.4	MSA	385.3	SSA	36.8
BDE	.6598	BRA	1.6565	BC3	1.6550	FSP	848	SG1	2691.4	SG2	499.5	THA	.67	EL1	983.4	EL2	336.4	ALF	160.27

LAUNCH DATE NOV 26 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 428.863 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.518	GAL	-2.33	AZL	88.68	HCA	135.66	SMA	218.81	ECC	.32759	INC	1.3175
RP	242.20	LAP	.92	LOP	199.44	VP	22.122	GAP	18.15	AZP	90.94	TAL	350.55	TAP	126.21	RCA	147.13	APO	290.49
RC	150.330	GL	10.13	GP	1.62	ZAL	104.01	ZAP	169.24	ETS	170.05	ZAE	153.86	ETE	2.37	ZAC	91.20	ETC	255.91

V1	30.181	V2	22.664	CLP	169.36														

PLANETOCENTRIC CONIC

C3	20.321	VHL	4.508	DLA	14.05	RAL	173.04	RAD	6567.8	VEL	11.904	PTH	2.12	VHP	8.613	DPA	-.92	RAP	189.23
ECC	1.3344																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 4	2670.31	-27.40	72.42	39.49	97.46	17 25 35	2070.3	-26.08	64.00
90.00	8 23 48	4410.07	6.77	183.75	33.43	62.44	9 37 18	3810.1	3.02	177.07
100.00	18 9 52	2383.96	-28.67	51.15	39.28	98.84	18 49 36	1784.0	-27.15	42.68
100.00	9 37 42	4171.66	7.90	165.61	32.82	61.08	10 47 14	3571.7	3.98	159.01
110.00	19 34 48	2118.19	-32.04	30.23	38.54	102.61	20 10 6	1518.2	-29.97	21.63
110.00	10 29 15	4010.19	10.84	151.59	31.04	57.38	11 36 5	3410.2	6.47	145.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5246	TRA	-1.6171	TC3	1.7641	BAU	.4793	SGT	2731.9	SGR	493.4	SG3	309.2	ST	922.4	SR	452.1	SS	399.4
RDE	-.3524	RRA	-.1567	RC3	-.0278	FAU	.08277	RRT	.0716	RRF	-.0938	RTF	-.8841	CRT	-.6223	CRS	-.2450	CST	.9060
FDE	-.1572	FRA	1.2437	FC3	-3.5265	BSP	9262	SGB	2776.1	R23	-.0284	R13	-.8842	LSA	1031.1	MSA	387.8	SSA	37.6
BDE	.6320	BRA	1.6247	BC3	1.7643	FSP	896	SG1	2732.1	SG2	492.1	THA	.77	EL1	970.7	EL2	336.3	ALF	160.62

LAUNCH DATE NOV 26 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 431.751 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.440	GAL	-2.18	AZL	88.70	HCA	136.58	SMA	216.90	ECC	.32141	INC	1.3019
RP	241.93	LAP	.89	LOP	200.37	VP	22.029	GAP	17.58	AZP	90.95	TAL	351.01	TAP	127.59	RCA	147.18	APO	286.61
RC	152.629	GL	10.20	GP	1.68	ZAL	103.12	ZAP	168.66	ETS	170.17	ZAE	154.07	ETE	2.67	ZAC	91.33	ETC	255.90

V1	30.181	V2	22.692	CLP	168.78														

PLANETOCENTRIC CONIC

C3	19.485	VHL	4.414	DLA	14.47	RAL	172.22	RAD	6567.8	VEL	11.869	PTH	2.11	VHP	8.415	DPA	-1.00	RAP	189.57
ECC	1.3207																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 2	2675.21	-27.44	72.78	38.10	97.28	17 18 37	2075.2	-26.15	64.35
90.00	8 24 21	4385.19	5.98	182.35	32.06	62.27	9 37 26	3785.2	2.22	175.68
100.00	18 3 7	2387.90	-28.71	51.44	37.89	98.69	18 42 55	1787.9	-27.21	42.96
100.00	9 37 56	4147.73	7.11	164.27	31.44	60.89	10 47 4	3547.7	3.18	157.70
110.00	19 28 41	2120.15	-32.07	30.38	37.17	102.53	20 4 2	1520.2	-30.01	21.77
110.00	10 28 51	3988.24	10.04	150.40	29.66	57.15	11 35 20	3388.2	5.64	144.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5014	TRA	-1.5846	TC3	1.8775	BAU	.4891	SGT	2771.9	SGR	486.2	SG3	324.8	ST	912.2	SR	445.4	SS	395.7
RDE	-.3399	RRA	-.1518	RC3	-.0225	FAU	.08567	RRT	.0831	RRF	-.1057	RTF	-.8874	CRT	-.6111	CRS	-.2066	CST	.8949
FDE	-.1409	FRA	1.2496	FC3	-3.8067	BSP	9430	SGB	2814.2	R23	-.0297	R13	-.8875	LSA	1016.5	MSA	390.2	SSA	38.3
BDE	.6058	BRA	1.5918	BC3	1.8777	FSP	947	SG1	2772.2	SG2	484.5	THA	.86	EL1	958.1	EL2	335.7	ALF	160.96

LAUNCH DATE NOV 26 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 434.698 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.366	GAL	-2.04	AZL	88.71	HCA	137.51	SMA	215.10	ECC	.31550	INC	1.2858
RP	241.65	LAP	.87	LOP	201.29	VP	21.941	GAP	17.01	AZP	90.95	TAL	351.47	TAP	128.98	RCA	147.23	APO	282.96
RC	154.936	GL	10.26	GP	1.75	ZAL	102.21	ZAP	168.06	ETS	170.28	ZAE	154.31	ETE	2.97	ZAC	91.47	ETC	255.89

V1	30.181	V2	22.720	CLP	168.19														

PLANETOCENTRIC CONIC

C3	18.705	VHL	4.325	DLA	14.89	RAL	171.39	RAD	6567.8	VEL	11.836	PTH	2.10	VHP	8.222	DPA	-1.08	RAP	189.91
ECC	1.3078																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 55	2680.40	-27.48	73.15	36.71	97.10	17 11 35	2080.4	-26.21	64.71
90.00	8 24 48	4360.73	5.20	180.97	30.69	62.13	9 37 29	3760.7	1.43	174.32
100.00	17 56 18	2392.12	-28.76	51.75	36.51	98.53	18 36 11	1792.1	-27.28	43.26
100.00	9 38 6	4124.24	6.33	162.97	30.07	60.73	10 46 50	3524.2	2.38	156.40
110.00	19 22 31	2122.38	-32.10	30.54	35.79	102.44	19 57 54	1522.4	-30.05	21.93
110.00	10 28 23	3966.76	9.24	149.24	28.30	56.94	11 34 29	3366.8	4.82	142.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4783	TRA	-1.5514	TC3	1.9970	BAU	.4994	SGT	2812.2	SGR	479.0	SG3	341.3	ST	900.7	SR	438.5	SS	391.8
RDE	-.3279	RRA	-.1470	RC3	-.0164	FAU	.08875	RRT	.0958	RRF	-.1193	RTF	-.8910	CRT	-.5992	CRS	-.1638	CST	.8817
FDE	-.1230	FRA	1.2548	FC3	-4.1074	BSP	9594	SGB	2852.7	R23	-.0315	R13	-.8910	LSA	1000.5	MSA	393.1	SSA	39.0
BDE	.5799	BRA	1.5584	BC3	1.9971	FSP	1002	SG1	2812.6	SG2	476.8	THA	.96	EL1	944.1	EL2	334.9	ALF	161.30

LAUNCH DATE NOV 26 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 437.700 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.295	GAL	-1.91	AZL	88.73	HCA	138.44	SMA	213.41	ECC	.30987	INC	1.2689
RP	241.36	LAP	.84	LOP	202.22	VP	21.859	GAP	16.45	AZP	90.95	TAL	351.93	TAP	130.37	RCA	147.28	APO	279.53
RC	157.250	GL	10.31	GP	1.82	ZAL	101.29	ZAP	167.46	ETS	170.36	ZAE	154.60	ETE	3.30	ZAC	91.62	ETC	255.89

V1	30.181	V2	22.748	CLP	167.59														

PLANETOCENTRIC CONIC

C3	17.979	VHL	4.240	DLA	15.30	RAL	170.54	RAD	6567.7	VEL	11.805	PTH	2.09	VHP	8.033	DPA	-1.15	RAP	190.24
ECC	1.2959																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 45	2685.84	-27.53	73.54	35.33	96.91	17 4 31	2085.8	-26.29	65.09
90.00	8 25 11	4336.75	4.44	179.62	29.34	62.00	9 37 28	3736.8	.66	172.98
100.00	17 49 27	2396.58	-28.80	52.07	35.13	98.37	18 29 23	1796.6	-27.34	43.57
100.00	9 38 10	4101.25	5.57	161.69	28.72	60.58	10 46 31	3501.2	1.60	155.14
110.00	19 16 18	2124.82	-32.13	30.73	34.43	102.34	19 51 43	1524.8	-30.10	22.10
110.00	10 27 48	3945.77	8.46	148.12	26.94	56.76	11 33 34	3345.8	4.03	141.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4558	TRA	-1.5168	TC3	2.1204	BAU	.5097	SGT	2851.0	SGR	471.8	SG3	358.7	ST	888.0	SR	431.6	SS	387.7
RDE	-.3163	RRA	-.1425	RC3	-.0091	FAU	.09198	RRT	.1095	RRF	-.1341	RTF	-.8944	CRT	-.5872	CRS	-.1185	CST	.8666
FDE	-.1043	FRA	1.2580	FC3	-4.4291	BSP	9734	SGB	2889.8	R23	-.0337	R13	-.8945	LSA	983.3	MSA	396.0	SSA	39.7
BDE	.5548	BRA	1.5235	BC3	2.1204	FSP	1058	SG1	2851.5	SG2	468.9	THA	1.07	EL1	929.2	EL2	333.8	ALF	161.62

LAUNCH DATE NOV 26 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 440.754 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.226	GAL	-1.77	AZL	88.75	HCA	139.37	SMA	211.82	ECC	.30448	INC	1.2516
RP	241.08	LAP	.82	LOP	203.15	VP	21.782	GAP	15.90	AZP	90.95	TAL	352.40	TAP	131.77	RCA	147.32	APO	276.31
RC	159.568	GL	10.35	GP	1.90	ZAL	100.36	ZAP	166.84	ETS	170.42	ZAE	154.91	ETE	3.65	ZAC	91.76	ETC	255.88

V1	30.181	V2	22.777	CLP	166.97														

PLANETOCENTRIC CONIC

C3	17.302	VHL	4.160	DLA	15.70	RAL	169.67	RAD	6567.7	VEL	11.776	PTH	2.08	VHP	7.848	DPA	-1.21	RAP	190.56
ECC	1.2847																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 33	2691.46	-27.57	73.95	33.95	96.71	16 57 24	2091.5	-26.36	65.49
90.00	8 25 28	4313.31	3.69	178.31	28.00	61.90	9 37 21	3713.3	-.10	171.67
100.00	17 42 33	2401.20	-28.85	52.41	33.76	98.20	18 22 34	1801.2	-27.41	43.90
100.00	9 38 9	4078.80	4.81	160.45	27.38	60.46	10 46 7	3478.8	.84	153.91
110.00	19 10 3	2127.43	-32.17	30.92	33.07	102.23	19 45 31	1527.4	-30.15	22.29
110.00	10 27 8	3925.34	7.70	147.03	25.60	56.59	11 32 33	3325.3	3.25	140.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4328	TRA	-1.4828	TC3	2.2447	BAU	.5192	SGT	2888.6	SGR	464.6	SG3	376.7	ST	873.9	SR	424.5	SS	383.8
RDE	-.3052	RRA	-.1382	RC3	-.0007	FAU	.09533	RRT	.1251	RRF	-.1510	RTF	-.8976	CRT	-.5737	CRS	-.0682	CST	.8489
FDE	-.0837	FRA	1.2607	FC3	-4.7699	BSP	9887	SGB	2925.7	R23	-.0360	R13	-.8977	LSA	964.4	MSA	399.4	SSA	40.4
BDE	.5296	BRA	1.4892	BC3	2.2447	FSP	1119	SG1	2889.2	SG2	460.8	THA	1.18	EL1	912.7	EL2	332.9	ALF	161.94

LAUNCH DATE NOV 26 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 443.856 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.161	GAL	-1.64	AZL	88.77	HCA	140.31	SMA	210.32	ECC	.29934	INC	1.2334
RP	240.79	LAP	.79	LOP	204.09	VP	21.710	GAP	15.35	AZP	90.95	TAL	352.86	TAP	133.17	RCA	147.36	APO	273.27
RC	161.890	GL	10.37	GP	1.98	ZAL	99.43	ZAP	166.21	ETS	170.47	ZAE	155.27	ETE	4.02	ZAC	91.91	ETC	255.87

V1	30.181	V2	22.806	CLP	166.35														

PLANETOCENTRIC CONIC

C3	16.671	VHL	4.083	DLA	16.10	RAL	168.79	RAD	6567.7	VEL	11.750	PTH	2.07	VHP	7.668	DPA	-1.26	RAP	190.87
ECC	1.2744																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 20	2697.21	-27.62	74.36	32.58	96.51	16 50 17	2097.2	-26.43	65.90
90.00	8 25 38	4290.45	2.95	177.03	26.67	61.82	9 37 9	3690.4	-.84	170.40
100.00	17 35 39	2405.95	-28.89	52.75	32.39	98.02	18 15 45	1806.0	-27.48	44.23
100.00	9 38 0	4056.94	4.08	159.24	26.04	60.36	10 45 37	3456.9	.10	152.71
110.00	19 3 47	2130.17	-32.21	31.12	31.71	102.11	19 39 17	1530.2	-30.21	22.48
110.00	10 26 21	3905.49	6.95	145.98	24.27	56.45	11 31 27	3305.5	2.49	139.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4160	TRA	-1.4427	TC3	2.3858	BAU	.5317	SGT	2928.6	SGR	457.5	SG3	395.8	ST	862.5	SR	417.5	SS	380.1
RDE	-.2945	RRA	-.1342	RC3	.0088	FAU	.09888	RRT	.1386	RRF	-.1694	RTF	-.9022	CRT	-.5669	CRS	-.0153	CST	.8245
FDE	-.0624	FRA	1.2618	FC3	-5.1350	BSP	9890	SGB	2964.1	R23	-.0417	R13	-.9023	LSA	948.0	MSA	402.8	SSA	40.7
BDE	.5097	BRA	1.4490	BC3	2.3858	FSP	1182	SG1	2929.3	SG2	453.0	THA	1.27	EL1	899.7	EL2	329.7	ALF	162.18

LAUNCH DATE NOV 26 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 447.002 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.099	GAL	-1.52	AZL	88.79	HCA	141.24	SMA	208.91	ECC	.29444	INC	1.2145
RP	240.49	LAP	.76	LOP	205.02	VP	21.643	GAP	14.81	AZP	90.95	TAL	353.33	TAP	134.57	RCA	147.40	APO	270.42
RC	164.213	GL	10.38	GP	2.06	ZAL	98.49	ZAP	165.56	ETS	170.50	ZAE	155.65	ETE	4.42	ZAC	92.06	ETC	255.86

V1	30.181	V2	22.836	CLP	165.71														

PLANETOCENTRIC CONIC

C3	16.084	VHL	4.010	DLA	16.48	RAL	167.89	RAD	6567.6	VEL	11.725	PTH	2.07	VHP	7.492	DPA	-1.31	RAP	191.18
ECC	1.2647																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 8	2702.98	-27.66	74.78	31.22	96.31	16 43 11	2103.0	-26.50	66.30
90.00	8 25 41	4268.29	2.24	175.79	25.35	61.76	9 36 50	3668.3	-1.55	169.16
100.00	17 28 46	2410.72	-28.94	53.10	31.04	97.84	18 8 56	1810.7	-27.55	44.57
100.00	9 37 45	4035.78	3.37	158.07	24.73	60.28	10 45 1	3435.8	-.62	151.55
110.00	18 57 32	2132.94	-32.25	31.33	30.36	102.00	19 33 5	1532.9	-30.26	22.68
110.00	10 25 27	3886.32	6.23	144.97	22.95	56.32	11 30 14	3286.3	1.76	138.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3888	TRA	-1.4140	TC3	2.5028	BAU	.5382	SGT	2962.5	SGR	450.3	SG3	415.9	ST	843.6	SR	410.2	SS	377.0
RDE	-.2842	RRA	-.1302	RC3	.0201	FAU	.10263	RRT	.1615	RRF	-.1904	RTF	-.9037	CRT	-.5454	CRS	.0395	CST	.8073
FDE	-.0405	FRA	1.2620	FC3	-5.5241	BSP	10150	SGB	2996.5	R23	-.0415	R13	-.9039	LSA	924.5	MSA	406.8	SSA	41.8
BDE	.4816	BRA	1.4200	BC3	2.5029	FSP	1248	SG1	2963.4	SG2	444.3	THA	1.44	EL1	877.9	EL2	330.3	ALF	162.61

LAUNCH DATE NOV 26 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 450.191 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	34.039	GAL	-1.39	AZL	88.81	HCA	142.18	SMA	207.58	ECC	.28975	INC	1.1948	V1	30.181
RP	240.19	LAP	.73	LOP	205.96	VP	21.581	GAP	14.27	AZP	90.94	TAL	353.79	TAP	135.97	RCA	147.43	APO	267.72	V2	22.866
RC	166.536	GL	10.37	GP	2.16	ZAL	97.54	ZAP	164.90	ETS	170.52	ZAE	156.07	ETE	4.85	ZAC	92.21	ETC	255.86	CLP	165.06

PLANETOCENTRIC CONIC

C3	15.536	VHL	3.942	DLA	16.84	RAL	166.98	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	7.320	DPA	-1.34	RAP	191.48	ECC	1.2557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 58	2708.73	-27.71	75.19	29.86	96.10	16 36 7	2108.7	-26.57	66.71
90.00	8 25 36	4246.84	1.55	174.59	24.04	61.72	9 36 23	3646.8	-2.24	167.97
100.00	17 21 54	2415.48	-28.98	53.45	29.68	97.67	18 2 10	1815.5	-27.62	44.91
100.00	9 37 22	4015.32	2.67	156.95	23.42	60.22	10 44 17	3415.3	-1.31	150.43
110.00	18 51 19	2135.73	-32.29	31.54	29.02	101.88	19 26 55	1535.7	-30.32	22.88
110.00	10 24 26	3867.84	5.53	143.99	21.64	56.21	11 28 54	3267.8	1.05	137.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3671	TRA	-1.3784	TC3	2.6325	BAU	.5468	SGT	2995.7	SGR	443.4	SG3	436.8	ST	826.4	SR	402.9	SS	374.0
RDE	-.2743	RRA	-.1265	RC3	.0327	FAU	.10652	RRT	.1829	RRF	-.2134	RTF	-.9066	CRT	-.5301	CRS	.0982	CST	.7823
FDE	-.0169	FRA	1.2596	FC3	-5.9358	BSP	10272	SGB	3028.3	R23	-.0448	R13	-.9067	LSA	902.5	MSA	410.9	SSA	42.5
BDE	.4582	BRA	1.3842	BC3	2.6327	FSP	1317	SG1	2996.8	SG2	435.8	THA	1.58	EL1	858.6	EL2	328.9	ALF	162.93

LAUNCH DATE NOV 26 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 453.419 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.982	GAL	-1.27	AZL	88.83	HCA	143.12	SMA	206.32	ECC	.28528	INC	1.1741	V1	30.181
RP	239.88	LAP	.70	LOP	206.90	VP	21.523	GAP	13.74	AZP	90.94	TAL	354.25	TAP	137.38	RCA	147.46	APO	265.18	V2	22.897
RC	168.857	GL	10.35	GP	2.25	ZAL	96.60	ZAP	164.23	ETS	170.52	ZAE	156.53	ETE	5.31	ZAC	92.37	ETC	255.85	CLP	164.39

PLANETOCENTRIC CONIC

C3	15.026	VHL	3.876	DLA	17.19	RAL	166.06	RAD	6567.6	VEL	11.680	PTH	2.05	VHP	7.151	DPA	-1.37	RAP	191.77	ECC	1.2473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 52	2714.37	-27.75	75.60	28.51	95.90	16 29 6	2114.4	-26.64	67.11
90.00	8 25 22	4226.20	.88	173.44	22.74	61.70	9 35 49	3626.2	-2.91	166.81
100.00	17 15 6	2420.15	-29.02	53.79	28.34	97.49	17 55 26	1820.1	-27.68	45.24
100.00	9 36 49	3995.66	2.01	155.87	22.12	60.17	10 43 25	3395.7	-1.98	149.35
110.00	18 45 8	2138.46	-32.33	31.74	27.69	101.77	19 20 46	1538.5	-30.37	23.07
110.00	10 23 17	3850.11	4.86	143.06	20.35	56.12	11 27 27	3250.1	.37	136.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3478	TRA	-1.3427	TC3	2.7695	BAU	.5564	SGT	3031.6	SGR	436.8	SG3	459.0	ST	810.5	SR	395.6	SS	371.8
RDE	-.2649	RRA	-.1230	RC3	.0470	FAU	.11068	RRT	.2056	RRF	-.2386	RTF	-.9096	CRT	-.5165	CRS	.1555	CST	.7551
FDE	.0062	FRA	1.2564	FC3	-6.3767	BSP	10388	SGB	3062.9	R23	-.0488	R13	-.9098	LSA	882.0	MSA	414.7	SSA	43.1
BDE	.4372	BRA	1.3484	BC3	2.7699	FSP	1392	SG1	3032.9	SG2	427.3	THA	1.73	EL1	840.7	EL2	326.6	ALF	163.25

LAUNCH DATE NOV 26 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 456.684 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.927	GAL	-1.16	AZL	88.85	HCA	144.07	SMA	205.13	ECC	.28102	INC	1.1525	V1	30.181
RP	239.58	LAP	.68	LOP	207.85	VP	21.470	GAP	13.21	AZP	90.93	TAL	354.71	TAP	138.78	RCA	147.49	APO	262.78	V2	22.928
RC	171.174	GL	10.30	GP	2.36	ZAL	95.65	ZAP	163.55	ETS	170.52	ZAE	157.01	ETE	5.82	ZAC	92.53	ETC	255.84	CLP	163.71

PLANETOCENTRIC CONIC

C3	14.551	VHL	3.815	DLA	17.52	RAL	165.13	RAD	6567.6	VEL	11.659	PTH	2.05	VHP	6.987	DPA	-1.38	RAP	192.05	ECC	1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 51	2719.80	-27.78	75.99	27.17	95.71	16 22 11	2119.8	-26.70	67.49
90.00	8 24 58	4206.44	.25	172.34	21.46	61.68	9 35 5	3606.4	-3.54	165.71
100.00	17 8 23	2424.61	-29.06	54.11	27.00	97.32	17 48 48	1824.6	-27.74	45.56
100.00	9 36 7	3976.86	1.37	154.84	20.83	60.14	10 42 24	3376.9	-2.61	148.32
110.00	18 39 1	2141.05	-32.36	31.94	26.36	101.66	19 14 42	1541.1	-30.42	23.26
110.00	10 21 58	3833.19	4.21	142.17	19.06	56.05	11 25 52	3233.2	-.27	135.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3241	TRA	-1.3086	TC3	2.8934	BAU	.5630	SGT	3059.1	SGR	430.6	SG3	481.8	ST	789.7	SR	388.3	SS	370.4
RDE	-.2558	RRA	-.1196	RC3	.0632	FAU	.11492	RRT	.2336	RRF	-.2673	RTF	-.9117	CRT	-.4955	CRS	.2207	CST	.7263
FDE	.0328	FRA	1.2510	FC3	-6.8376	BSP	10552	SGB	3089.3	R23	-.0516	R13	-.9119	LSA	856.4	MSA	419.9	SSA	43.9
BDE	.4128	BRA	1.3141	BC3	2.8941	FSP	1471	SG1	3060.8	SG2	418.4	THA	1.92	EL1	817.5	EL2	325.8	ALF	163.64

LAUNCH DATE NOV 26 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 459.983 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.875	GAL	-1.05	AZL	88.87	HCA	145.01	SMA	204.01	ECC	.27696	INC	1.1297	V1	30.181
RP	239.26	LAP	.65	LOP	208.79	VP	21.421	GAP	12.69	AZP	90.93	TAL	355.17	TAP	140.18	RCA	147.51	APO	260.52	V2	22.959
RC	173.485	GL	10.24	GP	2.47	ZAL	94.71	ZAP	162.84	ETS	170.49	ZAE	157.53	ETE	6.38	ZAC	92.69	ETC	255.84	CLP	163.02

PLANETOCENTRIC CONIC

C3	14.109	VHL	3.756	DLA	17.83	RAL	164.19	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	6.827	DPA	-1.38	RAP	192.32	ECC	1.2322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 57	2724.93	-27.82	76.36	25.83	95.52	16 15 22	2124.9	-26.76	67.86
90.00	8 24 23	4187.65	-.36	171.29	20.18	61.69	9 34 10	3587.6	-4.14	164.65
100.00	17 1 47	2428.82	-29.10	54.42	25.67	97.17	17 42 16	1828.8	-27.80	45.86
100.00	9 35 14	3959.00	.77	153.86	19.56	60.12	10 41 13	3359.0	-3.22	147.33
110.00	18 32 59	2143.44	-32.40	32.12	25.04	101.56	19 8 43	1543.4	-30.47	23.43
110.00	10 20 31	3817.14	3.60	141.33	17.79	55.98	11 24 8	3217.1	-.89	135.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3036	TRA	-1.2748	TC3	3.0223	BAU	.5703	SGT	3089.1	SGR	424.9	SG3	506.0	ST	771.2	SR	381.0	SS	370.1
RDE	-.2470	RRA	-.1164	RC3	.0815	FAU	.11942	RRT	.2631	RRF	-.2986	RTF	-.9139	CRT	-.4769	CRS	.2832	CST	.6953
FDE	.0590	FRA	1.2454	FC3	-7.3282	BSP	10681	SGB	3118.2	R23	-.0557	R13	-.9142	LSA	833.3	MSA	424.8	SSA	44.6
BDE	.3914	BRA	1.2801	BC3	3.0234	FSP	1553	SG1	3091.1	SG2	409.6	THA	2.11	EL1	796.7	EL2	324.1	ALF	164.03

LAUNCH DATE NOV 26 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 463.316 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.824	GAL	-.94	AZL	88.89	HCA	145.96	SMA	202.96	ECC	.27308	INC	1.1059
RP	238.95	LAP	.62	LOP	209.74	VP	21.376	GAP	12.18	AZP	90.92	TAL	355.63	TAP	141.59	RCA	147.53	APO	258.38
RC	175.790	GL	10.16	GP	2.59	ZAL	93.77	ZAP	162.12	ETS	170.46	ZAE	158.08	ETE	6.99	ZAC	92.86	ETC	255.83

V1	30.181	V2	22.991	CLP	162.30														

PLANETOCENTRIC CONIC

C3	13.696	VHL	3.701	DLA	18.12	RAL	163.25	RAD	6567.5	VEL	11.622	PTH	2.04	VHP	6.670	DPA	-1.37	RAP	192.59
ECC	1.2254																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 13	2729.66	-27.85	76.71	24.50	95.35	16 8 42	2129.7	-26.81	68.19
90.00	8 23 34	4169.90	-.93	170.30	18.92	61.70	9 33 4	3569.9	-4.71	163.66
100.00	16 55 19	2432.65	-29.13	54.70	24.34	97.02	17 35 51	1832.7	-27.85	46.13
100.00	9 34 9	3942.15	.19	152.93	18.29	60.11	10 39 51	3342.1	-3.78	146.41
110.00	18 27 4	2145.56	-32.43	32.27	23.72	101.47	19 2 50	1545.6	-30.51	23.58
110.00	10 18 53	3802.01	3.03	140.54	16.52	55.93	11 22 15	3202.0	-1.46	134.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2849	TRA	-1.2406	TC3	3.1503	BAU	.5771	SGT	3117.0	SGR	419.8	SG3	531.3	ST	753.0	SR	373.6	SS	370.5
RDE	-.2386	RRA	-.1133	RC3	.1019	FAU	.12414	RRT	.2949	RRF	-.3326	RTF	-.9161	CRT	-.4593	CRS	.3431	CST	.6629
FDE	.0848	FRA	1.2373	FC3	-7.8467	BSP	10777	SGB	3145.1	R23	-.0605	R13	-.9164	LSA	810.7	MSA	429.5	SSA	45.3
BDE	.3716	BRA	1.2457	BC3	3.1519	FSP	1638	SG1	3119.5	SG2	400.8	THA	2.31	EL1	776.5	EL2	321.8	ALF	164.42

LAUNCH DATE NOV 26 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 466.680 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.777	GAL	-.83	AZL	88.92	HCA	146.91	SMA	201.95	ECC	.26938	INC	1.0808
RP	238.63	LAP	.59	LOP	210.69	VP	21.335	GAP	11.67	AZP	90.91	TAL	356.08	TAP	142.99	RCA	147.55	APO	256.36
RC	178.086	GL	10.06	GP	2.72	ZAL	92.83	ZAP	161.38	ETS	170.42	ZAE	158.65	ETE	7.66	ZAC	93.03	ETC	255.83

V1	30.181	V2	23.024	CLP	161.58

PLANETOCENTRIC CONIC

C3	13.312	VHL	3.649	DLA	18.39	RAL	162.30	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	6.517	DPA	-1.35	RAP	192.85
ECC	1.2191																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 39	2733.88	-27.87	77.01	23.18	95.20	16 2 13	2133.9	-26.86	68.49
90.00	8 22 32	4153.30	-1.47	169.38	17.66	61.72	9 31 45	3553.3	-5.24	162.72
100.00	16 49 1	2436.03	-29.16	54.95	23.03	96.90	17 29 37	1836.0	-27.90	46.37
100.00	9 32 51	3926.38	-.34	152.07	17.04	60.11	10 38 18	3326.4	-4.32	145.54
110.00	18 21 18	2147.32	-32.45	32.41	22.41	101.39	18 57 5	1547.3	-30.54	23.71
110.00	10 17 4	3787.86	2.49	139.80	15.27	55.90	11 20 12	3187.9	-2.01	133.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2690	TRA	-1.2044	TC3	3.2845	BAU	.5850	SGT	3145.7	SGR	415.6	SG3	558.1	ST	735.6	SR	366.2	SS	370.9
RDE	-.2305	RRA	-.1104	RC3	.1249	FAU	.12918	RRT	.3286	RRF	-.3693	RTF	-.9185	CRT	-.4453	CRS	.3987	CST	.6283
FDE	.1096	FRA	1.2260	FC3	-8.4013	BSP	10837	SGB	3173.0	R23	-.0665	R13	-.9189	LSA	789.2	MSA	433.5	SSA	46.0
BDE	.3543	BRA	1.2095	BC3	3.2869	FSP	1726	SG1	3148.7	SG2	392.2	THA	2.52	EL1	757.5	EL2	318.4	ALF	164.74

LAUNCH DATE NOV 26 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 470.074 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.731	GAL	-.73	AZL	88.95	HCA	147.86	SMA	201.01	ECC	.26586	INC	1.0543
RP	238.31	LAP	.56	LOP	211.64	VP	21.297	GAP	11.17	AZP	90.89	TAL	356.52	TAP	144.39	RCA	147.57	APO	254.45
RC	180.373	GL	9.93	GP	2.86	ZAL	91.90	ZAP	160.63	ETS	170.36	ZAE	159.26	ETE	8.42	ZAC	93.21	ETC	255.82

V1	30.181	V2	23.056	CLP	160.83

PLANETOCENTRIC CONIC

C3	12.954	VHL	3.599	DLA	18.63	RAL	161.34	RAD	6567.5	VEL	11.591	PTH	2.03	VHP	6.368	DPA	-1.31	RAP	193.09
ECC	1.2132																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 19	2737.48	-27.90	77.27	21.87	95.07	15 55 56	2137.5	-26.90	68.75
90.00	8 21 14	4137.92	-1.96	168.52	16.42	61.75	9 30 12	3537.9	-5.73	161.86
100.00	16 42 55	2438.84	-29.18	55.15	21.72	96.79	17 23 34	1838.8	-27.93	46.57
100.00	9 31 19	3911.79	-.84	151.27	15.79	60.12	10 36 31	3311.8	-4.81	144.73
110.00	18 15 41	2148.64	-32.47	32.50	21.11	101.33	18 51 29	1548.6	-30.56	23.80
110.00	10 15 3	3774.75	1.99	139.11	14.02	55.87	11 17 58	3174.8	-2.51	132.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2542	TRA	-1.1662	TC3	3.4241	BAU	.5936	SGT	3174.4	SGR	412.6	SG3	586.3	ST	717.4	SR	358.8	SS	372.6
RDE	-.2228	RRA	-.1076	RC3	.1504	FAU	.13446	RRT	.3647	RRF	-.4093	RTF	-.9214	CRT	-.4328	CRS	.4564	CST	.5880
FDE	.1366	FRA	1.2129	FC3	-8.9861	BSP	10902	SGB	3201.1	R23	-.0734	R13	-.9219	LSA	766.6	MSA	438.7	SSA	46.4
BDE	.3380	BRA	1.1711	BC3	3.4274	FSP	1825	SG1	3178.0	SG2	383.7	THA	2.75	EL1	737.9	EL2	314.5	ALF	165.00

LAUNCH DATE NOV 26 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 473.494 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.687	GAL	-.63	AZL	88.97	HCA	148.82	SMA	200.11	ECC	.26250	INC	1.0262
RP	237.98	LAP	.53	LOP	212.60	VP	21.264	GAP	10.68	AZP	90.88	TAL	356.96	TAP	145.78	RCA	147.58	APO	252.64
RC	182.651	GL	9.78	GP	3.00	ZAL	90.98	ZAP	159.86	ETS	170.29	ZAE	159.89	ETE	9.26	ZAC	93.40	ETC	255.82

V1	30.181	V2	23.089	CLP	160.07

PLANETOCENTRIC CONIC

C3	12.621	VHL	3.553	DLA	18.84	RAL	160.38	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	6.222	DPA	-1.26	RAP	193.33
ECC	1.2077																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 15	2740.29	-27.91	77.48	20.56	94.97	15 49 55	2140.3	-26.93	68.95
90.00	8 19 40	4123.92	-2.42	167.74	15.18	61.78	9 28 23	3523.9	-6.17	161.07
100.00	16 37 5	2440.94	-29.20	55.31	20.41	96.71	17 17 46	1840.9	-27.96	46.72
100.00	9 29 31	3898.49	-1.29	150.54	14.55	60.13	10 34 29	3298.5	-5.25	144.00
110.00	18 10 16	2149.41	-32.48	32.56	19.81	101.30	18 46 5	1549.4	-30.58	23.86
110.00	10 12 49	3762.79	1.53	138.49	12.79	55.85	11 15 32	3162.8	-2.96	132.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2320	TRA	-1.1358	TC3	3.5264	BAU	.5958	SGT	3188.1	SGR	410.8	SG3	615.1	ST	694.8	SR	351.4	SS	375.5
RDE	-.2153	RRA	-.1049	RC3	.1790	FAU	.13982	RRT	.4083	RRF	-.4528	RTF	-.9221	CRT	-.4034	CRS	.5135	CST	.5594
FDE	.1650	FRA	1.1983	FC3	-9.5914	BSP	11089	SGB	3214.4	R23	-.0778	R13	-.9226	LSA	740.5	MSA	443.4	SSA	47.4
BDE	.3165	BRA	1.1406	BC3	3.5309	FSP	1925	SG1	3192.6	SG2	374.5	THA	3.05	EL1	712.8	EL2	313.5	ALF	165.63

LAUNCH DATE NOV 26 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 476.941 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.645 GAL -.54 AZL 89.00 HCA 149.78 SMA 199.26 ECC .25931 INC .9964 V1 30.181
RP 237.65 LAP .50 LOP 213.56 VP 21.234 GAP 10.19 AZP 90.86 TAL 357.39 TAP 147.17 RCA 147.59 APO 250.93 V2 23.123
RC 184.919 GL 9.60 GP 3.16 ZAL 90.08 ZAP 159.06 ETS 170.21 ZAE 160.55 ETE 10.20 ZAC 93.59 ETC 255.81 CLP 159.29

PLANETOCENTRIC CONIC

C3 12.310 VHL 3.509 DLA 19.02 RAL 159.42 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 6.080 DPA -1.18 RAP 193.56 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 29	2742.23	-27.92	77.62	19.27	94.90	15 44 11	2142.2	-26.95	69.09
90.00	8 17 46	4111.35	-2.82	167.03	13.95	61.81	9 26 17	3511.3	-6.57	160.36
100.00	16 31 30	2442.26	-29.21	55.41	19.12	96.66	17 12 12	1842.3	-27.98	46.82
100.00	9 27 26	3886.54	-1.69	149.88	13.32	60.15	10 32 12	3286.5	-5.65	143.33
110.00	18 5 3	2149.57	-32.48	32.57	18.52	101.30	18 40 53	1549.6	-30.58	23.87
110.00	10 10 22	3752.01	1.12	137.93	11.57	55.83	11 12 54	3152.0	-3.37	131.72

DIFFERENTIAL CORRECTIONS
TDE .2162 TRA-1.1027 TC3 3.6378 BAU .5997
RDE -.2081 RRA -.1024 RC3 .2107 FAU .14545
FDE .1909 FRA 1.1823 FC-10.2295 BSP 11172
BDE .3001 BRA 1.1074 BC3 3.6439 FSP 2030

MID-COURSE EXECUTION ACCURACY
SGT 3204.4 SGR 410.7 SG3 645.4
RRT .4515 RRF -.4982 RTF -.9234
SGB 3230.6 R23 -.0849 R13 -.9240
SG1 3209.9 SG2 365.8 THA 3.36

ORBIT DETERMINATION ACCURACY
ST 676.1 SR 344.0 SS 378.4
CRT -.3842 CRS .5627 CST .5266
LSA 718.4 MSA 447.5 SSA 48.1
EL1 692.2 EL2 310.2 ALF 166.09

LAUNCH DATE NOV 26 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 480.414 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.605 GAL -.44 AZL 89.03 HCA 150.74 SMA 198.46 ECC .25626 INC .9649 V1 30.181
RP 237.31 LAP .47 LOP 214.52 VP 21.207 GAP 9.71 AZP 90.84 TAL 357.82 TAP 148.56 RCA 147.60 APO 249.32 V2 23.157
RC 187.176 GL 9.40 GP 3.33 ZAL 89.18 ZAP 158.25 ETS 170.11 ZAE 161.24 ETE 11.27 ZAC 93.80 ETC 255.81 CLP 158.49

PLANETOCENTRIC CONIC

C3 12.020 VHL 3.467 DLA 19.17 RAL 158.46 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 5.940 DPA -1.09 RAP 193.77 ECC 1.1978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 3	2743.14	-27.93	77.69	17.98	94.87	15 38 46	2143.1	-26.96	69.15
90.00	8 15 31	4100.35	-3.17	166.42	12.73	61.85	9 23 52	3500.3	-6.91	159.74
100.00	16 26 14	2442.66	-29.21	55.43	17.83	96.64	17 6 56	1842.7	-27.98	46.85
100.00	9 25 2	3876.06	-2.05	149.31	12.10	60.17	10 29 38	3276.1	-6.00	142.75
110.00	18 0 5	2149.00	-32.47	32.53	17.23	101.32	18 35 54	1549.0	-30.57	23.83
110.00	10 7 39	3742.49	.75	137.43	10.35	55.82	11 10 2	3142.5	-3.74	131.22

DIFFERENTIAL CORRECTIONS
TDE .2033 TRA-1.0674 TC3 3.7526 BAU .6043
RDE -.2011 RRA -.0998 RC3 .2461 FAU .15146
FDE .2148 FRA 1.1602 FC-10.9088 BSP 11251
BDE .2860 BRA 1.0721 BC3 3.7606 FSP 2140

MID-COURSE EXECUTION ACCURACY
SGT 3220.4 SGR 412.4 SG3 677.4
RRT .4958 RRF -.5453 RTF -.9250
SGB 3246.7 R23 -.0933 R13 -.9257
SG1 3227.0 SG2 357.5 THA 3.68

ORBIT DETERMINATION ACCURACY
ST 658.0 SR 336.5 SS 380.1
CRT -.3700 CRS .6062 CST .4918
LSA 696.8 MSA 450.3 SSA 48.8
EL1 672.8 EL2 305.7 ALF 166.43

LAUNCH DATE NOV 26 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 483.911 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.566 GAL -.36 AZL 89.07 HCA 151.70 SMA 197.70 ECC .25336 INC .9310 V1 30.181
RP 236.98 LAP .44 LOP 215.48 VP 21.184 GAP 9.23 AZP 90.82 TAL 358.24 TAP 149.94 RCA 147.61 APO 247.79 V2 23.191
RC 189.421 GL 9.16 GP 3.52 ZAL 88.29 ZAP 157.41 ETS 170.00 ZAE 161.94 ETE 12.48 ZAC 94.01 ETC 255.80 CLP 157.67

PLANETOCENTRIC CONIC

C3 11.749 VHL 3.428 DLA 19.28 RAL 157.50 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 5.805 DPA -.98 RAP 193.98 ECC 1.1934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 0	2742.90	-27.93	77.67	16.69	94.88	15 33 43	2142.9	-26.96	69.14
90.00	8 12 54	4091.03	-3.47	165.90	11.51	61.88	9 21 5	3491.0	-7.21	159.21
100.00	16 21 18	2442.02	-29.21	55.39	16.54	96.67	17 2 0	1842.0	-27.98	46.80
100.00	9 22 17	3867.14	-2.35	148.82	10.89	60.19	10 26 44	3267.1	-6.30	142.26
110.00	17 55 24	2147.62	-32.45	32.43	15.94	101.38	18 31 11	1547.6	-30.55	23.73
110.00	10 4 40	3734.30	.44	137.00	9.14	55.82	11 6 55	3134.3	-4.05	130.79

DIFFERENTIAL CORRECTIONS
TDE .1896 TRA-1.0353 TC3 3.8678 BAU .6092
RDE -.1945 RRA -.0976 RC3 .2856 FAU .15781
FDE .2412 FRA 1.1410 FC-11.6280 BSP 11298
BDE .2716 BRA 1.0399 BC3 3.8783 FSP 2256

MID-COURSE EXECUTION ACCURACY
SGT 3239.2 SGR 416.9 SG3 711.4
RRT .5426 RRF -.5945 RTF -.9266
SGB 3265.9 R23 -.1021 R13 -.9274
SG1 3247.2 SG2 349.3 THA 4.04

ORBIT DETERMINATION ACCURACY
ST 639.8 SR 329.2 SS 384.3
CRT -.3516 CRS .6496 CST .4582
LSA 675.6 MSA 454.5 SSA 49.4
EL1 653.1 EL2 301.9 ALF 166.90

LAUNCH DATE NOV 26 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 487.430 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.530 GAL -.27 AZL 89.10 HCA 152.67 SMA 196.98 ECC .25060 INC .8954 V1 30.181
RP 236.64 LAP .41 LOP 216.45 VP 21.164 GAP 8.76 AZP 90.80 TAL 358.65 TAP 151.32 RCA 147.62 APO 246.34 V2 23.226
RC 191.655 GL 8.89 GP 3.72 ZAL 87.42 ZAP 156.55 ETS 169.88 ZAE 162.67 ETE 13.86 ZAC 94.23 ETC 255.80 CLP 156.83

PLANETOCENTRIC CONIC

C3 11.497 VHL 3.391 DLA 19.35 RAL 156.54 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 5.673 DPA -.85 RAP 194.18 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 23	2741.31	-27.92	77.55	15.41	94.94	15 29 4	2141.3	-26.94	69.02
90.00	8 9 52	4083.55	-3.71	165.48	10.30	61.91	9 17 56	3483.5	-7.44	158.78
100.00	16 16 46	2440.18	-29.19	55.25	15.26	96.74	16 57 26	1840.2	-27.95	46.67
100.00	9 19 10	3859.92	-2.59	148.42	9.68	60.21	10 23 30	3259.9	-6.54	141.86
110.00	17 51 1	2145.30	-32.42	32.25	14.66	101.48	18 26 46	1545.3	-30.50	23.56
110.00	10 1 24	3727.56	.18	136.65	7.94	55.82	11 3 32	3127.6	-4.30	130.44

DIFFERENTIAL CORRECTIONS
TDE .1703 TRA-1.0028 TC3 3.9565 BAU .6102
RDE -.1881 RRA -.0952 RC3 .3290 FAU .16417
FDE .2716 FRA 1.1150 FC-12.3627 BSP 11434
BDE .2538 BRA 1.0073 BC3 3.9702 FSP 2387

MID-COURSE EXECUTION ACCURACY
SGT 3241.5 SGR 424.1 SG3 745.7
RRT .5916 RRF -.6438 RTF -.9275
SGB 3269.1 R23 -.1103 R13 -.9285
SG1 3251.3 SG2 340.9 THA 4.48

ORBIT DETERMINATION ACCURACY
ST 616.1 SR 322.0 SS 389.8
CRT -.3194 CRS .6957 CST .4304
LSA 649.8 MSA 458.8 SSA 50.2
EL1 627.3 EL2 299.7 ALF 167.66

LAUNCH DATE NOV 26 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 490.971 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.495 GAL -.19 AZL 89.14 HCA 153.64 SMA 196.30 ECC .24797 INC .8569 V1 30.181
RP 236.29 LAP .38 LOP 217.42 VP 21.148 GAP 8.30 AZP 90.77 TAL 359.06 TAP 152.70 RCA 147.62 APO 244.97 V2 23.261
RC 193.877 GL 8.59 GP 3.94 ZAL 86.57 ZAP 155.66 ETS 169.74 ZAE 163.42 ETE 15.46 ZAC 94.47 ETC 255.79 CLP 155.96

PLANETOCENTRIC CONIC

C3 11.261 VHL 3.356 DLA 19.38 RAL 155.58 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 5.543 DPA -.70 RAP 194.36 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 13	2738.26	-27.90	77.33	14.14	95.05	15 24 52	2138.3	-26.91	68.80
90.00	8 6 23	4078.01	-3.89	165.17	9.09	61.93	9 14 21	3478.0	-7.62	158.47
100.00	16 12 39	2437.02	-29.17	55.02	13.99	96.86	16 53 16	1837.0	-27.91	46.44
100.00	9 15 39	3854.49	-2.78	148.12	8.47	60.22	10 19 53	3254.5	-6.72	141.55
110.00	17 46 58	2141.93	-32.38	32.00	13.38	101.62	18 22 39	1541.9	-30.44	23.32
110.00	9 57 49	3722.34	-.02	136.38	6.75	55.82	10 59 52	3122.3	-4.50	130.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1600 TRA -.9731 TC3 4.0599 BAU .6139 SGT 3256.0 SGR 434.8 SG3 783.1 ST 600.4 SR 314.6 SS 392.5
RDE -.1818 RRA -.0931 RC3 .3779 FAU .17117 RRT .6379 RRF -.6922 RTF -.9288 CRT -.3043 CRS .7256 CST .4035
FDE .2926 FRA 1.0924 FC-13.1592 BSP 11534 SGB 3284.9 R23 -.1213 R13 -.9299 LSA 631.9 MSA 460.0 SSA 50.9
BDE .2422 BRA .9775 BC3 4.0775 FSP 2521 SG1 3267.9 SG2 333.6 THA 4.92 EL1 610.4 EL2 294.7 ALF 168.14

LAUNCH DATE NOV 26 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 494.533 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.462 GAL -.11 AZL 89.18 HCA 154.61 SMA 195.65 ECC .24547 INC .8157 V1 30.181
RP 235.94 LAP .35 LOP 218.39 VP 21.134 GAP 7.84 AZP 90.74 TAL 359.45 TAP 154.06 RCA 147.62 APO 243.68 V2 23.297
RC 196.086 GL 8.24 GP 4.17 ZAL 85.73 ZAP 154.75 ETS 169.59 ZAE 164.18 ETE 17.31 ZAC 94.72 ETC 255.79 CLP 155.08

PLANETOCENTRIC CONIC

C3 11.041 VHL 3.323 DLA 19.37 RAL 154.63 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 5.418 DPA -.52 RAP 194.54 ECC 1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 35	2733.56	-27.87	76.99	12.86	95.21	15 21 9	2133.6	-26.86	68.47
90.00	8 2 24	4074.58	-4.00	164.98	7.89	61.94	9 10 19	3474.6	-7.72	158.27
100.00	16 8 59	2432.37	-29.13	54.68	12.71	97.03	16 49 32	1832.4	-27.85	46.11
100.00	9 11 41	3850.99	-2.89	147.93	7.28	60.24	10 15 52	3251.0	-6.84	141.36
110.00	17 43 16	2137.39	-32.31	31.66	12.09	101.81	18 18 54	1537.4	-30.35	23.00
110.00	9 53 54	3718.74	-.16	136.19	5.56	55.82	10 55 52	3118.7	-4.64	129.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1371 TRA -.9393 TC3 4.1400 BAU .6144 SGT 3251.6 SGR 449.6 SG3 820.8 ST 572.7 SR 307.9 SS 402.0
RDE -.1761 RRA -.0909 RC3 .4316 FAU .17816 RRT .6858 RRF -.7392 RTF -.9301 CRT -.2575 CRS .7710 CST .3820
FDE .3295 FRA 1.0593 FC-13.9695 BSP 11291 SGB 3282.5 R23 -.1303 R13 -.9314 LSA 604.9 MSA 464.6 SSA 51.5
BDE .2232 BRA .9437 BC3 4.1624 FSP 2620 SG1 3266.3 SG2 325.7 THA 5.47 EL1 580.1 EL2 293.7 ALF 169.36

LAUNCH DATE NOV 26 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 498.115 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.430 GAL -.03 AZL 89.23 HCA 155.59 SMA 195.04 ECC .24309 INC .7715 V1 30.181
RP 235.59 LAP .32 LOP 219.36 VP 21.123 GAP 7.40 AZP 90.70 TAL 359.83 TAP 155.42 RCA 147.62 APO 242.45 V2 23.333
RC 198.280 GL 7.86 GP 4.43 ZAL 84.92 ZAP 153.81 ETS 169.42 ZAE 164.94 ETE 19.46 ZAC 94.98 ETC 255.78 CLP 154.17

PLANETOCENTRIC CONIC

C3 10.835 VHL 3.292 DLA 19.30 RAL 153.68 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 5.295 DPA -.31 RAP 194.70 ECC 1.1783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 31	2727.03	-27.83	76.52	11.59	95.45	15 17 58	2127.0	-26.78	68.01
90.00	7 57 54	4073.39	-4.04	164.91	6.68	61.95	9 5 47	3473.4	-7.76	158.21
100.00	16 5 50	2426.08	-29.07	54.22	11.43	97.27	16 46 16	1826.1	-27.76	45.66
100.00	9 7 15	3849.58	-2.94	147.85	6.08	60.24	10 11 25	3249.6	-6.88	141.28
110.00	17 39 59	2131.54	-32.23	31.23	10.81	102.06	18 15 30	1531.5	-30.24	22.58
110.00	9 49 36	3716.89	-.23	136.10	4.38	55.82	10 51 33	3116.9	-4.71	129.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1473 TRA -.9339 TC3 4.2059 BAU .6134 SGT 3271.0 SGR 467.7 SG3 859.6 ST 582.8 SR 299.3 SS 395.8
RDE -.1695 RRA -.0897 RC3 .4906 FAU .18517 RRT .7214 RRF -.7813 RTF -.9274 CRT -.2819 CRS .7683 CST .3598
FDE .3254 FRA 1.0574 FC-14.7948 BSP 12197 SGB 3304.3 R23 -.1526 R13 -.9290 LSA 610.2 MSA 459.1 SSA 52.2
BDE .2245 BRA .9382 BC3 4.2344 FSP 2879 SG1 3288.5 SG2 322.1 THA 5.95 EL1 590.7 EL2 283.3 ALF 169.26

LAUNCH DATE NOV 26 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 501.718 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.399 GAL .04 AZL 89.28 HCA 156.57 SMA 194.46 ECC .24084 INC .7229 V1 30.181
RP 235.24 LAP .29 LOP 220.34 VP 21.115 GAP 6.95 AZP 90.66 TAL .21 TAP 156.78 RCA 147.62 APO 241.29 V2 23.369
RC 200.460 GL 7.43 GP 4.72 ZAL 84.12 ZAP 152.85 ETS 169.23 ZAE 165.71 ETE 21.99 ZAC 95.27 ETC 255.77 CLP 153.23

PLANETOCENTRIC CONIC

C3 10.643 VHL 3.262 DLA 19.18 RAL 152.73 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 5.176 DPA -.07 RAP 194.86 ECC 1.1752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 2	2718.50	-27.77	75.90	10.32	95.75	15 15 21	2118.5	-26.69	67.40
90.00	7 52 48	4074.63	-4.00	164.98	5.48	61.94	9 0 43	3474.6	-7.72	158.28
100.00	16 3 14	2417.97	-29.00	53.63	10.16	97.57	16 43 32	1818.0	-27.65	45.09
100.00	9 2 18	3850.38	-2.92	147.90	4.88	60.24	10 6 28	3250.4	-6.86	141.32
110.00	17 37 7	2124.23	-32.13	30.68	9.52	102.36	18 12 32	1524.2	-30.09	22.06
110.00	9 44 54	3716.90	-.23	136.10	3.20	55.82	10 46 50	3116.9	-4.71	129.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1981 TRA -.8246 TC3 4.3564 BAU .6250 SGT 3248.3 SGR 487.7 SG3 904.6 ST 583.0 SR 285.3 SS 326.5
RDE -.1601 RRA -.0836 RC3 .5623 FAU .19453 RRT .7469 RRF -.8166 RTF -.9345 CRT -.4536 CRS .7052 CST .2596
FDE .2427 FRA .9055 FC-15.8232 BSP 10684 SGB 3284.7 R23 -.1679 R13 -.9364 LSA 603.5 MSA 400.6 SSA 56.6
BDE .2547 BRA .8288 BC3 4.3926 FSP 2823 SG1 3268.9 SG2 322.2 THA 6.46 EL1 600.2 EL2 246.9 ALF 164.86

LAUNCH DATE NOV 26 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 505.336 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.370	GAL	.11	AZL	89.33	HCA	157.55	SMA	193.91	ECC	.23869	INC	.6709	V1	30.181
RP	234.89	LAP	.26	LOP	221.32	VP	21.110	GAP	6.52	AZP	90.62	TAL	.57	TAP	158.12	RCA	147.62	APO	240.19	V2	23.405
RC	202.623	GL	6.94	GP	5.03	ZAL	83.34	ZAP	151.85	ETS	169.02	ZAE	166.47	ETE	24.97	ZAC	95.58	ETC	255.77	CLP	152.27

PLANETOCENTRIC CONIC

C3 10.463 VHL 3.235 DLA 19.00 RAL 151.78 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.060 DPA .21 RAP 195.01 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 13	2707.76	-27.70	75.12	9.04	96.14	15 13 21	2107.8	-26.56	66.64
90.00	7 47 5	4078.46	-3.88	165.19	4.28	61.93	8 55 4	3478.5	-7.60	158.49
100.00	16 1 13	2407.86	-28.91	52.89	8.87	97.95	16 41 21	1807.9	-27.51	44.37
100.00	8 56 46	3853.59	-2.81	148.07	3.69	60.23	10 1 0	3253.6	-6.75	141.50
110.00	17 34 44	2115.29	-31.99	30.02	8.22	102.73	18 10 0	1515.3	-29.91	21.43
110.00	9 39 45	3718.92	-.15	136.20	2.03	55.82	10 41 44	3118.9	-4.63	129.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1526	TRA	-.8330	TC3	4.4099	BAU	.6233	SGT	3263.1	SGR	520.3	SG3	949.4	ST	547.3	SR	280.8	SS	359.3
RDE	-.1562	RRA	-.0832	RC3	.6371	FAU	.20248	RRT	.7919	RRF	-.8550	RTF	-.9332	CRT	-.3370	CRS	.7818	CST	.2687
FDE	.3108	FRA	.9190	FC-16.7538		BSP	11169	SGB	3304.3	R23	-.1786	R13	-.9354	LSA	564.4	MSA	431.0	SSA	56.2
BDE	.2183	BRA	.8372	BC3	4.4557	FSP	3042	SG1	3289.2	SG2	315.2	THA	7.26	EL1	557.8	EL2	259.4	ALF	167.43

LAUNCH DATE NOV 26 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 508.974 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.343	GAL	.18	AZL	89.39	HCA	158.53	SMA	193.39	ECC	.23665	INC	.6139	V1	30.181
RP	234.53	LAP	.22	LOP	222.31	VP	21.107	GAP	6.09	AZP	90.57	TAL	.93	TAP	159.46	RCA	147.62	APO	239.15	V2	23.442
RC	204.770	GL	6.40	GP	5.37	ZAL	82.59	ZAP	150.82	ETS	168.79	ZAE	167.20	ETE	28.50	ZAC	95.91	ETC	255.76	CLP	151.28

PLANETOCENTRIC CONIC

C3 10.295 VHL 3.209 DLA 18.75 RAL 150.84 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.948 DPA .52 RAP 195.14 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 7	2694.60	-27.60	74.17	7.76	96.60	15 12 1	2094.6	-26.40	65.71
90.00	7 40 42	4085.08	-3.66	165.56	3.08	61.90	8 48 47	3485.1	-7.39	158.87
100.00	15 59 51	2395.54	-28.79	52.00	7.58	98.41	16 39 47	1795.5	-27.33	43.50
100.00	8 50 38	3859.37	-2.61	148.39	2.49	60.21	9 54 58	3259.4	-6.56	141.82
110.00	17 32 51	2104.56	-31.83	29.22	6.91	103.18	18 7 56	1504.6	-29.69	20.67
110.00	9 34 7	3723.13	.01	136.42	.86	55.82	10 36 10	3123.1	-4.47	130.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1499	TRA	-.7980	TC3	4.4694	BAU	.6231	SGT	3250.0	SGR	556.1	SG3	995.3	ST	531.8	SR	271.7	SS	346.1
RDE	-.1498	RRA	-.0804	RC3	.7220	FAU	.21109	RRT	.8219	RRF	-.8853	RTF	-.9341	CRT	-.3450	CRS	.7894	CST	.2389
FDE	.3071	FRA	.8622	FC-17.7510		BSP	11141	SGB	3297.2	R23	-.1937	R13	-.9368	LSA	546.6	MSA	417.4	SSA	58.3
BDE	.2119	BRA	.8021	BC3	4.5274	FSP	3194	SG1	3282.3	SG2	313.6	THA	8.08	EL1	542.3	EL2	250.1	ALF	167.25

LAUNCH DATE NOV 26 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 512.628 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.316	GAL	.24	AZL	89.45	HCA	159.52	SMA	192.89	ECC	.23471	INC	.5514	V1	30.181
RP	234.17	LAP	.19	LOP	223.29	VP	21.106	GAP	5.67	AZP	90.52	TAL	1.27	TAP	160.79	RCA	147.62	APO	238.17	V2	23.479
RC	206.900	GL	5.79	GP	5.75	ZAL	81.86	ZAP	149.76	ETS	168.54	ZAE	167.89	ETE	32.68	ZAC	96.27	ETC	255.75	CLP	150.26

PLANETOCENTRIC CONIC

C3 10.138 VHL 3.184 DLA 18.43 RAL 149.90 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.838 DPA .88 RAP 195.27 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 45	2678.78	-27.47	73.03	6.46	97.16	15 11 24	2078.8	-26.19	64.60
90.00	7 33 33	4094.73	-3.35	166.10	1.87	61.87	8 41 48	3494.7	-7.09	159.42
100.00	15 59 10	2380.79	-28.64	50.92	6.27	98.95	16 38 51	1780.8	-27.11	42.46
100.00	8 43 50	3867.96	-2.32	148.86	1.30	60.19	9 48 18	3268.0	-6.27	142.30
110.00	17 31 32	2091.81	-31.63	28.29	5.58	103.70	18 6 23	1491.8	-29.42	19.77
110.00	9 27 57	3729.71	.26	136.76	359.68	55.82	10 30 7	3129.7	-4.22	130.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1479	TRA	-.7737	TC3	4.5138	BAU	.6217	SGT	3238.3	SGR	599.0	SG3	1042.8	ST	521.6	SR	262.0	SS	331.4
RDE	-.1432	RRA	-.0780	RC3	.8167	FAU	.21991	RRT	.8472	RRF	-.9109	RTF	-.9338	CRT	-.3491	CRS	.7883	CST	.2250
FDE	.2966	FRA	.8149	FC-18.7792		BSP	11270	SGB	3293.2	R23	-.2112	R13	-.9372	LSA	535.0	MSA	400.9	SSA	60.6
BDE	.2059	BRA	.7776	BC3	4.5871	FSP	3381	SG1	3278.2	SG2	314.3	THA	8.99	EL1	531.7	EL2	240.9	ALF	167.43

LAUNCH DATE NOV 26 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 516.299 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.291	GAL	.30	AZL	89.52	HCA	160.51	SMA	192.42	ECC	.23287	INC	.4830	V1	30.181
RP	233.80	LAP	.16	LOP	224.28	VP	21.109	GAP	5.25	AZP	90.46	TAL	1.60	TAP	162.11	RCA	147.61	APO	237.23	V2	23.517
RC	209.011	GL	5.10	GP	6.17	ZAL	81.15	ZAP	148.66	ETS	168.26	ZAE	168.52	ETE	37.62	ZAC	96.67	ETC	255.74	CLP	149.22

PLANETOCENTRIC CONIC

C3 9.991 VHL 3.161 DLA 18.03 RAL 148.96 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.733 DPA 1.29 RAP 195.39 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 12	2660.05	-27.30	71.69	5.15	97.81	15 11 32	2060.0	-25.94	63.28
90.00	7 25 37	4107.65	-2.94	166.83	.65	61.82	8 34 5	3507.7	-6.68	160.15
100.00	15 59 13	2363.33	-28.45	49.66	4.95	99.59	16 38 36	1763.3	-26.83	41.23
100.00	8 36 17	3879.60	-1.93	149.50	.09	60.16	9 40 57	3279.6	-5.88	142.95
110.00	17 30 48	2076.80	-31.38	27.19	4.24	104.31	18 5 24	1476.8	-29.10	18.73
110.00	9 21 12	3738.89	.62	137.24	358.50	55.82	10 23 31	3138.9	-3.87	131.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1554	TRA	-.7444	TC3	4.5217	BAU	.6164	SGT	3203.7	SGR	648.1	SG3	1089.4	ST	517.6	SR	250.2	SS	304.0
RDE	-.1357	RRA	-.0750	RC3	.9212	FAU	.22851	RRT	.8660	RRF	-.9315	RTF	-.9329	CRT	-.3824	CRS	.7635	CST	.2114
FDE	.2625	FRA	.7527	FC-19.8002		BSP	11264	SGB	3268.6	R23	-.2309	R13	-.9370	LSA	530.5	MSA	370.7	SSA	64.2
BDE	.2063	BRA	.7481	BC3	4.6145	FSP	3559	SG1	3253.0	SG2	319.2	THA	10.03	EL1	528.4	EL2	226.5	ALF	167.12

LAUNCH DATE NOV 26 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 519.986 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.267	GAL	.36	AZL	89.59	HCA	161.50	SMA	191.98	ECC	.23113	INC	.4071	V1	30.181
RP	233.44	LAP	.13	LOP	225.28	VP	21.113	GAP	4.84	AZP	90.39	TAL	1.92	TAP	163.42	RCA	147.61	APO	236.35	V2	23.555
RC	211.104	GL	4.32	GP	6.64	ZAL	80.47	ZAP	147.53	ETS	167.94	ZAE	169.04	ETE	43.40	ZAC	97.11	ETC	255.72	CLP	148.14

PLANETOCENTRIC CONIC

C3	9.855	VHL	3.139	DLA	17.53	RAL	148.02	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.630	DPA	1.75	RAP	195.51	ECC	1.1622		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 31	2638.08	-27.09	70.11	3.82	98.58	15 12 29	2038.1	-25.63	61.75
90.00	7 16 47	4124.16	-2.41	167.75	359.43	61.78	8 25 32	3524.2	-6.16	161.08
100.00	16 0 4	2342.87	-28.21	48.19	3.61	100.33	16 39 7	1742.9	-26.49	39.81
100.00	8 27 56	3894.60	-1.42	150.32	358.88	60.14	9 32 51	3294.6	-5.38	143.78
110.00	17 30 43	2059.27	-31.08	25.91	2.86	105.01	18 5 2	1459.3	-28.71	17.51
110.00	9 13 47	3750.97	1.08	137.87	357.32	55.83	10 16 18	3151.0	-3.41	131.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1601	TRA	-.7166	TC3	4.5241	BAU	.6116	SGT	3167.8	SGR	706.4	SG3	1138.0	ST	511.8	SR	237.6	SS	276.0				
RDE	-.1278	RRA	-.0717	RC3	1.0393	FAU	.23750	RRT	.8819	RRF	-.9483	RTF	-.9321	CRT	-.4073	CRS	.7263	CST	.2160				
FDE	.2236	FRA	.6858	FC-20.8639		BSP	11228	SGB	3245.6	R23	-.2491	R13	-.9373	LSA	524.6	MSA	338.6	SSA	68.7				
BDE	.2048	BRA	.7202	BC3	4.6419	FSP	3739	SG1	3229.1	SG2	326.7	THA	11.24	EL1	522.7	EL2	212.5	ALF	167.13				

LAUNCH DATE NOV 26 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 523.689 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.245	GAL	.42	AZL	89.68	HCA	162.50	SMA	191.56	ECC	.22947	INC	.3220	V1	30.181		
RP	233.07	LAP	.10	LOP	226.27	VP	21.120	GAP	4.44	AZP	90.31	TAL	2.23	TAP	164.73	RCA	147.60	APO	235.52	V2	23.593		
RC	213.179	GL	3.45	GP	7.17	ZAL	79.81	ZAP	146.35	ETS	167.60	ZAE	169.42	ETE	50.05	ZAC	97.60	ETC	255.71	CLP	147.03		

PLANETOCENTRIC CONIC

C3	9.729	VHL	3.119	DLA	16.92	RAL	147.08	RAD	6567.4	VEL	11.451	PTH	1.99	VHP	4.532	DPA	2.28	RAP	195.63	ECC	1.1601		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 47	2612.53	-26.82	68.29	2.46	99.45	15 14 19	2012.5	-25.24	59.98
90.00	7 6 59	4144.62	-1.75	168.89	358.20	61.73	8 16 4	3544.6	-5.51	162.24
100.00	16 1 47	2319.06	-27.90	46.48	2.23	101.18	16 40 26	1719.1	-26.08	38.16
100.00	8 18 40	3913.32	-.78	151.35	357.67	60.12	9 23 54	3313.3	-4.75	144.82
110.00	17 31 20	2038.87	-30.71	24.43	1.46	105.81	18 5 19	1438.9	-28.24	16.11
110.00	9 5 37	3766.28	1.66	138.67	356.14	55.85	10 8 23	3166.3	-2.83	132.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1697	TRA	-.6850	TC3	4.5458	BAU	.6107	SGT	3141.4	SGR	776.4	SG3	1191.5	ST	510.0	SR	222.4	SS	241.2				
RDE	-.1186	RRA	-.0674	RC3	1.1764	FAU	.24750	RRT	.8952	RRF	-.9617	RTF	-.9322	CRT	-.4474	CRS	.6406	CST	.2492				
FDE	.1631	FRA	.6011	FC-22.0235		BSP	11088	SGB	3235.9	R23	-.2635	R13	-.9387	LSA	523.5	MSA	296.6	SSA	75.7				
BDE	.2071	BRA	.6883	BC3	4.6955	FSP	3907	SG1	3218.2	SG2	337.8	THA	12.62	EL1	521.2	EL2	194.6	ALF	167.14				

LAUNCH DATE NOV 26 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 527.406 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.223	GAL	.47	AZL	89.77	HCA	163.50	SMA	191.17	ECC	.22790	INC	.2253	V1	30.181		
RP	232.70	LAP	.07	LOP	227.27	VP	21.129	GAP	4.04	AZP	90.22	TAL	2.52	TAP	166.02	RCA	147.60	APO	234.73	V2	23.631		
RC	215.236	GL	2.45	GP	7.76	ZAL	79.18	ZAP	145.12	ETS	167.21	ZAE	169.62	ETE	57.49	ZAC	98.15	ETC	255.69	CLP	145.89		

PLANETOCENTRIC CONIC

C3	9.614	VHL	3.101	DLA	16.19	RAL	146.12	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	4.437	DPA	2.88	RAP	195.74	ECC	1.1582		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 3	2582.96	-26.47	66.20	1.06	100.44	15 17 6	1983.0	-24.76	57.95
90.00	6 56 6	4169.48	-.95	170.28	356.97	61.70	8 5 36	3569.5	-4.72	163.63
100.00	16 4 26	2291.47	-27.52	44.52	.82	102.15	16 42 38	1691.5	-25.57	36.26
100.00	8 8 24	3936.21	-.01	152.61	356.44	60.11	9 14 0	3336.2	-3.98	146.08
110.00	17 32 44	2015.20	-30.26	22.74	.02	106.72	18 6 19	1415.2	-27.67	14.50
110.00	8 56 35	3785.24	2.39	139.66	354.95	55.89	9 59 41	3185.2	-2.11	133.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1846	TRA	-.6563	TC3	4.5518	BAU	.6096	SGT	3111.1	SGR	858.1	SG3	1246.5	ST	516.8	SR	203.5	SS	207.3				
RDE	-.1075	RRA	-.0625	RC3	1.3322	FAU	.25775	RRT	.9049	RRF	-.9721	RTF	-.9317	CRT	-.4947	CRS	.4425	CST	.3625				
FDE	.0745	FRA	.5105	FC-23.2106		BSP	10987	SGB	3227.3	R23	-.2769	R13	-.9398	LSA	532.3	MSA	246.3	SSA	86.3				
BDE	.2137	BRA	.6593	BC3	4.7428	FSP	4085	SG1	3207.8	SG2	354.2	THA	14.19	EL1	527.7	EL2	173.2	ALF	167.62				

LAUNCH DATE NOV 26 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 531.138 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.202	GAL	.52	AZL	89.88	HCA	164.50	SMA	190.79	ECC	.22641	INC	.1177	V1	30.181		
RP	232.32	LAP	.03	LOP	228.27	VP	21.140	GAP	3.65	AZP	90.12	TAL	2.81	TAP	167.30	RCA	147.59	APO	233.99	V2	23.670		
RC	217.275	GL	1.32	GP	8.43	ZAL	78.58	ZAP	143.85	ETS	166.78	ZAE	169.59	ETE	65.48	ZAC	98.77	ETC	255.67	CLP	144.71		

PLANETOCENTRIC CONIC

C3	9.510	VHL	3.084	DLA	15.31	RAL	145.15	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	4.347	DPA	3.56	RAP	195.86	ECC	1.1565		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 26	2548.85	-26.03	63.80	359.62	101.57	15 20 55	1948.9	-24.17	55.62
90.00	6 43 59	4199.33	.02	171.94	355.72	61.68	7 53 58	3599.3	-3.77	165.31
100.00	16 8 8	2259.57	-27.05	42.27	359.37	103.24	16 45 48	1659.6	-24.96	34.09
100.00	7 56 58	3963.85	.93	154.12	355.21	60.12	9 3 2	3363.8	-3.05	147.60
110.00	17 35 0	1987.78	-29.71	20.79	358.53	107.75	18 8 8	1387.8	-26.99	12.66
110.00	8 46 35	3808.40	3.27	140.87	353.75	55.95	9 50 4	3208.4	-1.22	134.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1964	TRA	-.6308	TC3	4.5099	BAU	.6045	SGT	3057.3	SGR	951.3	SG3	1298.6	ST	522.5	SR	182.2	SS	192.5				
RDE	-.0953	RRA	-.0571	RC3	1.5049	FAU	.26731	RRT	.9115	RRF	-.9799	RTF	-.9301	CRT	-.5276	CRS	.1367	CST	.5280				
FDE	-.0235	FRA	.4174	FC-24.3339		BSP	10992	SGB	3201.9	R23	-.2894	R13	-.9405	LSA	541.6	MSA	199.9	SSA	99.9				
BDE	.2183	BRA	.6334	BC3	4.7544	FSP	4293	SG1	3179.7	SG2	376.2	THA	16.06	EL1	532.1	EL2	152.0	ALF	168.64				

LAUNCH DATE NOV 26 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 534.884 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.183	GAL	.56	AZL	90.00	HCA	165.50	SMA	190.43	ECC	.22501	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	21.153	GAP	3.27	AZP	90.00	TAL	3.07	TAP	168.58	RCA	147.59	APO	233.28
RC	219.295	GL	.01	GP	9.20	ZAL	78.01	ZAP	142.51	ETS	166.29	ZAE	169.27	ETE	73.62	ZAC	99.47	ETC	255.64

V1	30.181	V2	23.709	CLP	143.50														

PLANETOCENTRIC CONIC

C3	9.420	VHL	3.069	DLA	14.25	RAL	144.16	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	4.261	DPA	4.35	RAP	195.99

ECC	1.1550																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 4	2509.54	-25.46	61.06	358.12	102.83	15 25 53	1909.5	-23.44	52.97
90.00	6 30 27	4234.91	1.17	173.93	354.46	61.71	7 41 2	3634.9	-2.63	167.30
100.00	16 13 0	2222.73	-26.45	39.70	357.86	104.47	16 50 3	1622.7	-24.20	31.62
100.00	7 44 12	3996.96	2.05	155.94	353.97	60.17	8 50 49	3397.0	-1.93	149.42
110.00	17 38 15	1956.01	-29.02	18.57	356.98	108.90	18 10 51	1356.0	-26.17	10.55
110.00	8 35 27	3836.44	4.34	142.34	352.54	56.06	9 39 24	3236.4	-.15	136.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2193	TRA	-.6034	TC3	4.4789	BAU	.6036	SGT	3012.8	SGR	1062.5	SG3	1355.1	ST	544.0	SR	152.9	SS	220.1
RDE	-.0786	RRA	-.0499	RC3	1.7071	FAU	.27777	RRT	.9161	RRF	-.9859	RTF	-.9289	CRT	-.5706	CRS	-.3060	CST	.7162
FDE	-.1744	FRA	.3025	FC-25.5283		BSP	10946	SGB	3194.7	R23	-.2972	R13	-.9422	LSA	574.8	MSA	154.6	SSA	116.2
BDE	.2330	BRA	.6055	BC3	4.7932	FSP	4486	SG1	3168.9	SG2	404.9	THA	18.21	EL1	551.3	EL2	123.9	ALF	170.40

LAUNCH DATE NOV 26 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 538.643 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.164	GAL	.61	AZL	90.14	HCA	166.51	SMA	190.10	ECC	.22367	INC	.1378
RP	231.57	LAP	-.03	LOP	230.29	VP	21.168	GAP	2.90	AZP	89.86	TAL	3.33	TAP	169.84	RCA	147.58	APO	232.62
RC	221.297	GL	-1.51	GP	10.09	ZAL	77.48	ZAP	141.12	ETS	165.74	ZAE	168.65	ETE	81.47	ZAC	100.28	ETC	255.61

V1	30.181	V2	23.748	CLP	142.25														

PLANETOCENTRIC CONIC

C3	9.346	VHL	3.057	DLA	12.99	RAL	143.14	RAD	6567.3	VEL	11.434	PTH	1.98	VHP	4.180	DPA	5.25	RAP	196.14

ECC	1.1538																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 5	2464.18	-24.74	57.93	356.57	104.24	15 32 9	1864.2	-22.54	49.95
90.00	6 15 17	4277.19	2.53	176.29	353.19	61.79	7 26 34	3677.2	-1.26	169.66
100.00	16 19 10	2180.12	-25.69	36.76	356.28	105.84	16 55 30	1580.1	-23.27	28.80
100.00	7 29 53	4036.49	3.39	158.11	352.72	60.28	8 37 10	3436.5	-.59	151.59
110.00	17 42 35	1919.10	-28.18	16.03	355.37	110.20	18 14 34	1319.1	-25.17	8.15
110.00	8 22 58	3870.27	5.62	144.12	351.33	56.23	9 27 28	3270.3	1.15	137.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2412	TRA	-.5809	TC3	4.3980	BAU	.6002	SGT	2946.8	SGR	1189.4	SG3	1406.8	ST	568.5	SR	118.2	SS	296.5
RDE	-.0588	RRA	-.0421	RC3	1.9324	FAU	.28718	RRT	.9181	RRF	-.9902	RTF	-.9262	CRT	-.5771	CRS	-.5332	CST	.7937
FDE	-.3474	FRA	.1902	FC-26.6024		BSP	10844	SGB	3177.8	R23	-.3030	R13	-.9436	LSA	623.4	MSA	165.7	SSA	94.7
BDE	.2482	BRA	.5824	BC3	4.8038	FSP	4676	SG1	3146.9	SG2	441.5	THA	20.76	EL1	572.7	EL2	95.8	ALF	172.96

LAUNCH DATE NOV 26 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 542.416 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.147	GAL	.65	AZL	90.30	HCA	167.53	SMA	189.78	ECC	.22241	INC	.2973
RP	231.20	LAP	-.06	LOP	231.30	VP	21.184	GAP	2.53	AZP	89.71	TAL	3.57	TAP	171.10	RCA	147.57	APO	231.99
RC	223.281	GL	-3.28	GP	11.12	ZAL	76.99	ZAP	139.65	ETS	165.12	ZAE	167.70	ETE	88.63	ZAC	101.22	ETC	255.56

V1	30.181	V2	23.788	CLP	140.96														

PLANETOCENTRIC CONIC

C3	9.293	VHL	3.049	DLA	11.47	RAL	142.08	RAD	6567.3	VEL	11.432	PTH	1.98	VHP	4.105	DPA	6.30	RAP	196.32

ECC	1.1529																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 42	2411.70	-23.81	54.37	354.94	105.79	15 39 53	1811.7	-21.42	46.51
90.00	5 58 10	4327.48	4.14	179.10	351.93	61.96	7 10 18	3727.5	.36	172.46
100.00	16 26 50	2130.68	-24.73	33.40	354.64	107.35	17 2 20	1530.7	-22.12	25.57
100.00	7 13 43	4083.74	4.98	160.72	351.47	60.49	8 21 47	3483.7	1.01	154.18
110.00	17 48 11	1876.10	-27.14	13.12	353.69	111.63	18 19 27	1276.1	-23.96	5.40
110.00	8 8 51	3911.08	7.16	146.28	350.12	56.49	9 14 2	3311.1	2.70	140.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2702	TRA	-.5520	TC3	4.3182	BAU	.6020	SGT	2882.8	SGR	1342.7	SG3	1462.4	ST	604.2	SR	73.4	SS	429.9
RDE	-.0314	RRA	-.0297	RC3	2.1982	FAU	.29736	RRT	.9194	RRF	-.9933	RTF	-.9242	CRT	-.4815	CRS	-.4974	CST	.8263
FDE	-.5858	FRA	.0328	FC-27.7011		BSP	10890	SGB	3180.1	R23	-.3017	R13	-.9468	LSA	713.5	MSA	205.4	SSA	62.9
BDE	.2720	BRA	.5528	BC3	4.8454	FSP	4872	SG1	3143.0	SG2	484.3	THA	23.78	EL1	605.2	EL2	64.2	ALF	176.61

LAUNCH DATE NOV 26 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 546.204 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.130	GAL	.69	AZL	90.49	HCA	168.54	SMA	189.48	ECC	.22122	INC	.4907
RP	230.82	LAP	-.10	LOP	232.32	VP	21.203	GAP	2.16	AZP	89.52	TAL	3.80	TAP	172.34	RCA	147.57	APO	231.40
RC	225.247	GL	-5.37	GP	12.32	ZAL	76.55	ZAP	138.09	ETS	164.40	ZAE	166.41	ETE	94.84	ZAC	102.33	ETC	255.51

V1	30.181	V2	23.827	CLP	139.62														

PLANETOCENTRIC CONIC

C3	9.270	VHL	3.045	DLA	9.64	RAL	140.95	RAD	6567.3	VEL	11.431	PTH	1.98	VHP	4.037	DPA	7.52	RAP	196.54

ECC	1.1526																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 10	2350.67	-22.62	50.29	353.23	107.50	15 49 21	1750.7	-20.02	42.59
90.00	5 38 42	4387.54	6.06	182.48	350.67	62.29	6 51 49	3787.5	2.30	175.81
100.00	16 36 15	2073.04	-23.50	29.56	352.92	109.02	17 10 48	1473.0	-20.69	21.89
100.00	6 55 18	4140.41	6.87	163.86	350.23	60.84	8 4 18	3540.4	2.93	157.29
110.00	17 55 17	1825.75	-25.83	9.79	351.93	113.21	18 25 42	1225.7	-22.46	2.25
110.00	7 52 46	3960.47	9.01	148.91	348.92	56.88	8 58 46	3360.5	4.59	142.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3125	TRA	-.5181	TC3	4.2490	BAU	.6115	SGT	2831.7	SGR	1527.4	SG3	1518.3	ST	663.2	SR	47.8	SS	615.3
RDE	.00061	RRA	-.0133	RC3	2.5078	FAU	.30755	RRT	.9210	RRF	-.9956	RTF	-.9237	CRT	.3966	CRS	.5062	CST	.8587
FDE	-.8940	FRA	-.1485	FC-28.7210		BSP	10636	SGB	3217.3	R23	-.2912	R13	-.9522	LSA	872.6	MSA	239.9	SSA	41.1
BDE	.3126	BRA	.5183	BC3	4.9339	FSP	5004	SG1	3173.2	SG2	531.1	THA	27.24	EL1	663.5	EL2	43.9	ALF	1.65

LAUNCH DATE NOV 26 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 550.001 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.114 GAL .72 AZL 90.72 HCA 169.56 SMA 189.20 ECC .22009 INC .7205 V1 30.181
RP 230.43 LAP -.13 LOP 233.33 VP 21.223 GAP 1.81 AZP 89.29 TAL 4.01 TAP 173.57 RCA 147.56 APO 230.84 V2 23.867
RC 227.193 GL -7.86 GP 13.75 ZAL 76.17 ZAP 136.43 ETS 163.58 ZAE 164.77 ETE 99.97 ZAC 103.64 ETC 255.43 CLP 138.24

PLANETOCENTRIC CONIC

C3 9.290 VHL 3.048 DLA 7.41 RAL 139.74 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.977 DPA 8.97 RAP 196.82 ECC 1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 56	2279.09	-21.08	45.61	351.45	109.36	16 0 56	1679.1	-18.25	38.08
90.00	5 16 16	4459.94	8.33	186.59	349.46	62.84	6 30 36	3859.9	4.62	179.87
100.00	16 47 50	2005.27	-21.93	25.14	351.12	110.84	17 21 15	1405.3	-18.90	17.65
100.00	6 34 3	4208.99	9.13	167.71	349.03	61.41	7 44 12	3609.0	5.24	161.08
110.00	18 4 12	1766.30	-24.18	5.96	350.09	114.93	18 33 38	1166.3	-20.62	358.63
110.00	7 34 11	4020.73	11.23	152.16	347.77	57.50	8 41 12	3420.7	6.86	145.79

DIFFERENTIAL CORRECTIONS
TDE .3493 TRA -.5007 TC3 4.0813 BAU .6183
RDE .0555 RRA .0052 RC3 2.8504 FAU .31546
FDE-1.2560 FRA -.3205 FC-29.3983 BSP 10826
BDE .3537 BRA .5007 BC3 4.9781 FSP 5190

MID-COURSE EXECUTION ACCURACY
SGT 2742.6 SGR 1740.7 SG3 1562.6
RRT .9179 RRF -.9971 RTF -.9185
SGB 3248.3 R23 -.2820 R13 -.9564
SG1 3193.7 SG2 593.2 THA 31.43

ORBIT DETERMINATION ACCURACY
ST 719.6 SR 116.7 SS 834.5
CRT .8524 CRS .9703 CST .8805
LSA 1074.9 MSA 267.3 SSA 28.0
EL1 726.5 EL2 60.4 ALF 7.92

LAUNCH DATE NOV 26 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 553.811 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.099 GAL .76 AZL 91.00 HCA 170.58 SMA 188.93 ECC .21903 INC .9968 V1 30.181
RP 230.05 LAP -.16 LOP 234.36 VP 21.245 GAP 1.46 AZP 89.01 TAL 4.21 TAP 174.79 RCA 147.55 APO 230.32 V2 23.907
RC 229.120 GL -10.87 GP 15.47 ZAL 75.87 ZAP 134.64 ETS 162.62 ZAE 162.74 ETE 104.04 ZAC 105.23 ETC 255.33 CLP 136.81

PLANETOCENTRIC CONIC

C3 9.375 VHL 3.062 DLA 4.67 RAL 138.41 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.929 DPA 10.70 RAP 197.19 ECC 1.1543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 34	2194.32	-19.07	40.20	349.61	111.34	16 15 8	1594.3	-16.00	32.87
90.00	4 50 2	4548.26	11.03	191.67	348.33	63.75	6 5 51	3948.3	7.42	184.85
100.00	17 2 6	1924.88	-19.89	20.03	349.26	112.78	17 34 11	1324.9	-16.63	12.76
100.00	6 9 11	4292.94	11.82	172.48	347.92	62.34	7 20 44	3692.9	8.03	165.75
110.00	18 15 23	1695.56	-22.08	1.54	348.18	116.79	18 43 38	1095.6	-18.31	354.44
110.00	7 12 24	4095.02	13.91	156.24	346.70	58.46	8 20 39	3495.0	9.64	149.75

DIFFERENTIAL CORRECTIONS
TDE .3980 TRA -.4788 TC3 3.8952 BAU .6359
RDE .1286 RRA .0341 RC3 3.2517 FAU .32325
FDE-1.7410 FRA -.5526 FC-29.8512 BSP 11018
BDE .4183 BRA .4800 BC3 5.0741 FSP 5295

MID-COURSE EXECUTION ACCURACY
SGT 2655.6 SGR 2006.8 SG3 1606.8
RRT .9141 RRF -.9981 RTF -.9131
SGB 3328.6 R23 -.2636 R13 -.9627
SG1 3262.0 SG2 662.5 THA 36.37

ORBIT DETERMINATION ACCURACY
ST 795.4 SR 248.8 SS 1126.5
CRT .9016 CRS .9970 CST .9025
LSA 1371.2 MSA 288.1 SSA 18.9
EL1 826.9 EL2 103.5 ALF 16.00

LAUNCH DATE NOV 26 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 557.633 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.085 GAL .79 AZL 91.35 HCA 171.61 SMA 188.68 ECC .21802 INC 1.3461 V1 30.181
RP 229.67 LAP -.20 LOP 235.38 VP 21.269 GAP 1.11 AZP 88.67 TAL 4.40 TAP 176.00 RCA 147.55 APO 229.82 V2 23.948
RC 231.027 GL -14.56 GP 17.58 ZAL 75.68 ZAP 132.68 ETS 161.49 ZAE 160.27 ETE 107.12 ZAC 107.17 ETC 255.19 CLP 135.32

PLANETOCENTRIC CONIC

C3 9.565 VHL 3.093 DLA 1.27 RAL 136.91 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.896 DPA 12.79 RAP 197.68 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 57	2092.52	-16.43	33.90	347.74	113.39	16 32 50	1492.5	-13.13	26.78
90.00	4 18 43	4657.92	14.25	198.11	347.39	65.27	5 36 21	4057.9	10.79	191.14
100.00	17 19 53	1828.24	-17.24	14.09	347.37	114.81	17 50 22	1228.2	-13.75	7.03
100.00	5 39 29	4397.43	15.04	178.57	347.00	63.86	6 52 46	3797.4	11.41	171.66
110.00	18 29 29	1610.42	-19.38	356.41	346.23	118.73	18 56 20	1010.4	-15.39	349.56
110.00	6 46 22	4188.04	17.16	161.50	345.82	59.97	7 56 10	3588.0	13.04	154.81

DIFFERENTIAL CORRECTIONS
TDE .4511 TRA -.4598 TC3 3.6326 BAU .6609
RDE .2296 RRA .0707 RC3 3.6759 FAU .32671
FDE-2.2989 FRA -.7856 FC-29.5710 BSP 11525
BDE .5062 BRA .4652 BC3 5.1680 FSP 5442

MID-COURSE EXECUTION ACCURACY
SGT 2544.2 SGR 2316.9 SG3 1627.5
RRT .9081 RRF -.9988 RTF -.9060
SGB 3441.1 R23 -.2375 R13 -.9702
SG1 3361.8 SG2 734.3 THA 42.05

ORBIT DETERMINATION ACCURACY
ST 876.5 SR 432.6 SS 1453.0
CRT .9232 CRS .9995 CST .9210
LSA 1725.3 MSA 299.6 SSA 13.2
EL1 965.7 EL2 150.9 ALF 25.15

LAUNCH DATE NOV 26 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 561.467 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.072 GAL .81 AZL 91.79 HCA 172.63 SMA 188.45 ECC .21707 INC 1.7894 V1 30.181
RP 229.28 LAP -.23 LOP 236.41 VP 21.294 GAP .77 AZP 88.22 TAL 4.57 TAP 177.20 RCA 147.54 APO 229.36 V2 23.988
RC 232.913 GL -19.14 GP 20.19 ZAL 75.66 ZAP 130.48 ETS 160.17 ZAE 157.27 ETE 109.31 ZAC 109.60 ETC 254.98 CLP 133.76

PLANETOCENTRIC CONIC

C3 9.935 VHL 3.152 DLA -2.99 RAL 135.18 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.886 DPA 15.37 RAP 198.37 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 37	1968.03	-12.92	26.44	345.95	115.42	16 55 25	1368.0	-9.40	19.54
90.00	3 40 14	4797.40	18.04	206.60	346.81	67.80	5 0 11	4197.4	14.87	199.35
100.00	17 42 34	1710.13	-13.73	7.07	345.54	116.82	18 11 4	1110.1	-10.02	.24
100.00	5 2 58	4530.54	18.86	186.60	346.44	66.37	6 18 29	3930.5	15.51	179.42
110.00	18 47 37	1506.50	-15.87	350.40	344.33	120.68	19 12 43	906.5	-11.68	343.80
110.00	6 14 25	4306.93	21.06	168.51	345.32	62.43	7 26 12	3706.9	17.20	161.50

DIFFERENTIAL CORRECTIONS
TDE .5212 TRA -.4381 TC3 3.3206 BAU .7052
RDE .3877 RRA .1302 RC3 4.1429 FAU .32816
FDE-3.0353 FRA-1.0990 FC-28.5966 BSP 12157
BDE .6496 BRA .4570 BC3 5.3094 FSP 5446

MID-COURSE EXECUTION ACCURACY
SGT 2432.1 SGR 2715.4 SG3 1638.0
RRT .9003 RRF -.9993 RTF -.8972
SGB 3645.4 R23 -.2028 R13 -.9785
SG1 3554.5 SG2 808.9 THA 48.50

ORBIT DETERMINATION ACCURACY
ST 979.2 SR 712.7 SS 1872.5
CRT .9395 CRS .9999 CST .9373
LSA 2208.5 MSA 309.0 SSA 9.1
EL1 1194.5 EL2 200.1 ALF 35.51

LAUNCH DATE NOV 26 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 565.311 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.059 GAL .84 AZL 92.38 HCA 173.66 SMA 188.23 ECC .21618 INC 2.3806 V1 30.181
RP 228.89 LAP -.26 LOP 237.44 VP 21.320 GAP .44 AZP 87.63 TAL 4.73 TAP 178.39 RCA 147.54 APO 228.92 V2 24.029
RC 234.778 GL -24.90 GP 23.50 ZAL 75.88 ZAP 127.94 ETS 158.61 ZAE 153.57 ETE 110.71 ZAC 112.68 ETC 254.67 CLP 132.11

PLANETOCENTRIC CONIC

C3 10.631 VHL 3.260 DLA -8.38 RAL 133.09 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.913 DPA 18.61 RAP 199.33 ECC 1.1750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 24	1811.53	-8.19	17.38	344.45	117.20	17 25 36	1211.5	-4.48	10.67
90.00	2 50 48	4981.13	22.34	218.35	346.93	72.13	4 13 49	4381.1	19.69	210.68
100.00	18 12 41	1562.21	-9.04	358.60	344.00	118.62	18 38 43	962.2	-5.15	351.97
100.00	4 16 12	4705.68	23.25	197.76	346.60	70.66	5 34 38	4105.7	20.40	190.12
110.00	19 11 40	1377.51	-11.26	343.25	342.67	122.49	19 34 38	777.5	-6.89	336.88
110.00	5 33 42	4463.14	25.65	178.31	345.57	66.59	6 48 5	3863.1	22.26	170.80

DIFFERENTIAL CORRECTIONS

TDE .6120 TRA -.4170 TC3 2.9200 BAU .7703
RDE .6309 RRA .2159 RC3 4.5665 FAU .32225
FDE-3.9052 FRA-1.4289 FC-26.2433 BSP 13243
BDE .8789 BRA .4696 BC3 5.4202 FSP 5407

MID-COURSE EXECUTION ACCURACY

SGT 2308.9 SGR 3200.5 SG3 1608.1
RRT .8902 RRF -.9996 RTF -.8863
SGB 3946.4 R23 -.1634 R13 -.9861
SG1 3848.2 SG2 874.9 THA 55.24

ORBIT DETERMINATION ACCURACY

ST 1099.7 SR 1118.1 SS 2340.6
CRT .9530 CRS 1.0000 CST .9510
LSA 2799.9 MSA 313.9 SSA 6.3
EL1 1549.7 EL2 240.4 ALF 45.50

LAUNCH DATE NOV 26 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 569.166 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.048 GAL .86 AZL 93.20 HCA 174.70 SMA 188.02 ECC .21534 INC 3.2011 V1 30.181
RP 228.51 LAP -.30 LOP 238.48 VP 21.348 GAP .12 AZP 86.81 TAL 4.87 TAP 179.57 RCA 147.53 APO 228.51 V2 24.070
RC 236.623 GL -32.23 GP 27.80 ZAL 76.49 ZAP 124.92 ETS 156.80 ZAE 148.94 ETE 111.45 ZAC 116.69 ETC 254.18 CLP 130.32

PLANETOCENTRIC CONIC

C3 11.974 VHL 3.460 DLA -15.25 RAL 130.46 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 4.001 DPA 22.75 RAP 200.72 ECC 1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 51	1604.36	-1.60	5.73	343.82	118.28	18 9 35	1004.4	2.19	359.10
90.00	1 42 22	5237.52	26.60	235.90	348.40	79.91	3 9 39	4637.5	24.93	227.62
100.00	18 55 53	1368.73	-2.59	347.86	343.28	119.79	19 18 41	768.7	1.40	341.33
100.00	3 12 1	4948.39	27.71	214.39	348.16	78.30	4 34 30	4348.4	25.81	206.10
110.00	19 45 36	1212.98	-5.12	334.47	341.70	123.84	20 5 49	613.0	-.64	328.25
110.00	4 38 47	4676.90	30.60	192.96	347.34	73.96	5 56 44	4076.9	28.10	184.65

DIFFERENTIAL CORRECTIONS

TDE .7314 TRA -.3940 TC3 2.4162 BAU .8705
RDE 1.0350 RRA .3622 RC3 4.8715 FAU .30822
FDE-4.9496 FRA-1.8385 FC-22.2851 BSP 14704
BDE 1.2673 BRA .5352 BC3 5.4377 FSP 5121

MID-COURSE EXECUTION ACCURACY

SGT 2172.5 SGR 3832.6 SG3 1533.4
RRT .8758 RRF -.9997 RTF -.8709
SGB 4405.6 R23 -.1232 R13 -.9921
SG1 4305.5 SG2 933.5 THA 62.18

ORBIT DETERMINATION ACCURACY

ST 1228.9 SR 1726.8 SS 2856.4
CRT .9625 CRS 1.0000 CST .9608
LSA 3542.5 MSA 319.4 SSA 4.3
EL1 2101.6 EL2 273.8 ALF 54.91

LAUNCH DATE NOV 26 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 573.030 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.037 GAL .88 AZL 94.42 HCA 175.73 SMA 187.82 ECC .21455 INC 4.4213 V1 30.181
RP 228.12 LAP -.33 LOP 239.52 VP 21.377 GAP -.20 AZP 85.59 TAL 5.01 TAP 180.74 RCA 147.53 APO 228.12 V2 24.111
RC 238.446 GL -41.55 GP 33.47 ZAL 77.67 ZAP 121.13 ETS 154.78 ZAE 142.99 ETE 111.74 ZAC 121.96 ETC 253.34 CLP 128.30

PLANETOCENTRIC CONIC

C3 14.755 VHL 3.841 DLA -23.96 RAL 126.93 RAD 6567.6 VEL 11.668 PTH 2.05 VHP 4.208 DPA 28.17 RAP 202.78 ECC 1.2428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 14	1279.11	8.78	347.46	345.85	117.03	19 30 33	679.1	12.34	340.59
90.00	23 43 54	5653.31	27.94	266.06	351.58	94.83	25 18 7	5053.3	28.31	257.41
100.00	20 10 53	1080.08	7.15	331.96	344.98	119.10	20 28 53	480.1	10.97	325.26
100.00	1 28 51	5327.58	29.78	242.23	351.72	92.70	2 57 39	4727.6	29.84	233.43
110.00	20 40 11	988.21	3.46	322.72	342.70	124.03	20 56 39	388.2	7.90	316.45
110.00	3 16 3	4992.22	34.11	216.77	351.73	87.57	4 39 15	4392.2	33.39	207.60

DIFFERENTIAL CORRECTIONS

TDE .9121 TRA -.3589 TC3 1.8236 BAU 1.0284
RDE 1.7539 RRA .6342 RC3 4.8844 FAU .28180
FDE-6.1011 FRA-2.3276 FC-16.5346 BSP 16242
BDE 1.9769 BRA .7287 BC3 5.2137 FSP 4413

MID-COURSE EXECUTION ACCURACY

SGT 2038.8 SGR 4690.0 SG3 1389.4
RRT .8586 RRF -.9998 RTF -.8525
SGB 5114.0 R23 -.0871 R13 -.9961
SG1 5019.8 SG2 976.6 THA 68.69

ORBIT DETERMINATION ACCURACY

ST 1372.5 SR 2636.9 SS 3337.3
CRT .9697 CRS 1.0000 CST .9681
LSA 4457.5 MSA 325.1 SSA 3.0
EL1 2957.6 EL2 298.9 ALF 62.92

LAUNCH DATE NOV 26 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 576.899 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.026 GAL .90 AZL 96.43 HCA 176.77 SMA 187.64 ECC .21382 INC 6.4315 V1 30.181
RP 227.73 LAP -.36 LOP 240.56 VP 21.407 GAP -.52 AZP 83.58 TAL 5.13 TAP 181.90 RCA 147.52 APO 227.76 V2 24.152
RC 240.248 GL -53.25 GP 41.01 ZAL 79.63 ZAP 116.18 ETS 152.86 ZAE 135.22 ETE 112.00 ZAC 128.91 ETC 251.83 CLP 125.78

PLANETOCENTRIC CONIC

C3 21.323 VHL 4.618 DLA -34.78 RAL 121.77 RAD 6567.9 VEL 11.946 PTH 2.13 VHP 4.673 DPA 35.32 RAP 205.94 ECC 1.3509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.90	18 29 46	1403.72	23.36	4.27	353.29	116.54	18 53 10	803.7	26.73	356.67
111.10	23 42 8	5699.76	23.38	268.03	353.30	116.52	25 17 7	5099.8	26.74	260.43
68.90	18 29 46	1403.72	23.36	4.27	353.29	116.54	18 53 10	803.7	26.73	356.67
111.10	23 42 8	5699.76	23.38	268.03	353.30	116.52	25 17 7	5099.8	26.74	260.43
68.90	18 29 46	1403.72	23.36	4.27	353.29	116.54	18 53 10	803.7	26.73	356.67
111.10	23 42 8	5699.76	23.38	268.03	353.30	116.52	25 17 7	5099.8	26.74	260.43

DIFFERENTIAL CORRECTIONS

TDE 1.1564 TRA -.3399 TC3 1.1039 BAU 1.2452
RDE 3.0443 RRA 1.1126 RC3 4.2263 FAU .22859
FDE-6.8107 FRA-2.6290 FC3-9.2810 BSP 19117
BDE 3.2565 BRA 1.1634 BC3 4.3681 FSP 3478

MID-COURSE EXECUTION ACCURACY

SGT 1833.6 SGR 5685.8 SG3 1095.1
RRT .8188 RRF -.9998 RTF -.8100
SGB 5974.1 R23 -.0620 R13 -.9980
SG1 5887.0 SG2 1016.6 THA 74.74

ORBIT DETERMINATION ACCURACY

ST 1443.5 SR 3812.6 SS 3447.5
CRT .9714 CRS 1.0000 CST .9696
LSA 5328.5 MSA 335.7 SSA 2.3
EL1 4064.0 EL2 321.6 ALF 69.67

LAUNCH DATE NOV 26 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 600.522 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.977 GAL .93 AZL 79.83 HCA 183.17 SMA 186.78 ECC .21023 INC10.1668 V1 30.181
RP 225.38 LAP -.56 LOP 246.90 VP 21.613 GAP -2.25 AZP 100.15 TAL 5.36 TAP 188.53 RCA 147.51 APO 226.05 V2 24.402
RC 250.643 GL 67.36 GP -44.09 ZAL 82.29 ZAP 108.16 ETS 196.80 ZAE 130.48 ETE 230.60 ZAC 45.54 ETC 250.53 CLP 115.72

PLANETOCENTRIC CONIC

C3 39.782 VHL 6.307 DLA 73.35 RAL 202.69 RAD 6568.5 VEL 12.694 PTH 2.31 VHP 4.529 DPA -39.04 RAP 160.99 ECC 1.6547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
17.35	10 43 13	4496.09	-38.63	239.68	124.66	19.64	11 58 9	3896.1	-46.11	236.23
17.35	7 27 29	4696.87	-25.64	243.90	80.65	16.93	8 45 46	4096.9	-33.27	241.53
19.00	9 8 46	4593.02	-31.91	240.26	101.97	19.73	10 25 19	3993.0	-39.39	237.19
161.00	19 52 41	2820.98	-31.90	86.21	101.94	19.73	20 39 42	2221.0	-39.39	83.15
19.00	9 8 46	4593.02	-31.91	240.26	101.97	19.73	10 25 19	3993.0	-39.39	237.19
161.00	19 52 41	2820.98	-31.90	86.21	101.94	19.73	20 39 42	2221.0	-39.39	83.15

DIFFERENTIAL CORRECTIONS
TDE 1.1537 TRA -.0647 TC3 -.0321 BAU 1.4986
RDE 2.3252 RRA 1.5599 RC3-2.8175 FAU .26686
FDE 4.8795 FRA 3.0834 FC3-5.8075 BSP 20888
BDE 2.5957 BRA 1.5612 BC3 2.8177 FSP 3612

MID-COURSE EXECUTION ACCURACY
SGT 1068.7 SGR 6445.2 SG3 1122.7
RRT .1950 RRF .9997 RTF .2115
SGB 6533.2 R23 -.0115 R13 .9998
SG1 6448.7 SG2 1047.6 THA 88.10

ORBIT DETERMINATION ACCURACY
ST 1049.8 SR 2583.2 SS 2081.6
CRT .7827 CRS -.9996 CST -.7996
LSA 3422.9 MSA 626.2 SSA 2.4
EL1 2718.4 EL2 621.0 ALF 71.35

LAUNCH DATE NOV 26 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 604.464 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.970 GAL .93 AZL 81.94 HCA 184.23 SMA 186.67 ECC .20978 INC 8.0539 V1 30.181
RP 224.99 LAP -.59 LOP 247.97 VP 21.651 GAP -2.53 AZP 98.03 TAL 5.38 TAP 189.61 RCA 147.51 APO 225.83 V2 24.444
RC 252.307 GL 60.59 GP -37.14 ZAL 80.81 ZAP 109.46 ETS 193.95 ZAE 135.16 ETE 225.13 ZAC 52.20 ETC 252.46 CLP 114.70

PLANETOCENTRIC CONIC

C3 28.118 VHL 5.303 DLA 69.70 RAL 184.45 RAD 6568.1 VEL 12.227 PTH 2.20 VHP 3.919 DPA -33.11 RAP 165.48 ECC 1.4628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
23.21	8 4 53	4495.28	-36.56	233.25	78.54	25.60	9 19 48	3895.3	-43.69	228.90
156.79	18 31 4	2743.98	-36.56	83.57	78.52	25.59	19 16 48	2144.0	-43.68	79.22
23.21	8 4 53	4495.28	-36.56	233.25	78.54	25.60	9 19 48	3895.3	-43.69	228.90
156.79	18 31 4	2743.98	-36.56	83.57	78.52	25.59	19 16 48	2144.0	-43.68	79.22
23.21	8 4 53	4495.28	-36.56	233.25	78.54	25.60	9 19 48	3895.3	-43.69	228.90
156.79	18 31 4	2743.98	-36.56	83.57	78.52	25.59	19 16 48	2144.0	-43.68	79.22

DIFFERENTIAL CORRECTIONS
TDE .9470 TRA -.1500 TC3 -.0672 BAU 1.2301
RDE 2.7625 RRA 1.1066 RC3-3.2717 FAU .34474
FDE 8.8281 FRA 3.4255 FC-10.6143 BSP 19004
BDE 2.9204 BRA 1.1167 BC3 3.2723 FSP 5201

MID-COURSE EXECUTION ACCURACY
SGT 1127.1 SGR 5729.1 SG3 1573.1
RRT .2620 RRF .9998 RTF .2719
SGB 5838.9 R23 -.0002 R13 .9998
SG1 5736.9 SG2 1086.2 THA 86.94

ORBIT DETERMINATION ACCURACY
ST 1032.8 SR 3160.6 SS 3409.1
CRT .8914 CRS-1.0000 CST -.8957
LSA 4740.3 MSA 454.9 SSA 2.8
EL1 3294.6 EL2 449.1 ALF 73.44

LAUNCH DATE NOV 26 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 608.421 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.965 GAL .93 AZL 83.22 HCA 185.30 SMA 186.57 ECC .20936 INC 6.7845 V1 30.181
RP 224.60 LAP -.63 LOP 249.04 VP 21.690 GAP -2.80 AZP 96.76 TAL 5.38 TAP 190.68 RCA 147.51 APO 225.63 V2 24.486
RC 253.951 GL 55.39 GP -31.87 ZAL 79.71 ZAP 109.55 ETS 191.29 ZAE 137.78 ETE 219.25 ZAC 57.19 ETC 253.56 CLP 113.20

PLANETOCENTRIC CONIC

C3 22.384 VHL 4.731 DLA 66.02 RAL 174.61 RAD 6567.9 VEL 11.990 PTH 2.14 VHP 3.587 DPA -28.34 RAP 168.11 ECC 1.3684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.50	7 35 3	4425.99	-38.76	226.17	63.69	31.42	8 48 49	3826.0	-45.45	220.65
152.50	17 42 21	2700.94	-38.76	81.12	63.67	31.41	18 27 22	2100.9	-45.44	75.60
27.50	7 35 3	4425.99	-38.76	226.17	63.69	31.42	8 48 49	3826.0	-45.45	220.65
152.50	17 42 21	2700.94	-38.76	81.12	63.67	31.41	18 27 22	2100.9	-45.44	75.60
27.50	7 35 3	4425.99	-38.76	226.17	63.69	31.42	8 48 49	3826.0	-45.45	220.65
152.50	17 42 21	2700.94	-38.76	81.12	63.67	31.41	18 27 22	2100.9	-45.44	75.60

DIFFERENTIAL CORRECTIONS
TDE .8640 TRA -.1814 TC3 -.1845 BAU 1.0426
RDE 2.4562 RRA .8439 RC3-3.4792 FAU .40106
FDE10.6815 FRA 3.5633 FC-15.5118 BSP 17348
BDE 2.6037 BRA .8632 BC3 3.4840 FSP 6530

MID-COURSE EXECUTION ACCURACY
SGT 1190.6 SGR 5099.8 SG3 1923.2
RRT .3834 RRF .9998 RTF .3908
SGB 5236.9 R23 .0119 R13 .9997
SG1 5121.2 SG2 1095.0 THA 84.64

ORBIT DETERMINATION ACCURACY
ST 1058.8 SR 3070.3 SS 4131.3
CRT .9199 CRS-1.0000 CST -.9226
LSA 5239.4 MSA 404.0 SSA 3.3
EL1 3223.6 EL2 395.5 ALF 72.12

LAUNCH DATE NOV 26 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 612.391 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.959 GAL .93 AZL 84.06 HCA 186.37 SMA 186.48 ECC .20897 INC 5.9366 V1 30.181
RP 224.21 LAP -.66 LOP 250.12 VP 21.729 GAP -3.06 AZP 95.90 TAL 5.36 TAP 191.73 RCA 147.51 APO 225.45 V2 24.527
RC 255.576 GL 51.28 GP -27.82 ZAL 78.88 ZAP 108.91 ETS 189.03 ZAE 138.95 ETE 213.65 ZAC 60.96 ETC 254.25 CLP 111.50

PLANETOCENTRIC CONIC

C3 19.088 VHL 4.369 DLA 62.78 RAL 168.71 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 3.382 DPA -24.51 RAP 169.68 ECC 1.3141

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.30	7 20 23	4373.74	-39.65	219.86	53.49	36.44	8 33 17	3773.7	-45.90	213.46
148.70	17 9 58	2676.92	-39.64	79.14	53.48	36.44	17 54 35	2076.9	-45.89	72.74
31.30	7 20 23	4373.74	-39.65	219.86	53.49	36.44	8 33 17	3773.7	-45.90	213.46
148.70	17 9 58	2676.92	-39.64	79.14	53.48	36.44	17 54 35	2076.9	-45.89	72.74
31.30	7 20 23	4373.74	-39.65	219.86	53.49	36.44	8 33 17	3773.7	-45.90	213.46
148.70	17 9 58	2676.92	-39.64	79.14	53.48	36.44	17 54 35	2076.9	-45.89	72.74

DIFFERENTIAL CORRECTIONS
TDE .8446 TRA -.1943 TC3 -.3744 BAU .9164
RDE 2.0729 RRA .6570 RC3-3.5714 FAU .44729
FDE11.3911 FRA 3.4975 FC-20.2873 BSP 15482
BDE 2.2384 BRA .6851 BC3 3.5910 FSP 7397

MID-COURSE EXECUTION ACCURACY
SGT 1282.2 SGR 4547.3 SG3 2182.3
RRT .5115 RRF .9997 RTF .5175
SGB 4724.6 R23 .0292 R13 .9993
SG1 4597.2 SG2 1089.8 THA 81.30

ORBIT DETERMINATION ACCURACY
ST 1120.2 SR 2778.2 SS 4455.5
CRT .9375 CRS-1.0000 CST -.9396
LSA 5355.6 MSA 378.0 SSA 3.8
EL1 2973.3 EL2 364.3 ALF 68.96

LAUNCH DATE NOV 26 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 616.372 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.955 GAL .92 AZL 84.67 HCA 187.45 SMA 186.40 ECC .20861 INC 5.3308 V1 30.181
RP 223.82 LAP -.69 LOP 251.20 VP 21.769 GAP -3.31 AZP 95.29 TAL 5.32 TAP 192.77 RCA 147.52 APO 225.28 V2 24.569
RC 257.180 GL 47.97 GP -24.66 ZAL 78.27 ZAP 107.83 ETS 187.15 ZAE 139.11 ETE 208.63 ZAC 63.87 ETC 254.71 CLP 109.69

PLANETOCENTRIC CONIC

C3 16.988 VHL 4.122 DLA 60.02 RAL 164.87 RAD 6567.7 VEL 11.763 PTH 2.08 VHP 3.244 DPA -21.39 RAP 170.60 ECC 1.2796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.58	7 13 7	4332.35	-39.85	214.47	46.10	40.60	8 25 19	3732.3	-45.69	207.44
145.42	16 46 34	2663.96	-39.84	77.67	46.09	40.60	17 30 58	2064.0	-45.69	70.64
34.58	7 13 7	4332.35	-39.85	214.47	46.10	40.60	8 25 19	3732.3	-45.69	207.44
145.42	16 46 34	2663.96	-39.84	77.67	46.09	40.60	17 30 58	2064.0	-45.69	70.64
34.58	7 13 7	4332.35	-39.85	214.47	46.10	40.60	8 25 19	3732.3	-45.69	207.44
145.42	16 46 34	2663.96	-39.84	77.67	46.09	40.60	17 30 58	2064.0	-45.69	70.64

DIFFERENTIAL CORRECTIONS
TDE .8604 TRA -.1968 TC3 -.6230 BAU .8203
RDE 1.7585 RRA .5359 RC3-3.5577 FAU .48204
FDE11.6350 FRA 3.4250 FC-24.5663 BSP 14150
BDE 1.9577 BRA .5709 BC3 3.6118 FSP 8135

MID-COURSE EXECUTION ACCURACY
SGT 1412.2 SGR 4098.7 SG3 2385.8
RRT .6243 RRF .9996 RTF .6290
SGB 4335.1 R23 .0528 R13 .9982
SG1 4199.3 SG2 1076.7 THA 76.99

ORBIT DETERMINATION ACCURACY
ST 1207.4 SR 2486.7 SS 4606.1
CRT .9498 CRS-1.0000 CST -.9516
LSA 5359.6 MSA 364.0 SSA 4.4
EL1 2743.1 EL2 342.4 ALF 64.82

LAUNCH DATE NOV 26 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 620.364 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.950 GAL .91 AZL 85.12 HCA 188.54 SMA 186.33 ECC .20828 INC 4.8759 V1 30.181
RP 223.44 LAP -.72 LOP 252.28 VP 21.810 GAP -3.56 AZP 94.82 TAL 5.27 TAP 193.80 RCA 147.52 APO 225.13 V2 24.611
RC 258.763 GL 45.26 GP -22.13 ZAL 77.82 ZAP 106.46 ETS 185.61 ZAE 138.57 ETE 204.28 ZAC 66.15 ETC 255.05 CLP 107.81

PLANETOCENTRIC CONIC

C3 15.549 VHL 3.943 DLA 57.67 RAL 162.21 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.144 DPA -18.80 RAP 171.10 ECC 1.2559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.40	7 9 49	4298.23	-39.68	209.89	40.55	44.01	8 21 27	3698.2	-45.18	202.42
142.60	16 28 40	2657.71	-39.67	76.63	40.54	44.00	17 12 57	2057.7	-45.17	69.17
37.40	7 9 49	4298.23	-39.68	209.89	40.55	44.01	8 21 27	3698.2	-45.18	202.42
142.60	16 28 40	2657.71	-39.67	76.63	40.54	44.00	17 12 57	2057.7	-45.17	69.17
37.40	7 9 49	4298.23	-39.68	209.89	40.55	44.01	8 21 27	3698.2	-45.18	202.42
142.60	16 28 40	2657.71	-39.67	76.63	40.54	44.00	17 12 57	2057.7	-45.17	69.17

DIFFERENTIAL CORRECTIONS
TDE .8943 TRA -.1937 TC3 -.9192 BAU .7512
RDE 1.5082 RRA .4481 RC3-3.4947 FAU .51040
FDE11.6205 FRA 3.3249 FC-28.4184 BSP 13122
BDE 1.7534 BRA .4882 BC3 3.6136 FSP 8716

MID-COURSE EXECUTION ACCURACY
SGT 1578.2 SGR 3725.7 SG3 2547.0
RRT .7151 RRF .9995 RTF .7186
SGB 4046.2 R23 .0827 R13 .9961
SG1 3907.1 SG2 1052.0 THA 71.78

ORBIT DETERMINATION ACCURACY
ST 1309.1 SR 2223.3 SS 4649.4
CRT .9592 CRS-1.0000 CST -.9608
LSA 5305.5 MSA 354.0 SSA 5.1
EL1 2560.0 EL2 321.5 ALF 60.02

LAUNCH DATE NOV 26 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 624.366 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.947 GAL .89 AZL 85.48 HCA 189.62 SMA 186.26 ECC .20798 INC 4.5215 V1 30.181
RP 223.05 LAP -.75 LOP 253.37 VP 21.851 GAP -3.81 AZP 94.46 TAL 5.20 TAP 194.82 RCA 147.52 APO 225.00 V2 24.653
RC 260.326 GL 42.99 GP -20.07 ZAL 77.49 ZAP 104.90 ETS 184.32 ZAE 137.56 ETE 200.58 ZAC 67.97 ETC 255.32 CLP 105.89

PLANETOCENTRIC CONIC

C3 14.508 VHL 3.809 DLA 55.66 RAL 160.30 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 3.070 DPA -16.61 RAP 171.32 ECC 1.2388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.85	7 8 48	4269.35	-39.33	205.99	36.27	46.82	8 19 57	3669.3	-44.53	198.22
140.15	16 14 26	2655.57	-39.32	75.93	36.26	46.81	16 58 41	2055.6	-44.52	68.17
39.85	7 8 48	4269.35	-39.33	205.99	36.27	46.82	8 19 57	3669.3	-44.53	198.22
140.15	16 14 26	2655.57	-39.32	75.93	36.26	46.81	16 58 41	2055.6	-44.52	68.17
39.85	7 8 48	4269.35	-39.33	205.99	36.27	46.82	8 19 57	3669.3	-44.53	198.22
140.15	16 14 26	2655.57	-39.32	75.93	36.26	46.81	16 58 41	2055.6	-44.52	68.17

DIFFERENTIAL CORRECTIONS
TDE .9391 TRA -.1874 TC3-1.2541 BAU .7032
RDE 1.3099 RRA .3842 RC3-3.4016 FAU .53367
FDE11.4694 FRA 3.2297 FC-31.8462 BSP 12358
BDE 1.6117 BRA .4275 BC3 3.6254 FSP 9148

MID-COURSE EXECUTION ACCURACY
SGT 1777.0 SGR 3412.8 SG3 2677.6
RRT .7827 RRF .9993 RTF .7853
SGB 3847.7 R23 .1167 R13 .9924
SG1 3710.9 SG2 1017.1 THA 65.90

ORBIT DETERMINATION ACCURACY
ST 1420.8 SR 1995.8 SS 4631.5
CRT .9661 CRS-1.0000 CST -.9676
LSA 5228.0 MSA 347.3 SSA 5.9
EL1 2431.3 EL2 301.0 ALF 54.86

LAUNCH DATE NOV 26 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 628.377 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.943 GAL .88 AZL 85.76 HCA 190.71 SMA 186.20 ECC .20771 INC 4.2378 V1 30.181
RP 222.66 LAP -.79 LOP 254.46 VP 21.893 GAP -4.05 AZP 94.16 TAL 5.12 TAP 195.83 RCA 147.52 APO 224.87 V2 24.695
RC 261.869 GL 41.09 GP -18.36 ZAL 77.28 ZAP 103.21 ETS 183.25 ZAE 136.22 ETE 197.44 ZAC 69.45 ETC 255.53 CLP 103.93

PLANETOCENTRIC CONIC

C3 13.722 VHL 3.704 DLA 53.93 RAL 158.89 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 3.013 DPA -14.71 RAP 171.32 ECC 1.2258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.98	7 9 14	4244.24	-38.89	202.62	32.91	49.16	8 19 58	3644.2	-43.84	194.64
138.02	16 2 46	2656.15	-38.88	75.49	32.90	49.15	16 47 2	2056.1	-43.83	67.52
41.98	7 9 14	4244.24	-38.89	202.62	32.91	49.16	8 19 58	3644.2	-43.84	194.64
138.02	16 2 46	2656.15	-38.88	75.49	32.90	49.15	16 47 2	2056.1	-43.83	67.52
41.98	7 9 14	4244.24	-38.89	202.62	32.91	49.16	8 19 58	3644.2	-43.84	194.64
138.02	16 2 46	2656.15	-38.88	75.49	32.90	49.15	16 47 2	2056.1	-43.83	67.52

DIFFERENTIAL CORRECTIONS
TDE .9895 TRA -.1785 TC3-1.6223 BAU .6720
RDE 1.1555 RRA .3394 RC3-3.2841 FAU .55171
FDE11.2849 FRA 3.1761 FC-34.8079 BSP 11951
BDE 1.5213 BRA .3835 BC3 3.6629 FSP 9549

MID-COURSE EXECUTION ACCURACY
SGT 2001.7 SGR 3147.8 SG3 2785.4
RRT .8318 RRF .9990 RTF .8336
SGB 3730.4 R23 .1508 R13 .9876
SG1 3601.8 SG2 971.0 THA 59.69

ORBIT DETERMINATION ACCURACY
ST 1537.4 SR 1808.6 SS 4594.9
CRT .9712 CRS-1.0000 CST -.9726
LSA 5160.3 MSA 343.6 SSA 6.7
EL1 2357.0 EL2 281.2 ALF 49.77

LAUNCH DATE NOV 26 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 632.398 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.940 GAL .86 AZL 85.99 HCA 191.81 SMA 186.15 ECC .20747 INC 4.0052 V1 30.181
RP 222.28 LAP -.82 LOP 255.55 VP 21.936 GAP -4.28 AZP 93.92 TAL 5.02 TAP 196.82 RCA 147.53 APO 224.77 V2 24.737
RC 263.392 GL 39.46 GP -16.91 ZAL 77.14 ZAP 101.44 ETS 182.34 ZAE 134.64 ETE 194.80 ZAC 70.67 ETC 255.71 CLP 101.96

PLANETOCENTRIC CONIC

C3 13.109 VHL 3.621 DLA 52.41 RAL 157.84 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 2.969 DPA -13.04 RAP 171.19 ECC 1.2157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.86	7 10 36	4222.04	-38.42	199.68	30.22	51.13	8 20 58	3622.0	-43.14	191.56
136.14	15 53 2	2658.48	-38.41	75.24	30.21	51.12	16 37 21	2058.5	-43.13	67.12
43.86	7 10 36	4222.04	-38.42	199.68	30.22	51.13	8 20 58	3622.0	-43.14	191.56
136.14	15 53 2	2658.48	-38.41	75.24	30.21	51.12	16 37 21	2058.5	-43.13	67.12
43.86	7 10 36	4222.04	-38.42	199.68	30.22	51.13	8 20 58	3622.0	-43.14	191.56
136.14	15 53 2	2658.48	-38.41	75.24	30.21	51.12	16 37 21	2058.5	-43.13	67.12

DIFFERENTIAL CORRECTIONS
TDE 1.0431 TRA -.1679 TC3-2.0208 BAU .6574
RDE 1.0295 RRA .3042 RC3-3.1603 FAU .56675
FDE11.0494 FRA 3.1223 FC-37.4293 BSP 11782
BDE 1.4656 BRA .3475 BC3 3.7511 FSP 9864

MID-COURSE EXECUTION ACCURACY
SGT 2248.5 SGR 2917.9 SG3 2873.3
RRT .8679 RRF .9986 RTF .8692
SGB 3683.7 R23 .1812 R13 .9821
SG1 3568.7 SG2 913.3 THA 53.45

ORBIT DETERMINATION ACCURACY
ST 1656.4 SR 1647.8 SS 4532.9
CRT .9751 CRS-1.0000 CST -.9764
LSA 5088.2 MSA 340.5 SSA 7.5
EL1 2321.8 EL2 260.8 ALF 44.85

LAUNCH DATE NOV 26 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 636.429 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.937 GAL .84 AZL 86.19 HCA 192.91 SMA 186.10 ECC .20725 INC 3.8113 V1 30.181
RP 221.89 LAP -.85 LOP 256.65 VP 21.979 GAP -4.51 AZP 93.72 TAL 4.90 TAP 197.81 RCA 147.53 APO 224.67 V2 24.779
RC 264.895 GL 38.05 GP -15.67 ZAL 77.08 ZAP 99.60 ETS 181.56 ZAE 132.90 ETE 192.57 ZAC 71.69 ETC 255.87 CLP 99.98

PLANETOCENTRIC CONIC

C3 12.617 VHL 3.552 DLA 51.08 RAL 157.06 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 2.934 DPA -11.56 RAP 170.94 ECC 1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.54	7 12 38	4202.06	-37.94	197.09	28.06	52.81	8 22 40	3602.1	-42.47	188.86
134.46	15 44 46	2662.01	-37.93	75.13	28.05	52.80	16 29 8	2062.0	-42.46	66.91
45.54	7 12 38	4202.06	-37.94	197.09	28.06	52.81	8 22 40	3602.1	-42.47	188.86
134.46	15 44 46	2662.01	-37.93	75.13	28.05	52.80	16 29 8	2062.0	-42.46	66.91
45.54	7 12 38	4202.06	-37.94	197.09	28.06	52.81	8 22 40	3602.1	-42.47	188.86
134.46	15 44 46	2662.01	-37.93	75.13	28.05	52.80	16 29 8	2062.0	-42.46	66.91

DIFFERENTIAL CORRECTIONS
TDE 1.1002 TRA -.1530 TC3-2.4390 BAU .6552
RDE .9296 RRA .2788 RC3-3.0234 FAU .57718
FDE10.8317 FRA 3.1053 FC-39.6054 BSP 11928
BDE 1.4403 BRA .3180 BC3 3.8845 FSP 10185

MID-COURSE EXECUTION ACCURACY
SGT 2511.2 SGR 2715.4 SG3 2943.2
RRT .8948 RRF .9982 RTF .8957
SGB 3698.6 R23 .2043 R13 .9771
SG1 3600.6 SG2 845.7 THA 47.50

ORBIT DETERMINATION ACCURACY
ST 1779.4 SR 1516.1 SS 4475.8
CRT .9783 CRS-1.0000 CST -.9795
LSA 5038.2 MSA 337.6 SSA 8.4
EL1 2325.3 EL2 240.5 ALF 40.33

LAUNCH DATE NOV 26 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 640.469 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.935 GAL .82 AZL 86.35 HCA 194.01 SMA 186.06 ECC .20706 INC 3.6467 V1 30.181
RP 221.51 LAP -.88 LOP 257.75 VP 22.023 GAP -4.74 AZP 93.54 TAL 4.77 TAP 198.78 RCA 147.54 APO 224.59 V2 24.820
RC 266.379 GL 36.82 GP -14.59 ZAL 77.09 ZAP 97.73 ETS 180.89 ZAE 131.04 ETE 190.67 ZAC 72.55 ETC 256.02 CLP 97.99

PLANETOCENTRIC CONIC

C3 12.212 VHL 3.495 DLA 49.89 RAL 156.49 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 2.907 DPA -10.22 RAP 170.61 ECC 1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.04	7 15 10	4183.85	-37.46	194.77	26.30	54.26	8 24 53	3583.9	-41.82	186.47
132.96	15 37 40	2666.36	-37.45	75.13	26.28	54.25	16 22 6	2066.4	-41.81	66.83
47.04	7 15 10	4183.85	-37.46	194.77	26.30	54.26	8 24 53	3583.9	-41.82	186.47
132.96	15 37 40	2666.36	-37.45	75.13	26.28	54.25	16 22 6	2066.4	-41.81	66.83
47.04	7 15 10	4183.85	-37.46	194.77	26.30	54.26	8 24 53	3583.9	-41.82	186.47
132.96	15 37 40	2666.36	-37.45	75.13	26.28	54.25	16 22 6	2066.4	-41.81	66.83

DIFFERENTIAL CORRECTIONS
TDE 1.1572 TRA -.1374 TC3-2.8785 BAU .6663
RDE .8447 RRA .2576 RC3-2.8933 FAU .58632
FDE10.5755 FRA 3.0837 FC-41.5644 BSP 12233
BDE 1.4327 BRA .2919 BC3 4.0813 FSP 10412

MID-COURSE EXECUTION ACCURACY
SGT 2787.4 SGR 2537.1 SG3 3000.6
RRT .9144 RRF .9976 RTF .9152
SGB 3769.2 R23 .2194 R13 .9732
SG1 3688.4 SG2 776.0 THA 42.06

ORBIT DETERMINATION ACCURACY
ST 1901.2 SR 1400.1 SS 4401.1
CRT .9808 CRS-1.0000 CST -.9818
LSA 4983.1 MSA 335.2 SSA 9.3
EL1 2350.8 EL2 221.1 ALF 36.21

LAUNCH DATE NOV 26 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 644.518 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.933 GAL .79 AZL 86.50 HCA 195.11 SMA 186.03 ECC .20689 INC 3.5048 V1 30.181
RP 221.13 LAP -.91 LOP 258.86 VP 22.067 GAP -4.96 AZP 93.38 TAL 4.63 TAP 199.74 RCA 147.54 APO 224.52 V2 24.862
RC 267.844 GL 35.75 GP -13.64 ZAL 77.15 ZAP 95.82 ETS 180.32 ZAE 129.10 ETE 189.05 ZAC 73.28 ETC 256.15 CLP 95.99

PLANETOCENTRIC CONIC

C3 11.874 VHL 3.446 DLA 48.82 RAL 156.08 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 2.887 DPA -9.00 RAP 170.22 ECC 1.1954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.42	7 18 2	4167.12	-36.99	192.68	24.86	55.53	8 27 29	3567.1	-41.21	184.33
131.58	15 31 31	2671.24	-36.98	75.21	24.85	55.52	16 16 3	2071.2	-41.20	66.86
48.42	7 18 2	4167.12	-36.99	192.68	24.86	55.53	8 27 29	3567.1	-41.21	184.33
131.58	15 31 31	2671.24	-36.98	75.21	24.85	55.52	16 16 3	2071.2	-41.20	66.86
48.42	7 18 2	4167.12	-36.99	192.68	24.86	55.53	8 27 29	3567.1	-41.21	184.33
131.58	15 31 31	2671.24	-36.98	75.21	24.85	55.52	16 16 3	2071.2	-41.20	66.86

DIFFERENTIAL CORRECTIONS
TDE 1.2117 TRA -.1228 TC3-3.3414 BAU .6891
RDE .7712 RRA .2394 RC3-2.7711 FAU .59455
FDE10.2788 FRA 3.0521 FC-43.3485 BSP 12639
BDE 1.4363 BRA .2690 BC3 4.3410 FSP 10520

MID-COURSE EXECUTION ACCURACY
SGT 3075.5 SGR 2378.4 SG3 3047.4
RRT .9288 RRF .9969 RTF .9296
SGB 3887.8 R23 .2271 R13 .9708
SG1 3822.6 SG2 709.1 THA 37.18

ORBIT DETERMINATION ACCURACY
ST 2018.1 SR 1296.3 SS 4308.4
CRT .9826 CRS-1.0000 CST -.9836
LSA 4919.8 MSA 333.6 SSA 10.2
EL1 2390.0 EL2 203.2 ALF 32.52

LAUNCH DATE NOV 26 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 648.577 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.932	GAL	.77	AZL	86.62	HCA	196.22	SMA	186.00	ECC	.20675	INC	3.3816
RP	220.75	LAP	-.94	LOP	259.97	VP	22.111	GAP	-5.18	AZP	93.25	TAL	4.47	TAP	200.69	RCA	147.55	APO	224.46
RC	269.292	GL	34.80	GP	-12.80	ZAL	77.26	ZAP	93.90	ETS	179.81	ZAE	127.09	ETE	187.67	ZAC	73.91	ETC	256.28

PLANETOCENTRIC CONIC

C3	11.586	VHL	3.404	DLA	47.84	RAL	155.80	RAD	6567.4	VEL	11.531	PTH	2.01	VHP	2.873	DPA	-7.88	RAP	169.79

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.68	7 21 12	4151.54	-36.54	190.77	23.68	56.65	8 30 24	3551.5	-40.62	182.38
130.32	15 26 10	2676.54	-36.53	75.35	23.67	56.64	16 10 47	2076.5	-40.61	66.96
49.68	7 21 12	4151.54	-36.54	190.77	23.68	56.65	8 30 24	3551.5	-40.62	182.38
130.32	15 26 10	2676.54	-36.53	75.35	23.67	56.64	16 10 47	2076.5	-40.61	66.96
49.68	7 21 12	4151.54	-36.54	190.77	23.68	56.65	8 30 24	3551.5	-40.62	182.38
130.32	15 26 10	2676.54	-36.53	75.35	23.67	56.64	16 10 47	2076.5	-40.61	66.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2669	TRA	-.1051	TC3	-3.8180	BAU	.7195	SGT	3372.3	SGR	2232.7	SG3	3079.4	ST	2135.4	SR	1206.2	SS	4213.4
RDE	.7087	RRA	.2252	RC3	-2.6452	FAU	.59957	RRT	.9397	RRF	.9960	RTF	.9408	CRT	.9842	CRS	-.9999	CST	-.9851
FDE	9.9765	FRA	3.0396	FC	-44.8011	BSP	13235	SGB	4044.4	R23	.2281	R13	.9697	LSA	4863.9	MSA	332.2	SSA	11.2
BDE	1.4516	BRA	.2485	BC3	4.6448	FSP	10631	SG1	3992.7	SG2	644.8	THA	32.85	EL1	2445.4	EL2	186.7	ALF	29.26

LAUNCH DATE NOV 26 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 652.644 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.931	GAL	.74	AZL	86.73	HCA	197.34	SMA	185.98	ECC	.20663	INC	3.2736
RP	220.37	LAP	-.97	LOP	261.09	VP	22.156	GAP	-5.39	AZP	93.13	TAL	4.30	TAP	201.63	RCA	147.55	APO	224.42
RC	270.721	GL	33.95	GP	-12.05	ZAL	77.42	ZAP	91.98	ETS	179.38	ZAE	125.05	ETE	186.48	ZAC	74.46	ETC	256.40

PLANETOCENTRIC CONIC

C3	11.337	VHL	3.367	DLA	46.95	RAL	155.64	RAD	6567.4	VEL	11.521	PTH	2.01	VHP	2.864	DPA	-6.84	RAP	169.33

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.84	7 24 38	4136.89	-36.11	189.01	22.71	57.66	8 33 35	3536.9	-40.07	180.59
129.16	15 21 28	2682.18	-36.10	75.55	22.70	57.65	16 6 10	2082.2	-40.06	67.13
50.84	7 24 38	4136.89	-36.11	189.01	22.71	57.66	8 33 35	3536.9	-40.07	180.59
129.16	15 21 28	2682.18	-36.10	75.55	22.70	57.65	16 6 10	2082.2	-40.06	67.13
50.84	7 24 38	4136.89	-36.11	189.01	22.71	57.66	8 33 35	3536.9	-40.07	180.59
129.16	15 21 28	2682.18	-36.10	75.55	22.70	57.65	16 6 10	2082.2	-40.06	67.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3214	TRA	-.0852	TC3	-4.3041	BAU	.7563	SGT	3674.5	SGR	2101.3	SG3	3102.9	ST	2251.2	SR	1126.7	SS	4114.4
RDE	.6548	RRA	.2138	RC3	-2.5245	FAU	.60317	RRT	.9480	RRF	.9950	RTF	.9493	CRT	.9854	CRS	-.9999	CST	-.9862
FDE	9.6640	FRA	3.0364	FC	-46.0589	BSP	13954	SGB	4232.9	R23	.2242	R13	.9696	LSA	4812.0	MSA	330.9	SSA	12.1
BDE	1.4747	BRA	.2301	BC3	4.9898	FSP	10684	SG1	4192.1	SG2	586.4	THA	29.09	EL1	2511.5	EL2	171.7	ALF	26.39

LAUNCH DATE NOV 26 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 656.720 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.930	GAL	.70	AZL	86.82	HCA	198.46	SMA	185.97	ECC	.20654	INC	3.1778
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.201	GAP	-5.59	AZP	93.01	TAL	4.11	TAP	202.56	RCA	147.56	APO	224.38
RC	272.134	GL	33.19	GP	-11.37	ZAL	77.63	ZAP	90.06	ETS	178.99	ZAE	122.98	ETE	185.46	ZAC	74.95	ETC	256.51

PLANETOCENTRIC CONIC

C3	11.120	VHL	3.335	DLA	46.13	RAL	155.58	RAD	6567.4	VEL	11.511	PTH	2.01	VHP	2.860	DPA	-5.88	RAP	168.85

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.93	7 28 19	4122.95	-35.69	187.37	21.93	58.57	8 37 1	3523.0	-39.54	178.93
128.07	15 17 18	2688.11	-35.67	75.78	21.92	58.55	16 2 6	2088.1	-39.53	67.35
51.93	7 28 19	4122.95	-35.69	187.37	21.93	58.57	8 37 1	3523.0	-39.54	178.93
128.07	15 17 18	2688.11	-35.67	75.78	21.92	58.55	16 2 6	2088.1	-39.53	67.35
51.93	7 28 19	4122.95	-35.69	187.37	21.93	58.57	8 37 1	3523.0	-39.54	178.93
128.07	15 17 18	2688.11	-35.67	75.78	21.92	58.55	16 2 6	2088.1	-39.53	67.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3726	TRA	-.0649	TC3	-4.8070	BAU	.7990	SGT	3983.3	SGR	1980.4	SG3	3115.4	ST	2360.9	SR	1058.3	SS	4020.6
RDE	.6089	RRA	.2050	RC3	-2.4033	FAU	.60421	RRT	.9538	RRF	.9937	RTF	.9560	CRT	.9864	CRS	-.9999	CST	-.9870
FDE	9.3625	FRA	3.0500	FC	-47.0404	BSP	14741	SGB	4448.4	R23	.2161	R13	.9703	LSA	4769.6	MSA	330.9	SSA	13.1
BDE	1.5016	BRA	.2150	BC3	5.3743	FSP	10716	SG1	4415.9	SG2	536.5	THA	25.78	EL1	2582.4	EL2	159.0	ALF	23.95

LAUNCH DATE NOV 26 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 660.805 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.929	GAL	.67	AZL	86.91	HCA	199.58	SMA	185.96	ECC	.20647	INC	3.0925
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.246	GAP	-5.79	AZP	92.91	TAL	3.90	TAP	203.48	RCA	147.57	APO	224.36
RC	273.529	GL	32.50	GP	-10.75	ZAL	77.88	ZAP	88.14	ETS	178.65	ZAE	120.90	ETE	184.57	ZAC	75.37	ETC	256.62

PLANETOCENTRIC CONIC

C3	10.928	VHL	3.306	DLA	45.36	RAL	155.61	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	2.859	DPA	-4.98	RAP	168.36

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.95	7 32 11	4109.66	-35.28	185.83	21.31	59.40	8 40 41	3509.7	-39.03	177.37
127.05	15 13 37	2694.25	-35.27	76.06	21.30	59.38	15 58 31	2094.2	-39.02	67.61
52.95	7 32 11	4109.66	-35.28	185.83	21.31	59.40	8 40 41	3509.7	-39.03	177.37
127.05	15 13 37	2694.25	-35.27	76.06	21.30	59.38	15 58 31	2094.2	-39.02	67.61
52.95	7 32 11	4109.66	-35.28	185.83	21.31	59.40	8 40 41	3509.7	-39.03	177.37
127.05	15 13 37	2694.25	-35.27	76.06	21.30	59.38	15 58 31	2094.2	-39.02	67.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4239	TRA	-.0405	TC3	-5.3114	BAU	.8448	SGT	4293.2	SGR	1868.9	SG3	3119.0	ST	2470.3	SR	996.9	SS	3921.6
RDE	.5684	RRA	.1972	RC3	-2.2868	FAU	.60386	RRT	.9586	RRF	.9921	RTF	.9615	CRT	.9874	CRS	-.9999	CST	-.9878
FDE	9.0484	FRA	3.0572	FC	-47.8388	BSP	15633	SGB	4682.4	R23	.2043	R13	.9716	LSA	4729.4	MSA	329.0	SSA	14.1
BDE	1.5331	BRA	.2013	BC3	5.7827	FSP	10693	SG1	4656.6	SG2	490.4	THA	22.92	EL1	2659.8	EL2	146.6	ALF	21.79

LAUNCH DATE NOV 26 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 664.898 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.929 GAL .63 AZL 86.98 HCA 200.70 SMA 185.96 ECC .20642 INC 3.0156 V1 30.181
RP 219.25 LAP -1.07 LOP 264.45 VP 22.292 GAP -5.99 AZP 92.82 TAL 3.68 TAP 204.39 RCA 147.57 APO 224.34 V2 25.067
RC 274.906 GL 31.88 GP -10.19 ZAL 78.16 ZAP 86.23 ETS 178.35 ZAE 118.82 ETE 183.79 ZAC 75.75 ETC 256.73 CLP 86.17

PLANETOCENTRIC CONIC

C3 10.757 VHL 3.280 DLA 44.64 RAL 155.71 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 2.863 DPA -4.14 RAP 167.87 ECC 1.1770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.93	7 36 15	4096.88	-34.88	184.37	20.81	60.15	8 44 32	3496.9	-38.55	175.90
126.07	15 10 21	2700.58	-34.87	76.36	20.81	60.14	15 55 22	2100.6	-38.54	67.90
53.93	7 36 15	4096.88	-34.88	184.37	20.81	60.15	8 44 32	3496.9	-38.55	175.90
126.07	15 10 21	2700.58	-34.87	76.36	20.81	60.14	15 55 22	2100.6	-38.54	67.90
53.93	7 36 15	4096.88	-34.88	184.37	20.81	60.15	8 44 32	3496.9	-38.55	175.90
126.07	15 10 21	2700.58	-34.87	76.36	20.81	60.14	15 55 22	2100.6	-38.54	67.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4713 TRA -.0156 TC3-5.8292 BAU .8946 SGT 4607.4 SGR 1766.3 SG3 3115.0 ST 2572.8 SR 942.7 SS 3823.9
RDE .5330 RRA .1916 RC3-2.1730 FAU .60183 RRT .9615 RRF .9903 RTF .9657 CRT .9881 CRS -.9999 CST -.9883
FDE 8.7352 FRA 3.0883 FC-48.4360 BSP 16542 SGB 4934.4 R23 .1912 R13 .9729 LSA 4692.7 MSA 329.5 SSA 15.1
BDE 1.5648 BRA .1923 BC3 6.2210 FSP 10664 SG1 4913.4 SG2 454.9 THA 20.42 EL1 2736.7 EL2 136.6 ALF 19.95

LAUNCH DATE NOV 26 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 669.000 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.929 GAL .59 AZL 87.05 HCA 201.83 SMA 185.96 ECC .20639 INC 2.9463 V1 30.181
RP 218.89 LAP -1.10 LOP 265.58 VP 22.338 GAP -6.19 AZP 92.74 TAL 3.45 TAP 205.28 RCA 147.58 APO 224.34 V2 25.108
RC 276.266 GL 31.32 GP -9.67 ZAL 78.49 ZAP 84.35 ETS 178.08 ZAE 116.74 ETE 183.12 ZAC 76.10 ETC 256.83 CLP 84.27

PLANETOCENTRIC CONIC

C3 10.603 VHL 3.256 DLA 43.96 RAL 155.88 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 2.871 DPA -3.36 RAP 167.38 ECC 1.1745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.86	7 40 33	4084.41	-34.50	182.97	20.44	60.86	8 48 37	3484.4	-38.08	174.50
125.14	15 7 24	2707.19	-34.48	76.69	20.43	60.85	15 52 31	2107.2	-38.07	68.23
54.86	7 40 33	4084.41	-34.50	182.97	20.44	60.86	8 48 37	3484.4	-38.08	174.50
125.14	15 7 24	2707.19	-34.48	76.69	20.43	60.85	15 52 31	2107.2	-38.07	68.23
54.86	7 40 33	4084.41	-34.50	182.97	20.44	60.86	8 48 37	3484.4	-38.08	174.50
125.14	15 7 24	2707.19	-34.48	76.69	20.43	60.85	15 52 31	2107.2	-38.07	68.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5176 TRA .0132 TC3-6.3460 BAU .9458 SGT 4920.6 SGR 1669.3 SG3 3099.8 ST 2673.3 SR 993.2 SS 3720.0
RDE .5011 RRA .1870 RC3-2.0603 FAU .59773 RRT .9635 RRF .9881 RTF .9692 CRT .9887 CRS -.9998 CST -.9887
FDE 8.4067 FRA 3.1217 FC-48.8032 BSP 17530 SGB 5196.1 R23 .1763 R13 .9743 LSA 4655.5 MSA 329.6 SSA 16.1
BDE 1.5982 BRA .1875 BC3 6.6721 FSP 10621 SG1 5178.7 SG2 424.5 THA 18.23 EL1 2815.7 EL2 127.2 ALF 18.32

LAUNCH DATE NOV 26 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 673.110 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.930 GAL .55 AZL 87.12 HCA 202.97 SMA 185.97 ECC .20638 INC 2.8833 V1 30.181
RP 218.52 LAP -1.12 LOP 266.71 VP 22.383 GAP -6.37 AZP 92.66 TAL 3.20 TAP 206.17 RCA 147.59 APO 224.35 V2 25.148
RC 277.609 GL 30.80 GP -9.19 ZAL 78.85 ZAP 82.49 ETS 177.85 ZAE 114.67 ETE 182.52 ZAC 76.41 ETC 256.93 CLP 82.39

PLANETOCENTRIC CONIC

C3 10.464 VHL 3.235 DLA 43.31 RAL 156.11 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 2.882 DPA -2.62 RAP 166.90 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.75	7 45 2	4072.25	-34.12	181.62	20.17	61.52	8 52 54	3472.2	-37.62	173.16
124.25	15 4 46	2714.02	-34.11	77.05	20.16	61.51	15 50 0	2114.0	-37.61	68.59
55.75	7 45 2	4072.25	-34.12	181.62	20.17	61.52	8 52 54	3472.2	-37.62	173.16
124.25	15 4 46	2714.02	-34.11	77.05	20.16	61.51	15 50 0	2114.0	-37.61	68.59
55.75	7 45 2	4072.25	-34.12	181.62	20.17	61.52	8 52 54	3472.2	-37.62	173.16
124.25	15 4 46	2714.02	-34.11	77.05	20.16	61.51	15 50 0	2114.0	-37.61	68.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5613 TRA .0443 TC3-6.8645 BAU .9984 SGT 5232.9 SGR 1579.4 SG3 3078.1 ST 2768.8 SR 848.5 SS 3613.7
RDE .4725 RRA .1838 RC3-1.9515 FAU .59235 RRT .9643 RRF .9854 RTF .9719 CRT .9892 CRS -.9998 CST -.9888
FDE 8.0722 FRA 3.1704 FC-49.0062 BSP 18537 SGB 5466.0 R23 .1612 R13 .9756 LSA 4619.0 MSA 331.2 SSA 17.1
BDE 1.6313 BRA .1890 BC3 7.1365 FSP 10545 SG1 5451.3 SG2 401.5 THA 16.32 EL1 2893.5 EL2 119.1 ALF 16.89

LAUNCH DATE NOV 26 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 677.226 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.930 GAL .50 AZL 87.17 HCA 204.10 SMA 185.98 ECC .20640 INC 2.8256 V1 30.181
RP 218.16 LAP -1.15 LOP 267.85 VP 22.429 GAP -6.56 AZP 92.58 TAL 2.94 TAP 207.04 RCA 147.59 APO 224.36 V2 25.188
RC 278.933 GL 30.32 GP -8.75 ZAL 79.25 ZAP 80.65 ETS 177.64 ZAE 112.61 ETE 182.00 ZAC 76.69 ETC 257.03 CLP 80.54

PLANETOCENTRIC CONIC

C3 10.338 VHL 3.215 DLA 42.68 RAL 156.40 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 2.896 DPA -1.94 RAP 166.44 ECC 1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.62	7 49 45	4060.25	-33.75	180.32	19.99	62.14	8 57 25	3460.3	-37.17	171.85
123.38	15 2 23	2721.11	-33.73	77.44	19.98	62.13	15 47 44	2121.1	-37.16	68.98
56.62	7 49 45	4060.25	-33.75	180.32	19.99	62.14	8 57 25	3460.3	-37.17	171.85
123.38	15 2 23	2721.11	-33.73	77.44	19.98	62.13	15 47 44	2121.1	-37.16	68.98
56.62	7 49 45	4060.25	-33.75	180.32	19.99	62.14	8 57 25	3460.3	-37.17	171.85
123.38	15 2 23	2721.11	-33.73	77.44	19.98	62.13	15 47 44	2121.1	-37.16	68.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6089 TRA .0841 TC3-7.3672 BAU 1.0492 SGT 5541.2 SGR 1494.9 SG3 3043.0 ST 2871.1 SR 816.8 SS 3555.7
RDE .4517 RRA .1843 RC3-1.8317 FAU .58173 RRT .9632 RRF .9822 RTF .9741 CRT .9897 CRS -.9997 CST -.9889
FDE 7.8432 FRA 3.2933 FC-48.7153 BSP 19719 SGB 5739.4 R23 .1462 R13 .9769 LSA 4630.4 MSA 335.2 SSA 17.8
BDE 1.6711 BRA .2025 BC3 7.5915 FSP 10581 SG1 5726.2 SG2 388.8 THA 14.64 EL1 2982.9 EL2 112.5 ALF 15.75

LAUNCH DATE NOV 26 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 681.354 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.931 GAL .46 AZL 87.23 HCA 205.24 SMA 185.99 ECC .20643 INC 2.7727 V1 30.181
RP 217.80 LAP -1.18 LOP 268.99 VP 22.476 GAP -6.74 AZP 92.51 TAL 2.66 TAP 207.91 RCA 147.60 APO 224.39 V2 25.228
RC 280.240 GL 29.88 GP -8.34 ZAL 79.68 ZAP 78.84 ETS 177.46 ZAE 110.58 ETE 181.54 ZAC 76.95 ETC 257.12 CLP 78.72

PLANETOCENTRIC CONIC

C3 10.223 VHL 3.197 DLA 42.08 RAL 156.74 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 2.913 DPA -1.29 RAP 165.99 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.47	7 54 38	4048.42	-33.38	179.04	19.90	62.73	9 2 6	3448.4	-36.73	170.58
122.53	15 0 14	2728.45	-33.37	77.86	19.89	62.71	15 45 42	2128.4	-36.72	69.40
57.47	7 54 38	4048.42	-33.38	179.04	19.90	62.73	9 2 6	3448.4	-36.73	170.58
122.53	15 0 14	2728.45	-33.37	77.86	19.89	62.71	15 45 42	2128.4	-36.72	69.40
57.47	7 54 38	4048.42	-33.38	179.04	19.90	62.73	9 2 6	3448.4	-36.73	170.58
122.53	15 0 14	2728.45	-33.37	77.86	19.89	62.71	15 45 42	2128.4	-36.72	69.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6425 TRA .1169 TC3-7.8980 BAU 1.1053 SGT 5852.5 SGR 1417.9 SG3 3013.4 ST 2948.5 SR 777.2 SS 3430.3
RDE .4272 RRA .1801 RC3-1.7381 FAU .57626 RRT .9628 RRF .9786 RTF .9762 CRT .9902 CRS -.9996 CST -.9890
FDE 7.4693 FRA 3.2986 FC-48.7999 BSP 20658 SGB 6021.8 R23 .1292 R13 .9782 LSA 4577.4 MSA 334.4 SSA 18.9
BDE 1.6972 BRA .2148 BC3 8.0870 FSP 10380 SG1 6010.2 SG2 373.2 THA 13.18 EL1 3047.4 EL2 105.1 ALF 14.65

LAUNCH DATE NOV 26 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 685.490 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.932 GAL .41 AZL 87.28 HCA 206.39 SMA 186.01 ECC .20649 INC 2.7238 V1 30.181
RP 217.44 LAP -1.21 LOP 270.14 VP 22.522 GAP -6.92 AZP 92.44 TAL 2.37 TAP 208.76 RCA 147.60 APO 224.42 V2 25.268
RC 281.529 GL 29.47 GP -7.96 ZAL 80.15 ZAP 77.06 ETS 177.29 ZAE 108.57 ETE 181.14 ZAC 77.20 ETC 257.21 CLP 76.93

PLANETOCENTRIC CONIC

C3 10.118 VHL 3.181 DLA 41.49 RAL 157.13 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 2.934 DPA -.68 RAP 165.56 ECC 1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.31	7 59 45	4036.57	-33.01	177.79	19.88	63.29	9 7 2	3436.6	-36.30	169.33
121.69	14 58 14	2736.15	-33.00	78.31	19.87	63.27	15 43 50	2136.2	-36.29	69.86
58.31	7 59 45	4036.57	-33.01	177.79	19.88	63.29	9 7 2	3436.6	-36.30	169.33
121.69	14 58 14	2736.15	-33.00	78.31	19.87	63.27	15 43 50	2136.2	-36.29	69.86
58.31	7 59 45	4036.57	-33.01	177.79	19.88	63.29	9 7 2	3436.6	-36.30	169.33
121.69	14 58 14	2736.15	-33.00	78.31	19.87	63.27	15 43 50	2136.2	-36.29	69.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6737 TRA .1532 TC3-8.4254 BAU 1.1612 SGT 6160.8 SGR 1344.8 SG3 2975.6 ST 3021.1 SR 742.1 SS 3308.1
RDE .4055 RRA .1769 RC3-1.6443 FAU .56888 RRT .9614 RRF .9743 RTF .9780 CRT .9907 CRS -.9995 CST -.9890
FDE 7.1049 FRA 3.3112 FC-48.6758 BSP 21593 SGB 6305.8 R23 .1121 R13 .9794 LSA 4528.8 MSA 333.6 SSA 19.9
BDE 1.7221 BRA .2340 BC3 8.5843 FSP 10127 SG1 6295.4 SG2 362.0 THA 11.89 EL1 3109.4 EL2 98.2 ALF 13.69

LAUNCH DATE NOV 26 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 689.633 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.934 GAL .35 AZL 87.32 HCA 207.54 SMA 186.04 ECC .20657 INC 2.6788 V1 30.181
RP 217.09 LAP -1.24 LOP 271.29 VP 22.568 GAP -7.09 AZP 92.38 TAL 2.07 TAP 209.61 RCA 147.61 APO 224.47 V2 25.307
RC 282.801 GL 29.09 GP -7.60 ZAL 80.66 ZAP 75.31 ETS 177.15 ZAE 106.59 ETE 180.78 ZAC 77.42 ETC 257.30 CLP 75.18

PLANETOCENTRIC CONIC

C3 10.022 VHL 3.166 DLA 40.92 RAL 157.57 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 2.957 DPA -.12 RAP 165.16 ECC 1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.13	8 5 7	4024.64	-32.65	176.54	19.93	63.82	9 12 12	3424.6	-35.87	168.09
120.87	14 56 22	2744.26	-32.64	78.79	19.92	63.81	15 42 6	2144.3	-35.86	70.35
59.13	8 5 7	4024.64	-32.65	176.54	19.93	63.82	9 12 12	3424.6	-35.87	168.09
120.87	14 56 22	2744.26	-32.64	78.79	19.92	63.81	15 42 6	2144.3	-35.86	70.35
59.13	8 5 7	4024.64	-32.65	176.54	19.93	63.82	9 12 12	3424.6	-35.87	168.09
120.87	14 56 22	2744.26	-32.64	78.79	19.92	63.81	15 42 6	2144.3	-35.86	70.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7037 TRA .1958 TC3-8.9413 BAU 1.2158 SGT 6463.4 SGR 1277.1 SG3 2933.1 ST 3091.5 SR 711.0 SS 3190.4
RDE .3862 RRA .1758 RC3-1.5515 FAU .55998 RRT .9588 RRF .9693 RTF .9791 CRT .9911 CRS -.9993 CST -.9886
FDE 6.7502 FRA 3.3701 FC-48.3748 BSP 22630 SGB 6588.4 R23 .0975 R13 .9802 LSA 4486.4 MSA 336.8 SSA 20.9
BDE 1.7470 BRA .2632 BC3 9.0749 FSP 9978 SG1 6578.8 SG2 356.6 THA 10.76 EL1 3170.8 EL2 92.4 ALF 12.85

LAUNCH DATE NOV 26 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 693.783 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.935 GAL .30 AZL 87.36 HCA 208.69 SMA 186.07 ECC .20667 INC 2.6367 V1 30.181
RP 216.74 LAP -1.27 LOP 272.44 VP 22.614 GAP -7.26 AZP 92.31 TAL 1.75 TAP 210.44 RCA 147.61 APO 224.52 V2 25.346
RC 284.057 GL 28.73 GP -7.27 ZAL 81.19 ZAP 73.60 ETS 177.02 ZAE 104.64 ETE 180.47 ZAC 77.64 ETC 257.38 CLP 73.46

PLANETOCENTRIC CONIC

C3 9.933 VHL 3.152 DLA 40.35 RAL 158.05 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 2.983 DPA .41 RAP 164.78 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.96	8 10 42	4012.65	-32.28	175.31	20.04	64.34	9 17 35	3412.6	-35.44	166.87
120.04	14 54 38	2752.73	-32.27	79.31	20.03	64.33	15 40 31	2152.7	-35.43	70.87
59.96	8 10 42	4012.65	-32.28	175.31	20.04	64.34	9 17 35	3412.6	-35.44	166.87
120.04	14 54 38	2752.73	-32.27	79.31	20.03	64.33	15 40 31	2152.7	-35.43	70.87
59.96	8 10 42	4012.65	-32.28	175.31	20.04	64.34	9 17 35	3412.6	-35.44	166.87
120.04	14 54 38	2752.73	-32.27	79.31	20.03	64.33	15 40 31	2152.7	-35.43	70.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7290 TRA .2387 TC3-9.4574 BAU 1.2708 SGT 6763.3 SGR 1211.7 SG3 2880.5 ST 3152.9 SR 684.0 SS 3080.1
RDE .3697 RRA .1739 RC3-1.4579 FAU .54904 RRT .9551 RRF .9634 RTF .9805 CRT .9916 CRS -.9991 CST -.9885
FDE 6.4181 FRA 3.3950 FC-47.8516 BSP 23589 SGB 6871.0 R23 .0821 R13 .9813 LSA 4447.7 MSA 336.1 SSA 21.9
BDE 1.7681 BRA .2954 BC3 9.5691 FSP 9758 SG1 6861.8 SG2 353.9 THA 9.74 EL1 3225.1 EL2 86.5 ALF 12.15

LAUNCH DATE NOV 26 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 697.942 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.937	GAL	.24	AZL	87.40	HCA	209.85	SMA	186.10	ECC	.20678	INC	2.5978
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.660	GAP	-7.43	AZP	92.25	TAL	1.41	TAP	211.26	RCA	147.62	APO	224.58
RC	285.296	GL	28.40	GP	-6.96	ZAL	81.76	ZAP	71.93	ETS	176.90	ZAE	102.72	ETE	180.19	ZAC	77.84	ETC	257.45

V1 30.181 V2 25.385 CLP 71.79

PLANETOCENTRIC CONIC

C3	9.852	VHL	3.139	DLA	39.80	RAL	158.58	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	3.011	DPA	.91	RAP	164.43

ECC 1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.78	8 16 35	4000.39	-31.92	174.06	20.22	64.84	9 23 15	3400.4	-35.01	165.63
119.22	14 52 57	2761.73	-31.90	79.86	20.21	64.83	15 38 59	2161.7	-35.00	71.44
60.78	8 16 35	4000.39	-31.92	174.06	20.22	64.84	9 23 15	3400.4	-35.01	165.63
119.22	14 52 57	2761.73	-31.90	79.86	20.21	64.83	15 38 59	2161.7	-35.00	71.44
60.78	8 16 35	4000.39	-31.92	174.06	20.22	64.84	9 23 15	3400.4	-35.01	165.63
119.22	14 52 57	2761.73	-31.90	79.86	20.21	64.83	15 38 59	2161.7	-35.00	71.44

DIFFERENTIAL CORRECTIONS

TDE	1.7539	TRA	.2887	TC3-9.9585	BAU	1.3240	
RDE	.3553	RRA	.1734	RC3-1.3690	FAU	.53785	
FDE	6.1055	FRA	3.4527	FC-47.2621	BSP	24620	
BDE	1.7896	BRA	.3367	BC310.0521	FSP	9577	

MID-COURSE EXECUTION ACCURACY

SGT	7057.1	SGR	1152.8	SG3	2828.6		
RRT	.9504	RRF	.9567	RTF	.9816		
SGB	7150.6	R23	.0689	R13	.9822		
SG1	7141.8	SG2	354.4	THA	8.85		

ORBIT DETERMINATION ACCURACY

ST	3213.7	SR	660.7	SS	2978.3		
CRT	.9921	CRS	-.9988	CST	-.9882		
LSA	4418.2	MSA	337.7	SSA	22.7		
EL1	3279.9	EL2	81.0	ALF	11.54		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 702.108 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.939	GAL	.18	AZL	87.44	HCA	211.00	SMA	186.14	ECC	.20692	INC	2.5612
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.706	GAP	-7.59	AZP	92.20	TAL	1.06	TAP	212.07	RCA	147.62	APO	224.65
RC	286.520	GL	28.08	GP	-6.66	ZAL	82.37	ZAP	70.29	ETS	176.80	ZAE	100.83	ETE	179.94	ZAC	78.03	ETC	257.52

V1 30.181 V2 25.423 CLP 70.15

PLANETOCENTRIC CONIC

C3	9.778	VHL	3.127	DLA	39.24	RAL	159.15	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.042	DPA	1.36	RAP	164.11

ECC 1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.61	8 22 43	3987.88	-31.54	172.81	20.45	65.33	9 29 11	3387.9	-34.58	164.39
118.39	14 51 20	2771.25	-31.53	80.46	20.44	65.31	15 37 32	2171.2	-34.57	72.04
61.61	8 22 43	3987.88	-31.54	172.81	20.45	65.33	9 29 11	3387.9	-34.58	164.39
118.39	14 51 20	2771.25	-31.53	80.46	20.44	65.31	15 37 32	2171.2	-34.57	72.04
61.61	8 22 43	3987.88	-31.54	172.81	20.45	65.33	9 29 11	3387.9	-34.58	164.39
118.39	14 51 20	2771.25	-31.53	80.46	20.44	65.31	15 37 32	2171.2	-34.57	72.04

DIFFERENTIAL CORRECTIONS

TDE	1.7730	TRA	.3387	TC-10.4581	BAU	1.3773	
RDE	.3419	RRA	.1720	RC3-1.2817	FAU	.52558	
FDE	5.7847	FRA	3.4765	FC-46.5337	BSP	25533	
BDE	1.8057	BRA	.3799	BC310.5364	FSP	9289	

MID-COURSE EXECUTION ACCURACY

SGT	7346.7	SGR	1095.8	SG3	2768.8		
RRT	.9446	RRF	.9488	RTF	.9827		
SGB	7428.0	R23	.0558	R13	.9831		
SG1	7419.4	SG2	356.2	THA	8.04		

ORBIT DETERMINATION ACCURACY

ST	3263.5	SR	638.8	SS	2869.5		
CRT	.9927	CRS	-.9984	CST	-.9879		
LSA	4379.3	MSA	336.6	SSA	23.7		
EL1	3324.6	EL2	75.4	ALF	11.00		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 706.281 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.942	GAL	.12	AZL	87.47	HCA	212.17	SMA	186.18	ECC	.20708	INC	2.5269
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.752	GAP	-7.75	AZP	92.14	TAL	.70	TAP	212.87	RCA	147.62	APO	224.73
RC	287.729	GL	27.78	GP	-6.38	ZAL	83.00	ZAP	68.69	ETS	176.71	ZAE	98.98	ETE	179.72	ZAC	78.21	ETC	257.59

V1 30.181 V2 25.461 CLP 68.55

PLANETOCENTRIC CONIC

C3	9.711	VHL	3.116	DLA	38.69	RAL	159.75	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.075	DPA	1.79	RAP	163.83

ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.45	8 29 8	3975.02	-31.17	171.53	20.73	65.81	9 35 23	3375.0	-34.15	163.13
117.55	14 49 44	2781.37	-31.16	81.10	20.73	65.79	15 36 6	2181.4	-34.14	72.70
62.45	8 29 8	3975.02	-31.17	171.53	20.73	65.81	9 35 23	3375.0	-34.15	163.13
117.55	14 49 44	2781.37	-31.16	81.10	20.73	65.79	15 36 6	2181.4	-34.14	72.70
62.45	8 29 8	3975.02	-31.17	171.53	20.73	65.81	9 35 23	3375.0	-34.15	163.13
117.55	14 49 44	2781.37	-31.16	81.10	20.73	65.79	15 36 6	2181.4	-34.14	72.70

DIFFERENTIAL CORRECTIONS

TDE	1.7887	TRA	.3919	TC-10.9496	BAU	1.4300	
RDE	.3293	RRA	.1711	RC3-1.2032	FAU	.51470	
FDE	5.4505	FRA	3.5037	FC-45.8879	BSP	26516	
BDE	1.8188	BRA	.4276	BC311.0155	FSP	9073	

MID-COURSE EXECUTION ACCURACY

SGT	7631.4	SGR	1044.6	SG3	2713.6		
RRT	.9384	RRF	.9399	RTF	.9835		
SGB	7702.5	R23	.0434	R13	.9838		
SG1	7694.2	SG2	358.2	THA	7.34		

ORBIT DETERMINATION ACCURACY

ST	3306.8	SR	617.8	SS	2752.3		
CRT	.9933	CRS	-.9979	CST	-.9874		
LSA	4333.3	MSA	337.4	SSA	24.6		
EL1	3363.3	EL2	70.2	ALF	10.52		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 710.462 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	32.944	GAL	.06	AZL	87.51	HCA	213.33	SMA	186.22	ECC	.20726	INC	2.4947
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.797	GAP	-7.90	AZP	92.08	TAL	.32	TAP	213.66	RCA	147.62	APO	224.82
RC	288.924	GL	27.49	GP	-6.12	ZAL	83.67	ZAP	67.13	ETS	176.63	ZAE	97.16	ETE	179.53	ZAC	78.39	ETC	257.65

V1 30.181 V2 25.498 CLP 66.99

PLANETOCENTRIC CONIC

C3	9.649	VHL	3.106	DLA	38.14	RAL	160.39	RAD	6567.3	VEL	11.447	PTH	1.99	VHP	3.111	DPA	2.18	RAP	163.57

ECC 1.1588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.30	8 35 53	3961.70	-30.78	170.23	21.07	66.27	9 41 54	3361.7	-33.71	161.84
116.70	14 48 7	2792.19	-30.77	81.80	21.06	66.26	15 34 39	2192.2	-33.70	73.41
63.30	8 35 53	3961.70	-30.78	170.23	21.07	66.27	9 41 54	3361.7	-33.71	161.84
116.70	14 48 7	2792.19	-30.77	81.80	21.06	66.26	15 34 39	2192.2	-33.70	73.41
63.30	8 35 53	3961.70	-30.78	170.23	21.07	66.27	9 41 54	3361.7	-33.71	161.84
116.70	14 48 7	2792.19	-30.77	81.80	21.06	66.26	15 34 39	2192.2	-33.70	73.41

DIFFERENTIAL CORRECTIONS

TDE	1.8004	TRA	.4481	TC-11.4436	BAU	1.4835	
RDE	.3191	RRA	.1688	RC3-1.1339	FAU	.50566	
FDE	5.1601	FRA	3.4831	FC-45.3675	BSP	27421	
BDE	1.8284	BRA	.4788	BC311.4997	FSP	8767	

MID-COURSE EXECUTION ACCURACY

SGT	7916.9	SGR	999.7	SG3	2665.4		
RRT	.9323	RRF	.9303	RTF	.9850		
SGB	7979.8	R23	.0278	R13	.9852		
SG1	7971.7	SG2	359.0	THA	6.73		

ORBIT DETERMINATION ACCURACY

ST	3342.5	SR	600.8	SS	2651.3		
CRT	.9942	CRS	-.9973	CST	-.9875		
LSA	4295.7	MSA	329.5	SSA	25.6		
EL1	3395.5	EL2	63.9	ALF	10.14		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 714.649 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.947 GAL -.01 AZL 87.54 HCA 214.51 SMA 186.27 ECC .20746 INC 2.4643 V1 30.181
RP 215.05 LAP -1.40 LOP 278.26 VP 22.843 GAP -8.06 AZP 92.03 TAL 359.93 TAP 214.44 RCA 147.62 APO 224.91 V2 25.535
RC 290.105 GL 27.22 GP -5.88 ZAL 84.37 ZAP 65.61 ETS 176.56 ZAE 95.38 ETE 179.35 ZAC 78.56 ETC 257.70 CLP 65.48

PLANETOCENTRIC CONIC

C3 9.594 VHL 3.097 DLA 37.59 RAL 161.07 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.148 DPA 2.55 RAP 163.35 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.17	8 42 57	3947.85	-30.39	168.90	21.45	66.73	9 48 45	3347.8	-33.26	160.52
115.83	14 46 26	2803.80	-30.38	82.56	21.44	66.72	15 33 10	2203.8	-33.25	74.18
64.17	8 42 57	3947.85	-30.39	168.90	21.45	66.73	9 48 45	3347.8	-33.26	160.52
115.83	14 46 26	2803.80	-30.38	82.56	21.44	66.72	15 33 10	2203.8	-33.25	74.18
64.17	8 42 57	3947.85	-30.39	168.90	21.45	66.73	9 48 45	3347.8	-33.26	160.52
115.83	14 46 26	2803.80	-30.38	82.56	21.44	66.72	15 33 10	2203.8	-33.25	74.18

DIFFERENTIAL CORRECTIONS
TDE 1.8510 TRA .5271 TC-11.8236 BAU 1.5221
RDE .3204 RRA .1783 RC3-1.0091 FAU .47559
FDE 5.2093 FRA 3.8264 FC-42.9149 BSP 28993
BDE 1.8785 BRA .5564 BC311.8666 FSP 9376

MID-COURSE EXECUTION ACCURACY
SGT 8178.5 SGR 956.7 SG3 2562.2
RRT .9100 RRF .9181 RTF .9842
SGB 8234.2 R23 .0491 R13 .9845
SG1 8224.8 SG2 394.4 THA 6.09

ORBIT DETERMINATION ACCURACY
ST 3450.7 SR 606.0 SS 2729.3
CRT .9945 CRS -.9968 CST -.9866
LSA 4427.2 MSA 351.6 SSA 25.5
EL1 3503.0 EL2 62.8 ALF 9.91

LAUNCH DATE NOV 26 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 718.844 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.950 GAL -.08 AZL 87.56 HCA 215.68 SMA 186.32 ECC .20769 INC 2.4356 V1 30.181
RP 214.72 LAP -1.42 LOP 279.43 VP 22.888 GAP -8.21 AZP 91.98 TAL 359.52 TAP 215.20 RCA 147.62 APO 225.02 V2 25.572
RC 291.272 GL 26.95 GP -5.65 ZAL 85.11 ZAP 64.13 ETS 176.49 ZAE 93.64 ETE 179.20 ZAC 78.73 ETC 257.75 CLP 64.00

PLANETOCENTRIC CONIC

C3 9.545 VHL 3.090 DLA 37.03 RAL 161.78 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.188 DPA 2.88 RAP 163.16 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.07	8 50 24	3933.34	-30.00	167.52	21.88	67.18	9 55 57	3333.3	-32.81	159.16
114.93	14 44 39	2816.30	-29.99	83.38	21.87	67.17	15 31 36	2216.3	-32.80	75.02
65.07	8 50 24	3933.34	-30.00	167.52	21.88	67.18	9 55 57	3333.3	-32.81	159.16
114.93	14 44 39	2816.30	-29.99	83.38	21.87	67.17	15 31 36	2216.3	-32.80	75.02
65.07	8 50 24	3933.34	-30.00	167.52	21.88	67.18	9 55 57	3333.3	-32.81	159.16
114.93	14 44 39	2816.30	-29.99	83.38	21.87	67.17	15 31 36	2216.3	-32.80	75.02

DIFFERENTIAL CORRECTIONS
TDE 1.8176 TRA .5849 TC-12.3400 BAU 1.5795
RDE .3019 RRA .1732 RC3 -.9617 FAU .47180
FDE 4.6024 FRA 3.7032 FC-42.7909 BSP 29396
BDE 1.8425 BRA .6100 BC312.3775 FSP 8499

MID-COURSE EXECUTION ACCURACY
SGT 8446.9 SGR 910.2 SG3 2513.0
RRT .9059 RRF .9047 RTF .9853
SGB 8495.8 R23 .0243 R13 .9854
SG1 8487.1 SG2 383.6 THA 5.59

ORBIT DETERMINATION ACCURACY
ST 3403.1 SR 573.0 SS 2465.9
CRT .9951 CRS -.9951 CST -.9849
LSA 4227.1 MSA 347.4 SSA 26.9
EL1 3450.5 EL2 55.7 ALF 9.51

LAUNCH DATE NOV 26 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 723.046 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.953 GAL -.15 AZL 87.59 HCA 216.86 SMA 186.37 ECC .20793 INC 2.4084 V1 30.181
RP 214.40 LAP -1.44 LOP 280.61 VP 22.933 GAP -8.35 AZP 91.93 TAL 359.10 TAP 215.96 RCA 147.62 APO 225.13 V2 25.608
RC 292.426 GL 26.69 GP -5.43 ZAL 85.87 ZAP 62.69 ETS 176.44 ZAE 91.94 ETE 179.06 ZAC 78.89 ETC 257.79 CLP 62.56

PLANETOCENTRIC CONIC

C3 9.502 VHL 3.083 DLA 36.47 RAL 162.52 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.230 DPA 3.18 RAP 163.01 ECC 1.1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.99	8 58 14	3918.09	-29.59	166.10	22.35	67.63	10 3 32	3318.1	-32.34	157.75
114.01	14 42 45	2829.77	-29.58	84.27	22.34	67.62	15 29 55	2229.8	-32.34	75.93
65.99	8 58 14	3918.09	-29.59	166.10	22.35	67.63	10 3 32	3318.1	-32.34	157.75
114.01	14 42 45	2829.77	-29.58	84.27	22.34	67.62	15 29 55	2229.8	-32.34	75.93
65.99	8 58 14	3918.09	-29.59	166.10	22.35	67.63	10 3 32	3318.1	-32.34	157.75
114.01	14 42 45	2829.77	-29.58	84.27	22.34	67.62	15 29 55	2229.8	-32.34	75.93

DIFFERENTIAL CORRECTIONS
TDE 1.8119 TRA .6567 TC-12.7794 BAU 1.6274
RDE .2919 RRA .1746 RC3 -.8891 FAU .45778
FDE 4.2403 FRA 3.7849 FC-41.7075 BSP 30324
BDE 1.8352 BRA .6795 BC312.8103 FSP 8292

MID-COURSE EXECUTION ACCURACY
SGT 8701.7 SGR 870.4 SG3 2443.5
RRT .8923 RRF .8897 RTF .9850
SGB 8745.1 R23 .0199 R13 .9851
SG1 8736.3 SG2 391.4 THA 5.11

ORBIT DETERMINATION ACCURACY
ST 3406.6 SR 556.1 SS 2328.1
CRT .9956 CRS -.9929 CST -.9824
LSA 4147.7 MSA 360.5 SSA 27.7
EL1 3451.3 EL2 51.5 ALF 9.23

LAUNCH DATE NOV 26 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 727.255 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.957 GAL -.23 AZL 87.62 HCA 218.04 SMA 186.43 ECC .20819 INC 2.3825 V1 30.181
RP 214.08 LAP -1.47 LOP 281.79 VP 22.978 GAP -8.50 AZP 91.88 TAL 358.67 TAP 216.71 RCA 147.62 APO 225.25 V2 25.644
RC 293.566 GL 26.44 GP -5.22 ZAL 86.67 ZAP 61.29 ETS 176.39 ZAE 90.27 ETE 178.94 ZAC 79.05 ETC 257.82 CLP 61.16

PLANETOCENTRIC CONIC

C3 9.465 VHL 3.077 DLA 35.90 RAL 163.30 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.273 DPA 3.46 RAP 162.89 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.95	9 6 31	3901.84	-29.17	164.60	22.86	68.08	10 11 33	3301.8	-31.87	156.27
113.05	14 40 38	2844.50	-29.16	85.26	22.86	68.06	15 28 2	2244.5	-31.86	76.93
66.95	9 6 31	3901.84	-29.17	164.60	22.86	68.08	10 11 33	3301.8	-31.87	156.27
113.05	14 40 38	2844.50	-29.16	85.26	22.86	68.06	15 28 2	2244.5	-31.86	76.93
66.95	9 6 31	3901.84	-29.17	164.60	22.86	68.08	10 11 33	3301.8	-31.87	156.27
113.05	14 40 38	2844.50	-29.16	85.26	22.86	68.06	15 28 2	2244.5	-31.86	76.93

DIFFERENTIAL CORRECTIONS
TDE 1.8072 TRA .7292 TC-13.2110 BAU 1.6750
RDE .2848 RRA .1743 RC3 -.8205 FAU .44414
FDE 3.9549 FRA 3.8011 FC-40.6227 BSP 31095
BDE 1.8295 BRA .7498 BC313.2364 FSP 7954

MID-COURSE EXECUTION ACCURACY
SGT 8956.4 SGR 834.6 SG3 2374.7
RRT .8776 RRF .8730 RTF .9856
SGB 8995.2 R23 .0131 R13 .9857
SG1 8986.4 SG2 398.8 THA 4.68

ORBIT DETERMINATION ACCURACY
ST 3411.6 SR 544.0 SS 2221.2
CRT .9963 CRS -.9907 CST -.9812
LSA 4091.2 MSA 361.1 SSA 28.5
EL1 3454.4 EL2 46.3 ALF 9.03

LAUNCH DATE NOV 26 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 731.470 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.960 GAL -.31 AZL 87.64 HCA 219.22 SMA 186.49 ECC .20848 INC 2.3581 V1 30.181
RP 213.77 LAP -1.49 LOP 282.97 VP 23.022 GAP -8.64 AZP 91.83 TAL 358.22 TAP 217.44 RCA 147.61 APO 225.37 V2 25.679
RC 294.693 GL 26.20 GP -5.02 ZAL 87.50 ZAP 59.92 ETS 176.34 ZAE 88.63 ETE 178.84 ZAC 79.21 ETC 257.85 CLP 59.80

PLANETOCENTRIC CONIC

C3 9.435 VHL 3.072 DLA 35.32 RAL 164.10 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.319 DPA 3.71 RAP 162.80 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.94	9 15 18	3884.52	-28.74	163.02	23.42	68.52	10 20 3	3284.5	-31.39	154.72
112.06	14 38 16	2860.55	-28.73	86.34	23.41	68.50	15 25 56	2260.5	-31.38	78.03
67.94	9 15 18	3884.52	-28.74	163.02	23.42	68.52	10 20 3	3284.5	-31.39	154.72
112.06	14 38 16	2860.55	-28.73	86.34	23.41	68.50	15 25 56	2260.5	-31.38	78.03
67.94	9 15 18	3884.52	-28.74	163.02	23.42	68.52	10 20 3	3284.5	-31.39	154.72
112.06	14 38 16	2860.55	-28.73	86.34	23.41	68.50	15 25 56	2260.5	-31.38	78.03

DIFFERENTIAL CORRECTIONS
TDE 1.8010 TRA .8086 TC-13.6242 BAU 1.7211
RDE .2789 RRA .1747 RC3 -.7551 FAU .43069
FDE 3.6930 FRA 3.8388 FC-39.5205 BSP 32002
BDE 1.8225 BRA .8273 BC313.6451 FSP 7735

MID-COURSE EXECUTION ACCURACY
SGT 9206.2 SGR 803.3 SG3 2308.5
RRT .8611 RRF .8550 RTF .9861
SGB 9241.2 R23 .0081 R13 .9861
SG1 9232.2 SG2 407.2 THA 4.31

ORBIT DETERMINATION ACCURACY
ST 3414.3 SR 534.0 SS 2125.0
CRT .9969 CRS -.9878 CST -.9796
LSA 4040.4 MSA 363.9 SSA 29.2
EL1 3455.6 EL2 41.5 ALF 8.86

LAUNCH DATE NOV 26 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 735.688 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.964 GAL -.39 AZL 87.67 HCA 220.41 SMA 186.56 ECC .20879 INC 2.3347 V1 30.181
RP 213.46 LAP -1.51 LOP 284.16 VP 23.066 GAP -8.77 AZP 91.78 TAL 357.75 TAP 218.16 RCA 147.61 APO 225.51 V2 25.714
RC 295.805 GL 25.96 GP -4.84 ZAL 88.37 ZAP 58.60 ETS 176.30 ZAE 87.04 ETE 178.74 ZAC 79.36 ETC 257.88 CLP 58.47

PLANETOCENTRIC CONIC

C3 9.410 VHL 3.068 DLA 34.73 RAL 164.93 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.366 DPA 3.93 RAP 162.76 ECC 1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.99	9 24 38	3865.93	-28.30	161.36	24.01	68.96	10 29 4	3265.9	-30.89	153.07
111.01	14 35 36	2878.11	-28.28	87.53	24.01	68.94	15 23 34	2278.1	-30.88	79.24
68.99	9 24 38	3865.93	-28.30	161.36	24.01	68.96	10 29 4	3265.9	-30.89	153.07
111.01	14 35 36	2878.11	-28.28	87.53	24.01	68.94	15 23 34	2278.1	-30.88	79.24
68.99	9 24 38	3865.93	-28.30	161.36	24.01	68.96	10 29 4	3265.9	-30.89	153.07
111.01	14 35 36	2878.11	-28.28	87.53	24.01	68.94	15 23 34	2278.1	-30.88	79.24

DIFFERENTIAL CORRECTIONS
TDE 1.8093 TRA .9123 TC-13.9344 BAU 1.7551
RDE .2752 RRA .1771 RC3 -.6814 FAU .41271
FDE 3.4961 FRA 3.9473 FC-37.9699 BSP 33368
BDE 1.8301 BRA .9293 BC313.9511 FSP 7661

MID-COURSE EXECUTION ACCURACY
SGT 9423.6 SGR 775.2 SG3 2229.4
RRT .8412 RRF .8351 RTF .9863
SGB 9455.4 R23 .0071 R13 .9863
SG1 9446.2 SG2 418.2 THA 3.97

ORBIT DETERMINATION ACCURACY
ST 3445.8 SR 528.2 SS 2064.1
CRT .9975 CRS -.9845 CST -.9781
LSA 4034.2 MSA 369.9 SSA 29.5
EL1 3485.8 EL2 36.7 ALF 8.69

LAUNCH DATE NOV 26 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 739.918 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.968 GAL -.47 AZL 87.69 HCA 221.60 SMA 186.62 ECC .20912 INC 2.3123 V1 30.181
RP 213.16 LAP -1.53 LOP 285.35 VP 23.110 GAP -8.91 AZP 91.73 TAL 357.28 TAP 218.88 RCA 147.60 APO 225.65 V2 25.748
RC 296.904 GL 25.72 GP -4.66 ZAL 89.26 ZAP 57.31 ETS 176.27 ZAE 85.47 ETE 178.66 ZAC 79.52 ETC 257.90 CLP 57.19

PLANETOCENTRIC CONIC

C3 9.392 VHL 3.065 DLA 34.14 RAL 165.79 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.415 DPA 4.13 RAP 162.74 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.09	9 34 33	3845.82	-27.84	159.59	24.64	69.40	10 38 39	3245.8	-30.38	151.32
109.91	14 32 31	2897.48	-27.83	88.85	24.64	69.38	15 20 49	2297.5	-30.37	80.58
70.09	9 34 33	3845.82	-27.84	159.59	24.64	69.40	10 38 39	3245.8	-30.38	151.32
109.91	14 32 31	2897.48	-27.83	88.85	24.64	69.38	15 20 49	2297.5	-30.37	80.58
110.00	14 46 42	2854.26	-28.83	85.89	25.05	70.79	15 34 17	2254.3	-31.18	77.47
110.00	14 19 32	2937.04	-26.85	91.51	24.21	68.00	15 8 29	2337.0	-29.59	83.39

DIFFERENTIAL CORRECTIONS
TDE 1.7840 TRA .9911 TC-14.3506 BAU 1.8036
RDE .2694 RRA .1767 RC3 -.6247 FAU .40084
FDE 3.2031 FRA 3.9476 FC-36.9481 BSP 33976
BDE 1.8043 BRA 1.0068 BC314.3642 FSP 7362

MID-COURSE EXECUTION ACCURACY
SGT 9669.8 SGR 748.1 SG3 2165.6
RRT .8213 RRF .8131 RTF .9866
SGB 9698.7 R23 .0021 R13 .9867
SG1 9689.3 SG2 425.9 THA 3.64

ORBIT DETERMINATION ACCURACY
ST 3412.5 SR 517.9 SS 1945.5
CRT .9979 CRS -.9794 CST -.9755
LSA 3944.3 MSA 374.1 SSA 30.3
EL1 3451.4 EL2 33.4 ALF 8.61

LAUNCH DATE NOV 26 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 744.153 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.972 GAL -.56 AZL 87.71 HCA 222.80 SMA 186.69 ECC .20947 INC 2.2909 V1 30.181
RP 212.87 LAP -1.56 LOP 286.55 VP 23.153 GAP -9.04 AZP 91.68 TAL 356.78 TAP 219.58 RCA 147.58 APO 225.80 V2 25.782
RC 297.989 GL 25.49 GP -4.50 ZAL 90.19 ZAP 56.06 ETS 176.24 ZAE 83.94 ETE 178.58 ZAC 79.67 ETC 257.91 CLP 55.94

PLANETOCENTRIC CONIC

C3 9.381 VHL 3.063 DLA 33.53 RAL 166.68 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.465 DPA 4.30 RAP 162.75 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.25	9 45 12	3823.81	-27.37	157.68	25.31	69.84	10 48 56	3223.8	-29.86	149.43
108.75	14 28 56	2919.02	-27.36	90.33	25.31	69.82	15 17 35	2319.0	-29.85	82.08
71.25	9 45 12	3823.81	-27.37	157.68	25.31	69.84	10 48 56	3223.8	-29.86	149.43
108.75	14 28 56	2919.02	-27.36	90.33	25.31	69.82	15 17 35	2319.0	-29.85	82.08
110.00	15 27 18	2740.33	-31.11	77.80	26.67	75.07	16 12 58	2140.3	-32.85	69.01
110.00	13 46 0	3050.50	-23.74	98.86	23.62	64.65	14 36 51	2450.5	-26.95	91.16

DIFFERENTIAL CORRECTIONS
TDE 1.7566 TRA 1.0755 TC-14.7339 BAU 1.8492
RDE .2645 RRA .1765 RC3 -.5676 FAU .38796
FDE 2.9273 FRA 3.9457 FC-35.8034 BSP 34622
BDE 1.7764 BRA 1.0899 BC314.7448 FSP 7066

MID-COURSE EXECUTION ACCURACY
SGT 9903.6 SGR 722.9 SG3 2097.6
RRT .7990 RRF .7887 RTF .9870
SGB 9930.0 R23 -.0023 R13 .9870
SG1 9920.5 SG2 434.0 THA 3.34

ORBIT DETERMINATION ACCURACY
ST 3375.8 SR 509.0 SS 1832.9
CRT .9980 CRS -.9731 CST -.9724
LSA 3856.3 MSA 378.0 SSA 31.1
EL1 3413.8 EL2 31.5 ALF 8.56

LAUNCH DATE NOV 26 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 748.394 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.976 GAL -.65 AZL 87.73 HCA 224.00 SMA 186.76 ECC .20985 INC 2.2704 V1 30.181
RP 212.57 LAP -1.58 LOP 287.75 VP 23.196 GAP -9.17 AZP 91.63 TAL 356.28 TAP 220.27 RCA 147.57 APO 225.96 V2 25.815
RC 299.061 GL 25.25 GP -4.34 ZAL 91.14 ZAP 54.84 ETS 176.21 ZAE 82.45 ETE 178.52 ZAC 79.82 ETC 257.92 CLP 54.72

PLANETOCENTRIC CONIC

C3 9.377 VHL 3.062 DLA 32.91 RAL 167.59 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.517 DPA 4.45 RAP 162.80 ECC 1.1543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.50	9 56 39	3799.59	-26.89	155.61	26.01	70.27	10 59 59	3199.6	-29.32	147.39
107.50	14 24 44	2943.06	-26.88	91.98	26.01	70.26	15 13 47	2343.1	-29.31	83.76
72.50	9 56 39	3799.59	-26.89	155.61	26.01	70.27	10 59 59	3199.6	-29.32	147.39
107.50	14 24 44	2943.06	-26.88	91.98	26.01	70.26	15 13 47	2343.1	-29.31	83.76
110.00	15 50 50	2678.23	-32.11	73.24	27.74	77.60	16 35 29	2078.2	-33.49	64.27
110.00	13 29 43	3112.42	-21.88	102.70	23.65	63.06	14 21 35	2512.4	-25.31	95.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7280 TRA 1.1686 TC-15.0949 BAU 1.8933 SGT10133.9 SGR 701.3 SG3 2033.4 ST 3337.9 SR 501.5 SS 1729.2
RDE .2804 RRA .1769 RC3 -.5135 FAU .37551 RRT .7753 RRF .7632 RTF .9872 CRT .9979 CRS -.9648 CST -.9686
FDE 2.6690 FRA 3.9657 FC-34.6705 BSP 35291 SGB10158.2 R23 -.0058 R13 .9872 LSA 3772.8 MSA 385.1 SSA 31.7
BDE 1.7475 BRA 1.1819 BC315.1036 FSP 6797 SG110148.5 SG2 442.3 THA 3.08 EL1 3375.2 EL2 31.9 ALF 8.53

LAUNCH DATE NOV 26 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 752.640 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.980 GAL -.74 AZL 87.75 HCA 225.20 SMA 186.84 ECC .21026 INC 2.2507 V1 30.181
RP 212.29 LAP -1.60 LOP 288.95 VP 23.238 GAP -9.30 AZP 91.59 TAL 355.76 TAP 220.95 RCA 147.55 APO 226.12 V2 25.847
RC 300.120 GL 25.02 GP -4.19 ZAL 92.13 ZAP 53.66 ETS 176.18 ZAE 80.99 ETE 178.46 ZAC 79.97 ETC 257.92 CLP 53.54

PLANETOCENTRIC CONIC

C3 9.379 VHL 3.063 DLA 32.27 RAL 168.52 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.571 DPA 4.58 RAP 162.88 ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.84	10 9 8	3772.50	-26.39	153.34	26.75	70.71	11 12 0	3172.5	-28.77	145.14
106.16	14 19 42	2970.28	-26.38	93.87	26.75	70.70	15 9 12	2370.3	-28.76	85.67
73.84	10 9 8	3772.50	-26.39	153.34	26.75	70.71	11 12 0	3172.5	-28.77	145.14
106.16	14 19 42	2970.28	-26.38	93.87	26.75	70.70	15 9 12	2370.3	-28.76	85.67
110.00	16 10 11	2628.93	-32.77	69.54	28.69	79.69	16 54 0	2028.9	-33.85	60.47
110.00	13 17 49	3161.84	-20.33	105.69	23.86	61.91	14 10 31	2561.8	-23.92	98.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6960 TRA 1.2670 TC-15.4264 BAU 1.9353 SGT10354.2 SGR 681.7 SG3 1966.6 ST 3294.8 SR 495.4 SS 1634.0
RDE .2572 RRA .1773 RC3 -.4597 FAU .36237 RRT .7490 RRF .7356 RTF .9874 CRT .9974 CRS -.9545 CST -.9643
FDE 2.4306 FRA 3.9835 FC-33.4470 BSP 36010 SGB10376.6 R23 -.0082 R13 .9874 LSA 3690.0 MSA 391.6 SSA 32.3
BDE 1.7154 BRA 1.2794 BC315.4333 FSP 6563 SG110366.8 SG2 451.1 THA 2.83 EL1 3331.6 EL2 35.1 ALF 8.53

LAUNCH DATE NOV 26 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 756.891 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.985 GAL -.83 AZL 87.77 HCA 226.40 SMA 186.92 ECC .21068 INC 2.2317 V1 30.181
RP 212.01 LAP -1.62 LOP 290.15 VP 23.280 GAP -9.43 AZP 91.54 TAL 355.22 TAP 221.62 RCA 147.54 APO 226.30 V2 25.879
RC 301.167 GL 24.78 GP -4.05 ZAL 93.14 ZAP 52.51 ETS 176.16 ZAE 79.56 ETE 178.41 ZAC 80.12 ETC 257.92 CLP 52.40

PLANETOCENTRIC CONIC

C3 9.390 VHL 3.064 DLA 31.62 RAL 169.47 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.626 DPA 4.69 RAP 162.99 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.30	10 22 51	3741.76	-25.87	150.80	27.53	71.15	11 25 12	3141.8	-28.20	142.63
104.70	14 13 36	3001.45	-25.86	96.04	27.53	71.14	15 3 37	2401.5	-28.19	87.87
75.30	10 22 51	3741.76	-25.87	150.80	27.53	71.15	11 25 12	3141.8	-28.20	142.63
104.70	14 13 36	3001.45	-25.86	96.04	27.53	71.14	15 3 37	2401.5	-28.19	87.87
110.00	16 27 23	2586.25	-33.25	66.30	29.59	81.56	17 10 29	1986.2	-34.06	57.16
110.00	13 8 14	3204.96	-18.92	108.25	24.20	60.99	14 1 39	2605.0	-22.64	101.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6597 TRA 1.3706 TC-15.7361 BAU 1.9761 SGT10568.6 SGR 664.2 SG3 1901.0 ST 3244.9 SR 489.7 SS 1537.4
RDE .2542 RRA .1778 RC3 -.4085 FAU .34960 RRT .7215 RRF .7063 RTF .9876 CRT .9964 CRS -.9409 CST -.9587
FDE 2.1915 FRA 3.9990 FC-32.2327 BSP 36704 SGB10589.4 R23 -.0110 R13 .9876 LSA 3601.6 MSA 400.6 SSA 32.8
BDE 1.6791 BRA 1.3821 BC315.7414 FSP 6324 SG110579.5 SG2 459.4 THA 2.60 EL1 3281.4 EL2 41.0 ALF 8.55

LAUNCH DATE NOV 26 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 761.148 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.989 GAL -.93 AZL 87.79 HCA 227.61 SMA 187.00 ECC .21114 INC 2.2135 V1 30.181
RP 211.73 LAP -1.63 LOP 291.36 VP 23.321 GAP -9.56 AZP 91.49 TAL 354.67 TAP 222.28 RCA 147.51 APO 226.48 V2 25.911
RC 302.203 GL 24.54 GP -3.91 ZAL 94.19 ZAP 51.39 ETS 176.13 ZAE 78.16 ETE 178.36 ZAC 80.27 ETC 257.91 CLP 51.29

PLANETOCENTRIC CONIC

C3 9.408 VHL 3.067 DLA 30.96 RAL 170.45 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.683 DPA 4.78 RAP 163.13 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.93	10 38 11	3706.14	-25.34	147.92	28.34	71.59	11 39 57	3106.1	-27.62	139.76
103.07	14 6 3	3037.83	-25.33	98.59	28.33	71.58	14 56 41	2437.8	-27.61	90.44
76.93	10 38 11	3706.14	-25.34	147.92	28.34	71.59	11 39 57	3106.1	-27.62	139.76
103.07	14 6 3	3037.83	-25.33	98.59	28.33	71.58	14 56 41	2437.8	-27.61	90.44
110.00	16 43 15	2547.74	-33.59	63.35	30.45	83.27	17 25 42	1947.7	-34.16	54.15
110.00	13 0 10	3244.23	-17.61	110.54	24.63	60.22	13 54 14	2644.2	-21.44	103.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6210 TRA 1.4795 TC-16.0222 BAU 2.0158 SGT10777.9 SGR 649.0 SG3 1836.3 ST 3192.3 SR 485.3 SS 1451.5
RDE .2522 RRA .1783 RC3 -.3592 FAU .33694 RRT .6924 RRF .6758 RTF .9878 CRT .9947 CRS -.9247 CST -.9528
FDE 1.9752 FRA 4.0114 FC-31.0043 BSP 37427 SGB10797.4 R23 -.0131 R13 .9878 LSA 3516.4 MSA 408.5 SSA 33.2
BDE 1.6405 BRA 1.4902 BC316.0262 FSP 6105 SG110787.3 SG2 467.9 THA 2.39 EL1 3228.6 EL2 49.4 ALF 8.60

LAUNCH DATE NOV 26 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 765.410 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.994 GAL -1.03 AZL 87.80 HCA 228.82 SMA 187.08 ECC .21162 INC 2.1959 V1 30.181
RP 211.47 LAP -1.65 LOP 292.57 VP 23.362 GAP -9.68 AZP 91.45 TAL 354.11 TAP 222.93 RCA 147.49 APO 226.67 V2 25.941
RC 303.228 GL 24.30 GP -3.79 ZAL 95.26 ZAP 50.31 ETS 176.11 ZAE 76.80 ETE 178.32 ZAC 80.42 ETC 257.90 CLP 50.21

PLANETOCENTRIC CONIC

C3 9.435 VHL 3.072 DLA 30.28 RAL 171.45 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.740 DPA 4.84 RAP 163.30 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.80	10 55 46	3663.52	-24.79	144.52	29.18	72.04	11 56 50	3063.5	-27.02	136.40
101.20	13 56 24	3081.56	-24.78	101.67	29.17	72.02	14 47 46	2481.6	-27.01	93.54
78.80	10 55 46	3663.52	-24.79	144.52	29.18	72.04	11 56 50	3063.5	-27.02	136.40
101.20	13 56 24	3081.56	-24.78	101.67	29.17	72.02	14 47 46	2481.6	-27.01	93.54
110.00	16 58 11	2512.14	-33.84	60.60	31.30	84.88	17 40 3	1912.1	-34.18	51.37
110.00	12 53 10	3280.95	-16.36	112.65	25.13	59.56	13 47 51	2680.9	-20.28	105.72

DIFFERENTIAL CORRECTIONS
TDE 1.5785 TRA 1.5943 TC-16.2813 BAU 2.0541
RDE .2506 RRA .1788 RC3 -.3114 FAU .32425
FDE 1.7665 FRA 4.0354 FC-29.7520 BSP 38130
BDE 1.5983 BRA 1.6043 BC316.2843 FSP 5890

MID-COURSE EXECUTION ACCURACY
SGT10980.4 SGR 635.8 SG3 1771.8
RRT .6617 RRF .6439 RTF .9879
SGB10998.8 R23 -.0148 R13 .9879
SG110988.5 SG2 476.3 THA 2.20

ORBIT DETERMINATION ACCURACY
ST 3134.8 SR 481.6 SS 1369.7
CRT .9920 CRS -.9042 CST -.9455
LSA 3429.1 MSA 418.3 SSA 33.6
EL1 3171.0 EL2 59.9 ALF 8.67

LAUNCH DATE NOV 26 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 769.676 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 32.999 GAL -1.13 AZL 87.82 HCA 230.03 SMA 187.16 ECC .21212 INC 2.1789 V1 30.181
RP 211.20 LAP -1.67 LOP 293.79 VP 23.402 GAP -9.80 AZP 91.40 TAL 353.53 TAP 223.56 RCA 147.46 APO 226.86 V2 25.971
RC 304.242 GL 24.06 GP -3.67 ZAL 96.36 ZAP 49.26 ETS 176.09 ZAE 75.46 ETE 178.29 ZAC 80.57 ETC 257.88 CLP 49.16

PLANETOCENTRIC CONIC

C3 9.471 VHL 3.077 DLA 29.59 RAL 172.46 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.800 DPA 4.89 RAP 163.50 ECC 1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.04	11 16 51	3609.87	-24.23	140.34	30.05	72.48	12 17 1	3009.9	-26.40	132.23
98.96	13 43 25	3136.68	-24.22	105.57	30.05	72.46	14 35 41	2536.7	-26.39	97.47
100.00	14 27 15	2996.45	-26.61	95.92	30.80	75.85	15 17 11	2396.5	-28.29	87.52
100.00	13 15 42	3225.33	-21.88	111.26	29.16	69.11	14 9 27	2625.3	-24.53	103.46
110.00	17 12 27	2478.70	-34.02	58.00	32.14	86.41	17 53 46	1878.7	-34.14	48.76
110.00	12 46 59	3315.85	-15.14	114.62	25.71	58.98	13 42 15	2715.9	-19.14	107.79

DIFFERENTIAL CORRECTIONS
TDE 1.5320 TRA 1.7135 TC-16.5176 BAU 2.0916
RDE .2494 RRA .1792 RC3 -.2660 FAU .31196
FDE 1.5673 FRA 4.0324 FC-28.5174 BSP 38805
BDE 1.5522 BRA 1.7228 BC316.5197 FSP 5676

MID-COURSE EXECUTION ACCURACY
SGT11178.1 SGR 624.3 SG3 1708.7
RRT .6301 RRF .6108 RTF .9881
SGB11195.5 R23 -.0166 R13 .9881
SG111185.0 SG2 484.5 THA 2.02

ORBIT DETERMINATION ACCURACY
ST 3072.5 SR 478.5 SS 1292.5
CRT .9882 CRS -.8790 CST -.9370
LSA 3339.9 MSA 428.6 SSA 33.9
EL1 3108.7 EL2 72.3 ALF 8.75

LAUNCH DATE NOV 26 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 773.947 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.004 GAL -1.24 AZL 87.84 HCA 231.25 SMA 187.25 ECC .21266 INC 2.1625 V1 30.181
RP 210.95 LAP -1.69 LOP 295.01 VP 23.442 GAP -9.92 AZP 91.35 TAL 352.93 TAP 224.19 RCA 147.43 APO 227.07 V2 26.001
RC 305.247 GL 23.81 GP -3.55 ZAL 97.49 ZAP 48.24 ETS 176.08 ZAE 74.15 ETE 178.26 ZAC 80.73 ETC 257.86 CLP 48.14

PLANETOCENTRIC CONIC

C3 9.515 VHL 3.085 DLA 28.88 RAL 173.49 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.860 DPA 4.92 RAP 163.73 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.07	11 45 3	3533.39	-23.65	134.49	30.96	72.92	12 43 56	2933.4	-25.77	126.42
95.93	13 23 26	3215.01	-23.64	111.15	30.95	72.91	14 17 1	2615.0	-25.76	103.08
100.00	15 0 49	2902.20	-28.00	89.26	32.16	79.09	15 49 11	2302.2	-29.22	80.67
100.00	12 50 22	3321.43	-19.43	117.34	29.29	66.82	13 45 43	2721.4	-22.40	109.81
110.00	17 26 12	2446.94	-34.12	55.53	32.98	87.87	18 6 59	1846.9	-34.04	46.29
110.00	12 41 27	3349.45	-13.95	116.50	26.34	58.47	13 37 17	2749.5	-18.02	109.75

DIFFERENTIAL CORRECTIONS
TDE 1.4801 TRA 1.8376 TC-16.7317 BAU 2.1286
RDE .2488 RRA .1797 RC3 -.2227 FAU .29996
FDE 1.3761 FRA 4.0382 FC-27.2916 BSP 39469
BDE 1.5009 BRA 1.8464 BC316.7332 FSP 5473

MID-COURSE EXECUTION ACCURACY
SGT11371.3 SGR 614.5 SG3 1647.1
RRT .5973 RRF .5769 RTF .9882
SGB11387.8 R23 -.0180 R13 .9882
SG111377.2 SG2 492.6 THA 1.85

ORBIT DETERMINATION ACCURACY
ST 3003.6 SR 476.0 SS 1220.6
CRT .9829 CRS -.8478 CST -.9269
LSA 3247.0 MSA 440.3 SSA 34.1
EL1 3039.8 EL2 86.6 ALF 8.86

LAUNCH DATE NOV 26 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 778.223 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.009 GAL -1.35 AZL 87.85 HCA 232.47 SMA 187.34 ECC .21322 INC 2.1466 V1 30.181
RP 210.70 LAP -1.70 LOP 296.23 VP 23.480 GAP -10.04 AZP 91.31 TAL 352.33 TAP 224.80 RCA 147.39 APO 227.28 V2 26.029
RC 306.243 GL 23.55 GP -3.44 ZAL 98.65 ZAP 47.24 ETS 176.06 ZAE 72.87 ETE 178.23 ZAC 80.88 ETC 257.83 CLP 47.15

PLANETOCENTRIC CONIC

C3 9.570 VHL 3.094 DLA 28.16 RAL 174.54 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.922 DPA 4.93 RAP 163.98 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 44	3289.94	-24.73	116.98	32.40	75.75	13 59 34	2689.9	-26.45	108.73
90.00	12 12 7	3460.70	-21.39	128.37	31.31	70.99	13 9 47	2860.7	-23.79	120.52
100.00	15 25 5	2837.44	-28.75	84.59	33.31	81.44	16 12 22	2237.4	-29.63	75.90
100.00	12 34 27	3388.43	-17.58	121.46	29.70	65.43	13 30 55	2788.4	-20.75	114.10
110.00	17 39 33	2416.55	-34.18	53.16	33.82	89.27	18 19 50	1816.5	-33.90	43.92
110.00	12 36 28	3382.10	-12.78	118.31	27.03	58.02	13 32 50	2782.1	-16.92	111.64

DIFFERENTIAL CORRECTIONS
TDE 1.4263 TRA 1.9691 TC-16.9129 BAU 2.1640
RDE .2486 RRA .1802 RC3 -.1808 FAU .28797
FDE 1.1954 FRA 4.0483 FC-26.0508 BSP 40162
BDE 1.4478 BRA 1.9774 BC316.9138 FSP 5277

MID-COURSE EXECUTION ACCURACY
SGT11558.0 SGR 606.5 SG3 1586.1
RRT .5639 RRF .5427 RTF .9882
SGB11573.9 R23 -.0189 R13 .9882
SG111563.0 SG2 500.6 THA 1.70

ORBIT DETERMINATION ACCURACY
ST 2935.4 SR 474.2 SS 1156.4
CRT .9757 CRS -.8100 CST -.9151
LSA 3157.7 MSA 454.3 SSA 34.3
EL1 2971.7 EL2 102.6 ALF 8.97

LAUNCH DATE NOV 26 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 782.502 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.014 GAL -1.46 AZL 87.87 HCA 233.69 SMA 187.43 ECC .21381 INC 2.1311 V1 30.181
RP 210.46 LAP -1.72 LOP 297.45 VP 23.519 GAP -10.16 AZP 91.26 TAL 351.71 TAP 225.40 RCA 147.35 APO 227.50 V2 26.057
RC 307.229 GL 23.29 GP -3.34 ZAL 99.83 ZAP 46.28 ETS 176.04 ZAE 71.62 ETE 178.21 ZAC 81.03 ETC 257.80 CLP 46.19

PLANETOCENTRIC CONIC

C3 9.635 VHL 3.104 DLA 27.42 RAL 175.60 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.985 DPA 4.92 RAP 164.26 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 9	3172.90	-26.44	108.84	33.90	79.48	14 38 2	2572.9	-27.63	100.37
90.00	11 40 9	3580.40	-18.54	136.00	31.43	68.21	12 39 49	2980.4	-21.34	128.44
100.00	15 45 45	2784.12	-29.23	80.70	34.38	83.43	16 32 10	2184.1	-29.83	71.95
100.00	12 22 14	3444.42	-15.96	124.83	30.24	64.39	13 19 38	2844.4	-19.28	117.61
110.00	17 52 34	2387.28	-34.18	50.87	34.68	90.62	18 32 21	1787.3	-33.71	41.66
110.00	12 31 54	3414.02	-11.63	120.06	27.77	57.63	13 28 48	2814.0	-15.82	113.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3650 TRA 2.1025 TC-17.0808 BAU 2.2002 SGT11743.2 SGR 599.6 SG3 1527.4 ST 2858.3 SR 472.8 SS 1095.3
RDE .2488 RRA .1805 RC3 -.1418 FAU .27669 RRT .5299 RRF .5075 RTF .9883 CRT .9660 CRS -.7638 CST -.9013
FDE 1.0186 FRA 4.0452 FC-24.8624 BSP 40774 SGB11758.5 R23 -.0203 R13 .9883 LSA 3061.4 MSA 469.0 SSA 34.4
BDE 1.3874 BRA 2.1103 BC317.0814 FSP 5080 SG111747.5 SG2 508.3 THA 1.55 EL1 2894.6 EL2 120.7 ALF 9.09

LAUNCH DATE NOV 26 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 786.786 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.019 GAL -1.57 AZL 87.88 HCA 234.92 SMA 187.52 ECC .21444 INC 2.1161 V1 30.181
RP 210.22 LAP -1.73 LOP 298.67 VP 23.556 GAP -10.27 AZP 91.22 TAL 351.07 TAP 225.99 RCA 147.31 APO 227.73 V2 26.085
RC 308.206 GL 23.02 GP -3.24 ZAL 101.03 ZAP 45.34 ETS 176.02 ZAE 70.40 ETE 178.19 ZAC 81.19 ETC 257.77 CLP 45.25

PLANETOCENTRIC CONIC

C3 9.710 VHL 3.116 DLA 26.67 RAL 176.67 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.050 DPA 4.90 RAP 164.57 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 39	3100.78	-27.24	103.71	35.11	81.93	15 3 19	2500.8	-28.07	95.14
90.00	11 22 13	3655.61	-16.58	140.64	31.89	66.71	12 23 9	3055.6	-19.59	133.26
100.00	16 4 24	2737.29	-29.54	77.26	35.41	85.22	16 50 1	2137.3	-29.89	68.47
100.00	12 12 9	3494.33	-14.47	127.79	30.88	63.56	13 10 23	2894.3	-17.91	120.68
110.00	18 5 18	2358.97	-34.14	48.66	35.54	91.93	18 44 37	1759.0	-33.49	39.48
110.00	12 27 44	3445.42	-10.48	121.76	28.56	57.27	13 25 9	2845.4	-14.72	115.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3010 TRA 2.2427 TC-17.2164 BAU 2.2351 SGT11922.4 SGR 594.0 SG3 1469.7 ST 2782.5 SR 472.0 SS 1042.7
RDE .2494 RRA .1808 RC3 -.1044 FAU .26556 RRT .4958 RRF .4723 RTF .9884 CRT .9534 CRS -.7098 CST -.8861
FDE .8528 FRA 4.0423 FC-23.6760 BSP 41384 SGB11937.2 R23 -.0215 R13 .9884 LSA 2969.2 MSA 485.1 SSA 34.4
BDE 1.3247 BRA 2.2500 BC317.2167 FSP 4887 SG111926.1 SG2 515.7 THA 1.42 EL1 2818.8 EL2 140.5 ALF 9.21

LAUNCH DATE NOV 26 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 791.073 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.025 GAL -1.69 AZL 87.90 HCA 236.15 SMA 187.61 ECC .21509 INC 2.1015 V1 30.181
RP 209.99 LAP -1.75 LOP 299.90 VP 23.593 GAP -10.39 AZP 91.17 TAL 350.42 TAP 226.56 RCA 147.26 APO 227.97 V2 26.111
RC 309.174 GL 22.75 GP -3.14 ZAL 102.26 ZAP 44.43 ETS 176.01 ZAE 69.20 ETE 178.17 ZAC 81.34 ETC 257.73 CLP 44.34

PLANETOCENTRIC CONIC

C3 9.798 VHL 3.130 DLA 25.90 RAL 177.76 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 4.116 DPA 4.86 RAP 164.90 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 44	3042.85	-27.72	99.54	36.24	83.97	15 24 27	2442.8	-28.27	90.91
90.00	11 8 47	3717.08	-14.89	144.36	32.50	65.63	12 10 44	3117.1	-18.05	137.12
100.00	16 21 41	2694.79	-29.74	74.11	36.42	86.86	17 6 36	2094.8	-29.86	65.31
100.00	12 3 31	3540.36	-13.06	130.47	31.60	62.87	13 2 31	2940.4	-16.59	123.47
110.00	18 17 48	2331.50	-34.05	46.52	36.42	93.20	18 56 40	1731.5	-33.23	37.37
110.00	12 23 53	3476.43	-9.33	123.43	29.39	56.97	13 21 50	2876.4	-13.62	116.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2331 TRA 2.3886 TC-17.3230 BAU 2.2691 SGT12096.5 SGR 589.7 SG3 1412.9 ST 2706.7 SR 471.7 SS 997.6
RDE .2505 RRA .1810 RC3 -.0687 FAU .25459 RRT .4614 RRF .4370 RTF .9884 CRT .9372 CRS -.6472 CST -.8696
FDE .6953 FRA 4.0365 FC-22.4958 BSP 41983 SGB12110.9 R23 -.0225 R13 .9884 LSA 2879.3 MSA 502.6 SSA 34.4
BDE 1.2583 BRA 2.3955 BC317.3232 FSP 4699 SG112099.6 SG2 523.0 THA 1.29 EL1 2742.7 EL2 162.4 ALF 9.31

LAUNCH DATE NOV 26 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 795.363 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.030 GAL -1.81 AZL 87.91 HCA 237.38 SMA 187.71 ECC .21578 INC 2.0873 V1 30.181
RP 209.77 LAP -1.76 LOP 301.13 VP 23.629 GAP -10.50 AZP 91.13 TAL 349.75 TAP 227.13 RCA 147.21 APO 228.22 V2 26.137
RC 310.132 GL 22.47 GP -3.05 ZAL 103.51 ZAP 43.55 ETS 175.99 ZAE 68.02 ETE 178.16 ZAC 81.50 ETC 257.69 CLP 43.46

PLANETOCENTRIC CONIC

C3 9.897 VHL 3.146 DLA 25.12 RAL 178.85 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.183 DPA 4.80 RAP 165.26 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 26	2992.61	-28.03	95.89	37.32	85.77	15 43 19	2392.6	-28.32	87.24
90.00	10 57 49	3771.32	-13.34	147.59	33.21	64.79	12 0 40	3171.3	-16.63	140.46
100.00	16 38 1	2655.44	-29.85	71.19	37.43	88.40	17 22 16	2055.4	-29.76	62.39
100.00	11 55 55	3583.72	-11.70	132.98	32.38	62.30	12 55 39	2983.7	-15.32	126.05
110.00	18 30 6	2304.77	-33.93	44.44	37.31	94.42	19 8 30	1704.8	-32.95	35.34
110.00	12 20 20	3507.16	-8.19	125.08	30.27	56.70	13 18 47	2907.2	-12.51	118.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1623 TRA 2.5402 TC-17.3998 BAU 2.3023 SGT12265.5 SGR 586.4 SG3 1357.5 ST 2634.1 SR 472.0 SS 960.7
RDE .2521 RRA .1810 RC3 -.0350 FAU .24395 RRT .4273 RRF .4020 RTF .9885 CRT .9167 CRS -.5781 CST -.8534
FDE .5497 FRA 4.0261 FC-21.3395 BSP 42598 SGB12279.6 R23 -.0234 R13 .9884 LSA 2795.1 MSA 520.3 SSA 34.2
BDE 1.1893 BRA 2.5466 BC317.3999 FSP 4524 SG112268.1 SG2 530.1 THA 1.17 EL1 2669.6 EL2 186.1 ALF 9.37

LAUNCH DATE NOV 26 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 799.656 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.036	GAL	-1.94	AZL	87.93	HCA	238.61	SMA	187.81	ECC	.21650	INC	2.0734
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.665	GAP	-10.61	AZP	91.08	TAL	349.07	TAP	227.68	RCA	147.15	APO	228.47
RC	311.080	GL	22.18	GP	-2.97	ZAL	104.78	ZAP	42.69	ETS	175.98	ZAE	66.87	ETE	178.15	ZAC	81.66	ETC	257.65

V1	30.181	V2	26.162	CLP	42.60														

PLANETOCENTRIC CONIC

C3	10.009	VHL	3.164	DLA	24.32	RAL	179.95	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.251	DPA	4.73	RAP	165.64

ECC	1.1647	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 11 35	2947.38	-28.21	92.60	38.39	87.42	16 0 43	2347.4	-28.27	83.93							
		90.00	10 48 28	3821.04	-11.88	150.52	34.00	64.11	11 52 9	3221.0	-15.27	143.48							
		100.00	16 53 36	2618.50	-29.89	68.45	38.44	89.84	17 37 14	2018.5	-29.59	59.65							
		100.00	11 49 9	3625.15	-10.38	135.34	33.21	61.81	12 49 34	3025.1	-14.07	128.49							
		110.00	18 42 12	2278.72	-33.78	42.42	38.22	95.61	19 20 11	1678.7	-32.63	33.37							
		110.00	12 17 2	3537.70	-7.04	126.70	31.20	56.46	13 15 59	2937.7	-11.40	120.32							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0862	TRA	2.6971	TC-17.4548	BAU	2.3358	SGT12433.2	SGR	584.1	SG3	1304.3	ST	2562.3	SR	472.6	SS	931.0		
RDE	.2541	RRA	.1810	RC3 -.0034	FAU	.23377	RRT	.3935	RRF	.3673	RTF	.9885	CRT	.8908	CRS	-.4998	CST	-.8363	
FDE	.4085	FRA	4.0150	FC-20.2192	BSP	43165	SGB12446.9	R23	-.0243	R13	.9884	LSA	2713.4	MSA	540.3	SSA	34.0		
BDE	1.1156	BRA	2.7031	BC317.4548	FSP	4346	SG112435.3	SG2	536.9	THA	1.06	EL1	2596.9	EL2	211.9	ALF	9.39		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 803.951 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.041	GAL	-2.07	AZL	87.94	HCA	239.85	SMA	187.91	ECC	.21726	INC	2.0599
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.700	GAP	-10.73	AZP	91.04	TAL	348.38	TAP	228.22	RCA	147.08	APO	228.73
RC	312.019	GL	21.89	GP	-2.88	ZAL	106.07	ZAP	41.85	ETS	175.96	ZAE	65.74	ETE	178.14	ZAC	81.82	ETC	257.61

V1	30.181	V2	26.186	CLP	41.77														

PLANETOCENTRIC CONIC

C3	10.135	VHL	3.184	DLA	23.51	RAL	181.06	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	4.320	DPA	4.65	RAP	166.04

ECC	1.1668	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 28 39	2905.74	-28.30	89.55	39.45	88.94	16 17 5	2305.7	-28.15	80.89							
		90.00	10 40 16	3867.67	-10.48	153.22	34.84	63.54	11 44 44	3267.7	-13.95	146.27							
		100.00	17 8 35	2583.52	-29.87	65.85	39.45	91.21	17 51 39	1983.5	-29.38	57.08							
		100.00	11 43 1	3665.13	-9.08	137.60	34.11	61.40	12 44 6	3065.1	-12.83	130.82							
		110.00	18 54 8	2253.30	-33.59	40.46	39.14	96.75	19 31 42	1653.3	-32.29	31.47							
		110.00	12 13 57	3568.11	-5.89	128.31	32.16	56.27	13 13 25	2968.1	-10.29	121.97							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0064	TRA	2.8591	TC-17.4782	BAU	2.3683	SGT12594.4	SGR	582.5	SG3	1251.6	ST	2495.2	SR	473.7	SS	907.9		
RDE	.2565	RRA	.1808	RC3 .0265	FAU	.22373	RRT	.3598	RRF	.3326	RTF	.9884	CRT	.8588	CRS	-.4152	CST	-.8203	
FDE	.2743	FRA	3.9967	FC-19.1103	BSP	43736	SGB12607.9	R23	-.0254	R13	.9884	LSA	2638.0	MSA	561.0	SSA	33.7		
BDE	1.0386	BRA	2.8648	BC317.4782	FSP	4176	SG112596.2	SG2	543.4	THA	.96	EL1	2528.5	EL2	239.5	ALF	9.34		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 808.249 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.047	GAL	-2.20	AZL	87.95	HCA	241.08	SMA	188.01	ECC	.21805	INC	2.0467
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.733	GAP	-10.84	AZP	90.99	TAL	347.67	TAP	228.75	RCA	147.02	APO	229.01
RC	312.950	GL	21.59	GP	-2.81	ZAL	107.37	ZAP	41.04	ETS	175.95	ZAE	64.63	ETE	178.13	ZAC	81.98	ETC	257.56

V1	30.181	V2	26.209	CLP	40.96														

PLANETOCENTRIC CONIC

C3	10.276	VHL	3.206	DLA	22.69	RAL	182.18	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	4.391	DPA	4.55	RAP	166.47

ECC	1.1691	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	15 44 53	2866.85	-28.31	86.71	40.51	90.36	16 32 39	2266.9	-27.96	78.06							
		90.00	10 32 57	3912.08	-9.12	155.78	35.75	63.08	11 38 9	3312.1	-12.66	148.89							
		100.00	17 23 6	2550.17	-29.80	63.37	40.47	92.51	18 5 36	1950.2	-29.13	54.63							
		100.00	11 37 25	3704.00	-7.81	139.79	35.05	61.05	12 39 9	3104.0	-11.61	133.06							
		110.00	19 5 55	2228.47	-33.37	38.56	40.09	97.86	19 43 4	1628.5	-31.93	29.62							
		110.00	12 11 5	3598.46	-4.74	129.90	33.17	56.11	13 11 3	2998.5	-9.16	123.60							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9240	TRA	3.0290	TC-17.4680	BAU	2.3997	SGT12750.8	SGR	581.9	SG3	1200.4	ST	2437.2	SR	475.3	SS	893.5		
RDE	.2594	RRA	.1806	RC3 .0547	FAU	.21390	RRT	.3271	RRF	.2993	RTF	.9884	CRT	.8201	CRS	-.3295	CST	-.8083	
FDE	.1524	FRA	3.9806	FC-18.0211	BSP	44317	SGB12764.1	R23	-.0259	R13	.9884	LSA	2574.0	MSA	581.0	SSA	33.4		
BDE	.9597	BRA	3.0344	BC317.4681	FSP	4015	SG112752.2	SG2	549.9	THA	.86	EL1	2468.5	EL2	268.5	ALF	9.20		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 812.548 EARTH TO MARS

RL	147.63	LAL	-.00	LOL	63.77	VL	33.053	GAL	-2.33	AZL	87.97	HCA	242.33	SMA	188.12	ECC	.21888	INC	2.0338
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.766	GAP	-10.95	AZP	90.95	TAL	346.95	TAP	229.27	RCA	146.94	APO	229.29
RC	313.871	GL	21.28	GP	-2.73	ZAL	108.70	ZAP	40.25	ETS	175.93	ZAE	63.54	ETE	178.12	ZAC	82.15	ETC	257.51

V1	30.181	V2	26.232	CLP	40.17														

PLANETOCENTRIC CONIC

C3	10.432	VHL	3.230	DLA	21.86	RAL	183.30	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	4.463	DPA	4.43	RAP	166.91

ECC	1.1717	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 0 26	2830.18	-28.27	84.03	41.58	91.71	16 47 36	2230.2	-27.73	75.40							
		90.00	10 26 20	3954.81	-7.79	158.22	36.71	62.69	11 32 15	3354.8	-11.39	151.39							
		100.00	17 37 11	2518.21	-29.68	61.00	41.50	93.75	18 19 9	1918.2	-28.84	52.30							
		100.00	11 32 16	3742.01	-6.55	141.91	36.04	60.77	12 34 38	3142.0	-10.40	135.23							
		110.00	19 17 33	2204.21	-33.13	36.70	41.05	98.93	19 54 17	1604.2	-31.54	27.84							
		110.00	12 8 24	3628.78	-3.59	131.49	34.21	55.98	13 8 53	3028.8	-8.03	125.22							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8376	TRA	3.2042	TC-17.4335	BAU	2.4313	SGT12904.8	SGR	581.8	SG3	1150.6	ST	2387.0	SR	477.3	SS	884.7		
RDE	.2627	RRA	.1802	RC3 .0809	FAU	.20444	RRT	.2948	RRF	.2661	RTF	.9883	CRT	.7739	CRS	-.2398	CST	-.7984	
FDE	.0345	FRA	3.9582	FC-16.9666	BSP	44872	SGB12917.9	R23	-.0270	R13	.9883	LSA	2518.9	MSA	601.8	SSA	32.9		
BDE	.8778	BRA	3.2092	BC317.4337	FSP	3856	SG112906.0	SG2	555.9	THA	.76	EL1	2415.8	EL2	298.6	ALF	8.93		

LAUNCH DATE NOV 26 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 816.849 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.059 GAL -2.47 AZL 87.98 HCA 243.57 SMA 188.22 ECC .21976 INC 2.0211 V1 30.181
RP 208.76 LAP -1.81 LOP 307.33 VP 23.799 GAP -11.06 AZP 90.90 TAL 346.21 TAP 229.78 RCA 146.86 APO 229.58 V2 26.254
RC 314.784 GL 20.96 GP -2.66 ZAL 110.03 ZAP 39.48 ETS 175.91 ZAE 62.48 ETE 178.12 ZAC 82.31 ETC 257.45 CLP 39.40

PLANETOCENTRIC CONIC

C3 10.603 VHL 3.256 DLA 21.02 RAL 184.43 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 4.536 DPA 4.31 RAP 167.38 ECC 1.1745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 27	2795.35	-28.17	81.49	42.65	92.98	17 2 2	2195.4	-27.46	72.89
90.00	10 20 18	3996.26	-6.49	160.57	37.72	62.38	11 26 54	3396.3	-10.14	153.79
100.00	17 50 55	2487.49	-29.52	58.73	42.54	94.94	18 32 23	1887.5	-28.52	50.07
100.00	11 27 31	3779.35	-5.31	143.98	37.07	60.54	12 30 30	3179.4	-9.19	137.34
110.00	19 29 3	2180.51	-32.87	34.90	42.03	99.97	20 5 23	1580.5	-31.14	26.11
110.00	12 5 53	3659.10	-2.43	133.08	35.29	55.89	13 6 52	3059.1	-6.89	126.83

DIFFERENTIAL CORRECTIONS
TDE .7474 TRA 3.3858 TC-17.3687 BAU 2.4622
RDE .2664 RRA .1797 RC3 .1054 FAU .19518
FDE -.0731 FRA 3.9346 FC-15.9362 BSP 45423
BDE .7935 BRA 3.3906 BC317.3690 FSP 3704

MID-COURSE EXECUTION ACCURACY
SGT13054.1 SGR 582.4 SG3 1102.2
RRT .2633 RRF .2341 RTF .9882
SGB13067.1 R23 -.0275 R13 .9882
SG113055.0 SG2 561.8 THA .67

ORBIT DETERMINATION ACCURACY
ST 2347.5 SR 479.7 SS 882.0
CRT .7197 CRS -.1530 CST -.7944
LSA 2476.4 MSA 620.4 SSA 32.4
EL1 2373.2 EL2 329.4 ALF 8.53

LAUNCH DATE NOV 26 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 821.151 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.065 GAL -2.61 AZL 87.99 HCA 244.81 SMA 188.33 ECC .22067 INC 2.0087 V1 30.181
RP 208.58 LAP -1.82 LOP 308.57 VP 23.830 GAP -11.18 AZP 90.86 TAL 345.45 TAP 230.27 RCA 146.77 APO 229.89 V2 26.274
RC 315.690 GL 20.64 GP -2.59 ZAL 111.38 ZAP 38.73 ETS 175.90 ZAE 61.43 ETE 178.11 ZAC 82.48 ETC 257.40 CLP 38.66

PLANETOCENTRIC CONIC

C3 10.792 VHL 3.285 DLA 20.17 RAL 185.56 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 4.611 DPA 4.17 RAP 167.86 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 0	2762.11	-28.03	79.06	43.74	94.19	17 16 2	2162.1	-27.16	70.51
90.00	10 14 45	4036.69	-5.21	162.85	38.78	62.13	11 22 2	3436.7	-8.90	156.11
100.00	18 4 20	2457.89	-29.33	56.55	43.60	96.07	18 45 18	1857.9	-28.18	47.94
100.00	11 23 5	3816.15	-4.07	146.01	38.15	60.36	12 26 41	3216.2	-7.99	139.41
110.00	19 40 24	2157.35	-32.58	33.16	43.04	100.96	20 16 22	1557.3	-30.73	24.43
110.00	12 3 31	3689.45	-1.28	134.66	36.41	55.84	13 5 0	3089.5	-5.75	128.44

DIFFERENTIAL CORRECTIONS
TDE .6543 TRA 3.5735 TC-17.2773 BAU 2.4929
RDE .2706 RRA .1790 RC3 .1280 FAU .18627
FDE -.1759 FRA 3.9068 FC-14.9423 BSP 45960
BDE .7080 BRA 3.5779 BC317.2778 FSP 3553

MID-COURSE EXECUTION ACCURACY
SGT13200.3 SGR 583.4 SG3 1055.2
RRT .2327 RRF .2026 RTF .9880
SGB13213.2 R23 -.0285 R13 .9880
SG113201.0 SG2 567.4 THA .59

ORBIT DETERMINATION ACCURACY
ST 2320.6 SR 482.4 SS 883.9
CRT .6578 CRS -.0670 CST -.7939
LSA 2447.6 MSA 638.3 SSA 31.8
EL1 2342.8 EL2 359.9 ALF 7.98

LAUNCH DATE NOV 26 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 825.453 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.071 GAL -2.76 AZL 88.00 HCA 246.06 SMA 188.44 ECC .22162 INC 1.9965 V1 30.181
RP 208.40 LAP -1.82 LOP 309.82 VP 23.861 GAP -11.29 AZP 90.81 TAL 344.69 TAP 230.75 RCA 146.67 APO 230.20 V2 26.294
RC 316.588 GL 20.30 GP -2.53 ZAL 112.75 ZAP 38.00 ETS 175.88 ZAE 60.41 ETE 178.11 ZAC 82.65 ETC 257.34 CLP 37.93

PLANETOCENTRIC CONIC

C3 11.000 VHL 3.317 DLA 19.30 RAL 186.68 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.686 DPA 4.02 RAP 168.37 ECC 1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 9	2730.26	-27.85	76.75	44.84	95.33	17 29 39	2130.3	-26.82	68.24
90.00	10 9 36	4076.33	-3.94	165.07	39.88	61.94	11 17 33	3476.3	-7.67	158.37
100.00	18 17 28	2429.30	-29.10	54.46	44.68	97.15	18 57 58	1829.3	-27.81	45.89
100.00	11 18 58	3852.52	-2.84	148.01	39.27	60.23	12 23 10	3252.5	-6.78	141.44
110.00	19 51 38	2134.73	-32.28	31.46	44.06	101.92	20 27 12	1534.7	-30.30	22.81
110.00	12 1 18	3719.86	-.11	136.25	37.57	55.82	13 3 18	3119.9	-4.60	130.04

DIFFERENTIAL CORRECTIONS
TDE .5581 TRA 3.7685 TC-17.1565 BAU 2.5230
RDE .2753 RRA .1781 RC3 .1489 FAU .17756
FDE -.2692 FRA 3.8774 FC-13.9748 BSP 46497
BDE .6223 BRA 3.7727 BC317.1572 FSP 3411

MID-COURSE EXECUTION ACCURACY
SGT13342.4 SGR 585.0 SG3 1009.5
RRT .2029 RRF .1723 RTF .9879
SGB13355.3 R23 -.0291 R13 .9878
SG113343.0 SG2 572.8 THA .51

ORBIT DETERMINATION ACCURACY
ST 2308.4 SR 485.5 SS 889.6
CRT .5889 CRS .0128 CST -.7991
LSA 2435.0 MSA 652.6 SSA 31.3
EL1 2326.6 EL2 389.3 ALF 7.26

LAUNCH DATE NOV 26 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 829.756 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.077 GAL -2.91 AZL 88.02 HCA 247.31 SMA 188.55 ECC .22262 INC 1.9845 V1 30.181
RP 208.24 LAP -1.83 LOP 311.07 VP 23.890 GAP -11.40 AZP 90.77 TAL 343.91 TAP 231.22 RCA 146.57 APO 230.52 V2 26.314
RC 317.480 GL 19.97 GP -2.47 ZAL 114.12 ZAP 37.29 ETS 175.86 ZAE 59.40 ETE 178.10 ZAC 82.82 ETC 257.28 CLP 37.23

PLANETOCENTRIC CONIC

C3 11.226 VHL 3.351 DLA 18.44 RAL 187.81 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 4.763 DPA 3.86 RAP 168.89 ECC 1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 56	2699.67	-27.64	74.54	45.95	96.42	17 42 56	2099.7	-26.46	66.07
90.00	10 4 49	4115.30	-2.69	167.25	41.02	61.80	11 13 24	3515.3	-6.44	160.58
100.00	18 30 21	2401.66	-28.85	52.44	45.78	98.18	19 10 22	1801.7	-27.42	43.93
100.00	11 15 5	3888.55	-1.62	149.99	40.43	60.15	12 19 54	3288.5	-5.58	143.44
110.00	20 2 43	2112.66	-31.95	29.82	45.11	102.84	20 37 56	1512.7	-29.86	21.24
110.00	11 59 12	3750.32	1.05	137.84	38.76	55.83	13 1 43	3150.3	-3.44	131.63

DIFFERENTIAL CORRECTIONS
TDE .4583 TRA 3.9694 TC-17.0096 BAU 2.5529
RDE .2804 RRA .1771 RC3 .1681 FAU .16912
FDE -.3569 FRA 3.8442 FC-13.0426 BSP 47028
BDE .5372 BRA 3.9734 BC317.0105 FSP 3272

MID-COURSE EXECUTION ACCURACY
SGT13480.7 SGR 586.9 SG3 965.1
RRT .1739 RRF .1426 RTF .9876
SGB13493.5 R23 -.0299 R13 .9876
SG113481.1 SG2 577.9 THA .43

ORBIT DETERMINATION ACCURACY
ST 2310.6 SR 488.9 SS 898.2
CRT .5136 CRS .0884 CST -.8079
LSA 2437.7 MSA 664.1 SSA 30.7
EL1 2324.7 EL2 417.0 ALF 6.41

LAUNCH DATE NOV 26 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 834.059 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.084 GAL -3.06 AZL 88.03 HCA 248.56 SMA 188.66 ECC .22367 INC 1.9728 V1 30.181
RP 208.08 LAP -1.84 LOP 312.32 VP 23.919 GAP -11.51 AZP 90.72 TAL 343.11 TAP 231.67 RCA 146.46 APO 230.85 V2 26.332
RC 318.367 GL 19.62 GP -2.41 ZAL 115.49 ZAP 36.61 ETS 175.84 ZAE 58.41 ETE 178.10 ZAC 83.00 ETC 257.23 CLP 36.54

PLANETOCENTRIC CONIC

C3 11.473 VHL 3.387 DLA 17.56 RAL 188.94 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 4.842 DPA 3.68 RAP 169.43 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 24	2670.24	-27.40	72.42	47.09	97.46	17 55 54	2070.2	-26.08	64.00
90.00	10 0 21	4153.75	-1.45	169.40	42.21	61.72	11 9 34	3553.7	-5.22	162.75
100.00	18 42 58	2374.93	-28.58	50.50	46.89	99.17	19 22 33	1774.9	-27.01	42.05
100.00	11 11 27	3924.29	-.41	151.95	41.63	60.11	12 16 52	3324.3	-4.39	145.42
110.00	20 13 41	2091.13	-31.62	28.24	46.18	103.73	20 48 32	1491.1	-29.41	19.73
110.00	11 57 14	3780.85	2.22	139.43	39.98	55.88	13 0 15	3180.9	-2.27	133.23

DIFFERENTIAL CORRECTIONS
TDE .3570 TRA 4.1783 TC-16.8311 BAU 2.5817
RDE .2859 RRA .1758 RC3 .1856 FAU .16088
FDE -.4365 FRA 3.8076 FC-12.1399 BSP 47579
BDE .4574 BRA 4.1820 BC316.8321 FSP 3140

MID-COURSE EXECUTION ACCURACY
SGT13613.4 SGR 589.1 SG3 921.8
RRT .1461 RRF .1141 RTF .9874
SGB13626.1 R23 -.0308 R13 .9874
SG113613.7 SG2 582.8 THA .36

ORBIT DETERMINATION ACCURACY
ST 2329.8 SR 492.6 SS 908.2
CRT .4347 CRS .1574 CST -.8197
LSA 2458.3 MSA 671.7 SSA 30.0
EL1 2340.0 EL2 441.7 ALF 5.45

LAUNCH DATE NOV 26 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 838.360 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.090 GAL -3.22 AZL 88.04 HCA 249.81 SMA 188.77 ECC .22476 INC 1.9612 V1 30.181
RP 207.93 LAP -1.84 LOP 313.58 VP 23.947 GAP -11.63 AZP 90.68 TAL 342.30 TAP 232.11 RCA 146.34 APO 231.20 V2 26.349
RC 319.247 GL 19.27 GP -2.35 ZAL 116.88 ZAP 35.93 ETS 175.83 ZAE 57.44 ETE 178.10 ZAC 83.17 ETC 257.17 CLP 35.87

PLANETOCENTRIC CONIC

C3 11.741 VHL 3.426 DLA 16.68 RAL 190.06 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.921 DPA 3.50 RAP 169.99 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 34	2641.88	-27.13	70.39	48.24	98.44	18 8 36	2041.9	-25.68	62.02
90.00	9 56 9	4191.75	-.23	171.52	43.43	61.68	11 6 0	3591.8	-4.01	164.88
100.00	18 55 22	2349.06	-28.28	48.63	48.02	100.11	19 34 31	1749.1	-26.60	40.24
100.00	11 8 2	3959.80	.79	153.90	42.87	60.12	12 14 2	3359.8	-3.19	147.38
110.00	20 24 31	2070.17	-31.27	26.70	47.27	104.57	20 59 1	1470.2	-28.95	18.26
110.00	11 55 23	3811.46	3.39	141.03	41.25	55.96	12 58 54	3211.5	-1.10	134.83

DIFFERENTIAL CORRECTIONS
TDE .2516 TRA 4.3934 TC-16.6349 BAU 2.6113
RDE .2919 RRA .1744 RC3 .2014 FAU .15290
FDE -.5109 FRA 3.7684 FC-11.2748 BSP 48093
BDE .3854 BRA 4.3969 BC316.6361 FSP 3008

MID-COURSE EXECUTION ACCURACY
SGT13746.0 SGR 591.6 SG3 879.9
RRT .1189 RRF .0862 RTF .9871
SGB13758.7 R23 -.0316 R13 .9871
SG113746.2 SG2 587.4 THA .29

ORBIT DETERMINATION ACCURACY
ST 2363.8 SR 496.6 SS 919.7
CRT .3527 CRS .2214 CST -.8333
LSA 2494.4 MSA 676.0 SSA 29.3
EL1 2370.6 EL2 463.4 ALF 4.41

LAUNCH DATE NOV 26 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 842.661 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.097 GAL -3.38 AZL 88.05 HCA 251.07 SMA 188.88 ECC .22590 INC 1.9498 V1 30.181
RP 207.79 LAP -1.84 LOP 314.83 VP 23.974 GAP -11.74 AZP 90.63 TAL 341.47 TAP 232.54 RCA 146.22 APO 231.55 V2 26.366
RC 320.122 GL 18.91 GP -2.30 ZAL 118.27 ZAP 35.28 ETS 175.81 ZAE 56.49 ETE 178.10 ZAC 83.35 ETC 257.10 CLP 35.22

PLANETOCENTRIC CONIC

C3 12.032 VHL 3.469 DLA 15.80 RAL 191.19 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 5.002 DPA 3.30 RAP 170.56 ECC 1.1980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 28	2614.54	-26.84	68.44	49.41	99.38	18 21 3	2014.5	-25.27	60.12
90.00	9 52 12	4229.38	.99	173.62	44.70	61.70	11 2 41	3629.4	-2.80	166.99
100.00	19 7 33	2324.04	-27.97	46.84	49.18	101.00	19 46 17	1724.0	-26.17	38.50
100.00	11 4 48	3995.12	1.99	155.84	44.14	60.17	12 11 23	3395.1	-1.99	149.32
110.00	20 35 12	2049.77	-30.91	25.22	48.39	105.38	21 9 22	1449.8	-28.49	16.86
110.00	11 53 38	3842.15	4.55	142.64	42.55	56.08	12 57 40	3242.1	.07	136.43

DIFFERENTIAL CORRECTIONS
TDE .1439 TRA 4.6155 TC-16.4131 BAU 2.6404
RDE .2984 RRA .1727 RC3 .2155 FAU .14516
FDE -.5778 FRA 3.7258 FC-10.4445 BSP 48608
BDE .3313 BRA 4.6187 BC316.4146 FSP 2882

MID-COURSE EXECUTION ACCURACY
SGT13873.9 SGR 594.3 SG3 839.1
RRT .0926 RRF .0593 RTF .9867
SGB13886.6 R23 -.0324 R13 .9867
SG113874.0 SG2 591.7 THA .23

ORBIT DETERMINATION ACCURACY
ST 2413.1 SR 500.9 SS 930.9
CRT .2706 CRS .2788 CST -.8481
LSA 2546.0 MSA 676.4 SSA 28.7
EL1 2417.1 EL2 481.4 ALF 3.35

LAUNCH DATE NOV 26 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 846.960 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.103 GAL -3.55 AZL 88.06 HCA 252.33 SMA 189.00 ECC .22710 INC 1.9385 V1 30.181
RP 207.66 LAP -1.85 LOP 316.09 VP 24.000 GAP -11.86 AZP 90.59 TAL 340.63 TAP 232.96 RCA 146.08 APO 231.92 V2 26.381
RC 320.992 GL 18.55 GP -2.24 ZAL 119.66 ZAP 34.65 ETS 175.79 ZAE 55.55 ETE 178.10 ZAC 83.53 ETC 257.04 CLP 34.58

PLANETOCENTRIC CONIC

C3 12.347 VHL 3.514 DLA 14.92 RAL 192.30 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 5.084 DPA 3.10 RAP 171.15 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 7	2588.17	-26.53	66.57	50.60	100.27	18 33 15	1988.2	-24.85	58.30
90.00	9 48 28	4266.70	2.19	175.70	46.00	61.76	10 59 34	3666.7	-1.60	169.07
100.00	19 19 31	2299.83	-27.64	45.11	50.35	101.85	19 57 51	1699.8	-25.73	36.84
100.00	11 1 44	4030.27	3.18	157.77	45.45	60.26	12 8 55	3430.3	-.80	151.25
110.00	20 45 46	2029.96	-30.54	23.79	49.53	106.15	21 19 36	1430.0	-28.03	15.50
110.00	11 51 59	3872.91	5.72	144.26	43.88	56.24	12 56 32	3272.9	1.25	138.03

DIFFERENTIAL CORRECTIONS
TDE .0330 TRA 4.8448 TC-16.1698 BAU 2.6694
RDE .3053 RRA .1707 RC3 .2281 FAU .13770
FDE -.6392 FRA 3.6795 FC3-9.6548 BSP 49110
BDE .3071 BRA 4.8478 BC316.1715 FSP 2759

MID-COURSE EXECUTION ACCURACY
SGT13999.0 SGR 597.1 SG3 799.7
RRT .0671 RRF .0330 RTF .9864
SGB14011.7 R23 -.0334 R13 .9864
SG113999.0 SG2 595.8 THA .16

ORBIT DETERMINATION ACCURACY
ST 2476.8 SR 505.3 SS 941.9
CRT .1895 CRS .3312 CST -.8628
LSA 2611.9 MSA 673.8 SSA 28.0
EL1 2478.7 EL2 495.8 ALF 2.31

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LAUNCH DATE  NOV 26 1964                          FLIGHT TIME 388.00                                ARRIVAL DATE  DEC 19 1965

  HELIOCENTRIC CONIC                                  DISTANCE 851.256                                   EARTH  TO  MARS
   RL  147.63 LAL   -.00 LOL  63.77 VL  33.110 GAL  -3.72 AZL  88.07 HCA 253.58 SMA 189.12 ECC .22834 INC 1.9274 V1  30.181
   RP  207.54 LAP  -1.85 LOP 317.35 VP  24.025 GAP -11.98 AZP  90.55 TAL 339.78 TAP 233.36 RCA 145.93 APO 232.30 V2  26.396
   RC 321.856 GL   18.18 GP   -2.19 ZAL 121.05 ZAP  34.03 ETS 175.77 ZAE  54.63 ETE 178.09 ZAC  83.71 ETC 256.98 CLP  33.96
  PLANETOCENTRIC CONIC
   C3  12.688 VHL  3.562 DLA  14.03 RAL 193.42 RAD 6567.5 VEL 11.579 PTH   2.02 VHP  5.168 DPA   2.88 RAP 171.75 ECC 1.2088
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    18  2 31   2562.73     -26.21     64.77      51.81      101.11   18 45 14    1962.7     -24.41      56.57
      90.00     9 44 56   4303.74       3.38    177.77      47.34       61.87   10 56 40    3703.7       -.41     171.14
     100.00    19 31 18   2276.42     -27.30     43.46      51.55      102.66   20  9 14    1676.4     -25.29      35.24
     100.00    10 58 50   4065.28       4.36    159.70      46.80       60.40   12  6 36    3465.3        .39     153.17
     110.00    20 56 13   2010.73     -30.17     22.42      50.69      106.89   21 29 43    1410.7     -27.56      14.20
     110.00    11 50 25   3903.74       6.88    145.89      45.24       56.43   12 55 29    3303.7       2.42     139.64
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.0804 TRA 5.0817 TC-15.9057 BAU 2.6983      SGT14120.9 SGR  600.1 SG3  761.4            ST  2553.7 SR   510.0 SS   952.2
   RDE  .3127 RRA  .1686 RC3  .2391 FAU .13040      RRT  .0424 RRF  .0075 RTF  .9859            CRT  .1115 CRS  .3790 CST -.8766
   FDE -.6952 FRA 3.6302 FC3-8.8979 BSP  49616      SGB14133.7 R23 -.0344 R13  .9859            LSA 2690.6 MSA  669.1 SSA   27.3
   BDE  .3229 BRA 5.0845 BC315.9075 FSP   2639      SG114120.9 SG2  599.6 THA   .10            EL1 2554.3 EL2  506.7 ALF   1.33

LAUNCH DATE  NOV 26 1964                          FLIGHT TIME 390.00                                ARRIVAL DATE  DEC 21 1965

  HELIOCENTRIC CONIC                                  DISTANCE 855.550                                   EARTH  TO  MARS
   RL  147.63 LAL   -.00 LOL  63.77 VL  33.116 GAL  -3.89 AZL  88.08 HCA 254.84 SMA 189.23 ECC .22964 INC 1.9164 V1  30.181
   RP  207.42 LAP  -1.85 LOP 318.61 VP  24.049 GAP -12.10 AZP  90.50 TAL 338.91 TAP 233.75 RCA 145.78 APO 232.69 V2  26.409
   RC 322.714 GL   17.81 GP   -2.15 ZAL 122.44 ZAP  33.42 ETS 175.75 ZAE  53.72 ETE 178.09 ZAC  83.90 ETC 256.92 CLP  33.36
  PLANETOCENTRIC CONIC
   C3  13.055 VHL  3.613 DLA  13.15 RAL 194.52 RAD 6567.5 VEL 11.595 PTH   2.03 VHP  5.253 DPA   2.65 RAP 172.37 ECC 1.2149
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    18 14 41   2538.21     -25.88     63.06      53.04      101.91   18 57  0    1938.2     -23.98      54.90
      90.00     9 41 35   4340.55       4.56    179.83      48.72       62.02   10 53 56    3740.5        .78     173.19
     100.00    19 42 52   2253.81     -26.96     41.87      52.77      103.43   20 20 26    1653.8     -24.84      33.71
     100.00    10 56  5   4100.17       5.53    161.63      48.19       60.58   12  4 25    3500.2       1.57     155.08
     110.00    21  6 31   1992.12     -29.79     21.10      51.87      107.59   21 39 43    1392.1     -27.10      12.95
     110.00    11 48 57   3934.64       8.04    147.53      46.64       56.66   12 54 31    3334.6       3.60     141.26
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.1963 TRA 5.3256 TC-15.6235 BAU 2.7273      SGT14239.8 SGR  603.2 SG3  724.4            ST  2642.0 SR   514.8 SS   961.1
   RDE  .3206 RRA  .1661 RC3  .2486 FAU .12339      RRT  .0186 RRF -.0173 RTF  .9854            CRT  .0375 CRS  .4222 CST -.8893
   FDE -.7457 FRA 3.5775 FC3-8.1820 BSP  50112      SGB14252.6 R23 -.0356 R13  .9854            LSA 2780.2 MSA  662.4 SSA   26.6
   BDE  .3759 BRA 5.3282 BC315.6255 FSP   2523      SG114239.9 SG2  603.1 THA   .05            EL1 2642.1 EL2  514.5 ALF    .44

LAUNCH DATE  NOV 26 1964                          FLIGHT TIME 392.00                                ARRIVAL DATE  DEC 23 1965

  HELIOCENTRIC CONIC                                  DISTANCE 859.840                                   EARTH  TO  MARS
   RL  147.63 LAL   -.00 LOL  63.77 VL  33.123 GAL  -4.07 AZL  88.09 HCA 256.10 SMA 189.35 ECC .23101 INC 1.9055 V1  30.181
   RP  207.31 LAP  -1.85 LOP 319.87 VP  24.072 GAP -12.22 AZP  90.46 TAL 338.03 TAP 234.13 RCA 145.61 APO 233.10 V2  26.422
   RC 323.566 GL   17.43 GP   -2.10 ZAL 123.82 ZAP  32.84 ETS 175.73 ZAE  52.83 ETE 178.09 ZAC  84.08 ETC 256.86 CLP  32.78
  PLANETOCENTRIC CONIC
   C3  13.452 VHL  3.668 DLA  12.26 RAL 195.62 RAD 6567.5 VEL 11.612 PTH   2.03 VHP  5.340 DPA   2.42 RAP 173.01 ECC 1.2214
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    18 26 39   2514.57     -25.54     61.41      54.29      102.67   19  8 33    1914.6     -23.54      53.31
      90.00     9 38 24   4377.14       5.73    181.89      50.13       62.22   10 51 22    3777.1       1.96     175.23
     100.00    19 54 16   2231.99     -26.60     40.34      54.01      104.16   20 31 28    1632.0     -24.39      32.24
     100.00    10 53 28   4134.96       6.69    163.56      49.61       60.80   12  2 23    3535.0       2.75     156.99
     110.00    21 16 41   1974.12     -29.42     19.83      53.08      108.25   21 49 35    1374.1     -26.64      11.75
     110.00    11 47 33   3965.60       9.20    149.18      48.08       56.93   12 53 39    3365.6       4.78     142.88
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.3144 TRA 5.5773 TC-15.3244 BAU 2.7563      SGT14356.2 SGR  606.4 SG3  688.5            ST  2740.4 SR   519.8 SS   968.0
   RDE  .3289 RRA  .1634 RC3  .2566 FAU .11656      RRT -.0046 RRF -.0413 RTF  .9848            CRT -.0314 CRS  .4608 CST -.9008
   FDE -.7898 FRA 3.5218 FC3-7.5014 BSP  50585      SGB14369.0 R23  .0368 R13 -.9848            LSA 2879.0 MSA  654.2 SSA   26.0
   BDE  .4550 BRA 5.5797 BC315.3266 FSP   2410      SG114356.2 SG2  606.4 THA 179.99            EL1 2740.5 EL2  519.8 ALF 179.65

LAUNCH DATE  NOV 26 1964                          FLIGHT TIME 394.00                                ARRIVAL DATE  DEC 25 1965

  HELIOCENTRIC CONIC                                  DISTANCE 864.127                                   EARTH  TO  MARS
   RL  147.63 LAL   -.00 LOL  63.77 VL  33.130 GAL  -4.26 AZL  88.11 HCA 257.37 SMA 189.47 ECC .23243 INC 1.8948 V1  30.181
   RP  207.21 LAP  -1.85 LOP 321.13 VP  24.094 GAP -12.34 AZP  90.41 TAL 337.13 TAP 234.49 RCA 145.44 APO 233.51 V2  26.434
   RC 324.413 GL   17.05 GP   -2.06 ZAL 125.21 ZAP  32.26 ETS 175.70 ZAE  51.96 ETE 178.09 ZAC  84.27 ETC 256.80 CLP  32.20
  PLANETOCENTRIC CONIC
   C3  13.879 VHL  3.725 DLA  11.38 RAL 196.71 RAD 6567.5 VEL 11.630 PTH   2.04 VHP  5.428 DPA   2.17 RAP 173.65 ECC 1.2284
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    18 38 23   2491.82     -25.19     59.83      55.56      103.39   19 19 55    1891.8     -23.10      51.79
      90.00     9 35 23   4413.55       6.88    183.95      51.59       62.46   10 48 57    3813.5       3.13     177.27
     100.00    20  5 28   2210.96     -26.24     38.88      55.27      104.85   20 42 19    1611.0     -23.95      30.84
     100.00    10 50 59   4169.63       7.84    165.50      51.07       61.06   12  0 29    3569.6       3.92     158.90
     110.00    21 26 42   1956.75     -29.04     18.62      54.31      108.88   21 59 19    1356.8     -26.19      10.60
     110.00    11 46 14   3996.61      10.35    150.85      49.55       57.24   12 52 51    3396.6       5.95     144.51
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.4350 TRA 5.8364 TC-15.0105 BAU 2.7856      SGT14469.6 SGR  609.6 SG3  653.7            ST  2847.0 SR   524.9 SS   972.9
   RDE  .3378 RRA  .1604 RC3  .2634 FAU .10992      RRT -.0271 RRF -.0646 RTF  .9841            CRT -.0951 CRS  .4958 CST -.9110
   FDE -.8288 FRA 3.4631 FC3-6.8567 BSP  51071      SGB14482.4 R23  .0379 R13 -.9841            LSA 2985.1 MSA  645.2 SSA   25.4
   BDE  .5507 BRA 5.8386 BC315.0129 FSP   2300      SG114469.6 SG2  609.4 THA 179.93            EL1 2847.5 EL2  522.5 ALF 178.96
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LAUNCH DATE NOV 26 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 868.408 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.136 GAL -4.44 AZL 88.12 HCA 258.63 SMA 189.60 ECC .23391 INC 1.8841 V1 30.181
RP 207.12 LAP -1.85 LOP 322.40 VP 24.115 GAP -12.46 AZP 90.37 TAL 336.21 TAP 234.84 RCA 145.25 APO 233.95 V2 26.444
RC 325.253 GL 16.67 GP -2.01 ZAL 126.58 ZAP 31.71 ETS 175.68 ZAE 51.09 ETE 178.09 ZAC 84.46 ETC 256.74 CLP 31.65

PLANETOCENTRIC CONIC

C3 14.338 VHL 3.787 DLA 10.51 RAL 197.80 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 5.517 DPA 1.92 RAP 174.32 ECC 1.2360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 55	2469.92	-24.83	58.33	56.86	104.06	19 31 5	1869.9	-22.66	50.33
90.00	9 32 30	4449.77	8.01	186.01	53.07	62.75	10 46 40	3849.8	4.30	179.30
100.00	20 16 29	2190.71	-25.88	37.49	56.55	105.50	20 53 0	1590.7	-23.51	29.49
100.00	10 48 37	4204.21	8.97	167.44	52.56	61.37	11 58 41	3604.2	5.08	160.81
110.00	21 36 36	1940.03	-28.67	17.46	55.56	109.47	22 8 56	1340.0	-25.74	9.51
110.00	11 45 0	4027.67	11.48	152.54	51.05	57.58	12 52 7	3427.7	7.13	146.15

DIFFERENTIAL CORRECTIONS
TDE -.5578 TRA 6.1037 TC-14.6814 BAU 2.8146
RDE .3470 RRA .1570 RC3 .2688 FAU .10350
FDE -.8637 FRA 3.4003 FC3-6.2497 BSP 51530
BDE .6569 BRA 6.1057 BC314.6839 FSP 2193

MID-COURSE EXECUTION ACCURACY
SGT14579.5 SGR 612.8 SG3 620.0
RRT -.0488 RRF -.0875 RTF .9834
SGB14592.4 R23 .0395 R13 -.9834
SG114579.5 SG2 612.1 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 2960.5 SR 530.1 SS 976.0
CRT -.1535 CRS .5282 CST -.9196
LSA 3097.3 MSA 636.1 SSA 24.7
EL1 2961.7 EL2 523.6 ALF 178.37

LAUNCH DATE NOV 26 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 872.685 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.143 GAL -4.64 AZL 88.13 HCA 259.89 SMA 189.72 ECC .23546 INC 1.8735 V1 30.181
RP 207.04 LAP -1.84 LOP 323.66 VP 24.135 GAP -12.59 AZP 90.33 TAL 335.29 TAP 235.18 RCA 145.05 APO 234.39 V2 26.454
RC 326.088 GL 16.29 GP -1.97 ZAL 127.95 ZAP 31.16 ETS 175.66 ZAE 50.25 ETE 178.09 ZAC 84.65 ETC 256.68 CLP 31.11

PLANETOCENTRIC CONIC

C3 14.831 VHL 3.851 DLA 9.64 RAL 198.87 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 5.608 DPA 1.66 RAP 174.99 ECC 1.2441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 15	2448.88	-24.48	56.89	58.17	104.70	19 42 4	1848.9	-22.22	48.94
90.00	9 29 45	4485.84	9.13	188.07	54.59	63.08	10 44 31	3885.8	5.45	181.32
100.00	20 27 20	2171.25	-25.52	36.15	57.85	106.11	21 3 31	1571.2	-23.07	28.21
100.00	10 46 21	4238.70	10.09	169.39	54.08	61.71	11 57 0	3638.7	6.23	162.72
110.00	21 46 21	1923.96	-28.30	16.36	56.84	110.03	22 18 25	1324.0	-25.31	8.46
110.00	11 43 49	4058.75	12.61	154.24	52.59	57.96	12 51 28	3458.8	8.29	147.81

DIFFERENTIAL CORRECTIONS
TDE -.6826 TRA 6.3782 TC-14.3435 BAU 2.8444
RDE .3568 RRA .1534 RC3 .2729 FAU .09729
FDE -.8926 FRA 3.3343 FC3-5.6793 BSP 51971
BDE .7703 BRA 6.3800 BC314.3461 FSP 2088

MID-COURSE EXECUTION ACCURACY
SGT14687.5 SGR 616.1 SG3 587.4
RRT -.0700 RRF -.1098 RTF .9825
SGB14700.4 R23 .0410 R13 -.9825
SG114687.6 SG2 614.6 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3078.9 SR 535.4 SS 976.3
CRT -.2067 CRS .5571 CST -.9271
LSA 3213.4 MSA 626.5 SSA 24.1
EL1 3080.9 EL2 523.5 ALF 177.88

LAUNCH DATE NOV 26 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 876.955 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.150 GAL -4.83 AZL 88.14 HCA 261.16 SMA 189.84 ECC .23708 INC 1.8630 V1 30.181
RP 206.96 LAP -1.84 LOP 324.93 VP 24.154 GAP -12.72 AZP 90.29 TAL 334.35 TAP 235.51 RCA 144.84 APO 234.85 V2 26.463
RC 326.917 GL 15.90 GP -1.94 ZAL 129.31 ZAP 30.63 ETS 175.64 ZAE 49.41 ETE 178.09 ZAC 84.85 ETC 256.62 CLP 30.58

PLANETOCENTRIC CONIC

C3 15.360 VHL 3.919 DLA 8.77 RAL 199.94 RAD 6567.6 VEL 11.694 PTH 2.06 VHP 5.701 DPA 1.39 RAP 175.68 ECC 1.2528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 23	2428.68	-24.12	55.52	59.51	105.30	19 52 52	1828.7	-21.79	47.62
90.00	9 27 8	4521.74	10.23	190.13	56.15	63.45	10 42 29	3921.7	6.58	183.35
100.00	20 38 0	2152.56	-25.16	34.88	59.18	106.69	21 13 53	1552.6	-22.64	26.99
100.00	10 44 12	4273.10	11.19	171.34	55.64	62.10	11 55 25	3673.1	7.37	164.64
110.00	21 55 58	1908.56	-27.93	15.31	58.13	110.55	22 27 47	1308.6	-24.88	7.47
110.00	11 42 43	4089.87	13.73	155.95	54.16	58.38	12 50 53	3489.9	9.45	149.47

DIFFERENTIAL CORRECTIONS
TDE -.8113 TRA 6.6601 TC-13.9983 BAU 2.8750
RDE .3670 RRA .1494 RC3 .2760 FAU .09128
FDE -.9187 FRA 3.2643 FC3-5.1449 BSP 52378
BDE .8905 BRA 6.6618 BC314.0011 FSP 1985

MID-COURSE EXECUTION ACCURACY
SGT14793.9 SGR 619.3 SG3 555.8
RRT -.0909 RRF -.1320 RTF .9816
SGB14806.9 R23 .0428 R13 -.9816
SG114794.0 SG2 616.7 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3201.7 SR 540.7 SS 974.8
CRT -.2557 CRS .5844 CST -.9334
LSA 3333.5 MSA 617.1 SSA 23.6
EL1 3204.8 EL2 522.2 ALF 177.46

LAUNCH DATE NOV 26 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 881.218 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.157 GAL -5.04 AZL 88.15 HCA 262.42 SMA 189.97 ECC .23876 INC 1.8526 V1 30.181
RP 206.89 LAP -1.84 LOP 326.20 VP 24.173 GAP -12.85 AZP 90.24 TAL 333.39 TAP 235.82 RCA 144.61 APO 235.33 V2 26.471
RC 327.742 GL 15.52 GP -1.90 ZAL 130.66 ZAP 30.12 ETS 175.61 ZAE 48.59 ETE 178.08 ZAC 85.04 ETC 256.56 CLP 30.07

PLANETOCENTRIC CONIC

C3 15.927 VHL 3.991 DLA 7.92 RAL 201.00 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 5.795 DPA 1.11 RAP 176.38 ECC 1.2621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 20	2409.32	-23.77	54.21	60.86	105.86	20 3 30	1809.3	-21.36	46.36
90.00	9 24 37	4557.50	11.31	192.20	57.74	63.87	10 40 34	3957.5	7.71	185.38
100.00	20 48 30	2134.66	-24.81	33.67	60.52	107.24	21 24 4	1534.7	-22.21	25.83
100.00	10 42 8	4307.40	12.28	173.31	57.24	62.53	11 53 56	3707.4	8.50	166.56
110.00	22 5 27	1893.83	-27.58	14.31	59.45	111.05	22 37 1	1293.8	-24.47	6.52
110.00	11 41 40	4120.99	14.83	157.69	55.76	58.84	12 50 21	3521.0	10.60	151.15

DIFFERENTIAL CORRECTIONS
TDE -.9410 TRA 6.9504 TC-13.6438 BAU 2.9058
RDE .3777 RRA .1451 RC3 .2779 FAU .08543
FDE -.9388 FRA 3.1913 FC3-4.6437 BSP 52787
BDE 1.0139 BRA 6.9519 BC313.6466 FSP 1885

MID-COURSE EXECUTION ACCURACY
SGT14896.8 SGR 622.5 SG3 525.2
RRT -.1110 RRF -.1533 RTF .9805
SGB14909.8 R23 .0446 R13 -.9805
SG114897.0 SG2 618.6 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3326.6 SR 546.0 SS 970.2
CRT -.2995 CRS .6088 CST -.9388
LSA 3454.8 MSA 607.8 SSA 23.0
EL1 3330.7 EL2 520.3 ALF 177.12

LAUNCH DATE NOV 26 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 885.474 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.164 GAL -5.24 AZL 88.16 HCA 263.69 SMA 190.10 ECC .24053 INC 1.8422 V1 30.181
RP 206.84 LAP -1.83 LOP 327.46 VP 24.190 GAP -12.99 AZP 90.20 TAL 332.42 TAP 236.11 RCA 144.37 APO 235.82 V2 26.477
RC 328.562 GL 15.14 GP -1.86 ZAL 132.00 ZAP 29.62 ETS 175.59 ZAE 47.78 ETE 178.08 ZAC 85.24 ETC 256.50 CLP 29.57

PLANETOCENTRIC CONIC

C3 16.535 VHL 4.066 DLA 7.07 RAL 202.05 RAD 6567.7 VEL 11.744 PTH 2.07 VHP 5.891 DPA .83 RAP 177.09 ECC 1.2721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 6	2390.79	-23.42	52.96	62.24	106.39	20 13 57	1790.8	-20.95	45.16
90.00	9 22 13	4593.10	12.37	194.28	59.36	64.32	10 38 46	3993.1	8.81	187.41
100.00	20 58 49	2117.53	-24.46	32.52	61.89	107.75	21 34 7	1517.5	-21.80	24.73
100.00	10 40 10	4341.60	13.34	175.29	58.87	63.00	11 52 32	3741.6	9.62	168.49
110.00	22 14 48	1879.78	-27.23	13.37	60.79	111.51	22 46 8	1279.8	-24.06	5.63
110.00	11 40 41	4152.12	15.92	159.45	57.40	59.34	12 49 53	3552.1	11.74	152.84

DIFFERENTIAL CORRECTIONS
TDE-1.0738 TRA 7.2488 TC-13.2856 BAU 2.9375
RDE .3889 RRA .1404 RC3 .2789 FAU .07979
FDE -.9559 FRA 3.1145 FC3-4.1777 BSP 53171
BDE 1.1420 BRA 7.2502 BC313.2885 FSP 1786

MID-COURSE EXECUTION ACCURACY
SGT14998.5 SGR 625.7 SG3 495.7
RRT -.1308 RRF -.1747 RTF .9792
SGB15011.6 R23 .0467 R13 -.9793
SG114998.8 SG2 620.3 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 3453.6 SR 551.3 SS 963.7
CRT -.3396 CRS .6318 CST -.9432
LSA 3577.8 MSA 599.0 SSA 22.5
EL1 3458.8 EL2 517.7 ALF 176.83

LAUNCH DATE NOV 26 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 889.721 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.171 GAL -5.46 AZL 88.17 HCA 264.96 SMA 190.22 ECC .24236 INC 1.8319 V1 30.181
RP 206.79 LAP -1.82 LOP 328.73 VP 24.206 GAP -13.12 AZP 90.16 TAL 331.44 TAP 236.39 RCA 144.12 APO 236.33 V2 26.483
RC 329.378 GL 14.75 GP -1.83 ZAL 133.33 ZAP 29.13 ETS 175.57 ZAE 46.99 ETE 178.08 ZAC 85.44 ETC 256.44 CLP 29.08

PLANETOCENTRIC CONIC

C3 17.186 VHL 4.146 DLA 6.23 RAL 203.08 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 5.989 DPA .53 RAP 177.81 ECC 1.2828

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 41	2373.09	-23.07	51.78	63.63	106.89	20 24 14	1773.1	-20.54	44.02
90.00	9 19 54	4628.56	13.40	196.37	61.02	64.82	10 37 3	4028.6	9.90	189.44
100.00	21 8 59	2101.18	-24.11	31.42	63.27	108.22	21 44 0	1501.2	-21.40	23.68
100.00	10 38 17	4375.70	14.39	177.29	60.53	63.51	11 51 13	3775.7	10.72	170.42
110.00	22 24 0	1866.41	-26.89	12.47	62.15	111.94	22 55 6	1266.4	-23.68	4.79
110.00	11 39 46	4183.24	16.99	161.22	59.08	59.88	12 49 29	3583.2	12.86	154.55

DIFFERENTIAL CORRECTIONS
TDE-1.2072 TRA 7.5561 TC-12.9198 BAU 2.9691
RDE .4005 RRA .1354 RC3 .2789 FAU .07429
FDE -.9675 FRA 3.0344 FC3-3.7426 BSP 53549
BDE 1.2719 BRA 7.5573 BC312.9228 FSP 1692

MID-COURSE EXECUTION ACCURACY
SGT15096.0 SGR 628.8 SG3 467.0
RRT -.1499 RRF -.1953 RTF .9779
SGB15109.1 R23 .0490 R13 -.9779
SG115096.3 SG2 621.7 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3580.5 SR 556.5 SS 953.9
CRT -.3754 CRS .6525 CST -.9468
LSA 3700.0 MSA 590.5 SSA 22.0
EL1 3586.7 EL2 514.9 ALF 176.59

LAUNCH DATE NOV 26 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 893.959 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.178 GAL -5.68 AZL 88.18 HCA 266.23 SMA 190.35 ECC .24428 INC 1.8215 V1 30.181
RP 206.75 LAP -1.82 LOP 330.00 VP 24.220 GAP -13.26 AZP 90.12 TAL 330.44 TAP 236.66 RCA 143.85 APO 236.85 V2 26.488
RC 330.190 GL 14.37 GP -1.80 ZAL 134.64 ZAP 28.66 ETS 175.54 ZAE 46.21 ETE 178.07 ZAC 85.65 ETC 256.39 CLP 28.60

PLANETOCENTRIC CONIC

C3 17.882 VHL 4.229 DLA 5.40 RAL 204.11 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 6.089 DPA .23 RAP 178.55 ECC 1.2943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 5	2356.20	-22.73	50.66	65.05	107.35	20 34 21	1756.2	-20.15	42.94
90.00	9 17 42	4663.88	14.42	198.47	62.72	65.36	10 35 26	4063.9	10.97	191.48
100.00	21 18 59	2085.60	-23.78	30.39	64.68	108.67	21 53 44	1485.6	-21.01	22.69
100.00	10 36 29	4409.70	15.41	179.29	62.23	64.07	11 49 59	3809.7	11.80	172.36
110.00	22 33 4	1853.73	-26.57	11.63	63.52	112.34	23 3 58	1253.7	-23.30	3.99
110.00	11 38 53	4214.34	18.05	163.02	60.78	60.46	12 49 8	3614.3	13.98	156.27

DIFFERENTIAL CORRECTIONS
TDE-1.3442 TRA 7.8706 TC-12.5547 BAU 3.0021
RDE .4127 RRA .1300 RC3 .2781 FAU .06898
FDE -.9761 FRA 2.9506 FC3-3.3396 BSP 53890
BDE 1.4061 BRA 7.8717 BC312.5578 FSP 1598

MID-COURSE EXECUTION ACCURACY
SGT15192.1 SGR 631.8 SG3 439.3
RRT -.1688 RRF -.2158 RTF .9763
SGB15205.2 R23 .0515 R13 -.9763
SG115192.5 SG2 622.8 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 3707.4 SR 561.7 SS 942.2
CRT -.4082 CRS .6721 CST -.9498
LSA 3822.1 MSA 582.3 SSA 21.5
EL1 3714.6 EL2 511.8 ALF 176.39

LAUNCH DATE NOV 26 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 898.187 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.185 GAL -5.90 AZL 88.19 HCA 267.50 SMA 190.48 ECC .24628 INC 1.8113 V1 30.181
RP 206.71 LAP -1.81 LOP 331.27 VP 24.234 GAP -13.41 AZP 90.08 TAL 329.42 TAP 236.92 RCA 143.57 APO 237.39 V2 26.492
RC 331.000 GL 13.99 GP -1.76 ZAL 135.94 ZAP 28.19 ETS 175.52 ZAE 45.44 ETE 178.07 ZAC 85.85 ETC 256.34 CLP 28.14

PLANETOCENTRIC CONIC

C3 18.627 VHL 4.316 DLA 4.59 RAL 205.13 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 6.190 DPA -.07 RAP 179.30 ECC 1.3065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 19	2340.11	-22.40	49.59	66.48	107.79	20 44 19	1740.1	-19.76	41.92
90.00	9 15 35	4699.05	15.40	200.58	64.44	65.94	10 33 54	4099.0	12.03	193.53
100.00	21 28 49	2070.79	-23.45	29.41	66.10	109.09	22 3 19	1470.8	-20.63	21.75
100.00	10 34 46	4443.59	16.41	181.31	63.96	64.66	11 48 50	3843.6	12.86	174.32
110.00	22 42 0	1841.75	-26.26	10.84	64.92	112.72	23 12 41	1241.7	-22.95	3.24
110.00	11 38 4	4245.40	19.08	164.84	62.53	61.08	12 48 50	3645.4	15.08	158.01

DIFFERENTIAL CORRECTIONS
TDE-1.4823 TRA 8.1948 TC-12.1881 BAU 3.0358
RDE .4252 RRA .1242 RC3 .2765 FAU .06381
FDE -.9810 FRA 2.8631 FC3-2.9656 BSP 54217
BDE 1.5421 BRA 8.1958 BC312.1912 FSP 1506

MID-COURSE EXECUTION ACCURACY
SGT15286.2 SGR 634.8 SG3 412.5
RRT -.1872 RRF -.2361 RTF .9745
SGB15299.4 R23 .0543 R13 -.9745
SG115286.7 SG2 623.6 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 3833.1 SR 566.8 SS 928.0
CRT -.4376 CRS .6905 CST -.9522
LSA 3942.6 MSA 574.8 SSA 21.0
EL1 3841.3 EL2 508.5 ALF 176.23

LAUNCH DATE NOV 26 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 902.404 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.193 GAL -6.13 AZL 88.20 HCA 268.76 SMA 190.61 ECC .24837 INC 1.8010 V1 30.181
RP 206.69 LAP -1.80 LOP 332.54 VP 24.247 GAP -13.56 AZP 90.04 TAL 328.40 TAP 237.16 RCA 143.27 APO 237.95 V2 26.494
RC 331.806 GL 13.61 GP -1.73 ZAL 137.23 ZAP 27.74 ETS 175.49 ZAE 44.68 ETE 178.07 ZAC 86.06 ETC 256.29 CLP 27.69

PLANETOCENTRIC CONIC

C3 19.422 VHL 4.407 DLA 3.78 RAL 206.13 RAD 6567.8 VEL 11.866 PTH 2.11 VHP 6.293 DPA -.39 RAP 180.05 ECC 1.3196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 22	2324.82	-22.08	48.59	67.93	108.19	20 54 7	1724.8	-19.39	40.95
90.00	9 13 33	4734.06	16.36	202.70	66.20	66.56	10 32 27	4134.1	13.06	195.59
100.00	21 38 29	2056.75	-23.14	28.48	67.54	109.48	22 12 46	1456.7	-20.27	20.86
100.00	10 33 7	4477.37	17.38	183.35	65.73	65.29	11 47 45	3877.4	13.90	176.28
110.00	22 50 47	1830.45	-25.96	10.10	66.34	113.07	23 21 18	1230.4	-22.61	2.54
110.00	11 37 18	4276.44	20.09	166.67	64.30	61.74	12 48 35	3676.4	16.16	159.76

DIFFERENTIAL CORRECTIONS
TDE-1.6234 TRA 8.5271 TC-11.8219 BAU 3.0705
RDE .4383 RRA .1180 RC3 .2742 FAU .05879
FDE -.9818 FRA 2.7718 FC3-2.6206 BSP 54498
BDE 1.6816 BRA 8.5279 BC311.8251 FSP 1416

MID-COURSE EXECUTION ACCURACY
SGT15377.5 SGR 637.8 SG3 386.5
RRT -.2053 RRF -.2561 RTF .9724
SGB15390.7 R23 .0573 R13 -.9725
SG115378.0 SG2 624.2 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 3957.5 SR 571.7 SS 911.1
CRT -.4646 CRS .7076 CST -.9541
LSA 4061.6 MSA 567.3 SSA 20.6
EL1 3966.5 EL2 505.1 ALF 176.10

LAUNCH DATE NOV 26 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 906.608 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.200 GAL -6.37 AZL 88.21 HCA 270.03 SMA 190.74 ECC .25055 INC 1.7908 V1 30.181
RP 206.68 LAP -1.79 LOP 333.81 VP 24.259 GAP -13.71 AZP 90.00 TAL 327.35 TAP 237.39 RCA 142.95 APO 238.53 V2 26.496
RC 332.609 GL 13.24 GP -1.70 ZAL 138.50 ZAP 27.31 ETS 175.46 ZAE 43.93 ETE 178.06 ZAC 86.27 ETC 256.24 CLP 27.26

PLANETOCENTRIC CONIC

C3 20.273 VHL 4.503 DLA 2.99 RAL 207.13 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 6.399 DPA -.71 RAP 180.82 ECC 1.3336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 16	2310.32	-21.77	47.64	69.40	108.57	21 3 46	1710.3	-19.03	40.03
90.00	9 11 36	4768.93	17.30	204.84	67.99	67.22	10 31 5	4168.9	14.06	197.65
100.00	21 48 0	2043.45	-22.83	27.61	69.00	109.84	22 22 3	1443.5	-19.92	20.03
100.00	10 31 33	4511.04	18.33	185.40	67.52	65.96	11 46 44	3911.0	14.93	178.26
110.00	22 59 27	1819.84	-25.67	9.40	67.77	113.39	23 29 46	1219.8	-22.28	1.89
110.00	11 36 35	4307.41	21.08	168.54	66.11	62.44	12 48 23	3707.4	17.22	161.53

DIFFERENTIAL CORRECTIONS
TDE-1.7652 TRA 8.8687 TC-11.4578 BAU 3.1062
RDE .4518 RRA .1113 RC3 .2713 FAU .05391
FDE -.9792 FRA 2.6770 FC3-2.3022 BSP 54778
BDE 1.8221 BRA 8.8693 BC311.4610 FSP 1329

MID-COURSE EXECUTION ACCURACY
SGT15466.6 SGR 640.6 SG3 361.3
RRT -.2230 RRF -.2759 RTF .9700
SGB15479.8 R23 .0608 R13 -.9701
SG115467.2 SG2 624.5 THA 179.47

ORBIT DETERMINATION ACCURACY
ST 4078.7 SR 576.6 SS 892.1
CRT -.4888 CRS .7237 CST -.9554
LSA 4177.2 MSA 560.6 SSA 20.2
EL1 4088.5 EL2 501.8 ALF 175.99

LAUNCH DATE NOV 26 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 910.799 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.207 GAL -6.61 AZL 88.22 HCA 271.30 SMA 190.88 ECC .25282 INC 1.7805 V1 30.181
RP 206.67 LAP -1.78 LOP 335.08 VP 24.270 GAP -13.87 AZP 89.96 TAL 326.30 TAP 237.60 RCA 142.62 APO 239.13 V2 26.497
RC 333.409 GL 12.87 GP -1.68 ZAL 139.75 ZAP 26.88 ETS 175.44 ZAE 43.20 ETE 178.05 ZAC 86.48 ETC 256.19 CLP 26.83

PLANETOCENTRIC CONIC

C3 21.181 VHL 4.602 DLA 2.21 RAL 208.11 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 6.506 DPA -1.04 RAP 181.60 ECC 1.3486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 0	2296.59	-21.47	46.74	70.89	108.92	21 13 16	1696.6	-18.69	39.17
90.00	9 9 43	4803.65	18.20	206.98	69.82	67.92	10 29 47	4203.6	15.04	199.73
100.00	21 57 22	2030.90	-22.54	26.80	70.48	110.17	22 31 13	1430.9	-19.59	19.24
100.00	10 30 2	4544.57	19.24	187.47	69.35	66.67	11 45 47	3944.6	15.92	180.25
110.00	23 7 58	1809.91	-25.40	8.76	69.22	113.68	23 38 8	1209.9	-21.98	1.28
110.00	11 35 55	4338.33	22.04	170.42	67.96	63.18	12 48 13	3738.3	18.26	163.32

DIFFERENTIAL CORRECTIONS
TDE-1.9101 TRA 9.2195 TC-11.0975 BAU 3.1433
RDE .4658 RRA .1043 RC3 .2679 FAU .04920
FDE -.9735 FRA 2.5785 FC3-2.0108 BSP 55022
BDE 1.9661 BRA 9.2201 BC311.1007 FSP 1243

MID-COURSE EXECUTION ACCURACY
SGT15554.1 SGR 643.4 SG3 337.0
RRT -.2403 RRF -.2956 RTF .9673
SGB15567.4 R23 .0646 R13 -.9674
SG115554.9 SG2 624.5 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 4198.0 SR 581.3 SS 871.0
CRT -.5110 CRS .7391 CST -.9563
LSA 4291.0 MSA 554.0 SSA 19.8
EL1 4208.6 EL2 498.4 ALF 175.89

LAUNCH DATE NOV 26 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 914.975 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.214 GAL -6.86 AZL 88.23 HCA 272.57 SMA 191.01 ECC .25519 INC 1.7702 V1 30.181
RP 206.67 LAP -1.77 LOP 336.35 VP 24.279 GAP -14.03 AZP 89.92 TAL 325.23 TAP 237.80 RCA 142.27 APO 239.75 V2 26.497
RC 334.204 GL 12.50 GP -1.65 ZAL 140.99 ZAP 26.47 ETS 175.41 ZAE 42.47 ETE 178.05 ZAC 86.69 ETC 256.14 CLP 26.42

PLANETOCENTRIC CONIC

C3 22.150 VHL 4.706 DLA 1.44 RAL 209.09 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 6.616 DPA -1.37 RAP 182.39 ECC 1.3645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 34	2283.63	-21.18	45.90	72.39	109.24	21 22 37	1683.6	-18.36	38.36
90.00	9 7 55	4838.20	19.07	209.15	71.67	68.66	10 28 33	4238.2	16.00	201.81
100.00	22 6 35	2019.09	-22.26	26.03	71.97	110.48	22 40 14	1419.1	-19.27	18.51
100.00	10 28 35	4577.98	20.13	189.56	71.22	67.42	11 44 53	3978.0	16.90	182.26
110.00	23 16 22	1800.66	-25.15	8.16	70.69	113.95	23 46 22	1200.7	-21.69	.71
110.00	11 35 18	4369.17	22.97	172.33	69.84	63.96	12 48 7	3769.2	19.29	165.13

DIFFERENTIAL CORRECTIONS
TDE-2.0568 TRA 9.5790 TC-10.7407 BAU 3.1815
RDE .4802 RRA .0968 RC3 .2639 FAU .04458
FDE -.9642 FRA 2.4763 FC3-1.7423 BSP 55233
BDE 2.1121 BRA 9.5795 BC310.7439 FSP 1159

MID-COURSE EXECUTION ACCURACY
SGT15638.4 SGR 646.1 SG3 313.4
RRT -.2574 RRF -.3150 RTF .9641
SGB15651.7 R23 .0687 R13 -.9641
SG115639.3 SG2 624.3 THA 179.39

ORBIT DETERMINATION ACCURACY
ST 4313.8 SR 585.8 SS 847.6
CRT -.5313 CRS .7537 CST -.9568
LSA 4401.1 MSA 547.8 SSA 19.4
EL1 4325.2 EL2 495.0 ALF 175.82

LAUNCH DATE NOV 26 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 919.136 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.222 GAL -7.12 AZL 88.24 HCA 273.84 SMA 191.14 ECC .25766 INC 1.7599 V1 30.181
RP 206.68 LAP -1.76 LOP 337.62 VP 24.288 GAP -14.20 AZP 89.88 TAL 324.15 TAP 237.99 RCA 141.89 APO 240.39 V2 26.495
RC 334.996 GL 12.14 GP -1.62 ZAL 142.21 ZAP 26.06 ETS 175.39 ZAE 41.76 ETE 178.04 ZAC 86.90 ETC 256.10 CLP 26.02

PLANETOCENTRIC CONIC

C3 23.184 VHL 4.815 DLA .69 RAL 210.05 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 6.728 DPA -1.71 RAP 183.19 ECC 1.3815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 59	2271.41	-20.91	45.11	73.91	109.55	21 31 50	1671.4	-18.05	37.60
90.00	9 6 11	4872.60	19.91	211.32	73.56	69.44	10 27 24	4272.6	16.93	203.91
100.00	22 15 38	2008.00	-21.99	25.31	73.48	110.77	22 49 6	1408.0	-18.97	17.82
100.00	10 27 12	4611.25	20.99	191.66	73.11	68.21	11 44 4	4011.2	17.84	184.27
110.00	23 24 37	1792.08	-24.91	7.61	72.17	114.20	23 54 29	1192.1	-21.43	.19
110.00	11 34 43	4399.93	23.88	174.26	71.75	64.78	12 48 3	3799.9	20.28	166.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.2053 TRA 9.9488 TC-10.3883 BAU 3.2208 SGT15720.5 SGR 648.7 SG3 290.7 ST 4426.2 SR 590.1 SS 822.3
RDE .4951 RRA .0888 RC3 .2595 FAU .04010 RRT -.2741 RRF -.3343 RTF .9604 CRT -.5497 CRS .7677 CST -.9569
FDE -.9518 FRA 2.3703 FC3-1.4973 BSP 55421 SGB15733.9 R23 .0735 R13 -.9604 LSA 4508.0 MSA 541.9 SSA 19.0
BDE 2.2602 BRA 9.9491 BC310.3916 FSP 1077 SG115721.6 SG2 623.8 THA 179.35 EL1 4438.3 EL2 491.6 ALF 175.76

LAUNCH DATE NOV 26 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 923.280 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.229 GAL -7.38 AZL 88.25 HCA 275.11 SMA 191.28 ECC .26023 INC 1.7496 V1 30.181
RP 206.70 LAP -1.74 LOP 338.89 VP 24.296 GAP -14.37 AZP 89.84 TAL 323.05 TAP 238.16 RCA 141.50 APO 241.06 V2 26.493
RC 335.784 GL 11.78 GP -1.60 ZAL 143.41 ZAP 25.67 ETS 175.36 ZAE 41.06 ETE 178.03 ZAC 87.12 ETC 256.06 CLP 25.63

PLANETOCENTRIC CONIC

C3 24.287 VHL 4.928 DLA -.05 RAL 211.00 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 6.842 DPA -2.05 RAP 184.00 ECC 1.3997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 14	2259.93	-20.64	44.37	75.45	109.82	21 40 54	1659.9	-17.75	36.89
90.00	9 4 31	4906.83	20.71	213.51	75.47	70.24	10 26 18	4306.8	17.83	206.02
100.00	22 24 34	1997.61	-21.74	24.65	75.01	111.04	22 57 51	1397.6	-18.69	17.18
100.00	10 25 53	4644.38	21.81	193.77	75.03	69.03	11 43 17	4044.4	18.76	186.30
110.00	23 32 45	1784.15	-24.69	7.10	73.67	114.43	24 2 29	1184.2	-21.18	359.71
110.00	11 34 10	4430.60	24.76	176.21	73.69	65.64	12 48 1	3830.6	21.26	168.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.3556 TRA10.3272 TC-10.0436 BAU 3.2622 SGT15800.5 SGR 651.1 SG3 268.6 ST 4534.6 SR 594.2 SS 795.1
RDE .5104 RRA .0804 RC3 .2548 FAU .03573 RRT -.2905 RRF -.3536 RTF .9559 CRT -.5665 CRS .7814 CST -.9564
FDE -.9367 FRA 2.2603 FC3-1.2737 BSP 55562 SGB15813.9 R23 .0789 R13 -.9559 LSA 4610.8 MSA 536.4 SSA 18.6
BDE 2.4102 BRA10.3276 BC310.0468 FSP 997 SG115801.6 SG2 623.0 THA 179.31 EL1 4547.2 EL2 488.2 ALF 175.70

LAUNCH DATE NOV 26 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 927.405 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.237 GAL -7.65 AZL 88.26 HCA 276.38 SMA 191.42 ECC .26292 INC 1.7393 V1 30.181
RP 206.73 LAP -1.73 LOP 340.16 VP 24.302 GAP -14.55 AZP 89.81 TAL 321.94 TAP 238.32 RCA 141.09 APO 241.74 V2 26.490
RC 336.567 GL 11.43 GP -1.57 ZAL 144.60 ZAP 25.29 ETS 175.33 ZAE 40.37 ETE 178.02 ZAC 87.34 ETC 256.02 CLP 25.25

PLANETOCENTRIC CONIC

C3 25.464 VHL 5.046 DLA -.77 RAL 211.94 RAD 6568.0 VEL 12.118 PTH 2.17 VHP 6.959 DPA -2.40 RAP 184.82 ECC 1.4191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 21	2249.16	-20.39	43.68	77.00	110.08	21 49 50	1649.2	-17.47	36.22
90.00	9 2 55	4940.89	21.48	215.72	77.41	71.09	10 25 16	4340.9	18.70	208.14
100.00	22 33 20	1987.93	-21.50	24.02	76.55	111.28	23 6 28	1387.9	-18.42	16.59
100.00	10 24 37	4677.36	22.60	195.91	76.99	69.89	11 42 34	4077.4	19.65	188.35
110.00	23 40 46	1776.87	-24.48	6.63	75.18	114.64	24 10 23	1176.9	-20.95	359.27
110.00	11 33 41	4461.17	25.60	178.18	75.67	66.53	12 48 2	3861.2	22.20	170.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.5078 TRA10.7161 TC3-9.7047 BAU 3.3048 SGT15878.0 SGR 653.5 SG3 247.3 ST 4639.0 SR 598.0 SS 765.9
RDE .5262 RRA .0715 RC3 .2498 FAU .03146 RRT -.3066 RRF -.3725 RTF .9505 CRT -.5820 CRS .7946 CST -.9557
FDE -.9181 FRA 2.1466 FC3-1.0696 BSP 55696 SGB15891.4 R23 .0847 R13 -.9506 LSA 4709.8 MSA 530.9 SSA 18.3
BDE 2.5624 BRA10.7164 BC3 9.7079 FSP 919 SG115879.2 SG2 622.0 THA 179.28 EL1 4652.2 EL2 484.9 ALF 175.66

LAUNCH DATE NOV 26 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 931.511 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.244 GAL -7.93 AZL 88.27 HCA 277.65 SMA 191.55 ECC .26572 INC 1.7289 V1 30.181
RP 206.77 LAP -1.71 LOP 341.43 VP 24.308 GAP -14.74 AZP 89.77 TAL 320.81 TAP 238.46 RCA 140.65 APO 242.45 V2 26.485
RC 337.346 GL 11.08 GP -1.55 ZAL 145.77 ZAP 24.92 ETS 175.31 ZAE 39.69 ETE 178.01 ZAC 87.56 ETC 255.99 CLP 24.88

PLANETOCENTRIC CONIC

C3 26.719 VHL 5.169 DLA -1.48 RAL 212.87 RAD 6568.1 VEL 12.169 PTH 2.18 VHP 7.078 DPA -2.76 RAP 185.65 ECC 1.4397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 20	2239.09	-20.16	43.04	78.56	110.32	21 58 39	1639.1	-17.21	35.60
90.00	9 1 22	4974.78	22.21	217.93	79.39	71.97	10 24 17	4374.8	19.54	210.28
100.00	22 41 59	1978.91	-21.28	23.45	78.10	111.50	23 14 58	1378.9	-18.17	16.03
100.00	10 23 24	4710.18	23.35	198.06	78.97	70.78	11 41 54	4110.2	20.51	190.41
110.00	23 48 39	1770.23	-24.29	6.21	76.70	114.82	24 18 9	1170.2	-20.74	358.87
110.00	11 33 13	4491.63	26.41	180.18	77.68	67.46	12 48 5	3891.6	23.12	172.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.6616 TRA11.1159 TC3-9.3716 BAU 3.3487 SGT15952.6 SGR 655.8 SG3 226.7 ST 4739.3 SR 601.6 SS 735.1
RDE .5424 RRA .0622 RC3 .2444 FAU .02729 RRT -.3223 RRF -.3915 RTF .9441 CRT -.5960 CRS .8076 CST -.9544
FDE -.8970 FRA 2.0291 FC3 -.8842 BSP 55785 SGB15966.1 R23 .0916 R13 -.9441 LSA 4804.8 MSA 525.9 SSA 17.9
BDE 2.7163 BRA11.1161 BC3 9.3748 FSP 842 SG115954.0 SG2 620.8 THA 179.24 EL1 4753.0 EL2 481.7 ALF 175.63

LAUNCH DATE NOV 26 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 935.595 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.252 GAL -8.21 AZL 88.28 HCA 278.92 SMA 191.69 ECC .26864 INC 1.7184 V1 30.181
RP 206.81 LAP -1.70 LOP 342.69 VP 24.312 GAP -14.93 AZP 89.73 TAL 319.67 TAP 238.59 RCA 140.20 APO 243.19 V2 26.480
RC 338.120 GL 10.74 GP -1.53 ZAL 146.93 ZAP 24.57 ETS 175.28 ZAE 39.02 ETE 178.00 ZAC 87.78 ETC 255.96 CLP 24.52

PLANETOCENTRIC CONIC

C3 28.056 VHL 5.297 DLA -2.17 RAL 213.80 RAD 6568.1 VEL 12.224 PTH 2.20 VHP 7.200 DPA -3.12 RAP 186.48 ECC 1.4617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 9	2229.69	-19.93	42.44	80.13	110.54	22 7 19	1629.7	-16.96	35.03
90.00	8 59 53	5008.48	22.90	220.16	81.38	72.87	10 23 22	4408.5	20.34	212.42
100.00	22 50 29	1970.56	-21.07	22.92	79.67	111.71	23 23 20	1370.6	-17.94	15.52
100.00	10 22 15	4742.84	24.06	200.22	80.98	71.71	11 41 17	4142.8	21.34	192.48
110.00	0 0 21	1764.20	-24.12	5.83	78.24	114.99	0 29 45	1164.2	-20.55	358.50
110.00	11 32 49	4521.97	27.18	182.20	79.72	68.43	12 48 11	3922.0	24.01	174.47

DIFFERENTIAL CORRECTIONS
TDE-2.8171 TRA11.5253 TC3-9.0474 BAU 3.3947
RDE .5590 RRA .0523 RC3 .2389 FAU .02321
FDE -.8728 FRA 1.9077 FC3 -.7161 BSP 55843
BDE 2.8720 BRA11.5254 BC3 9.0505 FSP 769

MID-COURSE EXECUTION ACCURACY
SGT16024.9 SGR 658.0 SG3 206.8
RRT -.3378 RRF -.4101 RTF .9361
SGB16038.4 R23 .0992 R13 -.9361
SG116026.4 SG2 619.2 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 4834.9 SR 605.0 SS 702.6
CRT -.6090 CRS .8204 CST -.9526
LSA 4895.4 MSA 520.9 SSA 17.6
EL1 4849.1 EL2 478.5 ALF 175.60

LAUNCH DATE NOV 26 1964 FLIGHT TIME 430.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 939.656 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.259 GAL -8.50 AZL 88.29 HCA 280.18 SMA 191.83 ECC .27168 INC 1.7079 V1 30.181
RP 206.87 LAP -1.68 LOP 343.96 VP 24.316 GAP -15.13 AZP 89.70 TAL 318.52 TAP 238.70 RCA 139.71 APO 243.95 V2 26.474
RC 338.890 GL 10.40 GP -1.51 ZAL 148.06 ZAP 24.22 ETS 175.26 ZAE 38.36 ETE 177.98 ZAC 88.00 ETC 255.93 CLP 24.18

PLANETOCENTRIC CONIC

C3 29.483 VHL 5.430 DLA -2.85 RAL 214.71 RAD 6568.2 VEL 12.282 PTH 2.21 VHP 7.325 DPA -3.48 RAP 187.33 ECC 1.4852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 51	2220.95	-19.72	41.89	81.72	110.74	22 15 52	1621.0	-16.73	34.49
90.00	8 58 28	5042.00	23.56	222.40	83.40	73.81	10 22 30	4442.0	21.11	214.58
100.00	22 58 52	1962.85	-20.88	22.43	81.24	111.89	23 31 35	1362.9	-17.72	15.05
100.00	10 21 8	4775.33	24.74	202.40	83.01	72.66	11 40 43	4175.3	22.13	194.57
110.00	0 7 59	1758.77	-23.96	5.48	79.79	115.14	0 37 18	1158.8	-20.37	358.18
110.00	11 32 26	4552.17	27.92	184.23	81.79	69.43	12 48 18	3952.2	24.87	176.40

DIFFERENTIAL CORRECTIONS
TDE-2.9747 TRA11.9465 TC3-8.7318 BAU 3.4429
RDE .5761 RRA .0419 RC3 .2332 FAU .01922
FDE -.8462 FRA 1.7821 FC3 -.5644 BSP 55866
BDE 3.0300 BRA11.9466 BC3 8.7349 FSP 696

MID-COURSE EXECUTION ACCURACY
SGT16095.8 SGR 660.0 SG3 187.7
RRT -.3531 RRF -.4287 RTF .9261
SGB16109.4 R23 .1083 R13 -.9262
SG116097.5 SG2 617.5 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4926.6 SR 608.1 SS 668.8
CRT -.6209 CRS .8333 CST -.9502
LSA 4982.2 MSA 516.2 SSA 17.3
EL1 4941.2 EL2 475.3 ALF 175.58

LAUNCH DATE NOV 26 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 943.692 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.267 GAL -8.81 AZL 88.30 HCA 281.45 SMA 191.97 ECC .27485 INC 1.6973 V1 30.181
RP 206.93 LAP -1.66 LOP 345.23 VP 24.318 GAP -15.33 AZP 89.66 TAL 317.35 TAP 238.80 RCA 139.21 APO 244.73 V2 26.466
RC 339.657 GL 10.07 GP -1.49 ZAL 149.18 ZAP 23.89 ETS 175.23 ZAE 37.72 ETE 177.97 ZAC 88.23 ETC 255.91 CLP 23.84

PLANETOCENTRIC CONIC

C3 31.003 VHL 5.568 DLA -3.52 RAL 215.61 RAD 6568.2 VEL 12.344 PTH 2.23 VHP 7.452 DPA -3.85 RAP 188.19 ECC 1.5102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 25	2212.85	-19.53	41.37	83.32	110.92	22 24 18	1612.8	-16.51	34.00
90.00	8 57 5	5075.33	24.17	224.65	85.45	74.78	10 21 41	4475.3	21.85	216.75
100.00	23 7 7	1955.76	-20.69	21.98	82.83	112.06	23 39 43	1355.8	-17.52	14.62
100.00	10 20 5	4807.65	25.38	204.59	85.07	73.65	11 40 12	4207.6	22.89	196.67
110.00	0 15 31	1753.93	-23.82	5.18	81.35	115.27	0 44 45	1153.9	-20.22	357.89
110.00	11 32 6	4582.24	28.63	186.29	83.89	70.47	12 48 28	3982.2	25.70	178.34

DIFFERENTIAL CORRECTIONS
TDE-3.1328 TRA12.3791 TC3-8.4220 BAU 3.4920
RDE .5935 RRA .0310 RC3 .2274 FAU .01529
FDE -.8167 FRA 1.6525 FC3 -.4270 BSP 55884
BDE 3.1886 BRA12.3792 BC3 8.4251 FSP 626

MID-COURSE EXECUTION ACCURACY
SGT16162.7 SGR 661.9 SG3 169.2
RRT -.3679 RRF -.4468 RTF .9134
SGB16176.2 R23 .1186 R13 -.9135
SG116164.5 SG2 615.5 THA 179.14

ORBIT DETERMINATION ACCURACY
ST 5013.1 SR 610.9 SS 633.3
CRT -.6317 CRS .8461 CST -.9470
LSA 5063.9 MSA 511.6 SSA 17.0
EL1 5028.0 EL2 472.2 ALF 175.56

LAUNCH DATE NOV 26 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 947.696 EARTH TO MARS

RL 147.63 LAL -.00 LOL 63.77 VL 33.274 GAL -9.11 AZL 88.31 HCA 282.72 SMA 192.11 ECC .27816 INC 1.6865 V1 30.181
RP 207.00 LAP -1.65 LOP 346.50 VP 24.319 GAP -15.54 AZP 89.63 TAL 316.17 TAP 238.88 RCA 138.67 APO 245.55 V2 26.458
RC 340.420 GL 9.75 GP -1.47 ZAL 150.28 ZAP 23.56 ETS 175.21 ZAE 37.08 ETE 177.95 ZAC 88.46 ETC 255.88 CLP 23.52

PLANETOCENTRIC CONIC

C3 32.623 VHL 5.712 DLA -4.17 RAL 216.50 RAD 6568.3 VEL 12.409 PTH 2.24 VHP 7.582 DPA -4.22 RAP 189.06 ECC 1.5369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 55 52	2205.35	-19.34	40.90	84.93	111.09	22 32 37	1605.3	-16.30	33.54
90.00	8 55 46	5108.47	24.74	226.91	87.52	75.77	10 20 55	4508.5	22.54	218.92
100.00	23 15 15	1949.25	-20.53	21.57	84.43	112.22	23 47 44	1349.3	-17.34	14.23
100.00	10 19 4	4839.79	25.97	206.79	87.16	74.66	11 39 44	4239.8	23.62	198.78
110.00	0 22 56	1749.64	-23.70	4.91	82.92	115.39	0 52 6	1149.6	-20.08	357.63
110.00	11 31 48	4612.17	29.29	188.37	86.02	71.53	12 48 40	4012.2	26.49	180.31

DIFFERENTIAL CORRECTIONS
TDE-3.2488 TRA12.8680 TC3-8.0684 BAU 3.5203
RDE .6108 RRA .0189 RC3 .2208 FAU .01092
FDE -.7741 FRA 1.5255 FC3 -.2897 BSP 56915
BDE 3.3058 BRA12.8680 BC3 8.0714 FSP 577

MID-COURSE EXECUTION ACCURACY
SGT16219.8 SGR 662.9 SG3 151.3
RRT -.3790 RRF -.4566 RTF .8956
SGB16233.3 R23 .1261 R13 -.8957
SG116221.7 SG2 613.3 THA 179.11

ORBIT DETERMINATION ACCURACY
ST 5076.8 SR 612.8 SS 591.4
CRT -.6354 CRS .8555 CST -.9427
LSA 5122.4 MSA 509.1 SSA 16.8
EL1 5091.8 EL2 471.8 ALF 175.58

LAUNCH DATE NOV 27 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 20 1965

HELIOCENTRIC CONIC DISTANCE 396.623 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 36.008 GAL -4.43 AZL 88.53 HCA 122.34 SMA 264.52 ECC .44740 INC 1.4696 V1 30.186
RP 245.44 LAP 1.24 LOP 187.14 VP 24.078 GAP 26.28 AZP 90.79 TAL 345.62 TAP 107.97 RCA 146.17 APO 382.86 V2 22.343
RC 121.300 GL 8.42 GP 1.06 ZAL 113.22 ZAP 176.35 ETS 161.78 ZAE 155.07 ETE 359.17 ZAC 89.53 ETC 256.12 CLP 176.51

PLANETOCENTRIC CONIC

C3 39.535 VHL 6.288 DLA 8.41 RAL 181.79 RAD 6568.5 VEL 12.685 PTH 2.30 VHP 11.873 DPA .73 RAP 184.32 ECC 1.6506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 57	2647.10	-27.18	70.76	58.24	98.26	18 43 4	2047.1	-25.76	62.38
90.00	8 7 55	4763.76	17.16	204.52	52.67	67.12	9 27 19	4163.8	13.91	197.34
100.00	19 24 22	2371.60	-28.54	50.26	58.00	99.29	20 3 53	1771.6	-26.96	41.81
100.00	9 25 11	4514.48	18.42	185.61	52.10	66.03	10 40 25	3914.5	15.03	178.47
110.00	20 41 54	2128.96	-32.19	31.03	57.20	102.16	21 17 23	1529.0	-30.18	22.40
110.00	10 24 8	4329.89	21.78	169.90	50.40	62.98	11 36 18	3729.9	17.98	162.83

DIFFERENTIAL CORRECTIONS
TDE .7945 TRA-1.9778 TC3 .6084 BAU .3223
RDE -.5785 RRA -.2517 RC3 -.0408 FAU .05409
FDE -.2622 FRA 1.0506 FC3-1.1844 BSP 6687
BDE .9828 BRA 1.9937 BC3 .6098 FSP 412

MID-COURSE EXECUTION ACCURACY
SGT 2104.4 SGR 578.2 SG3 154.8
RRT .0012 RRF -.0212 RTF -.8155
SGB 2182.3 R23 -.0201 R13 -.8155
SG1 2104.4 SG2 578.2 THA .02

ORBIT DETERMINATION ACCURACY
ST 907.4 SR 531.7 SS 388.4
CRT -.7123 CRS -.5256 CST .9683
LSA 1058.4 MSA 368.6 SSA 29.8
EL1 995.1 EL2 340.3 ALF 154.09

LAUNCH DATE NOV 27 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 22 1965

HELIOCENTRIC CONIC DISTANCE 397.905 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 35.866 GAL -4.24 AZL 88.54 HCA 123.24 SMA 259.25 ECC .43580 INC 1.4586 V1 30.186
RP 245.23 LAP 1.22 LOP 188.04 VP 23.884 GAP 25.66 AZP 90.80 TAL 346.00 TAP 109.24 RCA 146.27 APO 372.23 V2 22.364
RC 123.232 GL 8.56 GP 1.10 ZAL 112.58 ZAP 175.88 ETS 163.28 ZAE 154.68 ETE 359.42 ZAC 89.65 ETC 256.10 CLP 176.03

PLANETOCENTRIC CONIC

C3 37.393 VHL 6.115 DLA 8.79 RAL 181.26 RAD 6568.5 VEL 12.600 PTH 2.29 VHP 11.593 DPA .59 RAP 184.71 ECC 1.6154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 47	2645.49	-27.16	70.64	56.82	98.32	18 37 52	2045.5	-25.73	62.27
90.00	8 8 50	4737.21	16.45	202.89	51.17	66.62	9 27 48	4137.2	13.15	195.77
100.00	19 19 24	2369.34	-28.52	50.10	56.58	99.37	19 58 53	1769.3	-26.93	41.65
100.00	9 25 54	4488.60	17.70	184.03	50.59	65.51	10 40 43	3888.6	14.25	176.94
110.00	20 37 24	2125.25	-32.14	30.76	55.78	102.32	21 12 49	1525.3	-30.11	22.13
110.00	10 24 24	4305.45	21.02	168.42	48.87	62.40	11 36 9	3705.4	17.15	161.42

DIFFERENTIAL CORRECTIONS
TDE .7720 TRA-1.9548 TC3 .6645 BAU .3328
RDE -.5583 RRA -.2431 RC3 -.0416 FAU .05569
FDE -.2603 FRA 1.0628 FC3-1.2893 BSP 6954
BDE .9527 BRA 1.9698 BC3 .6658 FSP 433

MID-COURSE EXECUTION ACCURACY
SGT 2149.1 SGR 573.9 SG3 163.1
RRT .0061 RRF -.0226 RTF -.8200
SGB 2224.4 R23 -.0172 R13 -.8200
SG1 2149.1 SG2 573.9 THA .10

ORBIT DETERMINATION ACCURACY
ST 912.6 SR 527.7 SS 392.0
CRT -.7059 CRS -.5171 CST .9679
LSA 1061.5 MSA 370.4 SSA 30.5
EL1 997.2 EL2 342.0 ALF 154.60

LAUNCH DATE NOV 27 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 399.391 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 35.731 GAL -4.05 AZL 88.55 HCA 124.15 SMA 254.42 ECC .42473 INC 1.4473 V1 30.186
RP 245.01 LAP 1.20 LOP 188.94 VP 23.700 GAP 25.05 AZP 90.81 TAL 346.38 TAP 110.53 RCA 146.36 APO 362.48 V2 22.385
RC 125.213 GL 8.70 GP 1.13 ZAL 111.91 ZAP 175.40 ETS 164.47 ZAE 154.34 ETE 359.66 ZAC 89.78 ETC 256.08 CLP 175.54

PLANETOCENTRIC CONIC

C3 35.396 VHL 5.949 DLA 9.19 RAL 180.70 RAD 6568.4 VEL 12.521 PTH 2.27 VHP 11.320 DPA .45 RAP 185.10 ECC 1.5825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 25	2644.43	-27.15	70.57	55.39	98.36	18 32 30	2044.4	-25.72	62.19
90.00	8 9 45	4710.54	15.72	201.27	49.67	66.14	9 28 16	4110.5	12.37	194.20
100.00	19 14 15	2367.58	-28.50	49.97	55.16	99.44	19 53 43	1767.6	-26.90	41.53
100.00	9 26 36	4462.62	16.96	182.46	49.08	65.01	10 40 59	3862.6	13.45	175.42
110.00	20 32 44	2122.01	-32.09	30.52	54.35	102.46	21 8 6	1522.0	-30.05	21.90
110.00	10 24 37	4280.96	20.24	166.95	47.36	61.84	11 35 58	3681.0	16.31	160.02

DIFFERENTIAL CORRECTIONS
TDE .7504 TRA-1.9295 TC3 .7262 BAU .3442
RDE -.5388 RRA -.2348 RC3 -.0422 FAU .05733
FDE -.2566 FRA 1.0753 FC3-1.4021 BSP 7188
BDE .9238 BRA 1.9438 BC3 .7274 FSP 457

MID-COURSE EXECUTION ACCURACY
SGT 2193.7 SGR 569.4 SG3 171.6
RRT .0103 RRF -.0250 RTF -.8251
SGB 2266.4 R23 -.0159 R13 -.8251
SG1 2193.7 SG2 569.4 THA .16

ORBIT DETERMINATION ACCURACY
ST 917.5 SR 523.4 SS 394.4
CRT -.7001 CRS -.5054 CST .9665
LSA 1064.0 MSA 372.1 SSA 31.2
EL1 999.0 EL2 343.3 ALF 155.09

LAUNCH DATE NOV 27 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 401.059 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 35.601 GAL -3.86 AZL 88.56 HCA 125.05 SMA 249.99 ECC .41415 INC 1.4358 V1 30.186
RP 244.80 LAP 1.18 LOP 189.85 VP 23.524 GAP 24.44 AZP 90.82 TAL 346.77 TAP 111.82 RCA 146.45 APO 353.52 V2 22.407
RC 127.239 GL 8.84 GP 1.17 ZAL 111.21 ZAP 174.91 ETS 165.43 ZAE 154.05 ETE 359.89 ZAC 89.90 ETC 256.06 CLP 175.05

PLANETOCENTRIC CONIC

C3 33.534 VHL 5.791 DLA 9.59 RAL 180.12 RAD 6568.3 VEL 12.446 PTH 2.25 VHP 11.055 DPA .31 RAP 185.49 ECC 1.5519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 53	2643.91	-27.15	70.53	53.97	98.37	18 26 56	2043.9	-25.71	62.16
90.00	8 10 40	4683.78	14.98	199.66	48.17	65.69	9 28 43	4083.8	11.57	192.64
100.00	19 8 56	2366.35	-28.48	49.88	53.73	99.48	19 48 22	1766.4	-26.88	41.45
100.00	9 27 17	4436.57	16.20	180.89	47.58	64.53	10 41 14	3836.6	12.64	173.91
110.00	20 27 54	2119.24	-32.05	30.31	52.92	102.57	21 3 13	1519.2	-29.99	21.71
110.00	10 24 49	4256.46	19.44	165.49	45.84	61.31	11 35 45	3656.5	15.46	158.63

DIFFERENTIAL CORRECTIONS
TDE .7294 TRA-1.9027 TC3 .7930 BAU .3560
RDE -.5199 RRA -.2269 RC3 -.0427 FAU .05901
FDE -.2514 FRA 1.0881 FC3-1.5233 BSP 7387
BDE .8957 BRA 1.9162 BC3 .7941 FSP 484

MID-COURSE EXECUTION ACCURACY
SGT 2238.2 SGR 564.7 SG3 180.5
RRT .0143 RRF -.0284 RTF -.8305
SGB 2308.3 R23 -.0157 R13 -.8305
SG1 2238.2 SG2 564.6 THA .22

ORBIT DETERMINATION ACCURACY
ST 921.8 SR 518.9 SS 396.1
CRT -.6944 CRS -.4910 CST .9643
LSA 1065.4 MSA 373.8 SSA 31.7
EL1 1000.3 EL2 344.1 ALF 155.57

LAUNCH DATE NOV 27 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 402.892 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	35.477	GAL	-3.68	AZL	88.58	HCA	125.96	SMA	245.90	ECC	.40406	INC	1.4241	V1	30.186
RP	244.57	LAP	1.15	LOP	190.75	VP	23.357	GAP	23.83	AZP	90.84	TAL	347.18	TAP	113.13	RCA	146.54	APO	345.25	V2	22.429
RC	129.306	GL	8.98	GP	1.21	ZAL	110.49	ZAP	174.41	ETS	166.21	ZAE	153.80	ETE	.13	ZAC	90.03	ETC	256.04	CLP	174.55

PLANETOCENTRIC CONIC

C3	31.799	VHL	5.639	DLA	10.00	RAL	179.52	RAD	6568.3	VEL	12.376	PTH	2.23	VHP	10.796	DPA	.17	RAP	185.88	ECC	1.5233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 9	2643.94	-27.15	70.53	52.53	98.37	18 21 13	2043.9	-25.71	62.16
90.00	8 11 33	4656.98	14.22	198.06	46.68	65.25	9 29 10	4057.0	10.77	191.08
100.00	19 3 26	2365.65	-28.47	49.83	52.30	99.51	19 42 52	1765.6	-26.87	41.40
100.00	9 27 57	4410.50	15.43	179.34	46.08	64.08	10 41 27	3810.5	11.82	172.41
110.00	20 22 55	2116.95	-32.02	30.14	51.49	102.67	20 58 12	1516.9	-29.94	21.54
110.00	10 24 57	4231.97	18.64	164.05	44.34	60.81	11 35 29	3632.0	14.60	157.25

DIFFERENTIAL CORRECTIONS

TDE	.7088	TRA	-1.8742	TC3	.8648	BAU	.3681
RDE	-.5017	RRA	-.2193	RC3	-.0429	FAU	.06076
FDE	-.2453	FRA	1.1003	FC3	-1.6541	BSP	7577
BDE	.8683	BRA	1.8870	BC3	.8658	FSP	513

MID-COURSE EXECUTION ACCURACY

SGT	2282.3	SGR	559.7	SG3	189.9		
RRT	.0182	RRF	-.0322	RTF	-.8361		
SGB	2350.0	R23	-.0160	R13	-.8361		
SG1	2282.4	SG2	559.6	THA	.27		

ORBIT DETERMINATION ACCURACY

ST	925.2	SR	514.2	SS	397.1
CRT	-.6889	CRS	-.4751	CST	.9615
LSA	1065.9	MSA	375.4	SSA	32.3
EL1	1000.8	EL2	344.6	ALF	156.03

LAUNCH DATE NOV 27 1964 FLIGHT TIME 154.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 404.874 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	35.358	GAL	-3.50	AZL	88.59	HCA	126.86	SMA	242.12	ECC	.39441	INC	1.4120	V1	30.186
RP	244.34	LAP	1.13	LOP	191.66	VP	23.198	GAP	23.22	AZP	90.85	TAL	347.59	TAP	114.45	RCA	146.62	APO	337.61	V2	22.451
RC	131.411	GL	9.11	GP	1.25	ZAL	109.75	ZAP	173.91	ETS	166.86	ZAE	153.61	ETE	.36	ZAC	90.16	ETC	256.02	CLP	174.04

PLANETOCENTRIC CONIC

C3	30.181	VHL	5.494	DLA	10.42	RAL	178.89	RAD	6568.2	VEL	12.311	PTH	2.22	VHP	10.544	DPA	.04	RAP	186.26	ECC	1.4967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 15	2644.52	-27.15	70.57	51.10	98.35	18 15 20	2044.5	-25.72	62.20
90.00	8 12 25	4630.17	13.45	196.46	45.19	64.85	9 29 35	4030.2	9.95	189.53
100.00	18 57 47	2365.47	-28.47	49.82	50.86	99.51	19 37 12	1765.5	-26.86	41.38
100.00	9 28 34	4384.45	14.65	177.80	44.59	63.65	10 41 39	3784.4	11.00	170.92
110.00	20 17 47	2115.13	-31.99	30.01	50.06	102.74	20 53 2	1515.1	-29.91	21.42
110.00	10 25 4	4207.55	17.82	162.62	42.84	60.33	11 35 11	3607.5	13.74	155.89

DIFFERENTIAL CORRECTIONS

TDE	.6887	TRA	-1.8446	TC3	.9422	BAU	.3806
RDE	-.4840	RRA	-.2119	RC3	-.0428	FAU	.06260
FDE	-.2384	FRA	1.1120	FC3	-1.7956	BSP	7746
BDE	.8418	BRA	1.8560	BC3	.9432	FSP	543

MID-COURSE EXECUTION ACCURACY

SGT	2326.8	SGR	554.6	SG3	199.7		
RRT	.0219	RRF	-.0364	RTF	-.8417		
SGB	2392.0	R23	-.0168	R13	-.8417		
SG1	2326.8	SG2	554.4	THA	.32		

ORBIT DETERMINATION ACCURACY

ST	928.0	SR	509.3	SS	397.6
CRT	-.6836	CRS	-.4579	CST	.9581
LSA	1065.7	MSA	376.8	SSA	32.9
EL1	1000.9	EL2	344.7	ALF	156.48

LAUNCH DATE NOV 27 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 406.990 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	35.244	GAL	-3.33	AZL	88.60	HCA	127.77	SMA	238.62	ECC	.38521	INC	1.3995	V1	30.186
RP	244.11	LAP	1.11	LOP	192.57	VP	23.047	GAP	22.62	AZP	90.86	TAL	348.01	TAP	115.78	RCA	146.70	APO	330.54	V2	22.475
RC	133.550	GL	9.24	GP	1.29	ZAL	108.98	ZAP	173.40	ETS	167.41	ZAE	153.46	ETE	.60	ZAC	90.29	ETC	256.01	CLP	173.53

PLANETOCENTRIC CONIC

C3	28.673	VHL	5.355	DLA	10.84	RAL	178.23	RAD	6568.2	VEL	12.249	PTH	2.20	VHP	10.299	DPA	-.09	RAP	186.64	ECC	1.4719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 11	2645.64	-27.17	70.65	49.66	98.31	18 9 17	2045.6	-25.74	62.28
90.00	8 13 15	4603.38	12.67	194.88	43.71	64.46	9 29 58	4003.4	9.13	187.99
100.00	18 51 57	2365.81	-28.48	49.84	49.43	99.50	19 31 23	1765.8	-26.87	41.41
100.00	9 29 10	4358.44	13.86	176.27	43.11	63.25	10 41 49	3758.4	10.16	169.44
110.00	20 12 30	2113.79	-31.97	29.91	48.63	102.80	20 47 43	1513.8	-29.88	21.32
110.00	10 25 7	4183.22	16.99	161.22	41.35	59.88	11 34 51	3583.2	12.86	154.55

DIFFERENTIAL CORRECTIONS

TDE	.6678	TRA	-1.8143	TC3	1.0236	BAU	.3927
RDE	-.4670	RRA	-.2048	RC3	-.0424	FAU	.06452
FDE	-.2303	FRA	1.1231	FC3	-1.9481	BSP	7913
BDE	.8149	BRA	1.8258	BC3	1.0244	FSP	576

MID-COURSE EXECUTION ACCURACY

SGT	2370.5	SGR	549.2	SG3	210.1		
RRT	.0263	RRF	-.0413	RTF	-.8470		
SGB	2433.3	R23	-.0178	R13	-.8471		
SG1	2370.5	SG2	549.0	THA	.37		

ORBIT DETERMINATION ACCURACY

ST	929.2	SR	504.2	SS	397.3
CRT	-.6776	CRS	-.4381	CST	.9540
LSA	1063.5	MSA	378.4	SSA	33.4
EL1	999.4	EL2	344.7	ALF	156.91

LAUNCH DATE NOV 27 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 409.229 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	35.135	GAL	-3.16	AZL	88.61	HCA	128.68	SMA	235.38	ECC	.37641	INC	1.3868	V1	30.186
RP	243.87	LAP	1.08	LOP	193.48	VP	22.904	GAP	22.02	AZP	90.87	TAL	348.43	TAP	117.12	RCA	146.78	APO	323.98	V2	22.498
RC	135.719	GL	9.36	GP	1.34	ZAL	108.20	ZAP	172.89	ETS	167.87	ZAE	153.36	ETE	.83	ZAC	90.42	ETC	255.99	CLP	173.01

PLANETOCENTRIC CONIC

C3	27.267	VHL	5.222	DLA	11.27	RAL	177.55	RAD	6568.1	VEL	12.192	PTH	2.19	VHP	10.059	DPA	-.21	RAP	187.01	ECC	1.4488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 58	2647.31	-27.18	70.77	48.23	98.26	18 3 5	2047.3	-25.76	62.40
90.00	8 14 4	4576.66	11.88	193.32	42.24	64.11	9 30 21	3976.7	8.30	186.47
100.00	18 45 59	2366.67	-28.49	49.90	48.00	99.47	19 25 25	1766.7	-26.88	41.47
100.00	9 29 44	4332.53	13.06	174.77	41.63	62.87	10 41 57	3732.5	9.32	167.97
110.00	20 7 4	2112.93	-31.96	29.84	47.21	102.83	20 42 17	1512.9	-29.86	21.26
110.00	10 25 8	4159.04	16.16	159.84	39.87	59.46	11 34 27	3559.0	11.99	153.22

DIFFERENTIAL CORRECTIONS

TDE	.6469	TRA	-1.7840	TC3	1.1092	BAU	.4046
RDE	-.4506	RRA	-.1980	RC3	-.0416	FAU	.06653
FDE	-.2213	FRA	1.1335	FC3	-2.1125	BSP	8087
BDE	.7884	BRA	1.7950	BC3	1.1100	FSP	610

MID-COURSE EXECUTION ACCURACY

SGT	2414.5	SGR	543.5	SG3	220.9		
RRT	.0311	RRF	-.0467	RTF	-.8521		
SGB	2474.9	R23	-.0188	R13	-.8522		
SG1	2414.5	SG2	543.2	THA	.42		

ORBIT DETERMINATION ACCURACY

ST	929.3	SR	498.9	SS	396.5
CRT	-.6712	CRS	-.4169	CST	.9494
LSA	1060.2	MSA	380.0	SSA	34.0
EL1	996.8	EL2	344.7	ALF	157.32

LAUNCH DATE NOV 27 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 411.579 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	35.031	GAL	-2.99	AZL	88.63	HCA	129.59	SMA	232.37	ECC	.36801	INC	1.3737	V1	30.186
RP	243.63	LAP	1.06	LOP	194.39	VP	22.767	GAP	21.42	AZP	90.88	TAL	348.87	TAP	118.46	RCA	146.85	APO	317.88	V2	22.522
RC	137.915	GL	9.48	GP	1.38	ZAL	107.39	ZAP	172.36	ETS	168.26	ZAE	153.31	ETE	1.07	ZAC	90.55	ETC	255.98	CLP	172.49

PLANETOCENTRIC CONIC

C3	25.957	VHL	5.095	DLA	11.70	RAL	176.85	RAD	6568.0	VEL	12.138	PTH	2.18	VHP	9.825	DPA	-.33	RAP	187.38	ECC	1.4272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 34	2649.50	-27.20	70.93	46.79	98.18	17 56 44	2049.5	-25.79	62.55
90.00	8 14 51	4550.04	11.09	191.77	40.77	63.78	9 30 41	3950.0	7.47	184.95
100.00	18 39 51	2368.03	-28.50	50.00	46.57	99.42	19 19 19	1768.0	-26.90	41.56
100.00	9 30 16	4306.74	12.26	173.28	40.17	62.52	10 42 2	3706.7	8.48	166.52
110.00	20 1 30	2112.52	-31.95	29.81	45.78	102.85	20 36 43	1512.5	-29.85	21.23
110.00	10 25 6	4135.02	15.33	158.48	38.40	59.06	11 34 1	3535.0	11.11	151.91

DIFFERENTIAL CORRECTIONS

TDE	.6248	TRA	-1.7536	TC3	1.1999	BAU	.4166	SGT	2458.5	SGR	537.7	SG3	232.2	ST	927.4	SR	493.4	SS	395.0
RDE	-.4348	RRA	-.1915	RC3	-.0405	FAU	.06865	RRT	.0369	RRF	-.0530	RTF	-.8572	CRT	-.6639	CRS	-.3926	CST	.9441
FDE	-.2110	FRA	1.1437	FC3	-2.2895	BSP	8263	SGB	2516.6	R23	-.0198	R13	-.8572	LSA	1054.7	MSA	381.9	SSA	34.6
BDE	.7612	BRA	1.7640	BC3	1.2006	FSP	647	SG1	2458.6	SG2	537.3	THA	.49	EL1	992.2	EL2	344.8	ALF	157.72

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 27 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 414.031 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.931	GAL	-2.82	AZL	88.64	HCA	130.51	SMA	229.56	ECC	.35999	INC	1.3603	V1	30.186
RP	243.38	LAP	1.03	LOP	195.30	VP	22.638	GAP	20.83	AZP	90.88	TAL	349.31	TAP	119.82	RCA	146.92	APO	312.20	V2	22.547
RC	140.134	GL	9.59	GP	1.43	ZAL	106.56	ZAP	171.83	ETS	168.59	ZAE	153.30	ETE	1.31	ZAC	90.68	ETC	255.96	CLP	171.95

PLANETOCENTRIC CONIC

C3	24.737	VHL	4.974	DLA	12.13	RAL	176.12	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	9.598	DPA	-.44	RAP	187.75	ECC	1.4071

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 2	2652.20	-27.23	71.12	45.36	98.09	17 50 14	2052.2	-25.83	62.74
90.00	8 15 36	4523.57	10.28	190.24	39.32	63.47	9 30 59	3923.6	6.64	183.45
100.00	18 33 35	2369.88	-28.52	50.14	45.13	99.35	19 13 4	1769.9	-26.93	41.69
100.00	9 30 45	4281.12	11.45	171.80	38.71	62.20	10 42 6	3681.1	7.64	165.09
110.00	19 55 49	2112.55	-31.95	29.82	44.36	102.85	20 31 1	1512.6	-29.85	21.23
110.00	10 25 0	4111.21	14.49	157.14	36.94	58.70	11 33 31	3511.2	10.24	150.62

DIFFERENTIAL CORRECTIONS

TDE	.6036	TRA	-1.7214	TC3	1.2953	BAU	.4285	SGT	2501.6	SGR	531.6	SG3	244.2	ST	924.8	SR	487.7	SS	392.9
RDE	-.4195	RRA	-.1852	RC3	-.0388	FAU	.07088	RRT	.0427	RRF	-.0597	RTF	-.8620	CRT	-.6569	CRS	-.3669	CST	.9378
FDE	-.2000	FRA	1.1523	FC3	-2.4806	BSP	8409	SGB	2557.4	R23	-.0212	R13	-.8620	LSA	1048.4	MSA	383.6	SSA	35.3
BDE	.7351	BRA	1.7314	BC3	1.2958	FSP	685	SG1	2501.7	SG2	531.1	THA	.54	EL1	987.2	EL2	344.5	ALF	158.09

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 27 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 416.576 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.836	GAL	-2.66	AZL	88.65	HCA	131.43	SMA	226.95	ECC	.35233	INC	1.3464	V1	30.186
RP	243.12	LAP	1.01	LOP	196.22	VP	22.516	GAP	20.24	AZP	90.89	TAL	349.76	TAP	121.18	RCA	146.99	APO	306.91	V2	22.572
RC	142.373	GL	9.69	GP	1.49	ZAL	105.71	ZAP	171.28	ETS	168.88	ZAE	153.33	ETE	1.56	ZAC	90.81	ETC	255.95	CLP	171.41

PLANETOCENTRIC CONIC

C3	23.599	VHL	4.858	DLA	12.57	RAL	175.38	RAD	6568.0	VEL	12.041	PTH	2.15	VHP	9.375	DPA	-.55	RAP	188.11	ECC	1.3884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 22	2655.39	-27.26	71.35	43.93	97.98	17 43 37	2055.4	-25.87	62.96
90.00	8 16 18	4497.29	9.48	188.72	37.87	63.19	9 31 16	3897.3	5.81	181.97
100.00	18 27 10	2372.20	-28.55	50.30	43.71	99.27	19 6 43	1772.2	-26.97	41.85
100.00	9 31 11	4255.73	10.64	170.35	37.26	61.90	10 42 7	3655.7	6.80	163.67
110.00	19 50 0	2113.02	-31.96	29.85	42.94	102.83	20 25 13	1513.0	-29.86	21.27
110.00	10 24 51	4087.66	13.65	155.83	35.49	58.35	11 32 58	3487.7	9.37	149.35

DIFFERENTIAL CORRECTIONS

TDE	.5821	TRA	-1.6895	TC3	1.3950	BAU	.4403	SGT	2544.9	SGR	525.4	SG3	256.7	ST	920.9	SR	481.8	SS	390.4
RDE	-.4048	RRA	-.1791	RC3	-.0366	FAU	.07321	RRT	.0493	RRF	-.0673	RTF	-.8667	CRT	-.6492	CRS	-.3383	CST	.9306
FDE	-.1879	FRA	1.1606	FC3	-2.6858	BSP	8569	SGB	2598.5	R23	-.0227	R13	-.8667	LSA	1040.5	MSA	385.6	SSA	35.9
BDE	.7090	BRA	1.6990	BC3	1.3955	FSP	725	SG1	2545.0	SG2	524.7	THA	.61	EL1	980.7	EL2	344.1	ALF	158.46

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 27 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 419.207 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.744	GAL	-2.51	AZL	88.67	HCA	132.34	SMA	224.50	ECC	.34501	INC	1.3321	V1	30.186
RP	242.87	LAP	.98	LOP	197.14	VP	22.400	GAP	19.65	AZP	90.90	TAL	350.21	TAP	122.55	RCA	147.05	APO	301.96	V2	22.598
RC	144.629	GL	9.79	GP	1.54	ZAL	104.84	ZAP	170.73	ETS	169.12	ZAE	153.41	ETE	1.82	ZAC	90.95	ETC	255.94	CLP	170.86

PLANETOCENTRIC CONIC

C3	22.538	VHL	4.747	DLA	13.00	RAL	174.60	RAD	6567.9	VEL	11.997	PTH	2.14	VHP	9.158	DPA	-.65	RAP	188.47	ECC	1.3709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 32	2659.08	-27.29	71.62	42.50	97.85	17 36 51	2059.1	-25.93	63.22
90.00	8 16 58	4471.18	8.68	187.23	36.43	62.94	9 31 29	3871.2	4.98	180.50
100.00	18 20 38	2374.98	-28.58	50.50	42.28	99.17	19 0 13	1775.0	-27.01	42.05
100.00	9 31 34	4230.51	9.82	168.92	35.82	61.63	10 42 4	3630.5	5.96	162.27
110.00	19 44 4	2113.91	-31.97	29.92	41.52	102.79	20 19 18	1513.9	-29.88	21.33
110.00	10 24 37	4064.35	12.81	154.54	34.05	58.04	11 32 22	3464.3	8.50	148.11

DIFFERENTIAL CORRECTIONS

TDE	.5729	TRA	-1.6439	TC3	1.5219	BAU	.4587	SGT	2590.8	SGR	519.4	SG3	269.5	ST	923.6	SR	476.1	SS	386.8
RDE	-.3908	RRA	-.1735	RC3	-.0341	FAU	.07551	RRT	.0481	RRF	-.0770	RTF	-.8755	CRT	-.6522	CRS	-.2995	CST	.9136
FDE	-.1716	FRA	1.1707	FC3	-2.9007	BSP	8418	SGB	2642.4	R23	-.0332	R13	-.8756	LSA	1038.4	MSA	387.0	SSA	35.8
BDE	.6935	BRA	1.6530	BC3	1.5223	FSP	774	SG1	2590.9	SG2	518.7	THA	.58	EL1	982.1	EL2	339.4	ALF	158.76

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE NOV 27 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 421.917 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.657	GAL	-2.35	AZL	88.68	HCA	133.26	SMA	222.22	ECC	.33802	INC	1.3174
RP	242.60	LAP	.96	LOP	198.06	VP	22.291	GAP	19.07	AZP	90.90	TAL	350.67	TAP	123.93	RCA	147.11	APO	297.34
RC	146.900	GL	9.87	GP	1.60	ZAL	103.96	ZAP	170.17	ETS	169.33	ZAE	153.52	ETE	2.09	ZAC	91.08	ETC	255.93

V1 30.186 V2 22.624 CLP 170.30

PLANETOCENTRIC CONIC

C3	21.551	VHL	4.642	DLA	13.44	RAL	173.81	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	8.946	DPA	-.75	RAP	188.82

ECC 1.3547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 37	2663.15	-27.33	71.91	41.07	97.71	17 30 1	2063.2	-25.98	63.50
90.00	8 17 35	4445.44	7.88	185.76	35.01	62.71	9 31 40	3845.4	4.16	179.05
100.00	18 14 0	2378.14	-28.61	50.73	40.86	99.05	18 53 38	1778.1	-27.06	42.27
100.00	9 31 53	4205.68	9.02	167.52	34.40	61.38	10 41 59	3605.7	5.13	160.89
110.00	19 38 3	2115.15	-31.99	30.01	40.11	102.74	20 13 18	1515.1	-29.91	21.42
110.00	10 24 20	4041.44	11.99	153.29	32.62	57.75	11 31 41	3441.4	7.64	146.88

DIFFERENTIAL CORRECTIONS

TDE	.5429	TRA	-1.6179	TC3	1.6168	BAU	.4659
RDE	-.3771	RRA	-.1678	RC3	-.0304	FAU	.07816
FDE	-.1586	FRA	1.1750	FC3	-3.1399	BSP	8759
BDE	.6610	BRA	1.6265	BC3	1.6171	FSP	816

MID-COURSE EXECUTION ACCURACY

SGT	2630.1	SGR	512.6	SG3	283.4		
RRT	.0616	RRF	-.0858	RTF	-.8773		
SGB	2679.5	R23	-.0297	R13	-.8773		
SG1	2630.3	SG2	511.5	THA	.71		

ORBIT DETERMINATION ACCURACY

ST	911.2	SR	469.7	SS	383.4
CRT	-.6366	CRS	-.2686	CST	.9084
LSA	1022.1	MSA	389.8	SSA	36.9
EL1	966.6	EL2	341.5	ALF	159.10

LAUNCH DATE NOV 27 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 424.699 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.573	GAL	-2.21	AZL	88.70	HCA	134.19	SMA	220.09	ECC	.33135	INC	1.3021
RP	242.34	LAP	.93	LOP	198.98	VP	22.187	GAP	18.49	AZP	90.91	TAL	351.13	TAP	125.31	RCA	147.16	APO	293.01
RC	149.184	GL	9.95	GP	1.66	ZAL	103.06	ZAP	169.60	ETS	169.51	ZAE	153.68	ETE	2.37	ZAC	91.22	ETC	255.92

V1 30.186 V2 22.651 CLP 169.73

PLANETOCENTRIC CONIC

C3	20.631	VHL	4.542	DLA	13.87	RAL	173.00	RAD	6567.8	VEL	11.917	PTH	2.12	VHP	8.740	DPA	-.84	RAP	189.17

ECC 1.3395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 36	2667.63	-27.37	72.23	39.65	97.55	17 23 4	2067.6	-26.04	63.82
90.00	8 18 8	4420.00	7.08	184.32	33.60	62.51	9 31 48	3820.0	3.34	177.63
100.00	18 7 16	2381.68	-28.65	50.99	39.44	98.92	18 46 58	1781.7	-27.12	42.52
100.00	9 32 9	4181.19	8.22	166.14	32.98	61.16	10 41 50	3581.2	4.31	159.54
110.00	19 31 56	2116.74	-32.02	30.13	38.70	102.67	20 7 13	1516.7	-29.94	21.53
110.00	10 23 58	4018.89	11.16	152.06	31.21	57.48	11 30 57	3418.9	6.80	145.69

DIFFERENTIAL CORRECTIONS

TDE	.5171	TRA	-1.5888	TC3	1.7224	BAU	.4751
RDE	-.3639	RRA	-.1624	RC3	-.0260	FAU	.08091
FDE	-.1439	FRA	1.1797	FC3	-3.3952	BSP	8997
BDE	.6323	BRA	1.5970	BC3	1.7226	FSP	861

MID-COURSE EXECUTION ACCURACY

SGT	2671.1	SGR	505.7	SG3	298.0		
RRT	.0735	RRF	-.0960	RTF	-.8802		
SGB	2718.6	R23	-.0289	R13	-.8802		
SG1	2671.4	SG2	504.3	THA	.83		

ORBIT DETERMINATION ACCURACY

ST	900.6	SR	463.3	SS	379.8
CRT	-.6235	CRS	-.2330	CST	.8997
LSA	1007.2	MSA	392.6	SSA	37.8
EL1	953.2	EL2	342.2	ALF	159.45

LAUNCH DATE NOV 27 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 427.549 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.493	GAL	-2.06	AZL	88.71	HCA	135.11	SMA	218.08	ECC	.32498	INC	1.2864
RP	242.06	LAP	.91	LOP	199.90	VP	22.090	GAP	17.92	AZP	90.91	TAL	351.59	TAP	126.70	RCA	147.21	APO	288.95
RC	151.478	GL	10.02	GP	1.72	ZAL	102.15	ZAP	169.02	ETS	169.66	ZAE	153.87	ETE	2.66	ZAC	91.36	ETC	255.91

V1 30.186 V2 22.678 CLP 169.16

PLANETOCENTRIC CONIC

C3	19.775	VHL	4.447	DLA	14.30	RAL	172.17	RAD	6567.8	VEL	11.881	PTH	2.11	VHP	8.538	DPA	-.93	RAP	189.51

ECC 1.3254

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 29	2672.47	-27.42	72.58	38.24	97.38	17 16 2	2072.5	-26.11	64.15
90.00	8 18 37	4394.94	6.29	182.90	32.20	62.33	9 31 52	3794.9	2.54	176.23
100.00	18 0 27	2385.57	-28.69	51.27	38.03	98.78	18 40 12	1785.6	-27.18	42.79
100.00	9 32 20	4157.07	7.42	164.79	31.58	60.96	10 41 37	3557.1	3.49	158.21
110.00	19 25 45	2118.65	-32.04	30.27	37.30	102.60	20 1 4	1518.7	-29.98	21.66
110.00	10 23 31	3996.75	10.35	150.86	29.81	57.24	11 30 8	3396.8	5.96	144.52

DIFFERENTIAL CORRECTIONS

TDE	.4933	TRA	-1.5572	TC3	1.8339	BAU	.4848
RDE	-.3512	RRA	-.1573	RC3	-.0208	FAU	.08375
FDE	-.1280	FRA	1.1837	FC3	-3.6667	BSP	9191
BDE	.6055	BRA	1.5651	BC3	1.8340	FSP	910

MID-COURSE EXECUTION ACCURACY

SGT	2711.3	SGR	498.8	SG3	313.2		
RRT	.0852	RRF	-.1074	RTF	-.8834		
SGB	2756.8	R23	-.0296	R13	-.8835		
SG1	2711.6	SG2	497.0	THA	.93		

ORBIT DETERMINATION ACCURACY

ST	890.0	SR	456.9	SS	375.9
CRT	-.6116	CRS	-.1936	CST	.8883
LSA	992.2	MSA	395.3	SSA	38.7
EL1	940.1	EL2	342.2	ALF	159.78

LAUNCH DATE NOV 27 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 430.461 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.416	GAL	-1.92	AZL	88.73	HCA	136.04	SMA	216.20	ECC	.31890	INC	1.2700
RP	241.79	LAP	.88	LOP	200.83	VP	21.999	GAP	17.35	AZP	90.91	TAL	352.06	TAP	128.09	RCA	147.26	APO	285.15
RC	153.781	GL	10.08	GP	1.79	ZAL	101.23	ZAP	168.43	ETS	169.78	ZAE	154.10	ETE	2.96	ZAC	91.50	ETC	255.90

V1 30.186 V2 22.706 CLP 168.57

PLANETOCENTRIC CONIC

C3	18.977	VHL	4.356	DLA	14.72	RAL	171.32	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	8.341	DPA	-1.00	RAP	189.85

ECC 1.3123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 18	2677.63	-27.46	72.95	36.83	97.20	17 8 55	2077.6	-26.18	64.52
90.00	8 19 2	4370.29	5.51	181.51	30.81	62.18	9 31 52	3770.3	1.74	174.85
100.00	17 53 33	2389.76	-28.73	51.57	36.63	98.62	18 33 23	1789.8	-27.24	43.09
100.00	9 32 27	4133.39	6.64	163.47	30.19	60.79	10 41 20	3533.4	2.69	156.91
110.00	19 19 30	2120.84	-32.08	30.43	35.90	102.50	19 54 51	1520.8	-30.02	21.82
110.00	10 23 0	3975.07	9.55	149.69	28.42	57.02	11 29 15	3375.1	5.14	143.38

DIFFERENTIAL CORRECTIONS

TDE	.4701	TRA	-1.5236	TC3	1.9520	BAU	.4952
RDE	-.3391	RRA	-.1523	RC3	-.0146	FAU	.08676
FDE	-.1105	FRA	1.1859	FC3	-3.9580	BSP	9360
BDE	.5796	BRA	1.5312	BC3	1.9520	FSP	962

MID-COURSE EXECUTION ACCURACY

SGT	2750.9	SGR	491.9	SG3	329.2		
RRT	.0974	RRF	-.1202	RTF	-.8870		
SGB	2794.5	R23	-.0311	R13	-.8871		
SG1	2751.3	SG2	489.5	THA	1.03		

ORBIT DETERMINATION ACCURACY

ST	878.2	SR	450.3	SS	371.6
CRT	-.5997	CRS	-.1499	CST	.8742
LSA	975.7	MSA	398.1	SSA	39.4
EL1	925.8	EL2	341.8	ALF	160.08

LAUNCH DATE NOV 27 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 433.431 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.343	GAL	-1.78	AZL	88.75	HCA	136.96	SMA	214.44	ECC	.31309	INC	1.2531
RP	241.51	LAP	.86	LOP	201.76	VP	21.913	GAP	16.79	AZP	90.92	TAL	352.53	TAP	129.49	RCA	147.30	APO	281.58
RC	156.092	GL	10.13	GP	1.87	ZAL	100.29	ZAP	167.83	ETS	169.89	ZAE	154.36	ETE	3.29	ZAC	91.64	ETC	255.89

V1 30.186 V2 22.734 CLP 167.97

PLANETOCENTRIC CONIC

C3	18.234	VHL	4.270	DLA	15.13	RAL	170.45	RAD	6567.7	VEL	11.816	PTH	2.09	VHP	8.149	DPA	-1.07	RAP	190.18

ECC 1.3001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 3	2683.04	-27.51	73.34	35.42	97.01	17 1 46	2083.0	-26.25	64.90
90.00	8 19 21	4346.12	4.74	180.15	29.43	62.05	9 31 47	3746.1	.96	173.50
100.00	17 46 37	2394.19	-28.78	51.90	35.22	98.46	18 26 31	1794.2	-27.31	43.40
100.00	9 32 28	4110.21	5.86	162.19	28.81	60.64	10 40 58	3510.2	1.91	155.63
110.00	19 13 12	2123.26	-32.11	30.61	34.51	102.40	19 48 35	1523.3	-30.07	21.99
110.00	10 22 22	3953.89	8.76	148.56	27.04	56.83	11 28 16	3353.9	4.34	142.26

DIFFERENTIAL CORRECTIONS

TDE	.4470	TRA	-1.4895	TC3	2.0730	BAU	.5053
RDE	-.3274	RRA	-.1476	RC3	-.0075	FAU	.08989
FDE	-.0913	FRA	1.1873	FC3	-4.2681	BSP	9512
BDE	.5541	BRA	1.4968	BC3	2.0730	FSP	1017

MID-COURSE EXECUTION ACCURACY

SGT	2789.3	SGR	484.9	SG3	345.9		
RRT	.1109	RRF	-.1347	RTF	-.8905		
SGB	2831.2	R23	-.0331	R13	-.8906		
SG1	2789.9	SG2	481.8	THA	1.14		

ORBIT DETERMINATION ACCURACY

ST	865.1	SR	443.6	SS	367.3		
CRT	-.5870	CRS	-.1010	CST	.8572		
LSA	957.8	MSA	401.4	SSA	40.2		
EL1	910.3	EL2	341.3	ALF	160.38		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 436.454 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.272	GAL	-1.65	AZL	88.76	HCA	137.90	SMA	212.78	ECC	.30754	INC	1.2356
RP	241.22	LAP	.83	LOP	202.69	VP	21.832	GAP	16.23	AZP	90.92	TAL	353.00	TAP	130.89	RCA	147.34	APO	278.22
RC	158.408	GL	10.16	GP	1.94	ZAL	99.35	ZAP	167.21	ETS	169.98	ZAE	154.67	ETE	3.63	ZAC	91.79	ETC	255.88

V1 30.186 V2 22.762 CLP 167.36

PLANETOCENTRIC CONIC

C3	17.542	VHL	4.188	DLA	15.54	RAL	169.57	RAD	6567.7	VEL	11.787	PTH	2.08	VHP	7.961	DPA	-1.14	RAP	190.50

ECC 1.2887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 45	2688.66	-27.55	73.74	34.02	96.81	16 54 34	2088.7	-26.32	65.29
90.00	8 19 35	4322.48	3.98	178.82	28.06	61.94	9 31 38	3722.5	.20	172.18
100.00	17 39 38	2398.81	-28.82	52.23	33.83	98.29	18 19 37	1798.8	-27.38	43.73
100.00	9 32 24	4087.56	5.11	160.93	27.44	60.51	10 40 31	3487.6	1.14	154.39
110.00	19 6 52	2125.87	-32.15	30.80	33.13	102.29	19 42 18	1525.9	-30.12	22.18
110.00	10 21 39	3933.27	7.99	147.46	25.67	56.65	11 27 12	3333.3	3.55	141.18

DIFFERENTIAL CORRECTIONS

TDE	.4248	TRA	-1.4556	TC3	2.1989	BAU	.5157
RDE	-.3162	RRA	-.1431	RC3	.0008	FAU	.09321
FDE	-.0714	FRA	1.1881	FC3	-4.6003	BSP	9660
BDE	.5296	BRA	1.4627	BC3	2.1989	FSP	1075

MID-COURSE EXECUTION ACCURACY

SGT	2828.8	SGR	477.9	SG3	363.5		
RRT	.1257	RRF	-.1508	RTF	-.8940		
SGB	2868.9	R23	-.0354	R13	-.8941		
SG1	2829.5	SG2	474.0	THA	1.25		

ORBIT DETERMINATION ACCURACY

ST	851.6	SR	436.8	SS	363.3		
CRT	-.5741	CRS	-.0493	CST	.8379		
LSA	939.4	MSA	404.9	SSA	41.0		
EL1	894.5	EL2	340.5	ALF	160.68		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 439.528 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.205	GAL	-1.51	AZL	88.78	HCA	138.83	SMA	211.22	ECC	.30225	INC	1.2173
RP	240.93	LAP	.80	LOP	203.62	VP	21.757	GAP	15.68	AZP	90.92	TAL	353.47	TAP	132.30	RCA	147.38	APO	275.06
RC	160.729	GL	10.18	GP	2.02	ZAL	98.40	ZAP	166.59	ETS	170.04	ZAE	155.00	ETE	3.99	ZAC	91.93	ETC	255.87

V1 30.186 V2 22.791 CLP 166.74

PLANETOCENTRIC CONIC

C3	16.898	VHL	4.111	DLA	15.94	RAL	168.67	RAD	6567.7	VEL	11.759	PTH	2.08	VHP	7.778	DPA	-1.19	RAP	190.82

ECC 1.2781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 27	2694.41	-27.60	74.16	32.63	96.61	16 47 22	2094.4	-26.39	65.70
90.00	8 19 43	4299.45	3.24	177.53	26.71	61.85	9 31 22	3699.4	-.54	170.90
100.00	17 32 38	2403.57	-28.87	52.58	32.44	98.11	18 12 42	1803.6	-27.45	44.06
100.00	9 32 12	4065.52	4.37	159.71	26.09	60.40	10 39 58	3465.5	.39	153.18
110.00	19 0 31	2128.62	-32.19	31.01	31.75	102.18	19 36 0	1528.6	-30.18	22.37
110.00	10 20 49	3913.24	7.24	146.39	24.31	56.50	11 26 2	3313.2	2.79	140.14

DIFFERENTIAL CORRECTIONS

TDE	.4028	TRA	-1.4213	TC3	2.3245	BAU	.5251
RDE	-.3054	RRA	-.1388	RC3	.0103	FAU	.09665
FDE	-.0502	FRA	1.1871	FC3	-4.9518	BSP	9807
BDE	.5055	BRA	1.4280	BC3	2.3246	FSP	1136

MID-COURSE EXECUTION ACCURACY

SGT	2865.6	SGR	471.0	SG3	381.9		
RRT	.1421	RRF	-.1686	RTF	-.8972		
SGB	2904.1	R23	-.0381	R13	-.8973		
SG1	2866.4	SG2	466.1	THA	1.37		

ORBIT DETERMINATION ACCURACY

ST	837.0	SR	430.0	SS	359.5		
CRT	-.5605	CRS	.0062	CST	.8157		
LSA	919.7	MSA	408.7	SSA	41.8		
EL1	877.5	EL2	339.7	ALF	160.98		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 442.649 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.141	GAL	-1.39	AZL	88.80	HCA	139.76	SMA	209.75	ECC	.29720	INC	1.1984
RP	240.64	LAP	.77	LOP	204.56	VP	21.686	GAP	15.13	AZP	90.91	TAL	353.94	TAP	133.71	RCA	147.41	APO	272.08
RC	163.052	GL	10.18	GP	2.11	ZAL	97.44	ZAP	165.95	ETS	170.09	ZAE	155.37	ETE	4.39	ZAC	92.08	ETC	255.86

V1 30.186 V2 22.821 CLP 166.10

PLANETOCENTRIC CONIC

C3	16.298	VHL	4.037	DLA	16.32	RAL	167.75	RAD	6567.7	VEL	11.734	PTH	2.07	VHP	7.598	DPA	-1.24	RAP	191.13

ECC 1.2682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 9	2700.25	-27.64	74.58	31.24	96.40	16 40 9	2100.2	-26.47	66.11
90.00	8 19 43	4277.05	2.52	176.28	25.36	61.79	9 31 0	3677.1	-1.27	169.65
100.00	17 25 39	2408.40	-28.92	52.93	31.06	97.93	18 5 47	1808.4	-27.52	44.41
100.00	9 31 54	4044.13	3.65	158.53	24.74	60.31	10 39 18	3444.1	-.33	152.01
110.00	18 54 10	2131.45	-32.23	31.22	30.38	102.06	19 29 41	1531.4	-30.23	22.57
110.00	10 19 53	3893.85	6.51	145.36	22.97	56.37	11 24 46	3293.8	2.05	139.12

DIFFERENTIAL CORRECTIONS

TDE	.3843	TRA	-1.3830	TC3	2.4614	BAU	.5363
RDE	-.2952	RRA	-.1347	RC3	.0211	FAU	.10027
FDE	-.0283	FRA	1.1842	FC3	-5.3265	BSP	9872
BDE	.4846	BRA	1.3896	BC3	2.4615	FSP	1201

MID-COURSE EXECUTION ACCURACY

SGT	2903.5	SGR	464.2	SG3	401.2		
RRT	.1580	RRF	-.1881	RTF	-.9012		
SGB	2940.4	R23	-.0426	R13	-.9014		
SG1	2904.5	SG2	458.2	THA	1.48		

ORBIT DETERMINATION ACCURACY

ST	823.1	SR	423.1	SS	356.1		
CRT	-.5506	CRS	.0639	CST	.7882		
LSA	900.9	MSA	412.2	SSA	42.4		
EL1	861.8	EL2	337.4	ALF	161.21		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 445.813 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.079	GAL	-1.26	AZL	88.82	HCA	140.70	SMA	208.36	ECC	.29238	INC	1.1786	V1	30.186
RP	240.34	LAP	.75	LOP	205.49	VP	21.621	GAP	14.59	AZP	90.91	TAL	354.42	TAP	135.12	RCA	147.44	APO	269.28	V2	22.851
RC	165.375	GL	10.17	GP	2.20	ZAL	96.47	ZAP	165.29	ETS	170.13	ZAE	155.78	ETE	4.81	ZAC	92.24	ETC	255.86	CLP	165.45

PLANETOCENTRIC CONIC

C3	15.740	VHL	3.967	DLA	16.69	RAL	166.83	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	7.423	DPA	-1.28	RAP	191.43	ECC	1.2590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 53	2706.05	-27.69	75.00	29.87	96.20	16 32 59	2106.1	-26.54	66.52
90.00	8 19 35	4255.42	1.83	175.07	24.03	61.74	9 30 31	3655.4	-1.97	168.44
100.00	17 18 41	2413.22	-28.96	53.28	29.69	97.75	17 58 55	1813.2	-27.59	44.75
100.00	9 31 28	4023.48	2.95	157.40	23.41	60.24	10 38 32	3423.5	-1.03	150.88
110.00	18 47 50	2134.29	-32.27	31.43	29.02	101.94	19 23 25	1534.3	-30.29	22.78
110.00	10 18 49	3875.18	5.81	144.38	21.64	56.25	11 23 24	3275.2	1.33	138.15

DIFFERENTIAL CORRECTIONS

TDE	.3586	TRA	-1.3523	TC3	2.5812	BAU	.5432
RDE	-.2852	RRA	-.1308	RC3	.0336	FAU	.10407
FDE	-.0043	FRA	1.1806	FC3	-5.7243	BSP	10082
BDE	.4582	BRA	1.3586	BC3	2.5815	FSP	1268

MID-COURSE EXECUTION ACCURACY

SGT	2935.9	SGR	457.4	SG3	421.5		
RRT	.1812	RRF	-.2104	RTF	-.9031		
SGB	2971.3	R23	-.0436	R13	-.9033		
SG1	2937.1	SG2	449.7	THA	1.66		

ORBIT DETERMINATION ACCURACY

ST	803.7	SR	416.1	SS	353.5
CRT	-.5294	CRS	.1269	CST	.7635
LSA	876.5	MSA	417.2	SSA	43.4
EL1	839.6	EL2	337.9	ALF	161.59

LAUNCH DATE NOV 27 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 449.019 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	34.020	GAL	-1.14	AZL	88.84	HCA	141.64	SMA	207.06	ECC	.28779	INC	1.1580	V1	30.186
RP	240.04	LAP	.72	LOP	206.43	VP	21.560	GAP	14.05	AZP	90.91	TAL	354.89	TAP	136.53	RCA	147.47	APO	266.64	V2	22.881
RC	167.697	GL	10.15	GP	2.30	ZAL	95.51	ZAP	164.62	ETS	170.15	ZAE	156.22	ETE	5.26	ZAC	92.39	ETC	255.85	CLP	164.79

PLANETOCENTRIC CONIC

C3	15.221	VHL	3.901	DLA	17.04	RAL	165.89	RAD	6567.6	VEL	11.688	PTH	2.06	VHP	7.253	DPA	-1.30	RAP	191.72	ECC	1.2505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 40	2711.78	-27.73	75.41	28.50	95.99	16 25 52	2111.8	-26.61	66.93
90.00	8 19 19	4234.56	1.15	173.91	22.71	61.70	9 29 54	3634.6	-2.64	167.28
100.00	17 11 47	2417.96	-29.00	53.63	28.32	97.57	17 52 5	1818.0	-27.65	45.09
100.00	9 30 54	4003.61	2.28	156.31	22.09	60.19	10 37 37	3403.6	-1.71	149.78
110.00	18 41 33	2137.09	-32.31	31.64	27.67	101.82	19 17 10	1537.1	-30.34	22.98
110.00	10 17 37	3857.25	5.13	143.43	20.32	56.16	11 21 54	3257.2	.65	137.21

DIFFERENTIAL CORRECTIONS

TDE	.3389	TRA	-1.3177	TC3	2.7103	BAU	.5516
RDE	-.2757	RRA	-.1270	RC3	.0477	FAU	.10807
FDE	.0184	FRA	1.1748	FC3	-6.1470	BSP	10219
BDE	.4369	BRA	1.3238	BC3	2.7107	FSP	1340

MID-COURSE EXECUTION ACCURACY

SGT	2969.3	SGR	450.9	SG3	442.8		
RRT	.2031	RRF	-.2343	RTF	-.9057		
SGB	3003.4	R23	-.0471	R13	-.9060		
SG1	2970.8	SG2	441.3	THA	1.81		

ORBIT DETERMINATION ACCURACY

ST	787.7	SR	409.1	SS	351.4
CRT	-.5149	CRS	.1865	CST	.7344
LSA	855.6	MSA	421.0	SSA	44.3
EL1	821.4	EL2	336.3	ALF	161.89

LAUNCH DATE NOV 27 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 452.263 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.963	GAL	-1.03	AZL	88.86	HCA	142.58	SMA	205.82	ECC	.28340	INC	1.1364	V1	30.186
RP	239.73	LAP	.69	LOP	207.37	VP	21.503	GAP	13.52	AZP	90.90	TAL	355.35	TAP	137.94	RCA	147.49	APO	264.15	V2	22.912
RC	170.016	GL	10.10	GP	2.40	ZAL	94.54	ZAP	163.94	ETS	170.16	ZAE	156.69	ETE	5.76	ZAC	92.55	ETC	255.84	CLP	164.12

PLANETOCENTRIC CONIC

C3	14.737	VHL	3.839	DLA	17.38	RAL	164.94	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	7.086	DPA	-1.32	RAP	192.01	ECC	1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 32	2717.34	-27.77	75.82	27.13	95.79	16 18 50	2117.3	-26.67	67.32
90.00	8 18 53	4214.56	.51	172.79	21.40	61.69	9 29 7	3614.6	-3.28	166.16
100.00	17 4 57	2422.56	-29.04	53.96	26.97	97.40	17 45 19	1822.6	-27.72	45.41
100.00	9 30 9	3984.57	1.63	155.26	20.78	60.15	10 36 34	3384.6	-2.35	148.74
110.00	18 35 20	2139.79	-32.35	31.84	26.32	101.71	19 10 59	1539.8	-30.40	23.17
110.00	10 16 16	3840.11	4.48	142.53	19.01	56.08	11 20 16	3240.1	-.01	136.32

DIFFERENTIAL CORRECTIONS

TDE	.3207	TRA	-1.2796	TC3	2.8534	BAU	.5623
RDE	-.2666	RRA	-.1234	RC3	.0636	FAU	.11236
FDE	.0436	FRA	1.1669	FC3	-6.6003	BSP	10291
BDE	.4170	BRA	1.2855	BC3	2.8541	FSP	1416

MID-COURSE EXECUTION ACCURACY

SGT	3005.5	SGR	444.9	SG3	465.4		
RRT	.2263	RRF	-.2610	RTF	-.9094		
SGB	3038.3	R23	-.0521	R13	-.9097		
SG1	3007.3	SG2	433.1	THA	1.96		

ORBIT DETERMINATION ACCURACY

ST	770.6	SR	402.1	SS	350.1
CRT	-.5022	CRS	.2515	CST	.6977
LSA	833.6	MSA	425.8	SSA	44.9
EL1	802.5	EL2	333.9	ALF	162.12

LAUNCH DATE NOV 27 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 455.542 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.909	GAL	-.91	AZL	88.89	HCA	143.53	SMA	204.66	ECC	.27922	INC	1.1139	V1	30.186
RP	239.42	LAP	.66	LOP	208.32	VP	21.451	GAP	13.00	AZP	90.90	TAL	355.82	TAP	139.35	RCA	147.51	APO	261.80	V2	22.943
RC	172.331	GL	10.04	GP	2.51	ZAL	93.58	ZAP	163.24	ETS	170.15	ZAE	157.19	ETE	6.30	ZAC	92.72	ETC	255.84	CLP	163.43

PLANETOCENTRIC CONIC

C3	14.288	VHL	3.780	DLA	17.70	RAL	163.98	RAD	6567.6	VEL	11.648	PTH	2.04	VHP	6.923	DPA	-1.32	RAP	192.29	ECC	1.2351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 32	2722.62	-27.80	76.20	25.78	95.61	16 11 54	2122.6	-26.73	67.69
90.00	8 18 16	4195.53	-.11	171.73	20.11	61.68	9 28 11	3595.5	-3.89	165.10
100.00	16 58 14	2426.90	-29.08	54.28	25.62	97.24	17 38 41	1826.9	-27.77	45.72
100.00	9 29 15	3966.49	1.02	154.27	19.48	60.12	10 35 21	3366.5	-2.96	147.75
110.00	18 29 11	2142.31	-32.38	32.03	24.98	101.60	19 4 54	1542.3	-30.44	23.35
110.00	10 14 46	3823.85	3.86	141.68	17.71	56.01	11 18 30	3223.8	-.63	135.47

DIFFERENTIAL CORRECTIONS

TDE	.2977	TRA	-1.2473	TC3	2.9711	BAU	.5677
RDE	-.2578	RRA	-.1199	RC3	.0814	FAU	.11668
FDE	.0696	FRA	1.1574	FC3	-7.0700	BSP	10460
BDE	.3938	BRA	1.2531	BC3	2.9723	FSP	1494

MID-COURSE EXECUTION ACCURACY

SGT	3031.1	SGR	439.1	SG3	488.5		
RRT	.2557	RRF	-.2905	RTF	-.9110		
SGB	3062.7	R23	-.0547	R13	-.9113		
SG1	3033.2	SG2	424.2	THA	2.16		

ORBIT DETERMINATION ACCURACY

ST	750.1	SR	394.9	SS	349.8
CRT	-.4797	CRS	.3167	CST	.6659
LSA	808.2	MSA	430.9	SSA	45.9
EL1	779.3	EL2	333.5	ALF	162.52

LAUNCH DATE NOV 27 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 458.857 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.858	GAL	-.80	AZL	88.91	HCA	144.47	SMA	203.56	ECC	.27524	INC	1.0902
RP	239.11	LAP	.63	LOP	209.27	VP	21.404	GAP	12.48	AZP	90.89	TAL	356.28	TAP	140.76	RCA	147.53	APO	259.59
RC	174.639	GL	9.96	GP	2.63	ZAL	92.62	ZAP	162.53	ETS	170.13	ZAE	157.73	ETE	6.89	ZAC	92.88	ETC	255.83

V1 30.186 V2 22.975 CLP 162.72

PLANETOCENTRIC CONIC

C3	13.869	VHL	3.724	DLA	18.00	RAL	163.02	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	6.763	DPA	-1.32	RAP	192.55

ECC 1.2283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 39	2727.54	-27.83	76.55	24.43	95.43	16 5 7	2127.5	-26.79	68.04
90.00	8 17 26	4177.53	-.69	170.73	18.82	61.69	9 27 4	3577.5	-4.47	164.09
100.00	16 51 38	2430.92	-29.12	54.57	24.27	97.09	17 32 9	1830.9	-27.83	46.01
100.00	9 28 9	3949.38	.44	153.33	18.20	60.11	10 33 58	3349.4	-3.54	146.80
110.00	18 23 10	2144.57	-32.41	32.20	23.65	101.51	18 58 54	1544.6	-30.49	23.51
110.00	10 13 7	3808.49	3.27	140.88	16.43	55.95	11 16 35	3208.5	-1.22	134.67

DIFFERENTIAL CORRECTIONS

TDE	.2774	TRA	-1.2146	TC3	3.0997	BAU	.5751
RDE	-.2494	RRA	-.1166	RC3	.1014	FAU	.12132
FDE	.0967	FRA	1.1479	FC3	-7.5730	BSP	10601
BDE	.3730	BRA	1.2202	BC3	3.1014	FSP	1579

MID-COURSE EXECUTION ACCURACY

SGT	3061.5	SGR	434.1	SG3	513.2		
RRT	.2867	RRF	-.3231	RTF	-.9132		
SGB	3092.1	R23	-.0588	R13	-.9136		
SG1	3064.1	SG2	415.5	THA	2.37		

ORBIT DETERMINATION ACCURACY

ST	731.0	SR	387.8	SS	351.2		
CRT	-.4594	CRS	.3819	CST	.6296		
LSA	784.4	MSA	436.5	SSA	46.7		
EL1	757.8	EL2	332.3	ALF	162.92		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 462.203 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.808	GAL	-.70	AZL	88.93	HCA	145.42	SMA	202.52	ECC	.27144	INC	1.0653
RP	238.79	LAP	.60	LOP	210.21	VP	21.360	GAP	11.97	AZP	90.88	TAL	356.74	TAP	142.16	RCA	147.55	APO	257.49
RC	176.939	GL	9.86	GP	2.76	ZAL	91.67	ZAP	161.80	ETS	170.10	ZAE	158.29	ETE	7.54	ZAC	93.06	ETC	255.83

V1 30.186 V2 23.007 CLP 162.00

PLANETOCENTRIC CONIC

C3	13.480	VHL	3.672	DLA	18.27	RAL	162.05	RAD	6567.5	VEL	11.613	PTH	2.03	VHP	6.608	DPA	-1.29	RAP	192.81

ECC 1.2218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 58	2731.99	-27.86	76.88	23.10	95.27	15 58 30	2132.0	-26.84	68.36
90.00	8 16 24	4160.64	-1.23	169.79	17.55	61.71	9 25 44	3560.6	-5.01	163.14
100.00	16 45 13	2434.51	-29.15	54.84	22.94	96.95	17 25 47	1834.5	-27.88	46.26
100.00	9 26 50	3933.35	-.10	152.45	16.92	60.11	10 32 23	3333.4	-4.08	145.92
110.00	18 17 16	2146.52	-32.44	32.35	22.32	101.42	18 53 2	1546.5	-30.52	23.65
110.00	10 11 16	3794.11	2.72	140.12	15.15	55.91	11 14 30	3194.1	-1.77	133.92

DIFFERENTIAL CORRECTIONS

TDE	.2609	TRA	-1.1771	TC3	3.2274	BAU	.5821
RDE	-.2413	RRA	-.1133	RC3	.1237	FAU	.12618
FDE	.1219	FRA	1.1319	FC3	-8.1036	BSP	10686
BDE	.3554	BRA	1.1826	BC3	3.2298	FSP	1666

MID-COURSE EXECUTION ACCURACY

SGT	3086.2	SGR	429.8	SG3	538.9		
RRT	.3183	RRF	-.3576	RTF	-.9155		
SGB	3116.0	R23	-.0644	R13	-.9159		
SG1	3089.3	SG2	407.0	THA	2.58		

ORBIT DETERMINATION ACCURACY

ST	712.5	SR	380.7	SS	351.7		
CRT	-.4451	CRS	.4405	CST	.5902		
LSA	761.4	MSA	440.7	SSA	47.6		
EL1	737.7	EL2	329.2	ALF	163.18		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 465.580 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.761	GAL	-.59	AZL	88.96	HCA	146.38	SMA	201.54	ECC	.26782	INC	1.0393
RP	238.47	LAP	.58	LOP	211.17	VP	21.320	GAP	11.46	AZP	90.87	TAL	357.20	TAP	143.57	RCA	147.56	APO	255.51
RC	179.231	GL	9.73	GP	2.89	ZAL	90.72	ZAP	161.05	ETS	170.06	ZAE	158.88	ETE	8.27	ZAC	93.24	ETC	255.82

V1 30.186 V2 23.040 CLP 161.26

PLANETOCENTRIC CONIC

C3	13.118	VHL	3.622	DLA	18.52	RAL	161.08	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	6.456	DPA	-1.26	RAP	193.06

ECC 1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 29	2735.85	-27.89	77.16	21.77	95.13	15 52 5	2135.9	-26.88	68.63
90.00	8 15 6	4144.95	-1.74	168.91	16.29	61.73	9 24 11	3545.0	-5.50	162.25
100.00	16 38 59	2437.57	-29.17	55.06	21.62	96.84	17 19 36	1837.6	-27.92	46.48
100.00	9 25 18	3918.47	-.61	151.63	15.66	60.11	10 30 36	3318.5	-4.58	145.10
110.00	18 11 31	2148.06	-32.46	32.46	21.00	101.36	18 47 19	1548.1	-30.55	23.76
110.00	10 9 15	3780.75	2.22	139.43	13.89	55.88	11 12 15	3180.7	-2.28	133.22

DIFFERENTIAL CORRECTIONS

TDE	.2421	TRA	-1.1429	TC3	3.3579	BAU	.5895
RDE	-.2336	RRA	-.1102	RC3	.1486	FAU	.13129
FDE	.1509	FRA	1.1175	FC3	-8.6650	BSP	10772
BDE	.3364	BRA	1.1482	BC3	3.3612	FSP	1760

MID-COURSE EXECUTION ACCURACY

SGT	3114.3	SGR	426.5	SG3	566.1		
RRT	.3545	RRF	-.3960	RTF	-.9179		
SGB	3143.4	R23	-.0697	R13	-.9184		
SG1	3118.0	SG2	398.3	THA	2.83		

ORBIT DETERMINATION ACCURACY

ST	692.3	SR	373.6	SS	355.1		
CRT	-.4243	CRS	.5032	CST	.5496		
LSA	736.8	MSA	446.9	SSA	48.3		
EL1	715.3	EL2	327.4	ALF	163.57		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 468.986 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.716	GAL	-.49	AZL	88.99	HCA	147.33	SMA	200.61	ECC	.26437	INC	1.0116
RP	238.14	LAP	.55	LOP	212.12	VP	21.284	GAP	10.96	AZP	90.85	TAL	357.65	TAP	144.98	RCA	147.57	APO	253.64
RC	181.513	GL	9.59	GP	3.04	ZAL	89.78	ZAP	160.28	ETS	170.00	ZAE	159.50	ETE	9.08	ZAC	93.42	ETC	255.82

V1 30.186 V2 23.073 CLP 160.51

PLANETOCENTRIC CONIC

C3	12.780	VHL	3.575	DLA	18.74	RAL	160.10	RAD	6567.5	VEL	11.583	PTH	2.03	VHP	6.308	DPA	-1.21	RAP	193.31

ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 15	2739.03	-27.91	77.39	20.45	95.02	15 45 54	2139.0	-26.92	68.86
90.00	8 13 33	4130.56	-2.20	168.11	15.03	61.76	9 22 23	3530.6	-5.96	161.44
100.00	16 32 58	2440.02	-29.19	55.24	20.30	96.74	17 13 38	1840.0	-27.95	46.66
100.00	9 23 30	3904.81	-1.07	150.88	14.40	60.13	10 28 35	3304.8	-5.04	144.34
110.00	18 5 57	2149.11	-32.47	32.54	19.69	101.31	18 41 46	1549.1	-30.57	23.84
110.00	10 7 1	3768.48	1.75	138.79	12.64	55.86	11 9 49	3168.5	-2.75	132.58

DIFFERENTIAL CORRECTIONS

TDE	.2289	TRA	-1.1028	TC3	3.4924	BAU	.5975
RDE	-.2261	RRA	-.1073	RC3	.1762	FAU	.13664
FDE	.1780	FRA	1.0984	FC3	-9.2562	BSP	10767
BDE	.3218	BRA	1.1080	BC3	3.4968	FSP	1855

MID-COURSE EXECUTION ACCURACY

SGT	3139.0	SGR	424.5	SG3	594.4		
RRT	.3906	RRF	-.4364	RTF	-.9210		
SGB	3167.6	R23	-.0772	R13	-.9215		
SG1	3143.5	SG2	390.2	THA	3.07		

ORBIT DETERMINATION ACCURACY

ST	673.6	SR	366.5	SS	358.1		
CRT	-.4139	CRS	.5585	CST	.5027		
LSA	713.8	MSA	452.1	SSA	48.8		
EL1	695.4	EL2	323.2	ALF	163.69		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 472.418 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.672 GAL -.40 AZL 89.02 HCA 148.29 SMA 199.73 ECC .26108 INC .9826 V1 30.186
RP 237.81 LAP .52 LOP 213.08 VP 21.252 GAP 10.47 AZP 90.84 TAL 358.09 TAP 146.37 RCA 147.58 APO 251.87 V2 23.106
RC 183.786 GL 9.41 GP 3.19 ZAL 88.85 ZAP 159.50 ETS 169.94 ZAE 160.15 ETE 9.98 ZAC 93.61 ETC 255.81 CLP 159.73

PLANETOCENTRIC CONIC

C3 12.467 VHL 3.531 DLA 18.93 RAL 159.12 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 6.163 DPA -1.14 RAP 193.54 ECC 1.2052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 19	2741.34	-27.92	77.55	19.14	94.94	15 40 0	2141.3	-26.94	69.02
90.00	8 11 41	4117.63	-2.62	167.38	13.79	61.79	9 20 19	3517.6	-6.37	160.71
100.00	16 27 14	2441.68	-29.20	55.36	18.99	96.68	17 7 56	1841.7	-27.97	46.78
100.00	9 21 27	3892.51	-1.49	150.21	13.16	60.14	10 26 19	3292.5	-5.45	143.66
110.00	18 0 37	2149.56	-32.48	32.57	18.39	101.30	18 36 26	1549.6	-30.58	23.87
110.00	10 4 34	3757.40	1.32	138.21	11.40	55.84	11 7 11	3157.4	-3.17	132.00

DIFFERENTIAL CORRECTIONS
TDE .2089 TRA-1.0770 TC3 3.5915 BAU .5996
RDE -.2189 RRA -.1044 RC3 .2071 FAU .14220
FDE .2037 FRA 1.0813 FC3-9.8752 BSP 11045
BDE .3026 BRA 1.0820 BC3 3.5974 FSP 1964

MID-COURSE EXECUTION ACCURACY
SGT 3156.0 SGR 423.8 SG3 624.1
RRT .4346 RRF -.4800 RTF -.9212
SGB 3184.4 R23 -.0818 R13 -.9218
SG1 3161.5 SG2 381.0 THA 3.39

ORBIT DETERMINATION ACCURACY
ST 654.1 SR 359.2 SS 362.2
CRT -.3842 CRS .6066 CST .4771
LSA 691.0 MSA 456.3 SSA 50.1
EL1 673.1 EL2 322.3 ALF 164.43

LAUNCH DATE NOV 27 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 475.877 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.631 GAL -.30 AZL 89.05 HCA 149.25 SMA 198.90 ECC .25795 INC .9517 V1 30.186
RP 237.48 LAP .49 LOP 214.04 VP 21.223 GAP 9.98 AZP 90.82 TAL 358.52 TAP 147.77 RCA 147.59 APO 250.20 V2 23.140
RC 186.049 GL 9.21 GP 3.36 ZAL 87.93 ZAP 158.69 ETS 169.86 ZAE 160.82 ETE 11.00 ZAC 93.81 ETC 255.81 CLP 158.94

PLANETOCENTRIC CONIC

C3 12.174 VHL 3.489 DLA 19.09 RAL 158.15 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 6.022 DPA -1.06 RAP 193.76 ECC 1.2004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 42	2742.72	-27.93	77.65	17.84	94.89	15 34 25	2142.7	-26.96	69.12
90.00	8 9 30	4106.17	-2.99	166.74	12.55	61.83	9 17 56	3506.2	-6.73	160.07
100.00	16 21 48	2442.51	-29.21	55.42	17.69	96.65	17 2 30	1842.5	-27.98	46.84
100.00	9 19 5	3881.61	-1.86	149.61	11.93	60.16	10 23 47	3281.6	-5.82	143.06
110.00	17 55 30	2149.36	-32.48	32.56	17.09	101.30	18 31 19	1549.4	-30.58	23.86
110.00	10 1 53	3747.53	.95	137.69	10.17	55.83	11 4 20	3147.5	-3.54	131.49

DIFFERENTIAL CORRECTIONS
TDE .1933 TRA-1.0440 TC3 3.6910 BAU .6020
RDE -.2120 RRA -.1015 RC3 .2408 FAU .14784
FDE .2314 FRA 1.0582 FC-10.5127 BSP 11102
BDE .2869 BRA 1.0489 BC3 3.6988 FSP 2067

MID-COURSE EXECUTION ACCURACY
SGT 3166.4 SGR 424.9 SG3 654.3
RRT .4775 RRF -.5251 RTF -.9221
SGB 3194.8 R23 -.0894 R13 -.9228
SG1 3173.0 SG2 372.5 THA 3.72

ORBIT DETERMINATION ACCURACY
ST 634.7 SR 352.1 SS 366.8
CRT -.3636 CRS .6549 CST .4393
LSA 667.9 MSA 461.3 SSA 51.0
EL1 651.8 EL2 319.4 ALF 164.88

LAUNCH DATE NOV 27 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 479.360 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.592 GAL -.21 AZL 89.08 HCA 150.21 SMA 198.11 ECC .25498 INC .9191 V1 30.186
RP 237.15 LAP .46 LOP 215.00 VP 21.198 GAP 9.50 AZP 90.80 TAL 358.95 TAP 149.16 RCA 147.59 APO 248.62 V2 23.174
RC 188.300 GL 8.99 GP 3.54 ZAL 87.03 ZAP 157.86 ETS 169.76 ZAE 161.52 ETE 12.15 ZAC 94.02 ETC 255.80 CLP 158.13

PLANETOCENTRIC CONIC

C3 11.902 VHL 3.450 DLA 19.22 RAL 157.17 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 5.884 DPA -.96 RAP 193.97 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 27	2743.01	-27.93	77.68	16.55	94.88	15 29 10	2143.0	-26.96	69.14
90.00	8 6 58	4096.35	-3.30	166.19	11.33	61.86	9 15 14	3496.3	-7.04	159.51
100.00	16 16 41	2442.37	-29.21	55.41	16.40	96.66	16 57 23	1842.4	-27.98	46.82
100.00	9 16 25	3872.23	-2.18	149.10	10.70	60.18	10 20 57	3272.2	-6.13	142.54
110.00	17 50 39	2148.39	-32.46	32.49	15.80	101.35	18 26 27	1548.4	-30.56	23.79
110.00	9 58 57	3738.97	.62	137.25	8.96	55.82	11 1 16	3139.0	-3.87	131.04

DIFFERENTIAL CORRECTIONS
TDE .1769 TRA-1.0096 TC3 3.7896 BAU .6046
RDE -.2054 RRA -.0987 RC3 .2784 FAU .15381
FDE .2605 FRA 1.0315 FC-11.1878 BSP 11216
BDE .2711 BRA 1.0144 BC3 3.7998 FSP 2187

MID-COURSE EXECUTION ACCURACY
SGT 3174.3 SGR 428.2 SG3 686.2
RRT .5226 RRF -.5720 RTF -.9234
SGB 3203.1 R23 -.0973 R13 -.9243
SG1 3182.3 SG2 364.2 THA 4.09

ORBIT DETERMINATION ACCURACY
ST 613.4 SR 345.1 SS 372.5
CRT -.3402 CRS .7009 CST .4026
LSA 643.1 MSA 466.6 SSA 51.8
EL1 628.5 EL2 316.7 ALF 165.37

LAUNCH DATE NOV 27 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 482.867 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.554 GAL -.13 AZL 89.12 HCA 151.17 SMA 197.36 ECC .25214 INC .8842 V1 30.186
RP 236.81 LAP .43 LOP 215.96 VP 21.176 GAP 9.03 AZP 90.77 TAL 359.37 TAP 150.55 RCA 147.60 APO 247.12 V2 23.209
RC 190.540 GL 8.73 GP 3.73 ZAL 86.14 ZAP 157.01 ETS 169.66 ZAE 162.23 ETE 13.46 ZAC 94.24 ETC 255.80 CLP 157.29

PLANETOCENTRIC CONIC

C3 11.649 VHL 3.413 DLA 19.30 RAL 156.20 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.749 DPA -.83 RAP 194.17 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 36	2742.09	-27.92	77.61	15.26	94.91	15 24 18	2142.1	-26.95	69.08
90.00	8 4 2	4088.25	-3.56	165.74	10.11	61.89	9 12 11	3488.2	-7.29	159.05
100.00	16 11 56	2441.13	-29.20	55.32	15.11	96.70	16 52 37	1841.1	-27.96	46.74
100.00	9 13 24	3864.44	-2.44	148.67	9.48	60.20	10 17 48	3264.4	-6.39	142.11
110.00	17 46 5	2146.57	-32.44	32.35	14.51	101.42	18 21 52	1546.6	-30.53	23.65
110.00	9 55 44	3731.77	.34	136.87	7.75	55.82	10 57 56	3131.8	-4.14	130.66

DIFFERENTIAL CORRECTIONS
TDE .1593 TRA -.9740 TC3 3.8892 BAU .6077
RDE -.1992 RRA -.0960 RC3 .3198 FAU .16002
FDE .2937 FRA 1.0012 FC-11.8924 BSP 11142
BDE .2550 BRA .9787 BC3 3.9023 FSP 2291

MID-COURSE EXECUTION ACCURACY
SGT 3181.3 SGR 434.3 SG3 719.3
RRT .5688 RRF -.6198 RTF -.9252
SGB 3210.8 R23 -.1056 R13 -.9262
SG1 3191.0 SG2 356.1 THA 4.50

ORBIT DETERMINATION ACCURACY
ST 589.9 SR 338.3 SS 380.9
CRT -.3119 CRS .7472 CST .3653
LSA 616.6 MSA 473.8 SSA 52.4
EL1 602.9 EL2 314.5 ALF 165.97

LAUNCH DATE NOV 27 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 486.396 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.518 GAL -.04 AZL 89.15 HCA 152.14 SMA 196.65 ECC .24945 INC .8472 V1 30.186
RP 236.46 LAP .40 LOP 216.93 VP 21.157 GAP 8.56 AZP 90.75 TAL 359.79 TAP 151.93 RCA 147.60 APO 245.71 V2 23.244
RC 192.768 GL 8.44 GP 3.94 ZAL 85.27 ZAP 156.13 ETS 169.53 ZAE 162.97 ETE 14.96 ZAC 94.47 ETC 255.79 CLP 156.44

PLANETOCENTRIC CONIC

C3 11.412 VHL 3.378 DLA 19.35 RAL 155.23 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 5.618 DPA -.69 RAP 194.36 ECC 1.1878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 13	2739.77	-27.91	77.44	13.98	94.99	15 19 53	2139.8	-26.92	68.91
90.00	8 0 42	4082.03	-3.76	165.39	8.89	61.91	9 8 44	3482.0	-7.49	158.70
100.00	16 7 36	2438.64	-29.18	55.14	13.83	96.80	16 48 14	1838.6	-27.93	46.56
100.00	9 10 0	3858.40	-2.64	148.34	8.27	60.21	10 14 18	3258.4	-6.59	141.77
110.00	17 41 51	2143.76	-32.40	32.14	13.23	101.54	18 17 35	1543.8	-30.47	23.45
110.00	9 52 14	3726.04	.12	136.57	6.55	55.82	10 54 20	3126.0	-4.36	130.36

DIFFERENTIAL CORRECTIONS
TDE .1264 TRA -.9506 TC3 3.9139 BAU .5997
RDE -.1936 RRA -.0936 RC3 .3640 FAU .16570
FDE .3425 FRA .9801 FC-12.5697 BSP 11819
BDE .2312 BRA .9552 BC3 3.9307 FSP 2478

MID-COURSE EXECUTION ACCURACY
SGT 3155.7 SGR 443.4 SG3 751.1
RRT .6198 RRF -.6682 RTF -.9239
SGB 3186.7 R23 -.1128 R13 -.9250
SG1 3167.8 SG2 346.7 THA 5.04

ORBIT DETERMINATION ACCURACY
ST 561.3 SR 332.4 SS 400.8
CRT -.2355 CRS .7993 CST .3597
LSA 591.3 MSA 483.4 SSA 52.9
EL1 569.2 EL2 318.5 ALF 168.38

LAUNCH DATE NOV 27 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 489.948 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.483 GAL .04 AZL 89.19 HCA 153.11 SMA 195.98 ECC .24688 INC .8074 V1 30.186
RP 236.12 LAP .37 LOP 217.90 VP 21.142 GAP 8.10 AZP 90.72 TAL .19 TAP 153.31 RCA 147.60 APO 244.37 V2 23.279
RC 194.983 GL 8.11 GP 4.17 ZAL 84.41 ZAP 155.23 ETS 169.40 ZAE 163.72 ETE 16.69 ZAC 94.71 ETC 255.79 CLP 155.56

PLANETOCENTRIC CONIC

C3 11.192 VHL 3.345 DLA 19.36 RAL 154.26 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 5.490 DPA -.52 RAP 194.54 ECC 1.1842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 18	2735.95	-27.89	77.16	12.71	95.13	15 15 54	2135.9	-26.88	68.64
90.00	7 56 54	4077.79	-3.90	165.16	7.69	61.93	9 4 52	3477.8	-7.62	158.46
100.00	16 3 42	2434.79	-29.15	54.86	12.56	96.94	16 44 16	1834.8	-27.88	46.28
100.00	9 6 12	3854.17	-2.79	148.10	7.07	60.23	10 10 26	3254.2	-6.73	141.54
110.00	17 37 57	2139.88	-32.35	31.85	11.94	101.71	18 13 37	1539.9	-30.40	23.18
110.00	9 48 25	3721.85	-.04	136.35	5.35	55.82	10 50 27	3121.9	-4.52	130.14

DIFFERENTIAL CORRECTIONS
TDE .1881 TRA -.8639 TC3 4.1538 BAU .6247
RDE -.1847 RRA -.0884 RC3 .4212 FAU .17518
FDE .2702 FRA .8680 FC-13.5503 BSP 10869
BDE .2636 BRA .8685 BC3 4.1751 FSP 2497

MID-COURSE EXECUTION ACCURACY
SGT 3207.4 SGR 453.1 SG3 796.1
RRT .6421 RRF -.7077 RTF -.9312
SGB 3239.3 R23 -.1340 R13 -.9326
SG1 3220.8 SG2 345.9 THA 5.24

ORBIT DETERMINATION ACCURACY
ST 576.3 SR 320.1 SS 339.3
CRT -.4258 CRS .7489 CST .2329
LSA 598.5 MSA 434.0 SSA 56.6
EL1 597.0 EL2 279.6 ALF 162.81

LAUNCH DATE NOV 27 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 493.519 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.451 GAL .12 AZL 89.23 HCA 154.09 SMA 195.35 ECC .24444 INC .7652 V1 30.186
RP 235.77 LAP .33 LOP 218.88 VP 21.129 GAP 7.64 AZP 90.69 TAL .59 TAP 154.67 RCA 147.60 APO 243.10 V2 23.315
RC 197.185 GL 7.74 GP 4.42 ZAL 83.58 ZAP 154.30 ETS 169.25 ZAE 164.48 ETE 18.70 ZAC 94.97 ETC 255.78 CLP 154.66

PLANETOCENTRIC CONIC

C3 10.987 VHL 3.315 DLA 19.31 RAL 153.30 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 5.366 DPA -.32 RAP 194.70 ECC 1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 56	2730.43	-27.85	76.76	11.44	95.33	15 12 26	2130.4	-26.82	68.25
90.00	7 52 37	4075.67	-3.97	165.04	6.48	61.94	9 0 32	3475.7	-7.69	158.34
100.00	16 0 16	2429.43	-29.10	54.47	11.28	97.14	16 40 46	1829.4	-27.81	45.90
100.00	9 1 57	3851.91	-2.86	147.98	5.87	60.23	10 6 9	3251.9	-6.80	141.41
110.00	17 34 27	2134.80	-32.28	31.47	10.66	101.92	18 10 1	1534.8	-30.30	22.81
110.00	9 44 16	3719.31	-.13	136.22	4.17	55.82	10 46 15	3119.3	-4.62	130.01

DIFFERENTIAL CORRECTIONS
TDE .1526 TRA -.8631 TC3 4.2106 BAU .6224
RDE -.1797 RRA -.0871 RC3 .4773 FAU .18202
FDE .3220 FRA .8730 FC-14.3427 BSP 10979
BDE .2358 BRA .8675 BC3 4.2376 FSP 2648

MID-COURSE EXECUTION ACCURACY
SGT 3218.7 SGR 471.2 SG3 834.4
RRT .6945 RRF -.7551 RTF -.9304
SGB 3253.0 R23 -.1415 R13 -.9319
SG1 3235.5 SG2 337.3 THA 5.87

ORBIT DETERMINATION ACCURACY
ST 549.1 SR 314.5 SS 365.4
CRT -.3386 CRS .8011 CST .2416
LSA 566.4 MSA 458.1 SSA 56.6
EL1 563.2 EL2 288.5 ALF 165.01

LAUNCH DATE NOV 27 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 497.110 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.419 GAL .19 AZL 89.28 HCA 155.06 SMA 194.75 ECC .24212 INC .7193 V1 30.186
RP 235.42 LAP .30 LOP 219.85 VP 21.119 GAP 7.20 AZP 90.65 TAL .97 TAP 156.04 RCA 147.60 APO 241.90 V2 23.351
RC 199.372 GL 7.34 GP 4.69 ZAL 82.76 ZAP 153.35 ETS 169.08 ZAE 165.25 ETE 21.04 ZAC 95.25 ETC 255.77 CLP 153.74

PLANETOCENTRIC CONIC

C3 10.795 VHL 3.286 DLA 19.22 RAL 152.34 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.244 DPA -.10 RAP 194.86 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 7	2723.08	-27.80	76.23	10.17	95.59	15 9 30	2123.1	-26.74	67.73
90.00	7 47 48	4075.82	-3.96	165.05	5.29	61.94	8 55 44	3475.8	-7.68	158.34
100.00	15 57 22	2422.41	-29.04	53.95	10.01	97.41	16 37 44	1822.4	-27.71	45.40
100.00	8 57 14	3851.72	-2.87	147.97	4.68	60.23	10 1 26	3251.7	-6.81	141.40
110.00	17 31 21	2128.39	-32.19	30.99	9.38	102.19	18 6 49	1528.4	-30.17	22.36
110.00	9 39 45	3718.51	-.16	136.18	2.99	55.82	10 41 44	3118.5	-4.65	129.96

DIFFERENTIAL CORRECTIONS
TDE .1461 TRA -.8428 TC3 4.2932 BAU .6245
RDE -.1737 RRA -.0847 RC3 .5417 FAU .18990
FDE .3349 FRA .8447 FC-15.2298 BSP 11068
BDE .2270 BRA .8470 BC3 4.3272 FSP 2797

MID-COURSE EXECUTION ACCURACY
SGT 3232.1 SGR 492.9 SG3 876.6
RRT .7348 RRF -.7966 RTF -.9305
SGB 3269.4 R23 -.1556 R13 -.9324
SG1 3252.5 SG2 332.2 THA 6.46

ORBIT DETERMINATION ACCURACY
ST 538.6 SR 306.7 SS 365.4
CRT -.3289 CRS .8170 CST .2192
LSA 554.0 MSA 455.4 SSA 57.8
EL1 551.5 EL2 282.9 ALF 165.50

LAUNCH DATE NOV 27 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 500.720 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.389 GAL .26 AZL 89.33 HCA 156.04 SMA 194.18 ECC .23992 INC .6697 V1 30.186
RP 235.06 LAP .27 LOP 220.83 VP 21.112 GAP 6.76 AZP 90.61 TAL 1.35 TAP 157.39 RCA 147.59 APO 240.77 V2 23.387
RC 201.544 GL 6.88 GP 4.99 ZAL 81.97 ZAP 152.37 ETS 168.90 ZAE 166.01 ETE 23.79 ZAC 95.54 ETC 255.77 CLP 152.78

PLANETOCENTRIC CONIC

C3 10.616 VHL 3.258 DLA 19.08 RAL 151.40 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.126 DPA .16 RAP 195.01 ECC 1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 56	2713.72	-27.74	75.55	8.91	95.92	15 7 10	2113.7	-26.63	67.06
90.00	7 42 25	4078.38	-3.88	165.19	4.09	61.93	8 50 23	3478.4	-7.60	158.49
100.00	15 55 1	2413.57	-28.96	53.31	8.74	97.74	16 35 14	1813.6	-27.59	44.77
100.00	8 52 1	3853.77	-2.80	148.08	3.49	60.23	9 56 15	3253.8	-6.74	141.51
110.00	17 28 41	2120.51	-32.07	30.41	8.10	102.52	18 4 2	1520.5	-30.02	21.80
110.00	9 34 50	3719.59	-.12	136.24	1.82	55.82	10 36 50	3119.6	-4.61	130.02

DIFFERENTIAL CORRECTIONS
TDE .1375 TRA -.8064 TC3 4.3467 BAU .6230
RDE -.1678 RRA -.0814 RC3 .6121 FAU .19772
FDE .3470 FRA .7869 FC-16.1239 BSP 11179
BDE .2169 BRA .8105 BC3 4.3896 FSP 2956

MID-COURSE EXECUTION ACCURACY
SGT 3214.5 SGR 518.7 SG3 918.1
RRT .7710 RRF -.8332 RTF -.9313
SGB 3256.0 R23 -.1689 R13 -.9335
SG1 3239.5 SG2 327.8 THA 7.17

ORBIT DETERMINATION ACCURACY
ST 518.0 SR 298.8 SS 361.1
CRT -.3223 CRS .8365 CST .1823
LSA 531.3 MSA 449.6 SSA 59.5
EL1 530.3 EL2 276.3 ALF 165.43

LAUNCH DATE NOV 27 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 504.348 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.361 GAL .33 AZL 89.38 HCA 157.03 SMA 193.64 ECC .23783 INC .6156 V1 30.186
RP 234.71 LAP .24 LOP 221.81 VP 21.108 GAP 6.32 AZP 90.57 TAL 1.71 TAP 158.74 RCA 147.59 APO 239.69 V2 23.424
RC 203.699 GL 6.37 GP 5.31 ZAL 81.19 ZAP 151.35 ETS 168.69 ZAE 166.76 ETE 27.03 ZAC 95.86 ETC 255.76 CLP 151.81

PLANETOCENTRIC CONIC

C3 10.449 VHL 3.233 DLA 18.87 RAL 150.45 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 5.012 DPA .45 RAP 195.15 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 24	2702.16	-27.66	74.72	7.64	96.33	15 5 26	2102.2	-26.49	66.25
90.00	7 36 25	4083.51	-3.71	165.48	2.90	61.91	8 44 29	3483.5	-7.44	158.78
100.00	15 53 16	2402.72	-28.86	52.52	7.46	98.14	16 33 18	1802.7	-27.43	44.00
100.00	8 46 15	3858.19	-2.65	148.33	2.31	60.21	9 50 33	3258.2	-6.60	141.76
110.00	17 26 30	2111.00	-31.93	29.70	6.80	102.91	18 1 41	1511.0	-29.82	21.12
110.00	9 29 30	3722.67	-.01	136.40	.66	55.82	10 31 32	3122.7	-4.49	130.18

DIFFERENTIAL CORRECTIONS
TDE .1378 TRA -.7786 TC3 4.4068 BAU .6231
RDE -.1614 RRA -.0783 RC3 .6913 FAU .20613
FDE .3417 FRA .7352 FC-17.0785 BSP 11088
BDE .2122 BRA .7826 BC3 4.4607 FSP 3096

MID-COURSE EXECUTION ACCURACY
SGT 3209.9 SGR 550.5 SG3 962.8
RRT .8020 RRF -.8655 RTF -.9314
SGB 3256.8 R23 -.1854 R13 -.9341
SG1 3240.5 SG2 325.8 THA 7.91

ORBIT DETERMINATION ACCURACY
ST 508.3 SR 289.8 SS 348.4
CRT -.3360 CRS .8403 CST .1494
LSA 521.2 MSA 433.9 SSA 61.8
EL1 521.0 EL2 266.3 ALF 165.21

LAUNCH DATE NOV 27 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 507.994 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.334 GAL .39 AZL 89.44 HCA 158.01 SMA 193.13 ECC .23584 INC .5580 V1 30.186
RP 234.35 LAP .21 LOP 222.80 VP 21.106 GAP 5.90 AZP 90.52 TAL 2.06 TAP 160.07 RCA 147.58 APO 238.68 V2 23.461
RC 205.837 GL 5.81 GP 5.67 ZAL 80.45 ZAP 150.30 ETS 168.47 ZAE 167.47 ETE 30.85 ZAC 96.20 ETC 255.75 CLP 150.80

PLANETOCENTRIC CONIC

C3 10.293 VHL 3.208 DLA 18.59 RAL 149.51 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.900 DPA .79 RAP 195.28 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 34	2688.21	-27.55	73.71	6.36	96.83	15 4 22	2088.2	-26.32	65.26
90.00	7 29 46	4091.41	-3.46	165.92	1.70	61.88	8 37 57	3491.4	-7.20	159.23
100.00	15 52 8	2389.69	-28.73	51.57	6.18	98.62	16 31 58	1789.7	-27.24	43.08
100.00	8 39 52	3865.16	-2.42	148.71	1.12	60.20	9 44 18	3265.2	-6.36	142.15
110.00	17 24 50	2099.71	-31.75	28.87	5.50	103.38	17 59 49	1499.7	-29.59	20.33
110.00	9 23 41	3727.91	.20	136.67	359.49	55.82	10 25 49	3127.9	-4.29	130.46

DIFFERENTIAL CORRECTIONS
TDE .1373 TRA -.7505 TC3 4.4486 BAU .6215
RDE -.1550 RRA -.0750 RC3 .7788 FAU .21465
FDE .3348 FRA .6793 FC-18.0535 BSP 11147
BDE .2071 BRA .7542 BC3 4.5163 FSP 3272

MID-COURSE EXECUTION ACCURACY
SGT 3195.0 SGR 588.5 SG3 1008.3
RRT .8288 RRF -.8933 RTF -.9315
SGB 3248.7 R23 -.2023 R13 -.9347
SG1 3232.4 SG2 325.5 THA 8.77

ORBIT DETERMINATION ACCURACY
ST 497.4 SR 280.5 SS 334.9
CRT -.3484 CRS .8429 CST .1172
LSA 510.3 MSA 416.7 SSA 64.3
EL1 510.3 EL2 256.3 ALF 165.02

LAUNCH DATE NOV 27 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 511.656 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.308 GAL .46 AZL 89.51 HCA 159.00 SMA 192.65 ECC .23396 INC .4946 V1 30.186
RP 233.98 LAP .18 LOP 223.79 VP 21.106 GAP 5.48 AZP 90.46 TAL 2.40 TAP 161.40 RCA 147.57 APO 237.72 V2 23.498
RC 207.958 GL 5.18 GP 6.06 ZAL 79.72 ZAP 149.22 ETS 168.22 ZAE 168.13 ETE 35.37 ZAC 96.57 ETC 255.74 CLP 149.77

PLANETOCENTRIC CONIC

C3 10.148 VHL 3.186 DLA 18.25 RAL 148.58 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.793 DPA 1.16 RAP 195.40 ECC 1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 29	2671.65	-27.41	72.52	5.08	97.41	15 4 1	2071.7	-26.10	64.10
90.00	7 22 24	4102.27	-3.11	166.53	.51	61.84	8 30 46	3502.3	-6.85	159.85
100.00	15 51 42	2374.25	-28.57	50.45	4.89	99.19	16 31 17	1774.3	-27.00	42.00
100.00	8 32 51	3874.90	-2.09	149.24	359.94	60.17	9 37 26	3274.9	-6.04	142.69
110.00	17 23 42	2086.41	-31.54	27.89	4.19	103.92	17 58 29	1486.4	-29.31	19.40
110.00	9 17 21	3735.51	.49	137.07	358.33	55.82	10 19 36	3135.5	-4.00	130.86

DIFFERENTIAL CORRECTIONS
TDE .1409 TRA -.7197 TC3 4.4780 BAU .6191
RDE -.1481 RRA -.0712 RC3 .8767 FAU .22347
FDE .3144 FRA .6118 FC-19.0643 BSP 11182
BDE .2044 BRA .7232 BC3 4.5630 FSP 3450

MID-COURSE EXECUTION ACCURACY
SGT 3172.1 SGR 633.3 SG3 1055.3
RRT .8510 RRF -.9166 RTF -.9315
SGB 3234.7 R23 -.2196 R13 -.9355
SG1 3218.0 SG2 327.8 THA 9.75

ORBIT DETERMINATION ACCURACY
ST 488.6 SR 270.0 SS 313.5
CRT -.3756 CRS .8355 CST .0811
LSA 502.8 MSA 390.6 SSA 67.7
EL1 502.4 EL2 243.4 ALF 164.57

LAUNCH DATE NOV 27 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 515.335 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.283	GAL	.51	AZL	89.58	HCA	159.99	SMA	192.19	ECC	.23217	INC	.4246	V1	30.186
RP	233.62	LAP	.15	LOP	224.78	VP	21.110	GAP	5.06	AZP	90.40	TAL	2.73	TAP	162.72	RCA	147.57	APO	236.81	V2	23.536
RC	210.060	GL	4.47	GP	6.49	ZAL	79.02	ZAP	148.10	ETS	167.95	ZAE	168.72	ETE	40.68	ZAC	96.98	ETC	255.73	CLP	148.70

PLANETOCENTRIC CONIC

C3	10.013	VHL	3.164	DLA	17.81	RAL	147.65	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.688	DPA	1.59	RAP	195.51	ECC	1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 11	2652.24	-27.23	71.13	3.79	98.09	15 4 24	2052.2	-25.83	62.74
90.00	7 14 15	4116.34	-2.66	167.31	359.31	61.80	8 22 51	3516.3	-6.41	160.64
100.00	15 52 0	2356.17	-28.37	49.15	3.58	99.85	16 31 16	1756.2	-26.71	40.73
100.00	8 25 7	3887.63	-1.65	149.94	358.75	60.15	9 29 55	3287.6	-5.61	143.39
110.00	17 23 11	2070.91	-31.28	26.76	2.86	104.54	17 57 41	1470.9	-28.97	18.32
110.00	9 10 26	3745.66	.87	137.60	357.17	55.83	10 12 52	3145.7	-3.62	131.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1466	TRA	-.6921	TC3	4.4965	BAU	.6163	SGT	3146.7	SGR	686.3	SG3	1104.4	ST	483.4	SR	258.2	SS	286.7		
RDE	-.1406	RRA	-.0671	RC3	.9865	FAU	.23267	RRT	.8693	RRF	-.9359	RTF	-.9311	CRT	-.4076	CRS	.8139	CST	.0567		
FDE	.2814	FRA	.5415	FC-20.1160		BSP	11062	SGB	3220.6	R23	-.2374	R13	-.9360	LSA	498.5	MSA	358.9	SSA	72.3		
BDE	.2032	BRA	.6954	BC3	4.6035	FSP	3610	SG1	3203.4	SG2	333.2	THA	10.85	EL1	498.0	EL2	228.9	ALF	164.32		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 519.029 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.260	GAL	.57	AZL	89.65	HCA	160.99	SMA	191.75	ECC	.23047	INC	.3481	V1	30.186
RP	233.25	LAP	.11	LOP	225.77	VP	21.115	GAP	4.66	AZP	90.33	TAL	3.05	TAP	164.03	RCA	147.56	APO	235.95	V2	23.574
RC	212.144	GL	3.68	GP	6.98	ZAL	78.35	ZAP	146.95	ETS	167.65	ZAE	169.18	ETE	46.83	ZAC	97.43	ETC	255.71	CLP	147.61

PLANETOCENTRIC CONIC

C3	9.889	VHL	3.145	DLA	17.29	RAL	146.72	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	4.587	DPA	2.07	RAP	195.62	ECC	1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 45	2629.69	-27.00	69.52	2.47	98.86	15 5 35	2029.7	-25.50	61.17
90.00	7 5 16	4133.89	-2.09	168.29	358.11	61.75	8 14 9	3533.9	-5.86	161.63
100.00	15 53 5	2335.17	-28.11	47.64	2.26	100.61	16 32 0	1735.2	-26.36	39.27
100.00	8 16 37	3903.64	-1.11	150.82	357.57	60.13	9 21 41	3303.6	-5.08	144.28
110.00	17 23 17	2052.92	-30.97	25.45	1.50	105.26	17 57 30	1452.9	-28.56	17.07
110.00	9 2 54	3758.66	1.37	138.27	356.01	55.84	10 5 32	3158.7	-3.12	132.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1548	TRA	-.6647	TC3	4.5073	BAU	.6137	SGT	3118.4	SGR	748.2	SG3	1155.3	ST	481.3	SR	244.7	SS	254.7		
RDE	-.1324	RRA	-.0625	RC3	1.1101	FAU	.24218	RRT	.8839	RRF	-.9514	RTF	-.9306	CRT	-.4470	CRS	.7689	CST	.0465		
FDE	.2345	FRA	.4631	FC-21.2029		BSP	11050	SGB	3206.9	R23	-.2541	R13	-.9367	LSA	496.8	MSA	321.6	SSA	78.5		
BDE	.2037	BRA	.6676	BC3	4.6420	FSP	3799	SG1	3188.6	SG2	342.2	THA	12.12	EL1	496.5	EL2	212.2	ALF	164.25		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 522.739 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.237	GAL	.62	AZL	89.74	HCA	161.98	SMA	191.34	ECC	.22886	INC	.2613	V1	30.186
RP	232.88	LAP	.08	LOP	226.77	VP	21.123	GAP	4.26	AZP	90.25	TAL	3.35	TAP	165.34	RCA	147.55	APO	235.13	V2	23.612
RC	214.210	GL	2.79	GP	7.52	ZAL	77.71	ZAP	145.74	ETS	167.31	ZAE	169.49	ETE	53.81	ZAC	97.93	ETC	255.70	CLP	146.48

PLANETOCENTRIC CONIC

C3	9.774	VHL	3.126	DLA	16.66	RAL	145.78	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	4.490	DPA	2.62	RAP	195.72	ECC	1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 13	2603.68	-26.72	67.66	1.13	99.75	15 7 37	2003.7	-25.10	59.37
90.00	6 55 20	4155.28	-1.40	169.49	356.91	61.71	8 4 36	3555.3	-5.18	162.84
100.00	15 55 0	2310.92	-27.80	45.90	.90	101.47	16 33 31	1710.9	-25.93	37.60
100.00	8 7 15	3923.27	-.45	151.90	356.38	60.11	9 12 38	3323.3	-4.42	145.36
110.00	17 24 6	2032.15	-30.58	23.95	.12	106.07	17 57 58	1432.2	-28.08	15.65
110.00	8 54 38	3774.80	1.99	139.12	354.85	55.87	9 57 33	3174.8	-2.50	132.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1640	TRA	-.6345	TC3	4.4999	BAU	.6102	SGT	3079.0	SGR	820.1	SG3	1207.4	ST	479.6	SR	228.8	SS	218.5		
RDE	-.1229	RRA	-.0566	RC3	1.2492	FAU	.25195	RRT	.8956	RRF	-.9637	RTF	-.9301	CRT	-.4911	CRS	.6755	CST	.0670		
FDE	.1705	FRA	.3669	FC-22.3169		BSP	10918	SGB	3186.3	R23	-.2687	R13	-.9377	LSA	495.1	MSA	278.1	SSA	87.7		
BDE	.2050	BRA	.6370	BC3	4.6701	FSP	3967	SG1	3166.5	SG2	354.8	THA	13.59	EL1	495.1	EL2	193.1	ALF	164.38		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 526.463 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.216	GAL	.67	AZL	89.83	HCA	162.98	SMA	190.96	ECC	.22734	INC	.1651	V1	30.186
RP	232.51	LAP	.05	LOP	227.77	VP	21.132	GAP	3.86	AZP	90.16	TAL	3.64	TAP	166.63	RCA	147.54	APO	234.37	V2	23.650
RC	216.258	GL	1.78	GP	8.13	ZAL	77.09	ZAP	144.50	ETS	166.94	ZAE	169.59	ETE	61.47	ZAC	98.49	ETC	255.68	CLP	145.32

PLANETOCENTRIC CONIC

C3	9.670	VHL	3.110	DLA	15.91	RAL	144.84	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	4.397	DPA	3.24	RAP	195.83	ECC	1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 40	2573.80	-26.36	65.55	359.76	100.75	15 10 34	1973.8	-24.61	57.32
90.00	6 44 23	4180.93	-.58	170.92	355.70	61.69	7 54 4	3580.9	-4.36	164.28
100.00	15 57 50	2283.03	-27.40	43.92	359.52	102.44	16 35 53	1683.0	-25.41	35.69
100.00	7 56 54	3946.94	.36	153.20	355.18	60.11	9 2 41	3346.9	-3.62	146.67
110.00	17 25 40	2008.22	-30.12	22.24	358.70	106.98	17 59 8	1408.2	-27.50	14.03
110.00	8 45 34	3794.51	2.74	140.15	353.69	55.91	9 48 48	3194.5	-1.75	133.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1778	TRA	-.6111	TC3	4.4818	BAU	.6072	SGT	3040.9	SGR	904.0	SG3	1261.1	ST	487.5	SR	209.7	SS	186.2		
RDE	-.1118	RRA	-.0507	RC3	1.4066	FAU	.26196	RRT	.9039	RRF	-.9733	RTF	-.9288	CRT	-.5384	CRS	.4647	CST	.1758		
FDE	.0834	FRA	.2762	FC-23.4530		BSP	10908	SGB	3172.5	R23	-.2827	R13	-.9384	LSA	502.7	MSA	231.3	SSA	100.3		
BDE	.2100	BRA	.6132	BC3	4.6973	FSP	4168	SG1	3150.4	SG2	373.3	THA	15.26	EL1	502.2	EL2	171.5	ALF	165.20		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 530.202 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.196 GAL .72 AZL 89.94 HCA 163.99 SMA 190.59 ECC .22589 INC .0537 V1 30.186
RP 232.14 LAP .02 LOP 228.78 VP 21.144 GAP 3.48 AZP 90.06 TAL 3.92 TAP 167.91 RCA 147.54 APO 233.64 V2 23.689
RC 218.287 GL .64 GP 8.81 ZAL 76.51 ZAP 143.20 ETS 166.53 ZAE 169.45 ETE 69.51 ZAC 99.12 ETC 255.65 CLP 144.12

PLANETOCENTRIC CONIC

C3 9.577 VHL 3.095 DLA 15.01 RAL 143.89 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 4.308 DPA 3.94 RAP 195.94 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 12	2539.57	-25.90	63.15	358.35	101.87	15 14 32	1939.6	-24.00	54.99
90.00	6 32 16	4211.38	.41	172.62	354.49	61.69	7 42 27	3611.4	-3.38	165.98
100.00	16 1 41	2251.00	-26.91	41.67	358.09	103.53	16 39 12	1651.0	-24.78	33.52
100.00	7 45 28	3975.18	1.31	154.74	353.98	60.13	8 51 44	3375.2	-2.67	148.22
110.00	17 28 5	1980.68	-29.56	20.29	357.25	108.01	18 1 5	1380.7	-26.81	12.18
110.00	8 35 34	3818.27	3.65	141.39	352.53	55.99	9 39 12	3218.3	-.84	135.18

DIFFERENTIAL CORRECTIONS
TDE .1946 TRA -.5853 TC3 4.4458 BAU .6043
RDE -.0983 RRA -.0431 RC3 1.5847 FAU .27206
FDE -.0304 FRA .1669 FC-24.5925 BSP 10813
BDE .2180 BRA .5869 BC3 4.7198 FSP 4357

MID-COURSE EXECUTION ACCURACY
SGT 2993.3 SGR 1001.0 SG3 1315.4
RRT .9098 RRF -.9807 RTF -.9274
SGB 3156.3 R23 -.2933 R13 -.9396
SG1 3131.2 SG2 397.1 THA 17.21

ORBIT DETERMINATION ACCURACY
ST 499.8 SR 186.1 SS 175.0
CRT -.5892 CRS .0636 CST .3843
LSA 517.1 MSA 184.1 SSA 117.5
EL1 512.8 EL2 146.5 ALF 166.51

LAUNCH DATE NOV 27 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 533.954 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.177 GAL .77 AZL 90.06 HCA 165.00 SMA 190.24 ECC .22452 INC .0649 V1 30.186
RP 231.76 LAP -.02 LOP 229.78 VP 21.158 GAP 3.09 AZP 89.94 TAL 4.19 TAP 169.18 RCA 147.53 APO 232.95 V2 23.728
RC 220.299 GL -.67 GP 9.60 ZAL 75.96 ZAP 141.84 ETS 166.06 ZAE 169.03 ETE 77.53 ZAC 99.83 ETC 255.63 CLP 142.89

PLANETOCENTRIC CONIC

C3 9.498 VHL 3.082 DLA 13.95 RAL 142.92 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 4.224 DPA 4.75 RAP 196.06 ECC 1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 55	2500.38	-25.32	60.43	356.89	103.12	15 19 35	1900.4	-23.26	52.36
90.00	6 18 49	4247.32	1.57	174.62	353.27	61.72	7 29 37	3647.3	-2.23	167.99
100.00	16 6 38	2214.26	-26.30	39.11	356.62	104.74	16 43 32	1614.3	-24.02	31.05
100.00	7 32 47	4008.67	2.45	156.58	352.78	60.20	8 39 36	3408.7	-1.53	150.06
110.00	17 31 25	1948.96	-28.87	18.08	355.74	109.16	18 3 54	1349.0	-25.98	10.09
110.00	8 24 29	3846.74	4.73	142.88	351.36	56.11	9 28 36	3246.7	.25	136.67

DIFFERENTIAL CORRECTIONS
TDE .2134 TRA -.5625 TC3 4.3825 BAU .6009
RDE -.0820 RRA -.0345 RC3 1.7851 FAU .28192
FDE -.1714 FRA .0530 FC-25.6961 BSP 10760
BDE .2286 BRA .5636 BC3 4.7321 FSP 4557

MID-COURSE EXECUTION ACCURACY
SGT 2935.2 SGR 1112.8 SG3 1368.8
RRT .9133 RRF -.9862 RTF -.9252
SGB 3139.1 R23 -.3014 R13 -.9409
SG1 3109.8 SG2 427.8 THA 19.48

ORBIT DETERMINATION ACCURACY
ST 518.2 SR 157.2 SS 209.1
CRT -.6308 CRS -.3584 CST .5887
LSA 543.7 MSA 164.6 SSA 119.3
EL1 528.1 EL2 119.7 ALF 168.57

LAUNCH DATE NOV 27 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 537.721 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.159 GAL .81 AZL 90.20 HCA 166.01 SMA 189.91 ECC .22323 INC .2000 V1 30.186
RP 231.38 LAP -.05 LOP 230.79 VP 21.174 GAP 2.72 AZP 89.80 TAL 4.44 TAP 170.44 RCA 147.52 APO 232.31 V2 23.768
RC 222.292 GL -2.18 GP 10.49 ZAL 75.45 ZAP 140.42 ETS 165.54 ZAE 168.31 ETE 85.09 ZAC 100.65 ETC 255.59 CLP 141.62

PLANETOCENTRIC CONIC

C3 9.436 VHL 3.072 DLA 12.68 RAL 141.93 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 4.145 DPA 5.67 RAP 196.20 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 57	2455.47	-24.59	57.34	355.38	104.50	15 25 53	1855.5	-22.36	49.38
90.00	6 3 50	4289.65	2.93	176.98	352.06	61.82	7 15 20	3689.7	-.86	170.35
100.00	16 12 50	2172.04	-25.54	36.21	355.10	106.09	16 49 2	1572.0	-23.09	28.27
100.00	7 18 38	4048.31	3.79	158.77	351.58	60.33	8 26 7	3448.3	-.19	152.24
110.00	17 35 49	1912.37	-28.02	15.57	354.18	110.42	18 7 42	1312.4	-24.99	7.71
110.00	8 12 9	3880.74	6.02	144.67	350.20	56.29	9 16 49	3280.7	1.55	138.44

DIFFERENTIAL CORRECTIONS
TDE .2392 TRA -.5383 TC3 4.3092 BAU .6002
RDE -.0603 RRA -.0232 RC3 2.0160 FAU .29210
FDE -.3636 FRA -.0846 FC-26.8001 BSP 10711
BDE .2467 BRA .5388 BC3 4.7575 FSP 4747

MID-COURSE EXECUTION ACCURACY
SGT 2875.2 SGR 1244.4 SG3 1423.8
RRT .9151 RRF -.9903 RTF -.9228
SGB 3133.0 R23 -.3047 R13 -.9432
SG1 3098.2 SG2 465.6 THA 22.13

ORBIT DETERMINATION ACCURACY
ST 548.4 SR 119.2 SS 301.0
CRT -.6599 CRS -.5848 CST .7093
LSA 599.7 MSA 196.1 SSA 86.5
EL1 554.1 EL2 88.6 ALF 171.62

LAUNCH DATE NOV 27 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 541.502 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.141 GAL .85 AZL 90.36 HCA 167.02 SMA 189.60 ECC .22201 INC .3629 V1 30.186
RP 231.01 LAP -.08 LOP 231.81 VP 21.191 GAP 2.35 AZP 89.65 TAL 4.67 TAP 171.69 RCA 147.51 APO 231.70 V2 23.807
RC 224.266 GL -3.92 GP 11.52 ZAL 74.98 ZAP 138.93 ETS 164.96 ZAE 167.27 ETE 91.87 ZAC 101.59 ETC 255.55 CLP 140.30

PLANETOCENTRIC CONIC

C3 9.395 VHL 3.065 DLA 11.17 RAL 140.89 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 4.071 DPA 6.73 RAP 196.36 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 29	2403.89	-23.67	53.84	353.81	106.02	15 33 33	1803.9	-21.24	46.01
90.00	5 47 1	4339.54	4.53	179.78	350.84	62.02	6 59 21	3739.5	.75	173.14
100.00	16 20 27	2123.43	-24.58	32.91	353.51	107.57	16 55 50	1523.4	-21.94	25.11
100.00	7 2 45	4095.23	5.36	161.36	350.39	60.55	8 11 0	3495.2	1.40	154.81
110.00	17 41 25	1870.07	-26.99	12.72	352.55	111.82	18 12 35	1270.1	-23.78	5.02
110.00	7 58 16	3921.35	7.55	146.82	349.04	56.56	9 3 38	3321.4	3.10	140.56

DIFFERENTIAL CORRECTIONS
TDE .2816 TRA -.4986 TC3 4.2828 BAU .6100
RDE -.0304 RRA -.0064 RC3 2.2897 FAU .30339
FDE -.6255 FRA -.2699 FC-27.9567 BSP 10316
BDE .2833 BRA .4986 BC3 4.8564 FSP 4871

MID-COURSE EXECUTION ACCURACY
SGT 2841.3 SGR 1404.8 SG3 1484.9
RRT .9187 RRF -.9934 RTF -.9241
SGB 3169.6 R23 -.2950 R13 -.9490
SG1 3129.3 SG2 503.8 THA 25.13

ORBIT DETERMINATION ACCURACY
ST 603.8 SR 70.7 SS 452.5
CRT -.5972 CRS -.4971 CST .7879
LSA 718.4 MSA 234.7 SSA 56.5
EL1 605.3 EL2 56.6 ALF 175.96

LAUNCH DATE NOV 27 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 545.293 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.125	GAL	.89	AZL	90.55	HCA	168.04	SMA	189.31	ECC	.22085	INC	.5509
RP	230.62	LAP	-.11	LOP	232.82	VP	21.210	GAP	1.99	AZP	89.46	TAL	4.90	TAP	172.93	RCA	147.50	APO	231.12
RC	226.222	GL	-5.97	GP	12.73	ZAL	74.56	ZAP	137.36	ETS	164.29	ZAE	165.91	ETE	97.67	ZAC	102.69	ETC	255.49

V1 30.186 V2 23.847 CLP 138.95

PLANETOCENTRIC CONIC

C3	9.383	VHL	3.063	DLA	9.37	RAL	139.80	RAD	6567.3	VEL	11.436	PTH	1.98	VHP	4.005	DPA	7.96	RAP	196.56

ECC 1.1544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 49	2344.23	-22.49	49.87	352.18	107.67	15 42 54	1744.2	-19.86	42.18
90.00	5 28 1	4398.70	6.41	183.11	349.66	62.36	6 41 20	3798.7	2.66	176.44
100.00	16 29 45	2067.08	-23.37	29.16	351.86	109.19	17 4 12	1467.1	-20.54	21.51
100.00	6 44 46	4151.09	7.22	164.46	349.22	60.91	7 53 57	3551.1	3.29	157.88
110.00	17 48 27	1820.82	-25.70	9.47	350.86	113.36	18 18 48	1220.8	-22.31	1.95
110.00	7 42 34	3970.12	9.37	149.42	347.91	56.97	8 48 44	3370.1	4.95	143.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3088	TRA	-.4841	TC3	4.1332	BAU	.6117	SGT	2754.6	SGR	1584.9	SG3	1533.9	ST	644.4	SR	49.3	SS	623.6
RDE	.0061	RRA	.0107	RC3	2.5867	FAU	.31230	RRT	.9164	RRF	-.9955	RTF	-.9189	CRT	.2703	CRS	.5208	CST	.8252
FDE	-.9117	FRA	-.4280	FC-28.8138		BSP	10473	SGB	3178.0	R23	-.2916	R13	-.9520	LSA	856.9	MSA	265.8	SSA	39.6
BDE	.3089	BRA	.4843	BC3	4.8759	FSP	5068	SG1	3128.6	SG2	558.5	THA	28.81	EL1	644.6	EL2	47.4	ALF	1.19

LAUNCH DATE NOV 27 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 549.097 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.110	GAL	.92	AZL	90.78	HCA	169.06	SMA	189.04	ECC	.21976	INC	.7741
RP	230.24	LAP	-.15	LOP	233.85	VP	21.231	GAP	1.64	AZP	89.24	TAL	5.10	TAP	174.16	RCA	147.49	APO	230.58
RC	228.159	GL	-8.39	GP	14.15	ZAL	74.22	ZAP	135.68	ETS	163.53	ZAE	164.22	ETE	102.44	ZAC	103.98	ETC	255.41

V1 30.186 V2 23.887 CLP 137.55

PLANETOCENTRIC CONIC

C3	9.414	VHL	3.068	DLA	7.19	RAL	138.64	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.947	DPA	9.40	RAP	196.82

ECC 1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 17	2274.85	-20.98	45.34	350.48	109.46	15 54 12	1674.8	-18.14	37.82
90.00	5 6 17	4469.34	8.62	187.12	348.52	62.92	6 20 47	3869.3	4.92	180.40
100.00	16 41 4	2001.38	-21.83	24.89	350.14	110.94	17 14 26	1401.4	-18.79	17.41
100.00	6 24 11	4218.04	9.42	168.22	348.09	61.50	7 34 29	3618.0	5.54	161.58
110.00	17 57 11	1763.19	-24.09	5.76	349.10	115.02	18 26 34	1163.2	-20.52	358.44
110.00	7 24 34	4029.00	11.53	152.61	346.83	57.60	8 31 43	3429.0	7.18	146.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3428	TRA	-.4679	TC3	3.9564	BAU	.6192	SGT	2660.7	SGR	1799.1	SG3	1579.2	ST	696.3	SR	119.8	SS	841.0
RDE	.0564	RRA	.0337	RC3	2.9250	FAU	.32046	RRT	.9127	RRF	-.9970	RTF	-.9132	CRT	.7950	CRS	.9698	CST	.8568
FDE	-1.2747	FRA	-.6158	FC-29.4721		BSP	10684	SGB	3211.9	R23	-.2806	R13	-.9567	LSA	1059.5	MSA	288.5	SSA	27.7
BDE	.3474	BRA	.4691	BC3	4.9202	FSP	5245	SG1	3151.3	SG2	620.6	THA	33.13	EL1	702.9	EL2	72.0	ALF	7.87

LAUNCH DATE NOV 27 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 552.913 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.095	GAL	.95	AZL	91.05	HCA	170.08	SMA	188.78	ECC	.21873	INC	1.0454
RP	229.86	LAP	-.18	LOP	234.87	VP	21.254	GAP	1.29	AZP	88.97	TAL	5.30	TAP	175.38	RCA	147.49	APO	230.07
RC	230.076	GL	-11.29	GP	15.84	ZAL	73.95	ZAP	133.88	ETS	162.65	ZAE	162.17	ETE	106.22	ZAC	105.54	ETC	255.31

V1 30.186 V2 23.927 CLP 136.10

PLANETOCENTRIC CONIC

C3	9.507	VHL	3.083	DLA	4.55	RAL	137.37	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.900	DPA	11.11	RAP	197.16

ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 23	2193.38	-19.05	40.14	348.73	111.36	16 7 56	1593.4	-15.98	32.81
90.00	4 41 5	4554.66	11.22	192.04	347.47	63.83	5 57 0	3954.7	7.62	185.21
100.00	16 54 52	1924.12	-19.87	19.99	348.38	112.80	17 26 56	1324.1	-16.61	12.71
100.00	6 0 18	4299.15	12.02	172.84	347.06	62.42	7 11 57	3699.2	8.23	166.10
110.00	18 8 0	1695.20	-22.07	1.52	347.29	116.79	18 36 16	1095.2	-18.29	354.42
110.00	7 3 38	4100.84	14.12	156.56	345.84	58.54	8 11 59	3500.8	9.85	150.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3846	TRA	-.4487	TC3	3.7477	BAU	.6348	SGT	2559.6	SGR	2053.4	SG3	1615.6	ST	760.6	SR	244.8	SS	1104.8
RDE	.1261	RRA	.0648	RC3	3.3024	FAU	.32690	RRT	.9081	RRF	-.9980	RTF	-.9070	CRT	.8731	CRS	.9965	CST	.8850
FDE	-1.7211	FRA	-.8333	FC-29.7703		BSP	10965	SGB	3281.4	R23	-.2605	R13	-.9634	LSA	1329.5	MSA	301.9	SSA	19.5
BDE	.4047	BRA	.4534	BC3	4.9951	FSP	5402	SG1	3208.9	SG2	686.0	THA	38.13	EL1	790.7	EL2	114.8	ALF	16.04

LAUNCH DATE NOV 27 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 556.741 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.081	GAL	.98	AZL	91.38	HCA	171.11	SMA	188.53	ECC	.21775	INC	1.3790
RP	229.47	LAP	-.21	LOP	235.90	VP	21.278	GAP	.95	AZP	88.64	TAL	5.48	TAP	176.59	RCA	147.48	APO	229.59
RC	231.973	GL	-14.80	GP	17.88	ZAL	73.80	ZAP	131.92	ETS	161.64	ZAE	159.73	ETE	109.08	ZAC	107.42	ETC	255.17

V1 30.186 V2 23.968 CLP 134.59

PLANETOCENTRIC CONIC

C3	9.699	VHL	3.114	DLA	1.31	RAL	135.96	RAD	6567.4	VEL	11.449	PTH	1.99	VHP	3.868	DPA	13.16	RAP	197.62

ECC 1.1596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 55	2096.52	-16.54	34.14	346.97	113.32	16 24 51	1496.5	-13.24	27.02
90.00	4 11 17	4659.39	14.29	198.20	346.60	65.29	5 28 57	4059.4	10.84	191.22
100.00	17 11 52	1832.18	-17.35	14.33	346.60	114.73	17 42 24	1232.2	-13.87	7.26
100.00	5 32 1	4398.96	15.09	178.66	346.21	63.89	6 45 20	3799.0	11.46	171.75
110.00	18 21 31	1614.20	-19.50	356.64	345.46	118.65	18 48 25	1014.2	-15.52	349.77
110.00	6 38 52	4189.71	17.21	161.59	345.03	60.00	7 48 42	3589.7	13.10	154.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4342	TRA	-.4334	TC3	3.4897	BAU	.6609	SGT	2449.1	SGR	2359.4	SG3	1639.3	ST	836.4	SR	425.2	SS	1423.3
RDE	.2258	RRA	.1064	RC3	3.7156	FAU	.33097	RRT	.9009	RRF	-.9987	RTF	-.8987	CRT	.9061	CRS	.9994	CST	.9079
FDE	-2.2725	FRA	-1.0729	FC-29.5439		BSP	11442	SGB	3400.7	R23	-.2334	R13	-.9711	LSA	1676.1	MSA	310.8	SSA	13.8
BDE	.4893	BRA	.4462	BC3	5.0974	FSP	5526	SG1	3315.5	SG2	756.5	THA	43.81	EL1	924.0	EL2	162.8	ALF	25.59

LAUNCH DATE NOV 27 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 560.581 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.068 GAL 1.00 AZL 91.80 HCA 172.14 SMA 188.30 ECC .21684 INC 1.7990 V1 30.186
RP 229.09 LAP -.25 LOP 236.93 VP 21.304 GAP .61 AZP 88.22 TAL 5.64 TAP 177.78 RCA 147.47 APO 229.13 V2 24.009
RC 233.848 GL -19.11 GP 20.38 ZAL 73.82 ZAP 129.75 ETS 160.46 ZAE 156.80 ETE 111.13 ZAC 109.74 ETC 254.98 CLP 133.01

PLANETOCENTRIC CONIC

C3 10.055 VHL 3.171 DLA -2.70 RAL 134.34 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.857 DPA 15.64 RAP 198.25 ECC 1.1655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 10	1979.47	-13.26	27.12	345.29	115.25	16 46 9	1379.5	-9.75	20.20
90.00	3 35 7	4790.74	17.87	206.18	346.07	67.66	4 54 58	4190.7	14.68	198.95
100.00	17 33 15	1721.13	-14.07	7.71	344.88	116.65	18 1 56	1121.1	-10.38	.87
100.00	4 57 43	4524.32	18.69	186.22	345.70	66.24	6 13 7	3924.3	15.32	179.05
110.00	18 38 37	1516.52	-16.21	350.97	343.67	120.51	19 3 53	916.5	-12.04	344.35
110.00	6 8 51	4301.69	20.90	168.19	344.57	62.31	7 20 32	3701.7	17.03	161.20

DIFFERENTIAL CORRECTIONS
TDE .5007 TRA -.4153 TC3 3.1949 BAU .7055
RDE .3779 RRA .1693 RC3 4.1642 FAU .33277
FDE-2.9848 FRA-1.3742 FC-28.6525 BSP 12051
BDE .6273 BRA .4485 BC3 5.2486 FSP 5536

MID-COURSE EXECUTION ACCURACY
SGT 2342.7 SGR 2744.9 SG3 1651.7
RRT .8924 RRF -.9992 RTF -.8893
SGB 3608.7 R23 -.1982 R13 -.9794
SG1 3512.9 SG2 826.0 THA 50.05

ORBIT DETERMINATION ACCURACY
ST 934.4 SR 693.5 SS 1823.6
CRT .9288 CRS .9999 CST .9280
LSA 2139.8 MSA 317.2 SSA 9.7
EL1 1144.6 EL2 209.8 ALF 35.98

LAUNCH DATE NOV 27 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 564.431 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.056 GAL 1.03 AZL 92.35 HCA 173.17 SMA 188.09 ECC .21597 INC 2.3478 V1 30.186
RP 228.70 LAP -.28 LOP 237.96 VP 21.331 GAP .28 AZP 87.67 TAL 5.80 TAP 178.97 RCA 147.47 APO 228.71 V2 24.049
RC 235.703 GL -24.46 GP 23.51 ZAL 74.08 ZAP 127.29 ETS 159.09 ZAE 153.26 ETE 112.45 ZAC 112.64 ETC 254.68 CLP 131.35

PLANETOCENTRIC CONIC

C3 10.698 VHL 3.271 DLA -7.70 RAL 132.42 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.879 DPA 18.71 RAP 199.12 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 28	1834.57	-8.91	18.70	343.86	116.99	17 14 3	1234.6	-5.21	11.96
90.00	2 49 29	4960.65	21.91	217.00	346.16	71.60	4 12 10	4360.7	19.19	209.38
100.00	18 1 6	1584.11	-9.75	359.83	343.41	118.40	18 27 31	984.1	-5.88	353.18
100.00	4 14 32	4686.34	22.81	196.49	345.82	70.13	5 32 38	4086.3	19.89	188.91
110.00	19 0 54	1396.92	-11.97	344.31	342.09	122.26	19 24 10	796.9	-7.62	337.91
110.00	5 31 14	4446.30	25.19	177.22	344.77	66.09	6 45 20	3846.3	21.75	169.76

DIFFERENTIAL CORRECTIONS
TDE .5765 TRA -.4001 TC3 2.8089 BAU .7685
RDE .6052 RRA .2596 RC3 4.5808 FAU .32818
FDE-3.8140 FRA-1.7015 FC-26.5584 BSP 13067
BDE .8358 BRA .4769 BC3 5.3734 FSP 5476

MID-COURSE EXECUTION ACCURACY
SGT 2212.8 SGR 3211.5 SG3 1629.1
RRT .8798 RRF -.9995 RTF -.8759
SGB 3900.0 R23 -.1592 R13 -.9868
SG1 3797.2 SG2 889.6 THA 56.71

ORBIT DETERMINATION ACCURACY
ST 1033.4 SR 1072.8 SS 2266.2
CRT .9438 CRS 1.0000 CST .9423
LSA 2692.8 MSA 321.4 SSA 6.8
EL1 1468.5 EL2 249.5 ALF 46.14

LAUNCH DATE NOV 27 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 568.291 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.045 GAL 1.05 AZL 93.09 HCA 174.20 SMA 187.89 ECC .21516 INC 3.0946 V1 30.186
RP 228.31 LAP -.31 LOP 239.00 VP 21.359 GAP -.04 AZP 86.92 TAL 5.94 TAP 180.14 RCA 147.46 APO 228.31 V2 24.090
RC 237.537 GL -31.15 GP 27.49 ZAL 74.71 ZAP 124.41 ETS 157.53 ZAE 148.92 ETE 113.18 ZAC 116.34 ETC 254.23 CLP 129.57

PLANETOCENTRIC CONIC

C3 11.885 VHL 3.447 DLA -13.98 RAL 130.04 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 3.954 DPA 22.57 RAP 200.37 ECC 1.1956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 50	1647.47	-2.99	8.13	343.13	118.17	17 53 17	1047.5	.80	1.50
90.00	1 48 10	5191.27	26.00	232.64	347.39	78.38	3 14 41	4591.3	24.14	224.47
100.00	18 39 46	1408.91	-3.94	350.07	342.60	119.66	19 3 15	808.9	.03	343.54
100.00	3 16 55	4905.07	27.07	211.33	347.12	76.81	4 38 40	4305.1	24.99	203.15
110.00	19 31 25	1247.15	-6.41	336.27	341.08	123.65	19 52 12	647.1	-1.94	330.03
110.00	4 41 45	4639.59	29.87	190.30	346.25	72.54	5 59 5	4039.6	27.19	182.13

DIFFERENTIAL CORRECTIONS
TDE .6766 TRA -.3849 TC3 2.3372 BAU .8587
RDE .9640 RRA .3965 RC3 4.8733 FAU .31434
FDE-4.7682 FRA-2.0507 FC-22.8981 BSP 14566
BDE 1.1778 BRA .5526 BC3 5.4048 FSP 5280

MID-COURSE EXECUTION ACCURACY
SGT 2072.7 SGR 3783.9 SG3 1556.1
RRT .8630 RRF -.9997 RTF -.8582
SGB 4314.4 R23 -.1208 R13 -.9924
SG1 4210.5 SG2 940.9 THA 63.26

ORBIT DETERMINATION ACCURACY
ST 1142.8 SR 1618.2 SS 2736.0
CRT .9551 CRS 1.0000 CST .9534
LSA 3362.3 MSA 324.4 SSA 4.8
EL1 1961.3 EL2 279.4 ALF 55.19

LAUNCH DATE NOV 27 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 572.162 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.034 GAL 1.07 AZL 94.17 HCA 175.24 SMA 187.70 ECC .21440 INC 4.1673 V1 30.186
RP 227.92 LAP -.35 LOP 240.04 VP 21.389 GAP -.36 AZP 85.85 TAL 6.06 TAP 181.30 RCA 147.45 APO 227.94 V2 24.132
RC 239.350 GL -39.55 GP 32.63 ZAL 75.87 ZAP 120.92 ETS 155.79 ZAE 143.49 ETE 113.46 ZAC 121.11 ETC 253.50 CLP 127.60

PLANETOCENTRIC CONIC

C3 14.206 VHL 3.769 DLA -21.86 RAL 126.94 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 4.126 DPA 27.50 RAP 202.18 ECC 1.2338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 38	1376.00	5.74	352.96	344.32	117.78	18 58 34	776.0	9.41	346.20
90.00	0 13 36	5539.61	28.31	257.77	350.26	90.69	1 45 56	4939.6	28.11	249.11
100.00	19 41 34	1163.22	4.37	336.57	343.57	119.60	20 0 57	563.2	8.28	329.96
100.00	1 50 21	5227.64	29.87	234.81	350.25	88.80	3 17 29	4627.6	29.38	226.04
110.00	20 17 41	1050.00	1.10	325.95	341.53	124.17	20 35 11	450.0	5.58	319.72
110.00	3 30 44	4913.62	33.71	210.67	349.97	83.98	4 52 37	4313.6	32.51	201.64

DIFFERENTIAL CORRECTIONS
TDE .8182 TRA -.3648 TC3 1.7945 BAU .9953
RDE 1.5727 RRA .6332 RC3 4.9238 FAU .28956
FDE-5.8211 FRA-2.4539 FC-17.6462 BSP 16367
BDE 1.7728 BRA .7308 BC3 5.2406 FSP 4745

MID-COURSE EXECUTION ACCURACY
SGT 1932.3 SGR 4535.2 SG3 1423.4
RRT .8415 RRF -.9998 RTF -.8355
SGB 4929.6 R23 -.0867 R13 -.9961
SG1 4831.3 SG2 979.9 THA 69.39

ORBIT DETERMINATION ACCURACY
ST 1257.3 SR 2413.4 SS 3187.1
CRT .9630 CRS 1.0000 CST .9614
LSA 4177.9 MSA 328.6 SSA 3.4
EL1 2704.5 EL2 302.2 ALF 62.99

LAUNCH DATE NOV 27 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 576.039 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.024	GAL	1.09	AZL	95.84	HCA	176.28	SMA	187.52	ECC	.21369	INC	5.8424
RP	227.53	LAP	-.38	LOP	241.09	VP	21.420	GAP	-.67	AZP	84.17	TAL	6.18	TAP	182.46	RCA	147.45	APO	227.59
RC	241.142	GL	-50.01	GP	39.33	ZAL	77.76	ZAP	116.52	ETS	154.08	ZAE	136.57	ETE	113.60	ZAC	127.29	ETC	252.24

V1	30.186	V2	24.173	CLP	125.26														

PLANETOCENTRIC CONIC

C3	19.251	VHL	4.388	DLA	-31.58	RAL	122.58	RAD	6567.8	VEL	11.859	PTH	2.10	VHP	4.494	DPA	33.87	RAP	204.91
ECC	1.3168																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.39	19 10 19	1252.07	22.01	351.90	351.44	113.24	19 31 11	652.1	24.97	344.21
104.61	23 0 11	5802.63	22.03	275.28	351.45	113.23	24 36 53	5202.6	24.98	267.58
75.39	19 10 19	1252.07	22.01	351.90	351.44	113.24	19 31 11	652.1	24.97	344.21
104.61	23 0 11	5802.63	22.03	275.28	351.45	113.23	24 36 53	5202.6	24.98	267.58
110.00	21 54 35	718.98	13.47	308.30	346.79	121.72	22 6 32	119.0	17.57	301.59
110.00	1 19 3	5383.72	31.12	246.71	354.96	104.90	2 48 47	4783.7	32.85	237.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0158	TRA	-.3461	TC3	1.1776	BAU	1.1957	SGT	1763.2	SGR	5489.1	SG3	1186.9	ST	1336.3	SR	3490.9	SS	3418.8
RDE	2.6455	RRA	1.0606	RC3	4.4940	FAU	.24634	RRT	.8054	RRF	-.9998	RTF	-.7974	CRT	.9664	CRS	1.0000	CST	.9647
FDE	-6.6660	FRA	-2.8013	FC	-11.0780	BSP	18516	SGB	5765.3	R23	-.0609	R13	-.9980	LSA	5054.5	MSA	336.3	SSA	2.5
BDE	2.8338	BRA	1.1157	BC3	4.6458	FSP	3806	SG1	5676.1	SG2	1010.6	THA	75.01	EL1	3724.1	EL2	321.8	ALF	69.54

LAUNCH DATE NOV 27 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 579.914 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.014	GAL	1.10	AZL	98.82	HCA	177.32	SMA	187.35	ECC	.21302	INC	8.8212
RP	227.14	LAP	-.41	LOP	242.13	VP	21.452	GAP	-.97	AZP	81.19	TAL	6.29	TAP	183.60	RCA	147.44	APO	227.26
RC	242.914	GL	-62.74	GP	47.90	ZAL	80.51	ZAP	110.84	ETS	153.09	ZAE	127.79	ETE	114.35	ZAC	135.04	ETC	250.02

V1	30.186	V2	24.214	CLP	122.05														

PLANETOCENTRIC CONIC

C3	32.440	VHL	5.696	DLA	-43.14	RAL	115.69	RAD	6568.3	VEL	12.402	PTH	2.24	VHP	5.326	DPA	41.97	RAP	209.01
ECC	1.5339																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.98	16 58 42	1688.49	24.29	28.52	356.89	126.82	17 26 51	1088.5	28.90	21.63
124.02	0 20 48	5622.49	24.30	262.26	356.91	126.81	1 54 31	5022.5	28.92	255.36
55.98	16 58 42	1688.49	24.29	28.52	356.89	126.82	17 26 51	1088.5	28.90	21.63
124.02	0 20 48	5622.49	24.30	262.26	356.91	126.81	1 54 31	5022.5	28.92	255.36
55.98	16 58 42	1688.49	24.29	28.52	356.89	126.82	17 26 51	1088.5	28.90	21.63
124.02	0 20 48	5622.49	24.30	262.26	356.91	126.81	1 54 31	5022.5	28.92	255.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2770	TRA	-.3664	TC3	.5419	BAU	1.5007	SGT	1512.1	SGR	6615.8	SG3	809.1	ST	1293.6	SR	4734.7	SS	3078.1
RDE	4.6403	RRA	1.8945	RC3	3.4177	FAU	.17770	RRT	.7078	RRF	-.9997	RTF	-.6939	CRT	.9600	CRS	1.0000	CST	.9573
FDE	-6.5451	FRA	-2.8245	FC3	-4.7423	BSP	20916	SGB	6786.4	R23	-.0454	R13	-.9989	LSA	5782.5	MSA	358.0	SSA	2.0
BDE	4.8128	BRA	1.9296	BC3	3.4604	FSP	2446	SG1	6704.0	SG2	1054.2	THA	80.58	EL1	4895.7	EL2	350.4	ALF	75.23

LAUNCH DATE NOV 27 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 603.653 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.970	GAL	1.10	AZL	80.68	HCA	183.77	SMA	186.58	ECC	.20979	INC	9.3180
RP	224.80	LAP	-.61	LOP	248.50	VP	21.667	GAP	-2.66	AZP	99.30	TAL	6.36	TAP	190.12	RCA	147.44	APO	225.73
RC	253.132	GL	64.68	GP	-41.96	ZAL	80.86	ZAP	107.14	ETS	194.45	ZAE	130.85	ETE	226.41	ZAC	47.40	ETC	251.21

V1	30.186	V2	24.465	CLP	113.35														

PLANETOCENTRIC CONIC

C3	34.855	VHL	5.904	DLA	72.51	RAL	193.98	RAD	6568.4	VEL	12.499	PTH	2.26	VHP	4.253	DPA	-36.94	RAP	161.82
ECC	1.5736																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
16.91	10 36 37	4426.24	-43.24	238.33	122.36	20.58	11 50 23	3826.2	-50.65	234.32
16.91	6 14 53	4701.62	-25.44	244.37	63.93	16.47	7 33 14	4101.6	-33.08	242.09
19.97	8 32 4	4557.44	-33.87	238.42	91.77	21.23	9 48 2	3957.4	-41.27	235.00
160.03	19 11 59	2789.75	-33.87	85.37	91.75	21.22	19 58 29	2189.7	-41.27	81.94
19.97	8 32 4	4557.44	-33.87	238.42	91.77	21.23	9 48 2	3957.4	-41.27	235.00
160.03	19 11 59	2789.75	-33.87	85.37	91.75	21.22	19 58 29	2189.7	-41.27	81.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2338	TRA	-.0347	TC3	-.1593	BAU	1.3706	SGT	1217.2	SGR	6473.3	SG3	1329.5	ST	1197.9	SR	3217.9	SS	2834.5
RDE	2.9886	RRA	1.4351	RC3	-2.9371	FAU	.28775	RRT	.4577	RRF	.9998	RTF	.4674	CRT	.8890	CRS	-.9999	CST	-.8949
FDE	7.2079	FRA	3.3450	FC3	-7.1472	BSP	22932	SGB	6586.7	R23	.0037	R13	.9999	LSA	4421.2	MSA	526.8	SSA	2.6
BDE	3.2332	BRA	1.4355	BC3	2.9414	FSP	4691	SG1	6497.9	SG2	1078.1	THA	84.94	EL1	3394.0	EL2	520.0	ALF	71.23

LAUNCH DATE NOV 27 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 607.611 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.965	GAL	1.10	AZL	82.36	HCA	184.83	SMA	186.49	ECC	.20938	INC	7.6394
RP	224.41	LAP	-.64	LOP	249.58	VP	21.706	GAP	-2.93	AZP	97.61	TAL	6.35	TAP	191.19	RCA	147.44	APO	225.54
RC	254.766	GL	58.81	GP	-35.94	ZAL	79.48	ZAP	107.68	ETS	191.85	ZAE	134.28	ETE	220.93	ZAC	53.12	ETC	252.76

V1	30.186	V2	24.506	CLP	112.04														

PLANETOCENTRIC CONIC

C3	26.236	VHL	5.122	DLA	68.86	RAL	179.90	RAD	6568.1	VEL	12.150	PTH	2.18	VHP	3.782	DPA	-31.65	RAP	165.31
ECC	1.4318																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.18	7 44 52	4475.36	-37.38	231.56	72.73	26.98	8 59 27	3875.4	-44.40	226.91
155.82	18 6 54	2729.47	-37.37	82.90	72.72	26.98	18 52 23	2129.5	-44.40	78.25
24.18	7 44 52	4475.36	-37.38	231.56	72.73	26.98	8 59 27	3875.4	-44.40	226.91
155.82	18 6 54	2729.47	-37.37	82.90	72.72	26.98	18 52 23	2129.5	-44.40	78.25
24.18	7 44 52	4475.36	-37.38	231.56	72.73	26.98	8 59 27	3875.4	-44.40	226.91
155.82	18 6 54	2729.47	-37.37	82.90	72.72	26.98	18 52 23	2129.5	-44.40	78.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0902	TRA	-.1150	TC3	-.2807	BAU	1.1929	SGT	1302.7	SGR	5640.5	SG3	1696.5	ST	1224.2	SR	3345.5	SS	3794.5
RDE	2.8737	RRA	.9897	RC3	-3.3893	FAU	.36550	RRT	.5203	RRF	.9998	RTF	.5270	CRT	.9333	CRS	-1.0000	CST	-.9358
FDE	9.9939	FRA	3.3488	FC	-12.0606	BSP	19076	SGB	5789.0	R23	.0164	R13	.9997	LSA	5187.4	MSA	424.6	SSA	3.2
BDE	3.0736	BRA	.9963	BC3	3.4009	FSP	5713	SG1	5682.7	SG2	1104.2	THA	82.88	EL1	3538.1	EL2	415.7	ALF	70.87

LAUNCH DATE NOV 27 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 611.585 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.960 GAL 1.09 AZL 83.43 HCA 185.91 SMA 186.40 ECC .20901 INC 6.5671 V1 30.186
RP 224.02 LAP -.67 LOP 250.66 VP 21.746 GAP -3.19 AZP 96.53 TAL 6.33 TAP 192.23 RCA 147.44 APO 225.36 V2 24.548
RC 256.380 GL 54.20 GP -31.27 ZAL 78.43 ZAP 107.34 ETS 189.51 ZAE 136.07 ETE 215.42 ZAC 57.50 ETC 253.70 CLP 110.41

PLANETOCENTRIC CONIC

C3 21.591 VHL 4.647 DLA 65.43 RAL 171.90 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 3.507 DPA -27.34 RAP 167.42 ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.19	7/21 54	4414.88	-39.05	224.97	60.14	32.38	8 35 29	3814.9	-45.66	219.27
151.81	17 26 3	2694.60	-39.05	80.69	60.12	32.37	18 10 58	2094.6	-45.65	74.99
28.19	7 21 54	4414.88	-39.05	224.97	60.14	32.38	8 35 29	3814.9	-45.66	219.27
151.81	17 26 3	2694.60	-39.05	80.69	60.12	32.37	18 10 58	2094.6	-45.65	74.99
28.19	7 21 54	4414.88	-39.05	224.97	60.14	32.38	8 35 29	3814.9	-45.66	219.27
151.81	17 26 3	2694.60	-39.05	80.69	60.12	32.37	18 10 58	2094.6	-45.65	74.99

DIFFERENTIAL CORRECTIONS
TDE 1.0425 TRA -.1411 TC3 -.4588 BAU 1.0323
RDE 2.4975 RRA .7698 RC3-3.5469 FAU .41613
FDE11.3964 FRA 3.4163 FC-16.6860 BSP 17569
BDE 2.7063 BRA .7826 BC3 3.5765 FSP 6927

MID-COURSE EXECUTION ACCURACY
SGT 1417.5 SGR 5055.6 SG3 2008.8
RRT .6153 RRF .9998 RTF .6202
SGB 5250.6 R23 .0324 R13 .9992
SG1 5134.0 SG2 1100.3 THA 79.74

ORBIT DETERMINATION ACCURACY
ST 1291.7 SR 3156.4 SS 4358.2
CRT .9502 CRS-1.0000 CST -.9520
LSA 5520.4 MSA 388.0 SSA 3.6
EL1 3389.8 EL2 374.6 ALF 68.47

LAUNCH DATE NOV 27 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 615.570 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.955 GAL 1.08 AZL 84.18 HCA 186.99 SMA 186.33 ECC .20866 INC 5.8206 V1 30.186
RP 223.63 LAP -.71 LOP 251.74 VP 21.786 GAP -3.44 AZP 95.78 TAL 6.28 TAP 193.27 RCA 147.45 APO 225.20 V2 24.590
RC 257.974 GL 50.49 GP -27.61 ZAL 77.64 ZAP 106.44 ETS 187.52 ZAE 136.69 ETE 210.32 ZAC 60.89 ETC 254.33 CLP 108.63

PLANETOCENTRIC CONIC

C3 18.760 VHL 4.331 DLA 62.42 RAL 166.91 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 3.329 DPA -23.81 RAP 168.71 ECC 1.3087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.73	7 10 17	4367.95	-39.72	219.15	51.20	37.00	8 23 5	3767.9	-45.91	212.65
148.27	16 57 50	2674.57	-39.71	78.92	51.19	37.00	17 42 25	2074.6	-45.91	72.42
31.73	7 10 17	4367.95	-39.72	219.15	51.20	37.00	8 23 5	3767.9	-45.91	212.65
148.27	16 57 50	2674.57	-39.71	78.92	51.19	37.00	17 42 25	2074.6	-45.91	72.42
31.73	7 10 17	4367.95	-39.72	219.15	51.20	37.00	8 23 5	3767.9	-45.91	212.65
148.27	16 57 50	2674.57	-39.71	78.92	51.19	37.00	17 42 25	2074.6	-45.91	72.42

DIFFERENTIAL CORRECTIONS
TDE 1.0332 TRA -.1568 TC3 -.7033 BAU .9254
RDE 2.1107 RRA .6042 RC3-3.6221 FAU .45964
FDE11.8958 FRA 3.3002 FC-21.2110 BSP 15824
BDE 2.3500 BRA .6243 BC3 3.6898 FSP 7683

MID-COURSE EXECUTION ACCURACY
SGT 1562.0 SGR 4541.1 SG3 2243.3
RRT .6984 RRF .9997 RTF .7022
SGB 4802.2 R23 .0535 R13 .9983
SG1 4678.0 SG2 1085.2 THA 75.71

ORBIT DETERMINATION ACCURACY
ST 1373.4 SR 2841.2 SS 4600.8
CRT .9605 CRS-1.0000 CST -.9620
LSA 5567.1 MSA 366.5 SSA 4.2
EL1 3136.7 EL2 346.3 ALF 64.77

LAUNCH DATE NOV 27 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 619.566 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.951 GAL 1.07 AZL 84.73 HCA 188.07 SMA 186.26 ECC .20835 INC 5.2714 V1 30.186
RP 223.24 LAP -.74 LOP 252.82 VP 21.827 GAP -3.69 AZP 95.22 TAL 6.22 TAP 194.29 RCA 147.45 APO 225.06 V2 24.632
RC 259.547 GL 47.45 GP -24.69 ZAL 77.06 ZAP 105.19 ETS 185.87 ZAE 136.48 ETE 205.81 ZAC 63.56 ETC 254.77 CLP 106.76

PLANETOCENTRIC CONIC

C3 16.884 VHL 4.109 DLA 59.84 RAL 163.56 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 3.206 DPA -20.89 RAP 169.46 ECC 1.2779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.80	7 4 33	4329.90	-39.83	214.13	44.59	40.86	8 16 43	3729.9	-45.66	207.06
145.20	16 36 53	2663.58	-39.82	77.60	44.57	40.85	17 21 17	2063.6	-45.64	70.53
34.80	7 4 33	4329.90	-39.83	214.13	44.59	40.86	8 16 43	3729.9	-45.66	207.06
145.20	16 36 53	2663.58	-39.82	77.60	44.57	40.85	17 21 17	2063.6	-45.64	70.53
34.80	7 4 33	4329.90	-39.83	214.13	44.59	40.86	8 16 43	3729.9	-45.66	207.06
145.20	16 36 53	2663.58	-39.82	77.60	44.57	40.85	17 21 17	2063.6	-45.64	70.53

DIFFERENTIAL CORRECTIONS
TDE 1.0501 TRA -.1648 TC3 -.9995 BAU .8453
RDE 1.7979 RRA .4936 RC3-3.6091 FAU .49341
FDE12.0167 FRA 3.1838 FC-25.3002 BSP 14560
BDE 2.0821 BRA .5204 BC3 3.7450 FSP 8299

MID-COURSE EXECUTION ACCURACY
SGT 1740.1 SGR 4118.1 SG3 2430.2
RRT .7648 RRF .9996 RTF .7677
SGB 4470.7 R23 .0795 R13 .9964
SG1 4342.4 SG2 1063.1 THA 70.90

ORBIT DETERMINATION ACCURACY
ST 1470.9 SR 2542.0 SS 4701.6
CRT .9673 CRS-1.0000 CST -.9687
LSA 5532.2 MSA 354.9 SSA 4.8
EL1 2918.9 EL2 325.0 ALF 60.36

LAUNCH DATE NOV 27 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 623.572 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.947 GAL 1.06 AZL 85.15 HCA 189.16 SMA 186.19 ECC .20806 INC 4.8510 V1 30.186
RP 222.85 LAP -.77 LOP 253.91 VP 21.869 GAP -3.93 AZP 94.79 TAL 6.15 TAP 195.31 RCA 147.45 APO 224.93 V2 24.674
RC 261.100 GL 44.93 GP -22.31 ZAL 76.63 ZAP 103.72 ETS 184.49 ZAE 135.71 ETE 201.92 ZAC 65.69 ETC 255.10 CLP 104.85

PLANETOCENTRIC CONIC

C3 15.559 VHL 3.945 DLA 57.62 RAL 161.21 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.116 DPA -18.42 RAP 169.86 ECC 1.2561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.46	7 2 4	4298.08	-39.65	209.83	39.53	44.06	8 13 42	3698.1	-45.14	202.36
142.54	16 20 36	2658.17	-39.64	76.65	39.52	44.05	17 4 54	2058.2	-45.13	69.18
37.46	7 2 4	4298.08	-39.65	209.83	39.53	44.06	8 13 42	3698.1	-45.14	202.36
142.54	16 20 36	2658.17	-39.64	76.65	39.52	44.05	17 4 54	2058.2	-45.13	69.18
37.46	7 2 4	4298.08	-39.65	209.83	39.53	44.06	8 13 42	3698.1	-45.14	202.36
142.54	16 20 36	2658.17	-39.64	76.65	39.52	44.05	17 4 54	2058.2	-45.13	69.18

DIFFERENTIAL CORRECTIONS
TDE 1.0878 TRA -.1628 TC3-1.3291 BAU .7841
RDE 1.5556 RRA .4212 RC3-3.5276 FAU .51779
FDE11.9800 FRA 3.1202 FC-28.8101 BSP 13848
BDE 1.8982 BRA .4515 BC3 3.7697 FSP 8904

MID-COURSE EXECUTION ACCURACY
SGT 1947.1 SGR 3762.4 SG3 2579.0
RRT .8169 RRF .9994 RTF .8188
SGB 4236.4 R23 .1092 R13 .9934
SG1 4109.7 SG2 1028.2 THA 65.45

ORBIT DETERMINATION ACCURACY
ST 1585.9 SR 2287.0 SS 4738.4
CRT .9726 CRS-1.0000 CST -.9738
LSA 5484.2 MSA 347.4 SSA 5.5
EL1 2766.3 EL2 304.8 ALF 55.52

LAUNCH DATE NOV 27 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 627.588 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.944 GAL 1.04 AZL 85.48 HCA 190.25 SMA 186.14 ECC .20780 INC 4.5175 V1 30.186
RP 222.47 LAP -.80 LOP 255.01 VP 21.912 GAP -4.17 AZP 94.45 TAL 6.06 TAP 196.31 RCA 147.46 APO 224.82 V2 24.716
RC 262.633 GL 42.80 GP -20.33 ZAL 76.33 ZAP 102.09 ETS 183.33 ZAE 134.55 ETE 198.61 ZAC 67.42 ETC 255.36 CLP 102.90

PLANETOCENTRIC CONIC

C3 14.580 VHL 3.818 DLA 55.71 RAL 159.51 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 3.049 DPA -16.30 RAP 170.01 ECC 1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.79	7 1 35	4270.74	-39.31	206.12	35.58	46.73	8 12 45	3670.7	-44.52	198.36
140.21	16 7 29	2656.39	-39.29	76.00	35.57	46.72	16 51 46	2056.4	-44.51	68.25
39.79	7 1 35	4270.74	-39.31	206.12	35.58	46.73	8 12 45	3670.7	-44.52	198.36
140.21	16 7 29	2656.39	-39.29	76.00	35.57	46.72	16 51 46	2056.4	-44.51	68.25
39.79	7 1 35	4270.74	-39.31	206.12	35.58	46.73	8 12 45	3670.7	-44.52	198.36
140.21	16 7 29	2656.39	-39.29	76.00	35.57	46.72	16 51 46	2056.4	-44.51	68.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1290 TRA -.1607 TC3-1.6990 BAU .7473 SGT 2176.4 SGR 3459.0 SG3 2699.3 ST 1699.5 SR 2059.3 SS 4707.2
RDE 1.3578 RRA .3613 RC3-3.4366 FAU .53980 RRT .8561 RRF .9992 RTF .8575 CRT .9766 CRS-1.0000 CST -.9778
FDE11.7887 FRA 3.0044 FC-32.0521 BSP 13231 SGB 4086.8 R23 .1393 R13 .9894 LSA 5401.0 MSA 340.5 SSA 6.3
BDE 1.7659 BRA .3954 BC3 3.8337 FSP 9278 SG1 3967.4 SG2 980.5 THA 59.64 EL1 2654.9 EL2 283.6 ALF 50.60

LAUNCH DATE NOV 27 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 631.614 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.941 GAL 1.02 AZL 85.75 HCA 191.35 SMA 186.09 ECC .20757 INC 4.2472 V1 30.186
RP 222.08 LAP -.83 LOP 256.10 VP 21.954 GAP -4.40 AZP 94.16 TAL 5.95 TAP 197.30 RCA 147.46 APO 224.71 V2 24.758
RC 264.145 GL 40.99 GP -18.67 ZAL 76.14 ZAP 100.35 ETS 182.35 ZAE 133.10 ETE 195.80 ZAC 68.85 ETC 255.58 CLP 100.94

PLANETOCENTRIC CONIC

C3 13.828 VHL 3.719 DLA 54.04 RAL 158.25 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 2.998 DPA -14.44 RAP 169.99 ECC 1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.84	7 2 21	4246.74	-38.88	202.89	32.45	48.98	8 13 8	3646.7	-43.85	194.93
138.16	15 56 39	2657.01	-38.87	75.57	32.44	48.97	16 40 56	2057.0	-43.84	67.62
41.84	7 2 21	4246.74	-38.88	202.89	32.45	48.98	8 13 8	3646.7	-43.85	194.93
138.16	15 56 39	2657.01	-38.87	75.57	32.44	48.97	16 40 56	2057.0	-43.84	67.62
41.84	7 2 21	4246.74	-38.88	202.89	32.45	48.98	8 13 8	3646.7	-43.85	194.93
138.16	15 56 39	2657.01	-38.87	75.57	32.44	48.97	16 40 56	2057.0	-43.84	67.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1776 TRA -.1549 TC3-2.0956 BAU .7254 SGT 2426.1 SGR 3197.6 SG3 2796.5 ST 1819.1 SR 1870.7 SS 4661.5
RDE 1.2021 RRA .3202 RC3-3.3177 FAU .55600 RRT .8849 RRF .9989 RTF .8858 CRT .9795 CRS-1.0000 CST -.9807
FDE11.5700 FRA 2.9427 FC-34.8097 BSP 13002 SGB 4013.8 R23 .1669 R13 .9849 LSA 5331.5 MSA 336.8 SSA 7.1
BDE 1.6828 BRA .3557 BC3 3.9241 FSP 9650 SG1 3905.7 SG2 925.1 THA 53.77 EL1 2596.0 EL2 263.9 ALF 45.82

LAUNCH DATE NOV 27 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 635.650 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.939 GAL 1.00 AZL 85.98 HCA 192.45 SMA 186.05 ECC .20736 INC 4.0233 V1 30.186
RP 221.70 LAP -.87 LOP 257.20 VP 21.998 GAP -4.63 AZP 93.93 TAL 5.83 TAP 198.27 RCA 147.47 APO 224.63 V2 24.799
RC 265.639 GL 39.44 GP -17.25 ZAL 76.02 ZAP 98.55 ETS 181.52 ZAE 131.45 ETE 193.41 ZAC 70.04 ETC 255.77 CLP 98.95

PLANETOCENTRIC CONIC

C3 13.233 VHL 3.638 DLA 52.56 RAL 157.31 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 2.959 DPA -12.80 RAP 169.83 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.67	7 4 0	4225.32	-38.43	200.04	29.93	50.89	8 14 26	3625.3	-43.18	191.94
136.33	15 47 33	2659.26	-38.42	75.33	29.92	50.88	16 31 52	2059.3	-43.17	67.23
43.67	7 4 0	4225.32	-38.43	200.04	29.93	50.89	8 14 26	3625.3	-43.18	191.94
136.33	15 47 33	2659.26	-38.42	75.33	29.92	50.88	16 31 52	2059.3	-43.17	67.23
43.67	7 4 0	4225.32	-38.43	200.04	29.93	50.89	8 14 26	3625.3	-43.18	191.94
136.33	15 47 33	2659.26	-38.42	75.33	29.92	50.88	16 31 52	2059.3	-43.17	67.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2301 TRA -.1461 TC3-2.5146 BAU .7187 SGT 2691.5 SGR 2968.2 SG3 2873.9 ST 1941.6 SR 1708.1 SS 4593.8
RDE 1.0741 RRA .2885 RC3-3.1908 FAU .56889 RRT .9065 RRF .9985 RTF .9070 CRT .9819 CRS-1.0000 CST -.9830
FDE11.3053 FRA 2.8913 FC-37.2190 BSP 13029 SGB 4006.7 R23 .1894 R13 .9804 LSA 5261.1 MSA 333.7 SSA 7.9
BDE 1.6331 BRA .3233 BC3 4.0626 FSP 9970 SG1 3912.9 SG2 861.9 THA 48.09 EL1 2574.4 EL2 244.1 ALF 41.27

LAUNCH DATE NOV 27 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 639.695 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.937 GAL .98 AZL 86.17 HCA 193.55 SMA 186.01 ECC .20718 INC 3.8343 V1 30.186
RP 221.32 LAP -.90 LOP 258.31 VP 22.042 GAP -4.85 AZP 93.73 TAL 5.69 TAP 199.24 RCA 147.47 APO 224.55 V2 24.841
RC 267.114 GL 38.08 GP -16.03 ZAL 75.99 ZAP 96.70 ETS 180.81 ZAE 129.67 ETE 191.39 ZAC 71.05 ETC 255.94 CLP 96.97

PLANETOCENTRIC CONIC

C3 12.749 VHL 3.571 DLA 51.26 RAL 156.62 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 2.930 DPA -11.33 RAP 169.58 ECC 1.2098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.31	7 6 15	4205.94	-37.96	197.51	27.88	52.54	8 16 21	3605.9	-42.52	189.31
134.69	15 39 48	2662.61	-37.95	75.21	27.87	52.53	16 24 11	2062.6	-42.51	67.01
45.31	7 6 15	4205.94	-37.96	197.51	27.88	52.54	8 16 21	3605.9	-42.52	189.31
134.69	15 39 48	2662.61	-37.95	75.21	27.87	52.53	16 24 11	2062.6	-42.51	67.01
45.31	7 6 15	4205.94	-37.96	197.51	27.88	52.54	8 16 21	3605.9	-42.52	189.31
134.69	15 39 48	2662.61	-37.95	75.21	27.87	52.53	16 24 11	2062.6	-42.51	67.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2819 TRA -.1372 TC3-2.9580 BAU .7262 SGT 2969.3 SGR 2767.0 SG3 2937.2 ST 2060.7 SR 1566.4 SS 4508.8
RDE .9672 RRA .2627 RC3-3.0660 FAU .57992 RRT .9226 RRF .9981 RTF .9229 CRT .9837 CRS-1.0000 CST -.9847
FDE11.0042 FRA 2.8398 FC-39.3793 BSP 13199 SGB 4058.7 R23 .2054 R13 .9767 LSA 5188.4 MSA 331.3 SSA 8.9
BDE 1.6058 BRA .2964 BC3 4.2603 FSP 10155 SG1 3979.9 SG2 796.2 THA 42.81 EL1 2578.6 EL2 225.3 ALF 37.12

LAUNCH DATE NOV 27 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 643.749 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.935 GAL .95 AZL 86.33 HCA 194.66 SMA 185.98 ECC .20702 INC 3.6730 V1 30.186
RP 220.94 LAP -.93 LOP 259.42 VP 22.086 GAP -5.07 AZP 93.55 TAL 5.54 TAP 200.20 RCA 147.48 APO 224.49 V2 24.883
RC 268.570 GL 36.90 GP -14.95 ZAL 76.01 ZAP 94.81 ETS 180.19 ZAE 127.78 ETE 189.66 ZAC 71.91 ETC 256.09 CLP 94.98

PLANETOCENTRIC CONIC

C3 12.349 VHL 3.514 DLA 50.08 RAL 156.13 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 2.908 DPA -10.00 RAP 169.26 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.79	7 8 59	4188.14	-37.49	195.24	26.22	53.97	8 18 47	3588.1	-41.89	186.96
133.21	15 33 7	2666.77	-37.48	75.20	26.21	53.96	16 17 34	2066.8	-41.88	66.93
46.79	7 8 59	4188.14	-37.49	195.24	26.22	53.97	8 18 47	3588.1	-41.89	186.96
133.21	15 33 7	2666.77	-37.48	75.20	26.21	53.96	16 17 34	2066.8	-41.88	66.93
46.79	7 8 59	4188.14	-37.49	195.24	26.22	53.97	8 18 47	3588.1	-41.89	186.96
133.21	15 33 7	2666.77	-37.48	75.20	26.21	53.96	16 17 34	2066.8	-41.88	66.93

DIFFERENTIAL CORRECTIONS
TDE 1.3353 TRA -.1254 TC3-3.4174 BAU .7434
RDE .8790 RRA .2440 RC3-2.9325 FAU .58702
FDE10.7085 FRA 2.8217 FC-41.1552 BSP 13605
BDE 1.5986 BRA .2743 BC3 4.5031 FSP 10347

MID-COURSE EXECUTION ACCURACY
SGT 3257.3 SGR 2585.8 SG3 2984.1
RRT .9347 RRF .9975 RTF .9351
SGB 4158.8 R23 .2148 R13 .9741
SG1 4094.1 SG2 731.1 THA 38.00

ORBIT DETERMINATION ACCURACY
ST 2180.4 SR 1446.6 SS 4424.9
CRT .9851 CRS-1.0000 CST -.9861
LSA 5130.1 MSA 330.3 SSA 9.8
EL1 2608.3 EL2 208.2 ALF 33.41

LAUNCH DATE NOV 27 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 647.812 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.934 GAL .92 AZL 86.47 HCA 195.77 SMA 185.96 ECC .20689 INC 3.5334 V1 30.186
RP 220.56 LAP -.96 LOP 260.53 VP 22.131 GAP -5.28 AZP 93.40 TAL 5.37 TAP 201.14 RCA 147.49 APO 224.43 V2 24.924
RC 270.009 GL 35.85 GP -14.00 ZAL 76.10 ZAP 92.91 ETS 179.66 ZAE 125.83 ETE 188.18 ZAC 72.65 ETC 256.23 CLP 93.00

PLANETOCENTRIC CONIC

C3 12.010 VHL 3.466 DLA 49.02 RAL 155.79 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 2.892 DPA -8.79 RAP 168.89 ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.15	7 12 3	4171.67	-37.04	193.17	24.85	55.24	8 21 35	3571.7	-41.28	184.84
131.85	15 27 20	2671.49	-37.03	75.27	24.84	55.22	16 11 51	2071.5	-41.28	66.94
48.15	7 12 3	4171.67	-37.04	193.17	24.85	55.24	8 21 35	3571.7	-41.28	184.84
131.85	15 27 20	2671.49	-37.03	75.27	24.84	55.22	16 11 51	2071.5	-41.28	66.94
48.15	7 12 3	4171.67	-37.04	193.17	24.85	55.24	8 21 35	3571.7	-41.28	184.84
131.85	15 27 20	2671.49	-37.03	75.27	24.84	55.22	16 11 51	2071.5	-41.28	66.94

DIFFERENTIAL CORRECTIONS
TDE 1.3882 TRA -.1114 TC3-3.8907 BAU .7700
RDE .8034 RRA .2283 RC3-2.8040 FAU .59262
FDE10.3895 FRA 2.8030 FC-42.7178 BSP 14144
BDE 1.6039 BRA .2540 BC3 4.7959 FSP 10453

MID-COURSE EXECUTION ACCURACY
SGT 3552.3 SGR 2423.4 SG3 3019.8
RRT .9442 RRF .9968 RTF .9446
SGB 4300.2 R23 .2179 R13 .9727
SG1 4248.1 SG2 667.6 THA 33.73

ORBIT DETERMINATION ACCURACY
ST 2298.1 SR 1340.8 SS 4330.5
CRT .9862 CRS -.9999 CST -.9872
LSA 5071.9 MSA 328.6 SSA 10.7
EL1 2653.7 EL2 191.9 ALF 30.09

LAUNCH DATE NOV 27 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 651.885 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.933 GAL .89 AZL 86.59 HCA 196.89 SMA 185.94 ECC .20677 INC 3.4115 V1 30.186
RP 220.18 LAP -.99 LOP 261.64 VP 22.176 GAP -5.49 AZP 93.26 TAL 5.19 TAP 202.08 RCA 147.50 APO 224.39 V2 24.965
RC 271.430 GL 34.92 GP -13.15 ZAL 76.24 ZAP 91.01 ETS 179.20 ZAE 123.83 ETE 186.91 ZAC 73.30 ETC 256.36 CLP 91.03

PLANETOCENTRIC CONIC

C3 11.720 VHL 3.423 DLA 48.05 RAL 155.57 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 2.882 DPA -7.67 RAP 168.49 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.40	7 15 25	4156.24	-36.59	191.27	23.73	56.36	8 24 42	3556.2	-40.71	182.90
130.60	15 22 15	2676.65	-36.58	75.40	23.72	56.35	16 6 52	2076.7	-40.70	67.03
49.40	7 15 25	4156.24	-36.59	191.27	23.73	56.36	8 24 42	3556.2	-40.71	182.90
130.60	15 22 15	2676.65	-36.58	75.40	23.72	56.35	16 6 52	2076.7	-40.70	67.03
49.40	7 15 25	4156.24	-36.59	191.27	23.73	56.36	8 24 42	3556.2	-40.71	182.90
130.60	15 22 15	2676.65	-36.58	75.40	23.72	56.35	16 6 52	2076.7	-40.70	67.03

DIFFERENTIAL CORRECTIONS
TDE 1.4399 TRA -.0959 TC3-4.3773 BAU .8043
RDE .7378 RRA .2147 RC3-2.6805 FAU .59678
FDE10.0488 FRA 2.7786 FC-44.0823 BSP 14786
BDE 1.6179 BRA .2352 BC3 5.1329 FSP 10473

MID-COURSE EXECUTION ACCURACY
SGT 3853.2 SGR 2276.4 SG3 3045.2
RRT .9516 RRF .9959 RTF .9522
SGB 4475.4 R23 .2160 R13 .9723
SG1 4433.9 SG2 608.0 THA 29.97

ORBIT DETERMINATION ACCURACY
ST 2412.5 SR 1246.4 SS 4226.4
CRT .9873 CRS -.9999 CST -.9882
LSA 5013.0 MSA 326.3 SSA 11.7
EL1 2709.7 EL2 176.6 ALF 27.15

LAUNCH DATE NOV 27 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 655.965 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.932 GAL .85 AZL 86.70 HCA 198.01 SMA 185.93 ECC .20669 INC 3.3038 V1 30.186
RP 219.81 LAP -1.02 LOP 262.76 VP 22.221 GAP -5.70 AZP 93.14 TAL 4.99 TAP 203.00 RCA 147.50 APO 224.36 V2 25.006
RC 272.833 GL 34.08 GP -12.38 ZAL 76.43 ZAP 89.10 ETS 178.79 ZAE 121.79 ETE 185.82 ZAC 73.87 ETC 256.48 CLP 89.08

PLANETOCENTRIC CONIC

C3 11.468 VHL 3.386 DLA 47.16 RAL 155.47 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 2.878 DPA -6.64 RAP 168.06 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.57	7 19 4	4141.65	-36.16	189.51	22.82	57.37	8 28 6	3541.7	-40.16	181.10
129.43	15 17 48	2682.16	-36.15	75.59	22.81	57.36	16 2 30	2082.2	-40.15	67.18
50.57	7 19 4	4141.65	-36.16	189.51	22.82	57.37	8 28 6	3541.7	-40.16	181.10
129.43	15 17 48	2682.16	-36.15	75.59	22.81	57.36	16 2 30	2082.2	-40.15	67.18
50.57	7 19 4	4141.65	-36.16	189.51	22.82	57.37	8 28 6	3541.7	-40.16	181.10
129.43	15 17 48	2682.16	-36.15	75.59	22.81	57.36	16 2 30	2082.2	-40.15	67.18

DIFFERENTIAL CORRECTIONS
TDE 1.4904 TRA -.0783 TC3-4.8758 BAU .8438
RDE .6823 RRA .2053 RC3-2.5523 FAU .59754
FDE 9.7243 FRA 2.7889 FC-45.1095 BSP 15554
BDE 1.6392 BRA .2197 BC3 5.5034 FSP 10534

MID-COURSE EXECUTION ACCURACY
SGT 4159.5 SGR 2140.6 SG3 3057.5
RRT .9569 RRF .9948 RTF .9581
SGB 4678.0 R23 .2105 R13 .9725
SG1 4644.8 SG2 556.6 THA 26.63

ORBIT DETERMINATION ACCURACY
ST 2524.2 SR 1165.8 SS 4129.3
CRT .9880 CRS -.9999 CST -.9888
LSA 4967.5 MSA 326.1 SSA 12.6
EL1 2775.6 EL2 163.8 ALF 24.62

LAUNCH DATE NOV 27 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 660.055 EARTH TO MARS

```
RL  147.60 LAL   -.00 LOL  64.79 VL  32.932 GAL    .82 AZL  86.79 HCA 199.13 SMA 185.93 ECC .20662 INC 3.2082 V1  30.186
RP  219.44 LAP  -1.05 LOP 263.89 VP  22.266 GAP  -5.89 AZP  93.03 TAL   4.78 TAP 203.91 RCA 147.51 APO 224.34 V2  25.047
RC 274.220 GL   33.33 GP  -11.69 ZAL  76.66 ZAP  87.20 ETS 178.43 ZAE 119.74 ETE 184.86 ZAC  74.37 ETC 256.60 CLP  87.14
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PLANETOCENTRIC CONIC

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C3  11.246 VHL  3.354 DLA  46.33 RAL 155.46 RAD 6567.4 VEL 11.517 PTH   2.01 VHP  2.877 DPA  -5.68 RAP 167.61 ECC 1.1851
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.66	7 22 56	4127.78	-35.74	187.86	22.08	58.29	8 31 43	3527.8	-39.63	179.44
128.34	15 13 52	2687.95	-35.73	75.81	22.08	58.28	15 58 40	2088.0	-39.62	67.39
51.66	7 22 56	4127.78	-35.74	187.86	22.08	58.29	8 31 43	3527.8	-39.63	179.44
128.34	15 13 52	2687.95	-35.73	75.81	22.08	58.28	15 58 40	2088.0	-39.62	67.39
51.66	7 22 56	4127.78	-35.74	187.86	22.08	58.29	8 31 43	3527.8	-39.63	179.44
128.34	15 13 52	2687.95	-35.73	75.81	22.08	58.28	15 58 40	2088.0	-39.62	67.39

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.5400 TRA -.0570 TC3-5.3774 BAU  .8872   SGT 4466.6 SGR 2016.1 SG3 3060.8      ST  2633.6 SR  1093.3 SS  4026.3
 RDE  .6335 RRA  .1974 RC3-2.4292 FAU .59692   RRT  .9611 RRF  .9935 RTF  .9629      CRT  .9887 CRS -.9999 CST -.9894
 FDE 9.3857 FRA 2.8013 FC-45.9508 BSP  16414   SGB 4900.6 R23  .2016 R13  .9732      LSA 4923.1 MSA  324.8 SSA   13.6
 BDE 1.6652 BRA  .2055 BC3 5.9007 FSP  10532   SG1 4873.9 SG2  510.1 THA  23.73      EL1 2847.5 EL2  151.7 ALF  22.38
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LAUNCH DATE NOV 27 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 664.154 EARTH TO MARS

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RL  147.60 LAL   -.00 LOL  64.79 VL  32.932 GAL    .78 AZL  86.88 HCA 200.26 SMA 185.93 ECC .20657 INC 3.1223 V1  30.186
RP  219.07 LAP  -1.08 LOP 265.02 VP  22.312 GAP  -6.09 AZP  92.93 TAL   4.56 TAP 204.81 RCA 147.52 APO 224.34 V2  25.088
RC 275.589 GL   32.65 GP  -11.06 ZAL  76.93 ZAP  85.31 ETS 178.12 ZAE 117.69 ETE 184.04 ZAC  74.82 ETC 256.72 CLP  85.22
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PLANETOCENTRIC CONIC

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C3  11.050 VHL  3.324 DLA  45.55 RAL 155.54 RAD 6567.4 VEL 11.508 PTH   2.00 VHP  2.881 DPA  -4.79 RAP 167.17 ECC 1.1818
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.70	7 27 2	4114.39	-35.33	186.30	21.50	59.13	8 35 36	3514.4	-39.12	177.86
127.30	15 10 22	2694.06	-35.32	76.08	21.49	59.12	15 55 16	2094.1	-39.11	67.64
52.70	7 27 2	4114.39	-35.33	186.30	21.50	59.13	8 35 36	3514.4	-39.12	177.86
127.30	15 10 22	2694.06	-35.32	76.08	21.49	59.12	15 55 16	2094.1	-39.11	67.64
52.70	7 27 2	4114.39	-35.33	186.30	21.50	59.13	8 35 36	3514.4	-39.12	177.86
127.30	15 10 22	2694.06	-35.32	76.08	21.49	59.12	15 55 16	2094.1	-39.11	67.64

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.5855 TRA -.0359 TC3-5.8927 BAU  .9350   SGT 4777.4 SGR 1901.6 SG3 3056.5      ST  2735.5 SR  1028.3 SS  3918.6
 RDE  .5903 RRA  .1909 RC3-2.3108 FAU .59506   RRT  .9640 RRF  .9919 RTF  .9667      CRT  .9892 CRS -.9999 CST -.9898
 FDE 9.0367 FRA 2.8170 FC-46.6229 BSP  17275   SGB 5142.0 R23  .1908 R13  .9742      LSA 4877.5 MSA  324.7 SSA   14.6
 BDE 1.6918 BRA  .1942 BC3 6.3296 FSP  10482   SG1 5120.3 SG2  472.0 THA  21.18      EL1 2918.9 EL2  141.4 ALF  20.45
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LAUNCH DATE NOV 27 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 668.260 EARTH TO MARS

```
RL  147.60 LAL   -.00 LOL  64.79 VL  32.932 GAL    .74 AZL  86.95 HCA 201.39 SMA 185.93 ECC .20655 INC 3.0450 V1  30.186
RP  218.70 LAP  -1.11 LOP 266.15 VP  22.358 GAP  -6.28 AZP  92.84 TAL   4.31 TAP 205.70 RCA 147.53 APO 224.34 V2  25.128
RC 276.940 GL   32.04 GP  -10.49 ZAL  77.25 ZAP  83.45 ETS 177.84 ZAE 115.64 ETE 183.32 ZAC  75.23 ETC 256.82 CLP  83.33
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PLANETOCENTRIC CONIC

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C3  10.874 VHL  3.298 DLA  44.82 RAL 155.69 RAD 6567.4 VEL 11.501 PTH   2.00 VHP  2.889 DPA  -3.96 RAP 166.72 ECC 1.1790
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.69	7 31 20	4101.49	-34.93	184.82	21.04	59.91	8 39 41	3501.5	-38.63	176.37
126.31	15 7 16	2700.37	-34.92	76.37	21.04	59.90	15 52 16	2100.4	-38.62	67.93
53.69	7 31 20	4101.49	-34.93	184.82	21.04	59.91	8 39 41	3501.5	-38.63	176.37
126.31	15 7 16	2700.37	-34.92	76.37	21.04	59.90	15 52 16	2100.4	-38.62	67.93
53.69	7 31 20	4101.49	-34.93	184.82	21.04	59.91	8 39 41	3501.5	-38.63	176.37
126.31	15 7 16	2700.37	-34.92	76.37	21.04	59.90	15 52 16	2100.4	-38.62	67.93

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.6292 TRA -.0112 TC3-6.4100 BAU  .9848   SGT 5087.7 SGR 1794.6 SG3 3042.0      ST  2833.7 SR   970.1 SS  3809.4
 RDE  .5522 RRA  .1861 RC3-2.1935 FAU .59109   RRT  .9658 RRF  .9900 RTF  .9698      CRT  .9896 CRS -.9999 CST -.9900
 FDE 8.6842 FRA 2.8475 FC-47.0618 BSP  18203   SGB 5395.0 R23  .1782 R13  .9752      LSA 4834.9 MSA  325.1 SSA   15.6
 BDE 1.7202 BRA  .1864 BC3 6.7748 FSP  10423   SG1 5377.0 SG2  440.2 THA  18.94      EL1 2992.2 EL2  132.1 ALF  18.75
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LAUNCH DATE NOV 27 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 672.375 EARTH TO MARS

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RL  147.60 LAL   -.00 LOL  64.79 VL  32.933 GAL    .69 AZL  87.03 HCA 202.52 SMA 185.94 ECC .20655 INC 2.9749 V1  30.186
RP  218.34 LAP  -1.14 LOP 267.28 VP  22.404 GAP  -6.47 AZP  92.75 TAL   4.06 TAP 206.58 RCA 147.54 APO 224.35 V2  25.168
RC 278.273 GL   31.47 GP   -9.96 ZAL  77.60 ZAP  81.60 ETS 177.59 ZAE 113.59 ETE 182.69 ZAC  75.59 ETC 256.93 CLP  81.47
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PLANETOCENTRIC CONIC

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C3  10.715 VHL  3.273 DLA  44.12 RAL 155.90 RAD 6567.4 VEL 11.494 PTH   2.00 VHP  2.900 DPA  -3.18 RAP 166.28 ECC 1.1763
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.63	7 35 51	4088.87	-34.54	183.40	20.70	60.63	8 44 0	3488.9	-38.15	174.95
125.37	15 4 28	2706.99	-34.53	76.71	20.69	60.62	15 49 35	2107.0	-38.14	68.25
54.63	7 35 51	4088.87	-34.54	183.40	20.70	60.63	8 44 0	3488.9	-38.15	174.95
125.37	15 4 28	2706.99	-34.53	76.71	20.69	60.62	15 49 35	2107.0	-38.14	68.25
54.63	7 35 51	4088.87	-34.54	183.40	20.70	60.63	8 44 0	3488.9	-38.15	174.95
125.37	15 4 28	2706.99	-34.53	76.71	20.69	60.62	15 49 35	2107.0	-38.14	68.25

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE 1.6714 TRA  .0166 TC3-6.9267 BAU 1.0360   SGT 5396.7 SGR 1695.6 SG3 3021.0      ST  2928.8 SR   918.6 SS  3702.8
 RDE  .5187 RRA  .1823 RC3-2.0794 FAU .58576   RRT  .9669 RRF  .9877 RTF  .9724      CRT  .9900 CRS -.9998 CST -.9902
 FDE 8.3389 FRA 2.8839 FC-47.3287 BSP  19173   SGB 5656.8 R23  .1642 R13  .9764      LSA 4798.6 MSA  325.3 SSA   16.6
 BDE 1.7501 BRA  .1830 BC3 7.2321 FSP  10326   SG1 5641.6 SG2  414.1 THA  16.99      EL1 3067.0 EL2  123.7 ALF  17.28
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LAUNCH DATE NOV 27 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 676.496 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.934 GAL .65 AZL 87.09 HCA 203.66 SMA 185.96 ECC .20656 INC 2.9110 V1 30.186
RP 217.98 LAP -1.17 LOP 268.42 VP 22.450 GAP -6.65 AZP 92.67 TAL 3.79 TAP 207.45 RCA 147.54 APO 224.37 V2 25.208
RC 279.589 GL 30.96 GP -9.47 ZAL 78.00 ZAP 79.78 ETS 177.38 ZAE 111.57 ETE 182.13 ZAC 75.93 ETC 257.03 CLP 79.64

PLANETOCENTRIC CONIC

C3 10.570 VHL 3.251 DLA 43.46 RAL 156.18 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 2.915 DPA -2.46 RAP 165.86 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.55	7 40 35	4076.50	-34.16	182.03	20.46	61.31	8 48 32	3476.5	-37.68	173.57
124.45	15 1 58	2713.85	-34.15	77.07	20.46	61.30	15 47 12	2113.8	-37.67	68.61
55.55	7 40 35	4076.50	-34.16	182.03	20.46	61.31	8 48 32	3476.5	-37.68	173.57
124.45	15 1 58	2713.85	-34.15	77.07	20.46	61.30	15 47 12	2113.8	-37.67	68.61
55.55	7 40 35	4076.50	-34.16	182.03	20.46	61.31	8 48 32	3476.5	-37.68	173.57
124.45	15 1 58	2713.85	-34.15	77.07	20.46	61.30	15 47 12	2113.8	-37.67	68.61

DIFFERENTIAL CORRECTIONS
TDE 1.7184 TRA .0546 TC3-7.4234 BAU 1.0848
RDE 1.4932 RRA .1836 RC3-1.9537 FAU .57514
FDE 8.0829 FRA 3.0177 FC-47.1051 BSP 20360
BDE 1.7878 BRA .1916 BC3 7.6762 FSP 10392

MID-COURSE EXECUTION ACCURACY
SGT 5699.8 SGR 1602.5 SG3 2986.4
RRT .9660 RRF .9850 RTF .9743
SGB 5920.8 R23 .1513 R13 .9773
SG1 5907.3 SG2 399.9 THA 15.27

ORBIT DETERMINATION ACCURACY
ST 3032.0 SR 880.3 SS 3637.2
CRT .9903 CRS -.9998 CST -.9901
LSA 4805.0 MSA 330.7 SSA 17.3
EL1 3155.0 EL2 117.6 ALF 16.06

LAUNCH DATE NOV 27 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 680.629 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.935 GAL .60 AZL 87.15 HCA 204.81 SMA 185.97 ECC .20660 INC 2.8524 V1 30.186
RP 217.62 LAP -1.20 LOP 269.56 VP 22.496 GAP -6.83 AZP 92.59 TAL 3.50 TAP 208.31 RCA 147.55 APO 224.40 V2 25.248
RC 280.887 GL 30.48 GP -9.01 ZAL 78.43 ZAP 77.99 ETS 177.19 ZAE 109.56 ETE 181.64 ZAC 76.24 ETC 257.12 CLP 77.84

PLANETOCENTRIC CONIC

C3 10.439 VHL 3.231 DLA 42.81 RAL 156.52 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 2.933 DPA -1.78 RAP 165.44 ECC 1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.44	7 45 31	4064.29	-33.78	180.69	20.31	61.95	8 53 15	3464.3	-37.23	172.24
123.56	14 59 42	2721.00	-33.77	77.46	20.31	61.94	15 45 3	2121.0	-37.22	69.00
56.44	7 45 31	4064.29	-33.78	180.69	20.31	61.95	8 53 15	3464.3	-37.23	172.24
123.56	14 59 42	2721.00	-33.77	77.46	20.31	61.94	15 45 3	2121.0	-37.22	69.00
56.44	7 45 31	4064.29	-33.78	180.69	20.31	61.95	8 53 15	3464.3	-37.23	172.24
123.56	14 59 42	2721.00	-33.77	77.46	20.31	61.94	15 45 3	2121.0	-37.22	69.00

DIFFERENTIAL CORRECTIONS
TDE 1.7499 TRA .0832 TC3-7.9539 BAU 1.1399
RDE .4640 RRA .1783 RC3-1.8551 FAU .56950
FDE 7.6830 FRA 2.9992 FC-47.2293 BSP 21236
BDE 1.8103 BRA .1968 BC3 8.1674 FSP 10150

MID-COURSE EXECUTION ACCURACY
SGT 6007.2 SGR 1516.5 SG3 2954.9
RRT .9661 RRF .9818 RTF .9764
SGB 6195.7 R23 .1344 R13 .9785
SG1 6184.0 SG2 380.4 THA 13.76

ORBIT DETERMINATION ACCURACY
ST 3107.5 SR 833.7 SS 3503.8
CRT .9907 CRS -.9997 CST -.9903
LSA 4745.6 MSA 327.6 SSA 18.4
EL1 3215.5 EL2 109.6 ALF 14.90

LAUNCH DATE NOV 27 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 684.769 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.936 GAL .55 AZL 87.20 HCA 205.95 SMA 186.00 ECC .20666 INC 2.7986 V1 30.186
RP 217.27 LAP -1.22 LOP 270.71 VP 22.542 GAP -7.00 AZP 92.52 TAL 3.20 TAP 209.16 RCA 147.56 APO 224.44 V2 25.287
RC 282.167 GL 30.04 GP -8.59 ZAL 78.89 ZAP 76.23 ETS 177.02 ZAE 107.57 ETE 181.21 ZAC 76.52 ETC 257.21 CLP 76.07

PLANETOCENTRIC CONIC

C3 10.319 VHL 3.212 DLA 42.19 RAL 156.90 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 2.954 DPA -1.15 RAP 165.05 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.31	7 50 40	4052.15	-33.40	179.39	20.25	62.56	8 58 12	3452.1	-36.78	170.93
122.69	14 57 37	2728.47	-33.39	77.88	20.24	62.54	15 43 6	2128.5	-36.77	69.43
57.31	7 50 40	4052.15	-33.40	179.39	20.25	62.56	8 58 12	3452.1	-36.78	170.93
122.69	14 57 37	2728.47	-33.39	77.88	20.24	62.54	15 43 6	2128.5	-36.77	69.43
57.31	7 50 40	4052.15	-33.40	179.39	20.25	62.56	8 58 12	3452.1	-36.78	170.93
122.69	14 57 37	2728.47	-33.39	77.88	20.24	62.54	15 43 6	2128.5	-36.77	69.43

DIFFERENTIAL CORRECTIONS
TDE 1.7807 TRA .1185 TC3-8.4750 BAU 1.1939
RDE .4388 RRA .1764 RC3-1.7529 FAU .56101
FDE 7.3101 FRA 3.0423 FC-47.0671 BSP 22196
BDE 1.8340 BRA .2125 BC3 8.6544 FSP 9964

MID-COURSE EXECUTION ACCURACY
SGT 6310.0 SGR 1435.7 SG3 2914.7
RRT .9647 RRF .9780 RTF .9778
SGB 6471.2 R23 .1196 R13 .9794
SG1 6460.7 SG2 369.4 THA 12.42

ORBIT DETERMINATION ACCURACY
ST 3181.4 SR 793.7 SS 3382.2
CRT .9910 CRS -.9996 CST -.9901
LSA 4699.2 MSA 329.1 SSA 19.4
EL1 3277.3 EL2 103.3 ALF 13.90

LAUNCH DATE NOV 27 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 688.917 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.938 GAL .50 AZL 87.25 HCA 207.10 SMA 186.03 ECC .20674 INC 2.7487 V1 30.186
RP 216.91 LAP -1.25 LOP 271.86 VP 22.589 GAP -7.18 AZP 92.45 TAL 2.89 TAP 209.99 RCA 147.57 APO 224.48 V2 25.327
RC 283.431 GL 29.63 GP -8.20 ZAL 79.39 ZAP 74.51 ETS 176.87 ZAE 105.61 ETE 180.84 ZAC 76.79 ETC 257.30 CLP 74.34

PLANETOCENTRIC CONIC

C3 10.209 VHL 3.195 DLA 41.59 RAL 157.34 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 2.977 DPA -.56 RAP 164.69 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.17	7 56 3	4039.99	-33.03	178.10	20.26	63.14	9 3 23	3440.0	-36.33	169.65
121.83	14 55 43	2736.32	-33.02	78.33	20.25	63.12	15 41 19	2136.3	-36.32	69.89
58.17	7 56 3	4039.99	-33.03	178.10	20.26	63.14	9 3 23	3440.0	-36.33	169.65
121.83	14 55 43	2736.32	-33.02	78.33	20.25	63.12	15 41 19	2136.3	-36.32	69.89
58.17	7 56 3	4039.99	-33.03	178.10	20.26	63.14	9 3 23	3440.0	-36.33	169.65
121.83	14 55 43	2736.32	-33.02	78.33	20.25	63.12	15 41 19	2136.3	-36.32	69.89

DIFFERENTIAL CORRECTIONS
TDE 1.8087 TRA .1564 TC3-8.9914 BAU 1.2478
RDE .4168 RRA .1744 RC3-1.6547 FAU .55180
FDE 6.9542 FRA 3.0763 FC-46.7937 BSP 23157
BDE 1.8561 BRA .2342 BC3 9.1424 FSP 9768

MID-COURSE EXECUTION ACCURACY
SGT 6608.6 SGR 1360.8 SG3 2870.9
RRT .9626 RRF .9737 RTF .9792
SGB 6747.3 R23 .1042 R13 .9804
SG1 6737.6 SG2 361.4 THA 11.24

ORBIT DETERMINATION ACCURACY
ST 3249.9 SR 758.6 SS 3266.3
CRT .9913 CRS -.9995 CST -.9900
LSA 4658.0 MSA 329.2 SSA 20.4
EL1 3335.8 EL2 97.2 ALF 13.04

LAUNCH DATE NOV 27 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 693.073 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.940 GAL .44 AZL 87.30 HCA 208.26 SMA 186.06 ECC .20683 INC 2.7025 V1 30.186
RP 216.57 LAP -1.28 LOP 273.02 VP 22.635 GAP -7.34 AZP 92.38 TAL 2.56 TAP 210.82 RCA 147.57 APO 224.54 V2 25.365
RC 284.679 GL 29.24 GP -7.83 ZAL 79.93 ZAP 72.82 ETS 176.74 ZAE 103.69 ETE 180.50 ZAC 77.04 ETC 257.38 CLP 72.65

PLANETOCENTRIC CONIC

C3 10.108 VHL 3.179 DLA 41.00 RAL 157.82 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.004 DPA -.01 RAP 164.34 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.02	8 1 41	4027.75	-32.66	176.81	20.33	63.69	9 8 48	3427.7	-35.89	168.37
120.98	14 53 56	2744.57	-32.64	78.82	20.33	63.68	15 39 40	2144.6	-35.88	70.38
59.02	8 1 41	4027.75	-32.66	176.81	20.33	63.69	9 8 48	3427.7	-35.89	168.37
120.98	14 53 56	2744.57	-32.64	78.82	20.33	63.68	15 39 40	2144.6	-35.88	70.38
59.02	8 1 41	4027.75	-32.66	176.81	20.33	63.69	9 8 48	3427.7	-35.89	168.37
120.98	14 53 56	2744.57	-32.64	78.82	20.33	63.68	15 39 40	2144.6	-35.88	70.38

DIFFERENTIAL CORRECTIONS
TDE 1.8335 TRA .1987 TC3-9.5019 BAU 1.3011
RDE .3970 RRA .1736 RC3-1.5588 FAU .54145
FDE 6.5998 FRA 3.1294 FC-46.3761 BSP 24130
BDE 1.8759 BRA .2638 BC3 9.6289 FSP 9571

MID-COURSE EXECUTION ACCURACY
SGT 6902.6 SGR 1290.7 SG3 2822.1
RRT .9595 RRF .9686 RTF .9803
SGB 7022.2 R23 .0904 R13 .9811
SG1 7013.1 SG2 357.8 THA 10.20

ORBIT DETERMINATION ACCURACY
ST 3312.3 SR 726.7 SS 3149.6
CRT .9916 CRS -.9994 CST -.9896
LSA 4616.2 MSA 331.2 SSA 21.4
EL1 3389.8 EL2 91.8 ALF 12.28

LAUNCH DATE NOV 27 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 697.236 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.942 GAL .38 AZL 87.34 HCA 209.41 SMA 186.09 ECC .20695 INC 2.6596 V1 30.186
RP 216.22 LAP -1.31 LOP 274.17 VP 22.681 GAP -7.51 AZP 92.32 TAL 2.22 TAP 211.63 RCA 147.58 APO 224.61 V2 25.404
RC 285.910 GL 28.88 GP -7.48 ZAL 80.50 ZAP 71.17 ETS 176.62 ZAE 101.79 ETE 180.20 ZAC 77.28 ETC 257.45 CLP 71.00

PLANETOCENTRIC CONIC

C3 10.014 VHL 3.165 DLA 40.41 RAL 158.35 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.033 DPA .50 RAP 164.03 ECC 1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.87	8 7 33	4015.34	-32.28	175.53	20.48	64.23	9 14 29	3415.3	-35.45	167.10
120.13	14 52 15	2753.28	-32.27	79.35	20.47	64.22	15 38 8	2153.3	-35.44	70.92
59.87	8 7 33	4015.34	-32.28	175.53	20.48	64.23	9 14 29	3415.3	-35.45	167.10
120.13	14 52 15	2753.28	-32.27	79.35	20.47	64.22	15 38 8	2153.3	-35.44	70.92
59.87	8 7 33	4015.34	-32.28	175.53	20.48	64.23	9 14 29	3415.3	-35.45	167.10
120.13	14 52 15	2753.28	-32.27	79.35	20.47	64.22	15 38 8	2153.3	-35.44	70.92

DIFFERENTIAL CORRECTIONS
TDE 1.8558 TRA .2439 TC-10.0071 BAU 1.3541
RDE .3798 RRA .1725 RC3-1.4659 FAU .53035
FDE 6.2894 FRA 3.1676 FC-45.8478 BSP 25091
BDE 1.8942 BRA .2987 BC310.1139 FSP 9365

MID-COURSE EXECUTION ACCURACY
SGT 7193.1 SGR 1225.5 SG3 2769.7
RRT .9557 RRF .9626 RTF .9814
SGB 7296.8 R23 .0761 R13 .9820
SG1 7288.1 SG2 356.0 THA 9.27

ORBIT DETERMINATION ACCURACY
ST 3369.8 SR 699.2 SS 3041.4
CRT .9920 CRS -.9992 CST -.9894
LSA 4580.8 MSA 330.9 SSA 22.3
EL1 3440.5 EL2 86.2 ALF 11.64

LAUNCH DATE NOV 27 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 701.407 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.944 GAL .32 AZL 87.38 HCA 210.57 SMA 186.13 ECC .20709 INC 2.6194 V1 30.186
RP 215.88 LAP -1.33 LOP 275.34 VP 22.727 GAP -7.67 AZP 92.26 TAL 1.86 TAP 212.44 RCA 147.59 APO 224.68 V2 25.442
RC 287.127 GL 28.54 GP -7.16 ZAL 81.10 ZAP 69.55 ETS 176.52 ZAE 99.93 ETE 179.94 ZAC 77.50 ETC 257.52 CLP 69.38

PLANETOCENTRIC CONIC

C3 9.929 VHL 3.151 DLA 39.84 RAL 158.91 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.064 DPA .98 RAP 163.74 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.72	8 13 42	4002.69	-31.90	174.25	20.68	64.75	9 20 25	3402.7	-35.01	165.83
119.28	14 50 38	2762.51	-31.89	79.92	20.67	64.74	15 36 40	2162.5	-35.00	71.50
60.72	8 13 42	4002.69	-31.90	174.25	20.68	64.75	9 20 25	3402.7	-35.01	165.83
119.28	14 50 38	2762.51	-31.89	79.92	20.67	64.74	15 36 40	2162.5	-35.00	71.50
60.72	8 13 42	4002.69	-31.90	174.25	20.68	64.75	9 20 25	3402.7	-35.01	165.83
119.28	14 50 38	2762.51	-31.89	79.92	20.67	64.74	15 36 40	2162.5	-35.00	71.50

DIFFERENTIAL CORRECTIONS
TDE 1.8727 TRA .2937 TC-10.5046 BAU 1.4063
RDE .3635 RRA .1726 RC3-1.3757 FAU .51849
FDE 5.9205 FRA 3.2311 FC-45.2084 BSP 26037
BDE 1.9076 BRA .3407 BC310.5943 FSP 9141

MID-COURSE EXECUTION ACCURACY
SGT 7476.9 SGR 1164.3 SG3 2713.2
RRT .9505 RRF .9557 RTF .9821
SGB 7567.0 R23 .0647 R13 .9826
SG1 7558.5 SG2 357.8 THA 8.44

ORBIT DETERMINATION ACCURACY
ST 3417.3 SR 672.7 SS 2923.1
CRT .9924 CRS -.9989 CST -.9888
LSA 4534.6 MSA 334.4 SSA 23.3
EL1 3481.9 EL2 81.4 ALF 11.06

LAUNCH DATE NOV 27 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 705.585 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.946 GAL .26 AZL 87.42 HCA 211.74 SMA 186.18 ECC .20725 INC 2.5819 V1 30.186
RP 215.54 LAP -1.36 LOP 276.50 VP 22.773 GAP -7.82 AZP 92.20 TAL 1.49 TAP 213.23 RCA 147.59 APO 224.76 V2 25.480
RC 288.329 GL 28.22 GP -6.86 ZAL 81.74 ZAP 67.97 ETS 176.43 ZAE 98.10 ETE 179.71 ZAC 77.72 ETC 257.59 CLP 67.81

PLANETOCENTRIC CONIC

C3 9.851 VHL 3.139 DLA 39.26 RAL 159.52 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.098 DPA 1.42 RAP 163.49 ECC 1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.58	8 20 8	3989.76	-31.52	172.95	20.94	65.26	9 26 38	3389.8	-34.56	164.54
118.42	14 49 3	2772.29	-31.51	80.53	20.93	65.25	15 35 15	2172.3	-34.55	72.12
61.58	8 20 8	3989.76	-31.52	172.95	20.94	65.26	9 26 38	3389.8	-34.56	164.54
118.42	14 49 3	2772.29	-31.51	80.53	20.93	65.25	15 35 15	2172.3	-34.55	72.12
61.58	8 20 8	3989.76	-31.52	172.95	20.94	65.26	9 26 38	3389.8	-34.56	164.54
118.42	14 49 3	2772.29	-31.51	80.53	20.93	65.25	15 35 15	2172.3	-34.55	72.12

DIFFERENTIAL CORRECTIONS
TDE 1.8867 TRA .3464 TC-10.9890 BAU 1.4571
RDE .3486 RRA .1721 RC3-1.2870 FAU .50557
FDE 5.5739 FRA 3.2713 FC-44.4330 BSP 27019
BDE 1.9186 BRA .3868 BC311.0641 FSP 8962

MID-COURSE EXECUTION ACCURACY
SGT 7753.1 SGR 1105.6 SG3 2650.3
RRT .9445 RRF .9476 RTF .9828
SGB 7831.5 R23 .0529 R13 .9832
SG1 7823.3 SG2 359.9 THA 7.69

ORBIT DETERMINATION ACCURACY
ST 3459.1 SR 648.4 SS 2802.2
CRT .9928 CRS -.9985 CST -.9882
LSA 4486.1 MSA 335.7 SSA 24.2
EL1 3518.5 EL2 76.3 ALF 10.55

LAUNCH DATE NOV 27 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 709.771 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.949	GAL	.19	AZL	87.45	HCA	212.91	SMA	186.22	ECC	.20743	INC	2.5466	V1	30.186
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.818	GAP	-7.98	AZP	92.14	TAL	1.11	TAP	214.02	RCA	147.59	APO	224.85	V2	25.517
RC	289.516	GL	27.92	GP	-6.57	ZAL	82.41	ZAP	66.44	ETS	176.34	ZAE	96.31	ETE	179.50	ZAC	77.92	ETC	257.64	CLP	66.27

PLANETOCENTRIC CONIC

C3	9.779	VHL	3.127	DLA	38.69	RAL	160.17	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.134	DPA	1.82	RAP	163.27	ECC	1.1609		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.45	8 26 52	3976.38	-31.13	171.63	21.25	65.75	9 33 9	3376.4	-34.11	163.23
117.55	14 47 28	2782.78	-31.12	81.20	21.24	65.74	15 33 50	2182.8	-34.10	72.80
62.45	8 26 52	3976.38	-31.13	171.63	21.25	65.75	9 33 9	3376.4	-34.11	163.23
117.55	14 47 28	2782.78	-31.12	81.20	21.24	65.74	15 33 50	2182.8	-34.10	72.80
62.45	8 26 52	3976.38	-31.13	171.63	21.25	65.75	9 33 9	3376.4	-34.11	163.23
117.55	14 47 28	2782.78	-31.12	81.20	21.24	65.74	15 33 50	2182.8	-34.10	72.80

DIFFERENTIAL CORRECTIONS

TDE	1.8991	TRA	.4032	TC-11.4619	BAU	1.5067	
RDE	.3366	RRA	.1720	RC3-1.1997	FAU	.49168	
FDE	5.2746	FRA	3.3189	FC-43.5283	BSP	27915	
BDE	1.9287	BRA	.4384	BC311.5245	FSP	8668	

MID-COURSE EXECUTION ACCURACY

SGT	8024.4	SGR	1051.9	SG3	2585.1		
RRT	.9368	RRF	.9384	RTF	.9836		
SGB	8093.1	R23	.0430	R13	.9839		
SG1	8084.8	SG2	365.4	THA	7.02		

ORBIT DETERMINATION ACCURACY

ST	3497.7	SR	628.9	SS	2701.5		
CRT	.9934	CRS	-.9980	CST	-.9877		
LSA	4451.3	MSA	336.2	SSA	25.0		
EL1	3553.1	EL2	71.2	ALF	10.13		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 713.963 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.952	GAL	.12	AZL	87.49	HCA	214.08	SMA	186.27	ECC	.20763	INC	2.5134	V1	30.186		
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.864	GAP	-8.13	AZP	92.08	TAL	.71	TAP	214.79	RCA	147.60	APO	224.95	V2	25.554		
RC	290.691	GL	27.62	GP	-6.31	ZAL	83.12	ZAP	64.94	ETS	176.27	ZAE	94.55	ETE	179.32	ZAC	78.12	ETC	257.69	CLP	64.78		

PLANETOCENTRIC CONIC

C3	9.714	VHL	3.117	DLA	38.12	RAL	160.85	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.172	DPA	2.20	RAP	163.08	ECC	1.1599		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.34	8 33 57	3962.47	-30.73	170.27	21.61	66.24	9 40 0	3362.5	-33.66	161.88
116.66	14 45 49	2794.06	-30.72	81.93	21.60	66.23	15 32 23	2194.1	-33.65	73.54
63.34	8 33 57	3962.47	-30.73	170.27	21.61	66.24	9 40 0	3362.5	-33.66	161.88
116.66	14 45 49	2794.06	-30.72	81.93	21.60	66.23	15 32 23	2194.1	-33.65	73.54
63.34	8 33 57	3962.47	-30.73	170.27	21.61	66.24	9 40 0	3362.5	-33.66	161.88
116.66	14 45 49	2794.06	-30.72	81.93	21.60	66.23	15 32 23	2194.1	-33.65	73.54

DIFFERENTIAL CORRECTIONS

TDE	1.9059	TRA	.4634	TC-11.9331	BAU	1.5565	
RDE	.3249	RRA	.1719	RC3-1.1210	FAU	.47923	
FDE	4.9562	FRA	3.3579	FC-42.7108	BSP	28863	
BDE	1.9334	BRA	.4943	BC311.9856	FSP	8470	

MID-COURSE EXECUTION ACCURACY

SGT	8293.3	SGR	1003.2	SG3	2524.0		
RRT	.9285	RRF	.9280	RTF	.9843		
SGB	8353.7	R23	.0331	R13	.9844		
SG1	8345.5	SG2	370.1	THA	6.42		

ORBIT DETERMINATION ACCURACY

ST	3525.8	SR	609.7	SS	2588.5		
CRT	.9939	CRS	-.9973	CST	-.9870		
LSA	4403.3	MSA	337.3	SSA	25.9		
EL1	3577.5	EL2	66.2	ALF	9.76		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 718.163 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.955	GAL	.05	AZL	87.52	HCA	215.26	SMA	186.33	ECC	.20785	INC	2.4820	V1	30.186		
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.909	GAP	-8.27	AZP	92.03	TAL	.29	TAP	215.55	RCA	147.60	APO	225.05	V2	25.590		
RC	291.851	GL	27.34	GP	-6.05	ZAL	83.86	ZAP	63.48	ETS	176.21	ZAE	92.83	ETE	179.16	ZAC	78.31	ETC	257.74	CLP	63.32		

PLANETOCENTRIC CONIC

C3	9.655	VHL	3.107	DLA	37.54	RAL	161.57	RAD	6567.3	VEL	11.447	PTH	1.99	VHP	3.212	DPA	2.54	RAP	162.92	ECC	1.1589		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.25	8 41 24	3947.95	-30.33	168.88	22.02	66.72	9 47 12	3348.0	-33.19	160.51
115.75	14 44 6	2806.19	-30.31	82.72	22.01	66.71	15 30 52	2206.2	-33.18	74.35
64.25	8 41 24	3947.95	-30.33	168.88	22.02	66.72	9 47 12	3348.0	-33.19	160.51
115.75	14 44 6	2806.19	-30.31	82.72	22.01	66.71	15 30 52	2206.2	-33.18	74.35
64.25	8 41 24	3947.95	-30.33	168.88	22.02	66.72	9 47 12	3348.0	-33.19	160.51
115.75	14 44 6	2806.19	-30.31	82.72	22.01	66.71	15 30 52	2206.2	-33.18	74.35

DIFFERENTIAL CORRECTIONS

TDE	1.8973	TRA	.5262	TC-12.4033	BAU	1.6068	
RDE	.3107	RRA	.1725	RC3-1.0491	FAU	.46792	
FDE	4.5350	FRA	3.4107	FC-41.9561	BSP	29658	
BDE	1.9226	BRA	.5538	BC312.4476	FSP	8186	

MID-COURSE EXECUTION ACCURACY

SGT	8552.9	SGR	956.2	SG3	2463.1		
RRT	.9197	RRF	.9161	RTF	.9841		
SGB	8606.2	R23	.0239	R13	.9842		
SG1	8598.1	SG2	373.5	THA	5.88		

ORBIT DETERMINATION ACCURACY

ST	3525.3	SR	585.8	SS	2422.9		
CRT	.9943	CRS	-.9960	CST	-.9849		
LSA	4303.5	MSA	347.3	SSA	26.8		
EL1	3573.1	EL2	61.9	ALF	9.38		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 722.368 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.958	GAL	-.02	AZL	87.55	HCA	216.44	SMA	186.38	ECC	.20809	INC	2.4523	V1	30.186		
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.954	GAP	-8.42	AZP	91.97	TAL	359.86	TAP	216.30	RCA	147.60	APO	225.17	V2	25.626		
RC	292.998	GL	27.07	GP	-5.82	ZAL	84.63	ZAP	62.06	ETS	176.15	ZAE	91.15	ETE	179.02	ZAC	78.50	ETC	257.78	CLP	61.90		

PLANETOCENTRIC CONIC

C3	9.603	VHL	3.099	DLA	36.96	RAL	162.32	RAD	6567.3	VEL	11.445	PTH	1.99	VHP	3.255	DPA	2.85	RAP	162.80	ECC	1.1580		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.18	8 49 12	3932.77	-29.91	167.44	22.47	67.19	9 54 45	3332.8	-32.72	159.08
114.82	14 42 16	2819.23	-29.90	83.57	22.47	67.18	15 29 15	2219.2	-32.71	75.22
65.18	8 49 12	3932.77	-29.91	167.44	22.47	67.19	9 54 45	3332.8	-32.72	159.08
114.82	14 42 16	2819.23	-29.90	83.57	22.47	67.18	15 29 15	2219.2	-32.71	75.22
65.18	8 49 12	3932.77	-29.91	167.44	22.47	67.19	9 54 45	3332.8	-32.72	159.08
114.82	14 42 16	2819.23	-29.90	83.57	22.47	67.18	15 29 15	2219.2	-32.71	75.22

DIFFERENTIAL CORRECTIONS

TDE	1.9243	TRA	.6105	TC-12.8045	BAU	1.6484	
RDE	.3113	RRA	.1777	RC3 -.9538	FAU	.44731	
FDE	4.5383	FRA	3.6063	FC-40.3264	BSP	30653	
BDE	1.9493	BRA	.6358	BC312.8400	FSP	7941	

MID-COURSE EXECUTION ACCURACY

SGT	8810.9	SGR	921.8	SG3	2389.2		
RRT	.9012	RRF	.9036	RTF	.9850		
SGB	8859.0	R23	.0327	R13	.9851		
SG1	8850.1	SG2	397.8	THA	5.40		

ORBIT DETERMINATION ACCURACY

ST	3591.0	SR	588.9	SS	2471.3		
CRT	.9951	CRS	-.9954	CST	-.9853		
LSA	4384.7	MSA	350.0	SSA	27.1		
EL1	3638.5	EL2	57.6	ALF	9.27		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 726.583 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.962 GAL -.10 AZL 87.58 HCA 217.62 SMA 186.44 ECC .20835 INC 2.4242 V1 30.186
RP 213.93 LAP -1.48 LOP 282.38 VP 22.998 GAP -8.56 AZP 91.92 TAL 359.42 TAP 217.04 RCA 147.60 APO 225.29 V2 25.662
RC 294.131 GL 26.81 GP -5.59 ZAL 85.43 ZAP 60.68 ETS 176.10 ZAE 89.50 ETE 178.89 ZAC 78.68 ETC 257.81 CLP 60.52

PLANETOCENTRIC CONIC

C3 9.557 VHL 3.091 DLA 36.38 RAL 163.10 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.299 DPA 3.13 RAP 162.71 ECC 1.1573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.15	8 57 26	3916.70	-29.49	165.94	22.97	67.66	10 2 43	3316.7	-32.24	157.60
113.85	14 40 16	2833.42	-29.48	84.52	22.97	67.65	15 27 29	2233.4	-32.23	76.18
66.15	8 57 26	3916.70	-29.49	165.94	22.97	67.66	10 2 43	3316.7	-32.24	157.60
113.85	14 40 16	2833.42	-29.48	84.52	22.97	67.65	15 27 29	2233.4	-32.23	76.18
66.15	8 57 26	3916.70	-29.49	165.94	22.97	67.66	10 2 43	3316.7	-32.24	157.60
113.85	14 40 16	2833.42	-29.48	84.52	22.97	67.65	15 27 29	2233.4	-32.23	76.18

DIFFERENTIAL CORRECTIONS
TDE 1.9068 TRA .6746 TC-13.2479 BAU 1.6965
RDE .2980 RRA .1757 RC3 -.8881 FAU .43590
FDE 4.0990 FRA 3.5726 FC-39.4862 BSP 31525
BDE 1.9299 BRA .6971 BC313.2777 FSP 7807

MID-COURSE EXECUTION ACCURACY
SGT 9055.0 SGR 877.7 SG3 2320.6
RRT .8906 RRF .8878 RTF .9851
SGB 9097.5 R23 .0193 R13 .9852
SG1 9088.8 SG2 397.6 THA 4.94

ORBIT DETERMINATION ACCURACY
ST 3573.0 SR 565.8 SS 2286.0
CRT .9956 CRS -.9933 CST -.9832
LSA 4264.5 MSA 353.4 SSA 28.1
EL1 3617.1 EL2 52.4 ALF 8.96

LAUNCH DATE NOV 27 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 730.803 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.966 GAL -.18 AZL 87.60 HCA 218.81 SMA 186.51 ECC .20863 INC 2.3974 V1 30.186
RP 213.62 LAP -1.50 LOP 283.57 VP 23.043 GAP -8.70 AZP 91.87 TAL 358.96 TAP 217.77 RCA 147.60 APO 225.42 V2 25.697
RC 295.251 GL 26.55 GP -5.38 ZAL 86.27 ZAP 59.33 ETS 176.06 ZAE 87.88 ETE 178.77 ZAC 78.86 ETC 257.84 CLP 59.18

PLANETOCENTRIC CONIC

C3 9.518 VHL 3.085 DLA 35.78 RAL 163.91 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.344 DPA 3.39 RAP 162.65 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.15	9 6 9	3899.61	-29.05	164.37	23.51	68.13	10 11 9	3299.6	-31.75	156.05
112.85	14 38 2	2848.88	-29.04	85.55	23.51	68.11	15 25 31	2248.9	-31.74	77.23
67.15	9 6 9	3899.61	-29.05	164.37	23.51	68.13	10 11 9	3299.6	-31.75	156.05
112.85	14 38 2	2848.88	-29.04	85.55	23.51	68.11	15 25 31	2248.9	-31.74	77.23
67.15	9 6 9	3899.61	-29.05	164.37	23.51	68.13	10 11 9	3299.6	-31.75	156.05
112.85	14 38 2	2848.88	-29.04	85.55	23.51	68.11	15 25 31	2248.9	-31.74	77.23

DIFFERENTIAL CORRECTIONS
TDE 1.8952 TRA .7512 TC-13.6790 BAU 1.7437
RDE .2901 RRA .1764 RC3 -.8239 FAU .42412
FDE 3.8021 FRA 3.6184 FC-38.5785 BSP 32378
BDE 1.9173 BRA .7717 BC313.7038 FSP 7598

MID-COURSE EXECUTION ACCURACY
SGT 9304.9 SGR 843.7 SG3 2261.4
RRT .8766 RRF .8718 RTF .9854
SGB 9343.1 R23 .0131 R13 .9855
SG1 9334.3 SG2 404.8 THA 4.55

ORBIT DETERMINATION ACCURACY
ST 3566.4 SR 552.4 SS 2172.9
CRT .9962 CRS -.9909 CST -.9813
LSA 4197.2 MSA 358.6 SSA 28.9
EL1 3608.6 EL2 47.5 ALF 8.77

LAUNCH DATE NOV 27 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 735.030 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.969 GAL -.26 AZL 87.63 HCA 219.99 SMA 186.57 ECC .20893 INC 2.3719 V1 30.186
RP 213.31 LAP -1.52 LOP 284.76 VP 23.087 GAP -8.84 AZP 91.82 TAL 358.49 TAP 218.49 RCA 147.59 APO 225.55 V2 25.731
RC 296.356 GL 26.30 GP -5.18 ZAL 87.14 ZAP 58.03 ETS 176.02 ZAE 86.31 ETE 178.67 ZAC 79.03 ETC 257.87 CLP 57.88

PLANETOCENTRIC CONIC

C3 9.484 VHL 3.080 DLA 35.18 RAL 164.75 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.392 DPA 3.62 RAP 162.62 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.19	9 15 23	3881.31	-28.60	162.71	24.09	68.59	10 20 4	3281.3	-31.24	154.41
111.81	14 35 31	2865.81	-28.59	86.69	24.09	68.57	15 23 17	2265.8	-31.24	78.40
68.19	9 15 23	3881.31	-28.60	162.71	24.09	68.59	10 20 4	3281.3	-31.24	154.41
111.81	14 35 31	2865.81	-28.59	86.69	24.09	68.57	15 23 17	2265.8	-31.24	78.40
68.19	9 15 23	3881.31	-28.60	162.71	24.09	68.59	10 20 4	3281.3	-31.24	154.41
111.81	14 35 31	2865.81	-28.59	86.69	24.09	68.57	15 23 17	2265.8	-31.24	78.40

DIFFERENTIAL CORRECTIONS
TDE 1.8802 TRA .8308 TC-14.0797 BAU 1.7879
RDE .2830 RRA .1766 RC3 -.7568 FAU .41031
FDE 3.5174 FRA 3.6404 FC-37.4526 BSP 33153
BDE 1.9014 BRA .8493 BC314.1000 FSP 7322

MID-COURSE EXECUTION ACCURACY
SGT 9540.4 SGR 810.0 SG3 2192.0
RRT .8598 RRF .8530 RTF .9858
SGB 9574.7 R23 .0074 R13 .9859
SG1 9565.8 SG2 412.4 THA 4.18

ORBIT DETERMINATION ACCURACY
ST 3553.3 SR 540.4 SS 2061.5
CRT .9968 CRS -.9879 CST -.9794
LSA 4127.6 MSA 361.1 SSA 29.6
EL1 3593.9 EL2 42.6 ALF 8.62

LAUNCH DATE NOV 27 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 739.260 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 32.973 GAL -.35 AZL 87.65 HCA 221.19 SMA 186.64 ECC .20926 INC 2.3476 V1 30.186
RP 213.01 LAP -1.55 LOP 285.95 VP 23.130 GAP -8.97 AZP 91.77 TAL 358.01 TAP 219.19 RCA 147.58 APO 225.70 V2 25.765
RC 297.448 GL 26.05 GP -4.99 ZAL 88.04 ZAP 56.76 ETS 175.99 ZAE 84.77 ETE 178.58 ZAC 79.20 ETC 257.88 CLP 56.61

PLANETOCENTRIC CONIC

C3 9.458 VHL 3.075 DLA 34.57 RAL 165.62 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.441 DPA 3.82 RAP 162.63 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.29	9 25 14	3861.52	-28.14	160.95	24.72	69.05	10 29 35	3261.5	-30.73	152.67
110.71	14 32 38	2884.51	-28.13	87.96	24.71	69.03	15 20 42	2284.5	-30.72	79.69
69.29	9 25 14	3861.52	-28.14	160.95	24.72	69.05	10 29 35	3261.5	-30.73	152.67
110.71	14 32 38	2884.51	-28.13	87.96	24.71	69.03	15 20 42	2284.5	-30.72	79.69
69.29	9 25 14	3861.52	-28.14	160.95	24.72	69.05	10 29 35	3261.5	-30.73	152.67
110.71	14 32 38	2884.51	-28.13	87.96	24.71	69.03	15 20 42	2284.5	-30.72	79.69

DIFFERENTIAL CORRECTIONS
TDE 1.8756 TRA .9296 TC-14.4091 BAU 1.8240
RDE .2783 RRA .1783 RC3 -.6853 FAU .39386
FDE 3.2965 FRA 3.7150 FC-36.0523 BSP 34315
BDE 1.8961 BRA .9465 BC314.4253 FSP 7202

MID-COURSE EXECUTION ACCURACY
SGT 9756.0 SGR 780.5 SG3 2116.5
RRT .8399 RRF .8327 RTF .9861
SGB 9787.1 R23 .0054 R13 .9861
SG1 9778.0 SG2 422.6 THA 3.85

ORBIT DETERMINATION ACCURACY
ST 3560.7 SR 532.6 SS 1983.7
CRT .9974 CRS -.9843 CST -.9777
LSA 4094.3 MSA 365.5 SSA 30.1
EL1 3600.1 EL2 37.8 ALF 8.49

LAUNCH DATE NOV 27 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 743.500 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.977	GAL	-.43	AZL	87.68	HCA	222.38	SMA	186.71	ECC	.20961	INC	2.3244	V1	30.186
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.173	GAP	-9.10	AZP	91.72	TAL	357.51	TAP	219.89	RCA	147.58	APO	225.85	V2	25.798
RC	298.526	GL	25.81	GP	-4.81	ZAL	88.98	ZAP	55.52	ETS	175.96	ZAE	83.26	ETE	178.51	ZAC	79.37	ETC	257.89	CLP	55.38

PLANETOCENTRIC CONIC

C3	9.438	VHL	3.072	DLA	33.94	RAL	166.52	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.492	DPA	4.00	RAP	162.67	ECC	1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.45	9 35 43	3840.09	-27.67	159.07	25.37	69.50	10 39 43	3240.1	-30.20	150.81
109.55	14 29 18	2905.13	-27.66	89.37	25.37	69.49	15 17 43	2305.1	-30.19	81.12
70.45	9 35 43	3840.09	-27.67	159.07	25.37	69.50	10 39 43	3240.1	-30.20	150.81
109.55	14 29 18	2905.13	-27.66	89.37	25.37	69.49	15 17 43	2305.1	-30.19	81.12
110.00	15 2 45	2803.05	-29.93	82.30	26.26	72.65	15 49 28	2203.1	-32.00	73.71
110.00	14 1 26	2990.16	-25.44	95.00	24.37	66.36	14 51 16	2390.2	-28.41	87.08

DIFFERENTIAL CORRECTIONS

TDE	1.8476	TRA	1.0129	TC-14.8043	BAU	1.8697	
RDE	.2723	RRA	.1783	RC3 -.6275	FAU	.38187	
FDE	3.0145	FRA	3.7255	FC-35.0270	BSP	34941	
BDE	1.8676	BRA	1.0285	BC314.8176	FSP	6922	

MID-COURSE EXECUTION ACCURACY

SGT	9990.1	SGR	753.2	SG3	2053.6
RRT	.8200	RRF	.8106	RTF	.9864
SGB	10018.4	R23	.0004	R13	.9864
SG1	10009.2	SG2	430.3	THA	3.54

ORBIT DETERMINATION ACCURACY

ST	3523.5	SR	522.0	SS	1868.0
CRT	.9978	CRS	-.9791	CST	-.9747
LSA	4004.8	MSA	370.3	SSA	30.8
EL1	3561.8	EL2	34.3	ALF	8.41

LAUNCH DATE NOV 27 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 747.746 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.982	GAL	-.52	AZL	87.70	HCA	223.58	SMA	186.79	ECC	.20998	INC	2.3021	V1	30.186
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.216	GAP	-9.23	AZP	91.67	TAL	356.99	TAP	220.58	RCA	147.56	APO	226.01	V2	25.831
RC	299.592	GL	25.56	GP	-4.64	ZAL	89.94	ZAP	54.32	ETS	175.93	ZAE	81.78	ETE	178.44	ZAC	79.54	ETC	257.90	CLP	54.19

PLANETOCENTRIC CONIC

C3	9.426	VHL	3.070	DLA	33.31	RAL	167.44	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.544	DPA	4.15	RAP	162.74	ECC	1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.68	9 46 59	3816.51	-27.18	157.03	26.07	69.96	10 50 36	3216.5	-29.65	148.80
108.32	14 25 22	2928.19	-27.17	90.96	26.07	69.94	15 14 10	2328.2	-29.64	82.72
71.68	9 46 59	3816.51	-27.18	157.03	26.07	69.96	10 50 36	3216.5	-29.65	148.80
108.32	14 25 22	2928.19	-27.17	90.96	26.07	69.94	15 14 10	2328.2	-29.64	82.72
110.00	15 34 13	2717.04	-31.51	76.10	27.59	76.00	16 19 31	2117.0	-33.11	67.24
110.00	13 37 18	3075.65	-23.00	100.43	24.11	63.98	14 28 34	2475.7	-26.30	92.83

DIFFERENTIAL CORRECTIONS

TDE	1.8182	TRA	1.1035	TC-15.1642	BAU	1.9122	
RDE	.2674	RRA	.1786	RC3 -.5694	FAU	.36896	
FDE	2.7566	FRA	3.7419	FC-33.8878	BSP	35637	
BDE	1.8377	BRA	1.1179	BC315.1749	FSP	6675	

MID-COURSE EXECUTION ACCURACY

SGT	10212.0	SGR	728.3	SG3	1987.7
RRT	.7975	RRF	.7863	RTF	.9866
SGB	10238.0	R23	-.0033	R13	.9866
SG1	10228.5	SG2	438.6	THA	3.26

ORBIT DETERMINATION ACCURACY

ST	3483.9	SR	513.3	SS	1762.8
CRT	.9980	CRS	-.9726	CST	-.9715
LSA	3920.1	MSA	375.3	SSA	31.5
EL1	3521.4	EL2	32.1	ALF	8.37

LAUNCH DATE NOV 27 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 751.996 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.986	GAL	-.61	AZL	87.72	HCA	224.79	SMA	186.86	ECC	.21038	INC	2.2807	V1	30.186
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.258	GAP	-9.36	AZP	91.62	TAL	356.46	TAP	221.25	RCA	147.55	APO	226.18	V2	25.863
RC	300.645	GL	25.32	GP	-4.48	ZAL	90.94	ZAP	53.16	ETS	175.90	ZAE	80.34	ETE	178.37	ZAC	79.71	ETC	257.90	CLP	53.03

PLANETOCENTRIC CONIC

C3	9.421	VHL	3.069	DLA	32.66	RAL	168.39	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.598	DPA	4.28	RAP	162.84	ECC	1.1550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.00	9 59 12	3790.32	-26.67	154.81	26.80	70.42	11 2 23	3190.3	-29.09	146.60
107.00	14 20 42	2954.16	-26.66	92.75	26.80	70.40	15 9 56	2354.2	-29.08	84.54
73.00	9 59 12	3790.32	-26.67	154.81	26.80	70.42	11 2 23	3190.3	-29.09	146.60
107.00	14 20 42	2954.16	-26.66	92.75	26.80	70.40	15 9 56	2354.2	-29.08	84.54
110.00	15 56 32	2658.89	-32.39	71.80	28.63	78.41	16 40 51	2058.9	-33.64	62.79
110.00	13 22 32	3133.59	-21.22	103.99	24.21	62.55	14 14 46	2533.6	-24.73	96.59

DIFFERENTIAL CORRECTIONS

TDE	1.7843	TRA	1.2008	TC-15.5064	BAU	1.9540	
RDE	.2631	RRA	.1792	RC3 -.5135	FAU	.35622	
FDE	2.5061	FRA	3.7638	FC-32.7355	BSP	36307	
BDE	1.8036	BRA	1.2141	BC315.5149	FSP	6424	

MID-COURSE EXECUTION ACCURACY

SGT	10430.2	SGR	706.0	SG3	1922.9
RRT	.7733	RRF	.7603	RTF	.9868
SGB	10454.1	R23	-.0065	R13	.9868
SG1	10444.6	SG2	447.1	THA	3.00

ORBIT DETERMINATION ACCURACY

ST	3437.2	SR	505.5	SS	1660.1
CRT	.9979	CRS	-.9638	CST	-.9673
LSA	3831.3	MSA	382.1	SSA	32.1
EL1	3474.0	EL2	32.3	ALF	8.35

LAUNCH DATE NOV 27 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 756.253 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.991	GAL	-.71	AZL	87.74	HCA	225.99	SMA	186.94	ECC	.21080	INC	2.2602	V1	30.186
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.299	GAP	-9.48	AZP	91.57	TAL	355.92	TAP	221.91	RCA	147.53	APO	226.35	V2	25.895
RC	301.687	GL	25.08	GP	-4.33	ZAL	91.96	ZAP	52.03	ETS	175.88	ZAE	78.93	ETE	178.32	ZAC	79.87	ETC	257.89	CLP	51.90

PLANETOCENTRIC CONIC

C3	9.423	VHL	3.070	DLA	32.00	RAL	169.35	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	3.653	DPA	4.39	RAP	162.98	ECC	1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.44	10 12 34	3760.83	-26.15	152.36	27.57	70.87	11 15 15	3160.8	-28.52	144.17
105.56	14 15 4	2983.76	-26.14	94.81	27.57	70.86	15 4 48	2383.8	-28.51	86.62
74.44	10 12 34	3760.83	-26.15	152.36	27.57	70.87	11 15 15	3160.8	-28.52	144.17
105.56	14 15 4	2983.76	-26.14	94.81	27.57	70.86	15 4 48	2383.8	-28.51	86.62
110.00	16 15 28	2611.08	-32.98	68.19	29.58	80.47	16 58 59	2011.1	-33.95	59.09
110.00	13 11 20	3181.51	-19.69	106.87	24.48	61.48	14 4 22	2581.5	-23.34	99.63

DIFFERENTIAL CORRECTIONS

TDE	1.7481	TRA	1.3036	TC-15.8232	BAU	1.9942	
RDE	.2597	RRA	.1798	RC3 -.4602	FAU	.34380	
FDE	2.2734	FRA	3.7857	FC-31.5863	BSP	37001	
BDE	1.7673	BRA	1.3160	BC315.8299	FSP	6199	

MID-COURSE EXECUTION ACCURACY

SGT	10641.9	SGR	686.5	SG3	1860.1
RRT	.7475	RRF	.7329	RTF	.9870
SGB	10664.0	R23	-.0094	R13	.9870
SG1	10654.3	SG2	455.5	THA	2.77

ORBIT DETERMINATION ACCURACY

ST	3387.0	SR	499.0	SS	1565.3
CRT	.9975	CRS	-.9529	CST	-.9625
LSA	3744.1	MSA	389.3	SSA	32.6
EL1	3423.4	EL2	35.2	ALF	8.36

LAUNCH DATE NOV 27 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 760.514 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	32.995	GAL	-.81	AZL	87.76	HCA	227.20	SMA	187.02	ECC	.21125	INC	2.2404
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.341	GAP	-9.60	AZP	91.52	TAL	355.36	TAP	222.57	RCA	147.52	APO	226.53
RC	302.717	GL	24.83	GP	-4.18	ZAL	93.02	ZAP	50.93	ETS	175.86	ZAE	77.55	ETE	178.27	ZAC	80.03	ETC	257.88

V1	30.186	V2	25.926	CLP	50.81														

PLANETOCENTRIC CONIC

C3	9.434	VHL	3.071	DLA	31.32	RAL	170.34	RAD	6567.3	VEL	11.438	PTH	1.98	VHP	3.710	DPA	4.48	RAP	163.14
ECC	1.1553																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.02	10 27 23	3726.98	-25.62	149.59	28.38	71.33	11 29 30	3127.0	-27.92	141.42
103.98	14 8 9	3018.04	-25.60	97.20	28.37	71.31	14 58 27	2418.0	-27.92	89.04
76.02	10 27 23	3726.98	-25.62	149.59	28.38	71.33	11 29 30	3127.0	-27.92	141.42
103.98	14 8 9	3018.04	-25.60	97.20	28.37	71.31	14 58 27	2418.0	-27.92	89.04
110.00	16 32 31	2569.03	-33.41	64.99	30.47	82.32	17 15 20	1969.0	-34.11	55.81
110.00	13 2 11	3223.99	-18.29	109.37	24.86	60.61	13 55 55	2624.0	-22.06	102.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7093	TRA	1.4116	TC-16.1155	BAU	2.0331	SGT10847.6	SGR	669.3	SG3	1796.4	ST	3333.4	SR	493.8	SS	1478.9		
RDE	.2570	RRA	.1804	RC3 -.4080	FAU	.33113	RRT	.7196	RRF	.7039	RTF	.9873	CRT	.9964	CRS	-.9395	CST	-.9572	
FDE	2.0593	FRA	3.8056	FC-30.3881	BSP	37705	SGB10868.2	R23	-.0113	R13	.9872	LSA	3658.4	MSA	396.2	SSA	33.1		
BDE	1.7286	BRA	1.4231	BC316.1207	FSP	5979	SG110858.3	SG2	464.3	THA	2.55	EL1	3369.5	EL2	41.1	ALF	8.40		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 764.780 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.000	GAL	-.91	AZL	87.78	HCA	228.41	SMA	187.11	ECC	.21172	INC	2.2213
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.381	GAP	-9.73	AZP	91.47	TAL	354.79	TAP	223.21	RCA	147.49	APO	226.72
RC	303.736	GL	24.58	GP	-4.04	ZAL	94.11	ZAP	49.86	ETS	175.84	ZAE	76.20	ETE	178.23	ZAC	80.20	ETC	257.87

V1	30.186	V2	25.956	CLP	49.74														

PLANETOCENTRIC CONIC

C3	9.452	VHL	3.074	DLA	30.63	RAL	171.35	RAD	6567.3	VEL	11.439	PTH	1.98	VHP	3.768	DPA	4.55	RAP	163.33
ECC	1.1556																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.80	10 44 9	3687.13	-25.06	146.39	29.21	71.79	11 45 36	3087.1	-27.32	138.25
102.20	13 59 26	3058.68	-25.05	100.05	29.21	71.77	14 50 25	2458.7	-27.31	91.92
77.80	10 44 9	3687.13	-25.06	146.39	29.21	71.79	11 45 36	3087.1	-27.32	138.25
102.20	13 59 26	3058.68	-25.05	100.05	29.21	71.77	14 50 25	2458.7	-27.31	91.92
110.00	16 48 22	2530.76	-33.72	62.04	31.34	84.04	17 30 33	1930.8	-34.18	52.83
110.00	12 54 24	3263.04	-16.97	111.62	25.33	59.87	13 48 47	2663.0	-20.85	104.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6651	TRA	1.5253	TC-16.3856	BAU	2.0712	SGT11047.9	SGR	653.9	SG3	1734.1	ST	3271.4	SR	489.0	SS	1392.6		
RDE	.2546	RRA	.1812	RC3 -.3581	FAU	.31878	RRT	.6903	RRF	.6733	RTF	.9874	CRT	.9947	CRS	-.9219	CST	-.9503	
FDE	1.8455	FRA	3.8264	FC-29.1964	BSP	38374	SGB11067.2	R23	-.0132	R13	.9873	LSA	3565.7	MSA	405.9	SSA	33.6		
BDE	1.6844	BRA	1.5360	BC316.3895	FSP	5761	SG111057.1	SG2	472.7	THA	2.34	EL1	3307.4	EL2	49.7	ALF	8.46		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 769.051 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.005	GAL	-1.01	AZL	87.80	HCA	229.63	SMA	187.19	ECC	.21222	INC	2.2029
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.421	GAP	-9.85	AZP	91.43	TAL	354.21	TAP	223.84	RCA	147.47	APO	226.92
RC	304.746	GL	24.33	GP	-3.91	ZAL	95.22	ZAP	48.83	ETS	175.82	ZAE	74.88	ETE	178.19	ZAC	80.36	ETC	257.85

V1	30.186	V2	25.986	CLP	48.71														

PLANETOCENTRIC CONIC

C3	9.480	VHL	3.079	DLA	29.93	RAL	172.38	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	3.827	DPA	4.60	RAP	163.55
ECC	1.1560																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.89	11 3 49	3638.24	-24.49	142.53	30.08	72.24	12 4 27	3038.2	-26.69	134.42
100.11	13 47 59	3108.71	-24.48	103.59	30.08	72.23	14 39 48	2508.7	-26.68	95.47
79.89	11 3 49	3638.24	-24.49	142.53	30.08	72.24	12 4 27	3038.2	-26.69	134.42
100.11	13 47 59	3108.71	-24.48	103.59	30.08	72.23	14 39 48	2508.7	-26.68	95.47
110.00	17 3 22	2495.19	-33.94	59.29	32.19	85.65	17 44 57	1895.2	-34.17	50.05
110.00	12 47 36	3299.76	-15.70	113.72	25.87	59.24	13 42 36	2699.8	-19.67	106.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6166	TRA	1.6440	TC-16.6315	BAU	2.1083	SGT11242.9	SGR	640.5	SG3	1673.0	ST	3204.0	SR	484.8	SS	1310.5		
RDE	.2528	RRA	.1818	RC3 -.3105	FAU	.30672	RRT	.6598	RRF	.6414	RTF	.9874	CRT	.9920	CRS	-.8994	CST	-.9418	
FDE	1.6393	FRA	3.8441	FC-28.0093	BSP	39041	SGB11261.1	R23	-.0150	R13	.9874	LSA	3470.3	MSA	417.0	SSA	33.9		
BDE	1.6363	BRA	1.6540	BC316.6344	FSP	5553	SG111250.8	SG2	481.0	THA	2.16	EL1	3239.9	EL2	60.4	ALF	8.54		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 773.327 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.010	GAL	-1.12	AZL	87.81	HCA	230.85	SMA	187.28	ECC	.21275	INC	2.1852
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.460	GAP	-9.96	AZP	91.38	TAL	353.60	TAP	224.45	RCA	147.44	APO	227.13
RC	305.746	GL	24.07	GP	-3.79	ZAL	96.37	ZAP	47.82	ETS	175.80	ZAE	73.58	ETE	178.16	ZAC	80.53	ETC	257.83

V1	30.186	V2	26.015	CLP	47.71														

PLANETOCENTRIC CONIC

C3	9.517	VHL	3.085	DLA	29.20	RAL	173.43	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.888	DPA	4.63	RAP	163.80
ECC	1.1566																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.54	11 28 35	3572.99	-23.91	137.50	30.99	72.71	12 28 8	2973.0	-26.05	129.41
97.46	13 31 33	3175.49	-23.90	108.33	30.98	72.69	14 24 29	2575.5	-26.04	100.24
100.00	14 45 14	2939.23	-27.50	91.90	32.03	77.79	15 34 14	2339.2	-28.90	83.38
100.00	12 57 35	3284.48	-20.40	115.03	29.62	67.67	13 52 20	2684.5	-23.25	107.39
110.00	17 17 43	2461.66	-34.08	56.68	33.04	87.19	17 58 45	1861.7	-34.10	47.43
110.00	12 41 36	3334.82	-14.47	115.69	26.48	58.69	13 37 11	2734.8	-18.51	108.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5651	TRA	1.7674	TC-16.8530	BAU	2.1446	SGT11433.1	SGR	628.9	SG3	1612.7	ST	3133.5	SR	481.5	SS	1235.5		
RDE	.2516	RRA	.1824	RC3 -.2649	FAU	.29490	RRT	.6281	RRF	.6085	RTF	.9876	CRT	.9881	CRS	-.8724	CST	-.9324	
FDE	1.4478	FRA	3.8537	FC-26.8254	BSP	39715	SGB11450.3	R23	-.0167	R13	.9876	LSA	3375.4	MSA	427.6	SSA	34.2		
BDE	1.5851	BRA	1.7768	BC316.8550	FSP	5358	SG111439.9	SG2	489.1	THA	1.98	EL1	3169.4	EL2	73.2	ALF	8.64		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 777.607 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.016	GAL	-1.23	AZL	87.83	HCA	232.07	SMA	187.37	ECC	.21331	INC	2.1679
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.499	GAP	-10.08	AZP	91.33	TAL	352.99	TAP	225.06	RCA	147.41	APO	227.34
RC	306.737	GL	23.81	GP	-3.67	ZAL	97.54	ZAP	46.84	ETS	175.79	ZAE	72.32	ETE	178.13	ZAC	80.69	ETC	257.80

V1 30.186 V2 26.043 CLP 46.73

PLANETOCENTRIC CONIC

C3	9.564	VHL	3.093	DLA	28.47	RAL	174.49	RAD	6567.3	VEL	11.443	PTH	1.99	VHP	3.950	DPA	4.64	RAP	164.07

ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.94	12 8 44	3458.05	-23.30	128.85	31.92	73.17	13 6 22	2858.1	-25.39	120.79
93.06	12 59 53	3292.36	-23.29	116.72	31.92	73.15	13 54 45	2692.4	-25.38	108.66
100.00	15 13 0	2863.54	-28.47	86.48	33.26	80.48	16 0 44	2263.5	-29.49	77.83
100.00	12 38 18	3362.10	-18.32	119.85	29.93	65.96	13 34 20	2762.1	-21.41	112.42
110.00	17 31 35	2429.73	-34.16	54.19	33.90	88.66	18 12 5	1829.7	-33.97	44.95
110.00	12 36 12	3368.67	-13.27	117.57	27.15	58.20	13 32 21	2768.7	-17.38	110.87

DIFFERENTIAL CORRECTIONS

TDE	1.5092	TRA	1.8960	TC-17.0460	BAU	2.1797	
RDE	.2509	RRA	.1828	RC3 -.2209	FAU	.28315	
FDE	1.2663	FRA	3.8607	FC-25.6309	BSP	40353	
BDE	1.5299	BRA	1.9048	BC317.0475	FSP	5159	

MID-COURSE EXECUTION ACCURACY

SGT11616.6	SGR	619.0	SG3	1552.9			
RRT	.5952	RRF	.5745	RTF	.9877		
SGB11633.1	R23	-.0180	R13	.9877			
SG111622.5	SG2	497.1	THA	1.82			

ORBIT DETERMINATION ACCURACY

ST	3058.6	SR	478.9	SS	1166.8		
CRT	.9826	CRS	-.8394	CST	-.9215		
LSA	3279.0	MSA	439.2	SSA	34.4		
EL1	3094.6	EL2	88.0	ALF	8.75		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 781.891 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.021	GAL	-1.34	AZL	87.85	HCA	233.29	SMA	187.47	ECC	.21389	INC	2.1512
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.537	GAP	-10.20	AZP	91.29	TAL	352.36	TAP	225.65	RCA	147.37	APO	227.56
RC	307.719	GL	23.55	GP	-3.56	ZAL	98.73	ZAP	45.89	ETS	175.77	ZAE	71.08	ETE	178.11	ZAC	80.86	ETC	257.77

V1 30.186 V2 26.071 CLP 45.79

PLANETOCENTRIC CONIC

C3	9.621	VHL	3.102	DLA	27.72	RAL	175.57	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	4.013	DPA	4.63	RAP	164.37

ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 46	3209.92	-25.96	111.44	33.79	78.26	14 23 16	2609.9	-27.31	103.03
90.00	11 47 27	3542.83	-19.48	133.64	31.73	69.03	12 46 30	2942.8	-22.16	125.99
100.00	15 35 27	2804.72	-29.06	82.21	34.37	82.66	16 22 12	2204.7	-29.77	73.48
100.00	12 24 26	3423.26	-16.58	123.56	30.43	64.77	13 21 30	2823.3	-19.84	116.29
110.00	17 45 4	2399.12	-34.18	51.80	34.76	90.08	18 25 3	1799.1	-33.79	42.57
110.00	12 31 19	3401.63	-12.08	119.38	27.88	57.78	13 28 1	2801.6	-16.25	112.76

DIFFERENTIAL CORRECTIONS

TDE	1.4477	TRA	2.0300	TC-17.2195	BAU	2.2150	
RDE	.2505	RRA	.1833	RC3 -.1795	FAU	.27197	
FDE	1.0871	FRA	3.8677	FC-24.4720	BSP	40966	
BDE	1.4692	BRA	2.0382	BC317.2204	FSP	4965	

MID-COURSE EXECUTION ACCURACY

SGT11798.5	SGR	610.5	SG3	1495.6			
RRT	.5618	RRF	.5400	RTF	.9877		
SGB11814.3	R23	-.0193	R13	.9877			
SG111803.5	SG2	504.9	THA	1.67			

ORBIT DETERMINATION ACCURACY

ST	2977.9	SR	476.7	SS	1102.0		
CRT	.9750	CRS	-.7976	CST	-.9078		
LSA	3178.4	MSA	454.0	SSA	34.6		
EL1	3014.0	EL2	104.7	ALF	8.88		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 786.179 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.026	GAL	-1.46	AZL	87.86	HCA	234.52	SMA	187.56	ECC	.21451	INC	2.1350
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.574	GAP	-10.31	AZP	91.24	TAL	351.72	TAP	226.24	RCA	147.33	APO	227.79
RC	308.691	GL	23.27	GP	-3.45	ZAL	99.95	ZAP	44.97	ETS	175.76	ZAE	69.87	ETE	178.09	ZAC	81.02	ETC	257.74

V1 30.186 V2 26.098 CLP 44.87

PLANETOCENTRIC CONIC

C3	9.689	VHL	3.113	DLA	26.95	RAL	176.66	RAD	6567.3	VEL	11.449	PTH	1.99	VHP	4.078	DPA	4.61	RAP	164.69

ECC 1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 5	3125.60	-26.99	105.48	35.08	81.08	14 52 11	2525.6	-27.94	96.95
90.00	11 25 49	3629.93	-17.26	139.07	32.10	67.20	12 26 19	3029.9	-20.20	131.63
100.00	15 55 15	2754.35	-29.44	78.51	35.43	84.57	16 41 9	2154.3	-29.88	69.74
100.00	12 13 20	3476.42	-15.01	126.73	31.03	63.84	13 11 17	2876.4	-18.41	119.58
110.00	17 58 12	2369.60	-34.16	49.49	35.62	91.44	18 37 42	1769.6	-33.58	40.30
110.00	12 26 52	3433.93	-10.90	121.14	28.66	57.40	13 24 6	2833.9	-15.12	114.58

DIFFERENTIAL CORRECTIONS

TDE	1.3831	TRA	2.1694	TC-17.3650	BAU	2.2495	
RDE	.2507	RRA	.1836	RC3 -.1401	FAU	.26102	
FDE	.9223	FRA	3.8692	FC-23.3221	BSP	41570	
BDE	1.4057	BRA	2.1772	BC317.3655	FSP	4776	

MID-COURSE EXECUTION ACCURACY

SGT11975.8	SGR	603.6	SG3	1439.3			
RRT	.5279	RRF	.5051	RTF	.9878		
SGB11991.0	R23	-.0204	R13	.9878			
SG111980.1	SG2	512.5	THA	1.53			

ORBIT DETERMINATION ACCURACY

ST	2897.0	SR	475.3	SS	1046.1		
CRT	.9649	CRS	-.7491	CST	-.8933		
LSA	3081.0	MSA	468.4	SSA	34.7		
EL1	2933.2	EL2	123.3	ALF	9.01		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 790.470 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.032	GAL	-1.58	AZL	87.88	HCA	235.75	SMA	187.66	ECC	.21515	INC	2.1192
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.611	GAP	-10.42	AZP	91.19	TAL	351.06	TAP	226.81	RCA	147.28	APO	228.03
RC	309.654	GL	23.00	GP	-3.35	ZAL	101.20	ZAP	44.07	ETS	175.74	ZAE	68.68	ETE	178.07	ZAC	81.19	ETC	257.70

V1 30.186 V2 26.124 CLP 43.97

PLANETOCENTRIC CONIC

C3	9.769	VHL	3.126	DLA	26.17	RAL	177.76	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	4.143	DPA	4.57	RAP	165.04

ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 59	3061.99	-27.58	100.92	36.24	83.29	15 15 1	2462.0	-28.22	92.31
90.00	11 10 43	3696.77	-15.45	143.14	32.67	65.97	12 12 20	3096.8	-18.57	135.85
100.00	16 13 24	2709.24	-29.68	75.18	36.46	86.30	16 58 33	2109.2	-29.88	66.38
100.00	12 3 59	3524.76	-13.54	129.57	31.73	63.09	13 2 44	2924.8	-17.04	122.53
110.00	18 11 5	2341.03	-34.09	47.26	36.50	92.76	18 50 6	1741.0	-33.33	38.10
110.00	12 22 48	3465.73	-9.73	122.86	29.49	57.07	13 20 33	2865.7	-14.00	116.36

DIFFERENTIAL CORRECTIONS

TDE	1.3142	TRA	2.3148	TC-17.4804	BAU	2.2830	
RDE	.2513	RRA	.1839	RC3 -.1024	FAU	.25027	
FDE	.7633	FRA	3.8696	FC-22.1786	BSP	42177	
BDE	1.3381	BRA	2.3221	BC317.4807	FSP	4597	

MID-COURSE EXECUTION ACCURACY

SGT12147.5	SGR	598.0	SG3	1384.1			
RRT	.4936	RRF	.4699	RTF	.9878		
SGB12162.2	R23	-.0214	R13	.9878			
SG112151.1	SG2	519.9	THA	1.39			

ORBIT DETERMINATION ACCURACY

ST	2814.9	SR	474.3	SS	996.8		
CRT	.9516	CRS	-.6911	CST	-.8766		
LSA	2984.2	MSA	485.3	SSA	34.7		
EL1	2850.9	EL2	144.0	ALF	9.13		

LAUNCH DATE NOV 27 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 794.765 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.037	GAL	-1.70	AZL	87.90	HCA	236.98	SMA	187.76	ECC	.21583	INC	2.1039
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.647	GAP	-10.54	AZP	91.15	TAL	350.39	TAP	227.37	RCA	147.23	APO	228.28
RC	310.607	GL	22.71	GP	-3.26	ZAL	102.47	ZAP	43.20	ETS	175.73	ZAE	67.52	ETE	178.05	ZAC	81.35	ETC	257.66

V1 30.186 V2 26.149 CLP 43.10

PLANETOCENTRIC CONIC

C3	9.861	VHL	3.140	DLA	25.37	RAL	178.87	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.210	DPA	4.51	RAP	165.41

ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 50	3008.18	-27.94	97.02	37.35	85.21	15 34 58	2408.2	-28.31	88.38
90.00	10 58 45	3754.30	-13.83	146.58	33.35	65.04	12 1 19	3154.3	-17.08	139.42
100.00	16 30 24	2667.83	-29.83	72.11	37.48	87.91	17 14 52	2067.8	-29.80	63.31
100.00	11 55 52	3569.88	-12.14	132.18	32.49	62.47	12 55 22	2969.9	-15.73	125.23
110.00	18 23 43	2313.29	-33.97	45.10	37.40	94.03	19 2 16	1713.3	-33.04	35.99
110.00	12 19 2	3497.18	-8.56	124.54	30.36	56.78	13 17 19	2897.2	-12.87	118.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2418	TRA	2.4659	TC	-17.5679	BAU	2.3160	SGT	12315.3	SGR	593.4	SG3	1330.4	ST	2734.1	SR	473.9	SS	954.6
RDE	.2524	RRA	.1841	RC3	-.0668	FAU	.23989	RRT	.4595	RRF	.4345	RTF	.9879	CRT	.9344	CRS	-.6239	CST	-.8584
FDE	.6119	FRA	3.8648	FC	-21.0607	BSP	42776	SGB	12329.6	R23	-.0227	R13	.9878	LSA	2890.7	MSA	503.7	SSA	34.6
BDE	1.2672	BRA	2.4728	BC	317.5680	FSP	4426	SG1	12318.3	SG2	526.9	THA	1.27	EL1	2769.8	EL2	166.7	ALF	9.23

LAUNCH DATE NOV 27 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 799.062 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.043	GAL	-1.83	AZL	87.91	HCA	238.22	SMA	187.86	ECC	.21655	INC	2.0890
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.682	GAP	-10.65	AZP	91.10	TAL	349.70	TAP	227.92	RCA	147.18	APO	228.54
RC	311.551	GL	22.42	GP	-3.16	ZAL	103.75	ZAP	42.35	ETS	175.71	ZAE	66.38	ETE	178.04	ZAC	81.52	ETC	257.61

V1 30.186 V2 26.174 CLP 42.26

PLANETOCENTRIC CONIC

C3	9.966	VHL	3.157	DLA	24.56	RAL	180.00	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	4.279	DPA	4.44	RAP	165.81

ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 50	2960.35	-28.17	93.54	38.43	86.94	15 53 10	2360.4	-28.29	84.88
90.00	10 48 42	3806.32	-12.31	149.65	34.12	64.30	11 52 8	3206.3	-15.67	142.59
100.00	16 46 33	2629.19	-29.89	69.24	38.49	89.42	17 30 22	2029.2	-29.65	60.44
100.00	11 48 40	3612.71	-10.78	134.63	33.32	61.95	12 48 53	3012.7	-14.45	127.76
110.00	18 36 9	2286.30	-33.82	43.01	38.30	95.26	19 14 15	1686.3	-32.73	33.95
110.00	12 15 33	3528.37	-7.39	126.20	31.28	56.53	13 14 22	2928.4	-11.74	119.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1654	TRA	2.6221	TC	-17.6296	BAU	2.3488	SGT	12479.9	SGR	589.9	SG3	1277.9	ST	2655.1	SR	474.0	SS	920.6
RDE	.2540	RRA	.1841	RC3	-.0331	FAU	.22975	RRT	.4252	RRF	.3994	RTF	.9879	CRT	.9125	CRS	-.5492	CST	-.8403
FDE	.4704	FRA	3.8565	FC	-19.9591	BSP	43359	SGB	12493.8	R23	-.0236	R13	.9878	LSA	2801.3	MSA	522.8	SSA	34.4
BDE	1.1927	BRA	2.6285	BC	317.6297	FSP	4255	SG1	12482.4	SG2	533.8	THA	1.15	EL1	2690.2	EL2	191.4	ALF	9.30

LAUNCH DATE NOV 27 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 803.362 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.049	GAL	-1.96	AZL	87.93	HCA	239.45	SMA	187.96	ECC	.21730	INC	2.0743
RP	209.24	LAP	-1.79	LOP	304.22	VP	23.716	GAP	-10.76	AZP	91.05	TAL	349.00	TAP	228.45	RCA	147.12	APO	228.80
RC	312.486	GL	22.12	GP	-3.08	ZAL	105.06	ZAP	41.53	ETS	175.70	ZAE	65.26	ETE	178.03	ZAC	81.69	ETC	257.57

V1 30.186 V2 26.198 CLP 41.43

PLANETOCENTRIC CONIC

C3	10.084	VHL	3.176	DLA	23.74	RAL	181.12	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.348	DPA	4.36	RAP	166.23

ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 33	2916.68	-28.28	90.35	39.50	88.54	16 10 10	2316.7	-28.19	81.69
90.00	10 39 59	3854.70	-10.87	152.47	34.95	63.69	11 44 13	3254.7	-14.32	145.49
100.00	17 2 1	2592.75	-29.88	66.53	39.51	90.85	17 45 14	1992.7	-29.44	57.75
100.00	11 42 12	3653.87	-9.45	136.97	34.21	61.51	12 43 6	3053.9	-13.18	130.17
110.00	18 48 23	2259.99	-33.64	40.98	39.23	96.45	19 26 3	1660.0	-32.38	31.97
110.00	12 12 19	3559.39	-6.22	127.85	32.24	56.32	13 11 39	2959.4	-10.61	121.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0848	TRA	2.7842	TC	-17.6602	BAU	2.3809	SGT	12639.2	SGR	587.4	SG3	1226.5	ST	2579.7	SR	474.6	SS	894.2
RDE	.2560	RRA	.1841	RC3	-.0012	FAU	.21986	RRT	.3911	RRF	.3644	RTF	.9878	CRT	.8849	CRS	-.4669	CST	-.8225
FDE	.3359	FRA	3.8451	FC	-18.8757	BSP	43907	SGB	12652.8	R23	-.0246	R13	.9878	LSA	2717.2	MSA	543.2	SSA	34.2
BDE	1.1146	BRA	2.7903	BC	317.6602	FSP	4087	SG1	12641.3	SG2	540.5	THA	1.04	EL1	2613.9	EL2	218.2	ALF	9.31

LAUNCH DATE NOV 27 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 807.664 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.055	GAL	-2.09	AZL	87.94	HCA	240.69	SMA	188.06	ECC	.21808	INC	2.0601
RP	209.04	LAP	-1.80	LOP	305.46	VP	23.750	GAP	-10.87	AZP	91.01	TAL	348.28	TAP	228.98	RCA	147.05	APO	229.08
RC	313.411	GL	21.81	GP	-2.99	ZAL	106.39	ZAP	40.73	ETS	175.68	ZAE	64.16	ETE	178.02	ZAC	81.86	ETC	257.52

V1 30.186 V2 26.221 CLP 40.64

PLANETOCENTRIC CONIC

C3	10.217	VHL	3.196	DLA	22.90	RAL	182.26	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	4.418	DPA	4.26	RAP	166.66

ECC 1.1681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 20	2876.12	-28.32	87.39	40.57	90.02	16 26 16	2276.1	-28.01	78.74
90.00	10 32 16	3900.51	-9.48	155.12	35.85	63.19	11 37 16	3300.5	-13.00	148.21
100.00	17 16 57	2558.11	-29.82	63.96	40.54	92.20	17 59 35	1958.1	-29.19	55.21
100.00	11 36 19	3693.75	-8.15	139.21	35.14	61.14	12 37 53	3093.7	-11.94	132.47
110.00	19 0 27	2234.32	-33.43	39.00	40.17	97.60	19 37 41	1634.3	-32.02	30.06
110.00	12 9 19	3590.30	-5.05	129.48	33.25	56.15	13 9 9	2990.3	-9.47	123.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0008	TRA	2.9532	TC	-17.6608	BAU	2.4123	SGT	12794.9	SGR	585.8	SG3	1176.9	ST	2511.0	SR	475.7	SS	876.0
RDE	.2585	RRA	.1839	RC3	.0286	FAU	.21031	RRT	.3577	RRF	.3303	RTF	.9878	CRT	.8508	CRS	-.3803	CST	-.8072
FDE	.2109	FRA	3.8327	FC	-17.8206	BSP	44482	SGB	12808.3	R23	-.0254	R13	.9878	LSA	2641.9	MSA	564.0	SSA	33.8
BDE	1.0336	BRA	2.9589	BC	317.6609	FSP	3931	SG1	12796.7	SG2	547.0	THA	.94	EL1	2543.7	EL2	246.8	ALF	9.24

LAUNCH DATE NOV 27 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 811.967 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.061 GAL -2.23 AZL 87.95 HCA 241.94 SMA 188.17 ECC .21891 INC 2.0462 V1 30.186
RP 208.85 LAP -1.81 LOP 306.71 VP 23.783 GAP -10.98 AZP 90.96 TAL 347.55 TAP 229.49 RCA 146.98 APO 229.36 V2 26.243
RC 314.329 GL 21.49 GP -2.91 ZAL 107.73 ZAP 39.95 ETS 175.67 ZAE 63.09 ETE 178.01 ZAC 82.03 ETC 257.47 CLP 39.86

PLANETOCENTRIC CONIC

C3 10.365 VHL 3.219 DLA 22.06 RAL 183.40 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.490 DPA 4.14 RAP 167.12 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 22	2838.00	-28.28	84.60	41.64	91.42	16 41 40	2238.0	-27.79	75.97
90.00	10 25 20	3944.41	-8.12	157.63	36.81	62.78	11 31 4	3344.4	-11.70	150.78
100.00	17 31 26	2524.99	-29.71	61.50	41.57	93.49	18 13 31	1925.0	-28.91	52.79
100.00	11 30 56	3732.65	-6.86	141.39	36.13	60.83	12 33 9	3132.6	-10.70	134.70
110.00	19 12 21	2209.26	-33.19	37.09	41.14	98.71	19 49 11	1609.3	-31.63	28.21
110.00	12 6 31	3621.14	-3.88	131.09	34.29	56.01	13 6 52	3021.1	-8.32	124.82

DIFFERENTIAL CORRECTIONS
TDE .9140 TRA 3.1280 TC-17.6326 BAU 2.4434
RDE .2615 RRA .1836 RC3 .0567 FAU .20098
FDE .0938 FRA 3.8157 FC-16.7869 BSP 45035
BDE .9507 BRA 3.1334 BC317.6327 FSP 3774

MID-COURSE EXECUTION ACCURACY
SGT12947.0 SGR 585.0 SG3 1128.3
RRT .3248 RRF .2966 RTF .9877
SGB12960.2 R23 -.0262 R13 .9877
SG112948.4 SG2 553.2 THA .84

ORBIT DETERMINATION ACCURACY
ST 2451.3 SR 477.3 SS 864.4
CRT .8096 CRS -.2913 CST -.7951
LSA 2576.9 MSA 584.8 SSA 33.4
EL1 2481.9 EL2 276.7 ALF 9.07

LAUNCH DATE NOV 27 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 816.273 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.067 GAL -2.37 AZL 87.97 HCA 243.18 SMA 188.27 ECC .21977 INC 2.0326 V1 30.186
RP 208.67 LAP -1.81 LOP 307.95 VP 23.815 GAP -11.09 AZP 90.92 TAL 346.81 TAP 229.99 RCA 146.90 APO 229.65 V2 26.264
RC 315.238 GL 21.17 GP -2.84 ZAL 109.09 ZAP 39.19 ETS 175.65 ZAE 62.03 ETE 178.00 ZAC 82.21 ETC 257.41 CLP 39.10

PLANETOCENTRIC CONIC

C3 10.529 VHL 3.245 DLA 21.20 RAL 184.54 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 4.563 DPA 4.02 RAP 167.60 ECC 1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 47	2801.91	-28.19	81.96	42.72	92.74	16 56 29	2201.9	-27.52	73.36
90.00	10 19 2	3986.86	-6.79	160.04	37.82	62.44	11 25 29	3386.9	-10.43	153.25
100.00	17 45 31	2493.22	-29.55	59.15	42.62	94.72	18 27 5	1893.2	-28.59	50.48
100.00	11 25 59	3770.78	-5.59	143.50	37.16	60.59	12 28 50	3170.8	-9.47	136.86
110.00	19 24 6	2184.80	-32.92	35.23	42.12	99.78	20 0 31	1584.8	-31.22	26.42
110.00	12 3 53	3651.97	-2.71	132.71	35.37	55.91	13 4 45	3052.0	-7.16	126.45

DIFFERENTIAL CORRECTIONS
TDE .8222 TRA 3.3085 TC-17.5753 BAU 2.4740
RDE .2649 RRA .1831 RC3 .0829 FAU .19188
FDE -.0190 FRA 3.7951 FC-15.7766 BSP 45564
BDE .8638 BRA 3.3136 BC317.5755 FSP 3624

MID-COURSE EXECUTION ACCURACY
SGT13094.5 SGR 584.7 SG3 1080.8
RRT .2922 RRF .2632 RTF .9876
SGB13107.5 R23 -.0271 R13 .9875
SG113095.6 SG2 559.1 THA .75

ORBIT DETERMINATION ACCURACY
ST 2399.6 SR 479.2 SS 858.8
CRT .7601 CRS -.1994 CST -.7862
LSA 2521.3 MSA 606.1 SSA 33.0
EL1 2427.5 EL2 307.8 ALF 8.77

LAUNCH DATE NOV 27 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 820.579 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.073 GAL -2.51 AZL 87.98 HCA 244.43 SMA 188.38 ECC .22067 INC 2.0192 V1 30.186
RP 208.49 LAP -1.82 LOP 309.20 VP 23.846 GAP -11.20 AZP 90.87 TAL 346.05 TAP 230.47 RCA 146.81 APO 229.95 V2 26.285
RC 316.140 GL 20.84 GP -2.76 ZAL 110.46 ZAP 38.45 ETS 175.64 ZAE 61.00 ETE 178.00 ZAC 82.38 ETC 257.36 CLP 38.37

PLANETOCENTRIC CONIC

C3 10.711 VHL 3.273 DLA 20.33 RAL 185.69 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 4.638 DPA 3.88 RAP 168.10 ECC 1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 43	2767.53	-28.06	79.46	43.82	93.99	17 10 50	2167.5	-27.21	70.89
90.00	10 13 15	4028.18	-5.48	162.37	38.87	62.18	11 20 23	3428.2	-9.16	155.63
100.00	17 59 16	2462.64	-29.36	56.90	43.69	95.89	18 40 19	1862.6	-28.23	48.28
100.00	11 21 23	3808.30	-4.33	145.58	38.24	60.39	12 24 51	3208.3	-8.24	138.97
110.00	19 35 43	2160.90	-32.63	33.43	43.13	100.81	20 11 43	1560.9	-30.79	24.69
110.00	12 1 26	3682.80	-1.53	134.32	36.50	55.85	13 2 49	3082.8	-6.00	128.08

DIFFERENTIAL CORRECTIONS
TDE .7284 TRA 3.4970 TC-17.4859 BAU 2.5039
RDE .2688 RRA .1824 RC3 .1073 FAU .18303
FDE -.1208 FRA 3.7730 FC-14.7944 BSP 46110
BDE .7765 BRA 3.5018 BC317.4862 FSP 3480

MID-COURSE EXECUTION ACCURACY
SGT13238.1 SGR 585.2 SG3 1034.8
RRT .2608 RRF .2311 RTF .9874
SGB13251.0 R23 -.0278 R13 .9874
SG113239.0 SG2 564.9 THA .66

ORBIT DETERMINATION ACCURACY
ST 2362.4 SR 481.6 SS 858.9
CRT .7028 CRS -.1122 CST -.7838
LSA 2481.7 MSA 624.8 SSA 32.4
EL1 2387.0 EL2 339.0 ALF 8.32

LAUNCH DATE NOV 27 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 824.885 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.079 GAL -2.66 AZL 87.99 HCA 245.67 SMA 188.49 ECC .22162 INC 2.0061 V1 30.186
RP 208.32 LAP -1.83 LOP 310.45 VP 23.876 GAP -11.31 AZP 90.83 TAL 345.28 TAP 230.95 RCA 146.72 APO 230.27 V2 26.304
RC 317.035 GL 20.50 GP -2.69 ZAL 111.85 ZAP 37.73 ETS 175.62 ZAE 59.98 ETE 177.99 ZAC 82.56 ETC 257.30 CLP 37.65

PLANETOCENTRIC CONIC

C3 10.910 VHL 3.303 DLA 19.45 RAL 186.84 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 4.713 DPA 3.73 RAP 168.61 ECC 1.1796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 12	2734.64	-27.88	77.07	44.92	95.18	17 24 47	2134.6	-26.87	68.55
90.00	10 7 55	4068.60	-4.19	164.64	39.98	61.97	11 15 44	3468.6	-7.91	157.93
100.00	18 12 42	2433.14	-29.13	54.74	44.77	97.00	18 53 15	1833.1	-27.86	46.17
100.00	11 17 6	3845.33	-3.09	147.62	39.37	60.25	12 21 12	3245.3	-7.02	141.04
110.00	19 47 10	2137.58	-32.32	31.68	44.15	101.80	20 22 48	1537.6	-30.35	23.01
110.00	11 59 8	3713.65	-.35	135.93	37.66	55.82	13 1 1	3113.7	-4.83	129.71

DIFFERENTIAL CORRECTIONS
TDE .6313 TRA 3.6908 TC-17.3728 BAU 2.5340
RDE .2732 RRA .1816 RC3 .1297 FAU .17453
FDE -.2163 FRA 3.7469 FC-13.8495 BSP 46652
BDE .6878 BRA 3.6953 BC317.3733 FSP 3341

MID-COURSE EXECUTION ACCURACY
SGT13379.6 SGR 586.1 SG3 990.2
RRT .2300 RRF .1996 RTF .9873
SGB13392.4 R23 -.0286 R13 .9872
SG113380.3 SG2 570.3 THA .58

ORBIT DETERMINATION ACCURACY
ST 2338.1 SR 484.3 SS 863.1
CRT .6377 CRS -.0280 CST -.7861
LSA 2456.3 MSA 641.7 SSA 31.9
EL1 2358.9 EL2 369.8 ALF 7.72

LAUNCH DATE NOV 27 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 829.192 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.085 GAL -2.81 AZL 88.01 HCA 246.92 SMA 188.60 ECC .22260 INC 1.9932 V1 30.186
RP 208.16 LAP -1.83 LOP 311.70 VP 23.905 GAP -11.42 AZP 90.78 TAL 344.49 TAP 231.41 RCA 146.62 APO 230.59 V2 26.323
RC 317.924 GL 20.15 GP -2.63 ZAL 113.24 ZAP 37.03 ETS 175.60 ZAE 58.98 ETE 177.99 ZAC 82.74 ETC 257.24 CLP 36.95

PLANETOCENTRIC CONIC

C3 11.129 VHL 3.336 DLA 18.57 RAL 187.99 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 4.790 DPA 3.57 RAP 169.15 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 18	2703.10	-27.66	74.79	46.04	96.30	17 38 22	2103.1	-26.50	66.31
90.00	10 2 58	4108.29	-2.92	166.86	41.12	61.82	11 11 26	3508.3	-6.66	160.19
100.00	18 25 51	2404.65	-28.88	52.66	45.87	98.07	19 5 56	1804.7	-27.46	44.14
100.00	11 13 6	3881.97	-1.85	149.63	40.53	60.16	12 17 48	3282.0	-5.80	143.08
110.00	19 58 29	2114.83	-31.99	29.98	45.21	102.75	20 33 44	1514.8	-29.90	21.39
110.00	11 56 58	3744.56	.83	137.54	38.86	55.83	12 59 22	3144.6	-3.66	131.33

DIFFERENTIAL CORRECTIONS
TDE .5309 TRA 3.8922 TC-17.2293 BAU 2.5635
RDE .2780 RRA .1806 RC3 .1505 FAU .16621
FDE -.3048 FRA 3.7175 FC-12.9302 BSP 47181
BDE .5993 BRA 3.8964 BC317.2299 FSP 3204

MID-COURSE EXECUTION ACCURACY
SGT13516.8 SGR 587.5 SG3 946.7
RRT .2001 RRF .1690 RTF .9870
SGB13529.6 R23 -.0295 R13 .9870
SG113517.3 SG2 575.6 THA .50

ORBIT DETERMINATION ACCURACY
ST 2329.5 SR 487.5 SS 870.5
CRT .5654 CRS .0511 CST -.7933
LSA 2447.6 MSA 655.6 SSA 31.2
EL1 2346.2 EL2 399.2 ALF 6.95

LAUNCH DATE NOV 27 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 833.499 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.092 GAL -2.96 AZL 88.02 HCA 248.18 SMA 188.72 ECC .22364 INC 1.9806 V1 30.186
RP 208.01 LAP -1.84 LOP 312.95 VP 23.934 GAP -11.53 AZP 90.74 TAL 343.68 TAP 231.86 RCA 146.51 APO 230.92 V2 26.341
RC 318.808 GL 19.80 GP -2.57 ZAL 114.64 ZAP 36.35 ETS 175.59 ZAE 58.00 ETE 177.98 ZAC 82.92 ETC 257.18 CLP 36.27

PLANETOCENTRIC CONIC

C3 11.368 VHL 3.372 DLA 17.68 RAL 189.13 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 4.868 DPA 3.39 RAP 169.70 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 4	2672.77	-27.42	72.60	47.18	97.37	17 51 37	2072.8	-26.11	64.18
90.00	9 58 21	4147.40	-1.66	169.05	42.31	61.73	11 7 29	3547.4	-5.43	162.39
100.00	18 38 45	2377.12	-28.60	50.66	46.99	99.09	19 18 22	1777.1	-27.05	42.20
100.00	11 9 21	3918.29	-.62	151.62	41.73	60.11	12 14 40	3318.3	-4.59	145.09
110.00	20 9 40	2092.65	-31.64	28.35	46.28	103.67	20 44 33	1492.7	-29.44	19.83
110.00	11 54 55	3775.52	2.02	139.15	40.09	55.87	12 57 51	3175.5	-2.48	132.95

DIFFERENTIAL CORRECTIONS
TDE .4277 TRA 4.1005 TC-17.0577 BAU 2.5925
RDE .2833 RRA .1794 RC3 .1694 FAU .15812
FDE -.3870 FRA 3.6854 FC-12.0420 BSP 47708
BDE .5130 BRA 4.1044 BC317.0585 FSP 3075

MID-COURSE EXECUTION ACCURACY
SGT13649.9 SGR 589.2 SG3 904.4
RRT .1710 RRF .1392 RTF .9868
SGB13662.6 R23 -.0303 R13 .9868
SG113650.3 SG2 580.5 THA .42

ORBIT DETERMINATION ACCURACY
ST 2337.0 SR 490.9 SS 880.3
CRT .4875 CRS .1248 CST -.8041
LSA 2456.1 MSA 666.2 SSA 30.6
EL1 2349.6 EL2 426.3 ALF 6.05

LAUNCH DATE NOV 27 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 837.805 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.098 GAL -3.12 AZL 88.03 HCA 249.43 SMA 188.83 ECC .22472 INC 1.9681 V1 30.186
RP 207.86 LAP -1.84 LOP 314.21 VP 23.961 GAP -11.65 AZP 90.69 TAL 342.87 TAP 232.30 RCA 146.40 APO 231.27 V2 26.357
RC 319.685 GL 19.44 GP -2.50 ZAL 116.05 ZAP 35.69 ETS 175.57 ZAE 57.04 ETE 177.98 ZAC 83.10 ETC 257.12 CLP 35.61

PLANETOCENTRIC CONIC

C3 11.628 VHL 3.410 DLA 16.78 RAL 190.28 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 4.947 DPA 3.20 RAP 170.26 ECC 1.1914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 31	2643.57	-27.15	70.51	48.34	98.39	18 4 35	2043.6	-25.71	62.13
90.00	9 54 2	4186.02	-.41	171.20	43.55	61.69	11 3 48	3586.0	-4.19	164.56
100.00	18 51 24	2350.49	-28.30	48.74	48.12	100.06	19 30 35	1750.5	-26.62	40.34
100.00	11 5 50	3954.34	.61	153.60	42.98	60.11	12 11 44	3354.3	-3.37	147.08
110.00	20 20 43	2071.05	-31.28	26.77	47.37	104.54	20 55 14	1471.1	-28.97	18.33
110.00	11 53 1	3806.54	3.20	140.77	41.36	55.95	12 56 27	3206.5	-1.29	134.57

DIFFERENTIAL CORRECTIONS
TDE .3214 TRA 4.3154 TC-16.8614 BAU 2.6214
RDE .2891 RRA .1779 RC3 .1866 FAU .15028
FDE -.4624 FRA 3.6497 FC-11.1884 BSP 48228
BDE .4323 BRA 4.3191 BC316.8624 FSP 2945

MID-COURSE EXECUTION ACCURACY
SGT13779.9 SGR 591.3 SG3 863.4
RRT .1428 RRF .1103 RTF .9865
SGB13792.6 R23 -.0312 R13 .9865
SG113780.2 SG2 585.2 THA .35

ORBIT DETERMINATION ACCURACY
ST 2360.7 SR 494.7 SS 891.3
CRT .4058 CRS .1922 CST -.8177
LSA 2481.6 MSA 672.8 SSA 29.9
EL1 2369.5 EL2 450.4 ALF 5.04

LAUNCH DATE NOV 27 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 842.109 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.105 GAL -3.28 AZL 88.04 HCA 250.69 SMA 188.95 ECC .22585 INC 1.9559 V1 30.186
RP 207.73 LAP -1.85 LOP 315.46 VP 23.988 GAP -11.76 AZP 90.65 TAL 342.04 TAP 232.72 RCA 146.27 APO 231.62 V2 26.373
RC 320.558 GL 19.08 GP -2.45 ZAL 117.46 ZAP 35.04 ETS 175.55 ZAE 56.09 ETE 177.98 ZAC 83.28 ETC 257.06 CLP 34.97

PLANETOCENTRIC CONIC

C3 11.911 VHL 3.451 DLA 15.88 RAL 191.42 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 5.028 DPA 3.01 RAP 170.85 ECC 1.1960

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 41	2615.44	-26.85	68.50	49.51	99.35	18 17 16	2015.4	-25.28	60.18
90.00	9 49 58	4224.23	.82	173.33	44.82	61.69	11 0 22	3624.2	-2.97	166.70
100.00	19 3 50	2324.73	-27.98	46.89	49.28	100.98	19 42 34	1724.7	-26.18	38.55
100.00	11 2 30	3990.18	1.82	155.57	44.26	60.16	12 9 1	3390.2	-2.16	149.05
110.00	20 31 37	2050.04	-30.91	25.24	48.49	105.37	21 5 47	1450.0	-28.50	16.87
110.00	11 51 12	3837.63	4.38	142.40	42.67	56.07	12 55 10	3237.6	-.10	136.19

DIFFERENTIAL CORRECTIONS
TDE .2121 TRA 4.5371 TC-16.6436 BAU 2.6505
RDE .2953 RRA .1763 RC3 .2020 FAU .14270
FDE -.5314 FRA 3.6113 FC-10.3719 BSP 48730
BDE .3636 BRA 4.5405 BC316.6448 FSP 2821

MID-COURSE EXECUTION ACCURACY
SGT13908.0 SGR 593.6 SG3 823.7
RRT .1155 RRF .0823 RTF .9861
SGB13920.7 R23 -.0320 R13 .9861
SG113908.2 SG2 589.7 THA .28

ORBIT DETERMINATION ACCURACY
ST 2400.5 SR 498.7 SS 903.0
CRT .3221 CRS .2534 CST -.8330
LSA 2523.7 MSA 675.6 SSA 29.2
EL1 2406.1 EL2 471.1 ALF 3.98

LAUNCH DATE NOV 27 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 846.412 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.111 GAL -3.45 AZL 88.06 HCA 251.94 SMA 189.07 ECC .22703 INC 1.9438 V1 30.186
RP 207.60 LAP -1.85 LOP 316.72 VP 24.013 GAP -11.87 AZP 90.60 TAL 341.19 TAP 233.13 RCA 146.14 APO 231.99 V2 26.388
RC 321.425 GL 18.71 GP -2.39 ZAL 118.87 ZAP 34.42 ETS 175.53 ZAE 55.16 ETE 177.98 ZAC 83.47 ETC 257.00 CLP 34.34

PLANETOCENTRIC CONIC

C3 12.218 VHL 3.495 DLA 14.98 RAL 192.55 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 5.110 DPA 2.80 RAP 171.44 ECC 1.2011

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 35	2588.32	-26.54	66.58	50.71	100.26	18 29 43	1988.3	-24.85	58.32
90.00	9 46 9	4262.10	2.04	175.44	46.13	61.75	10 57 11	3662.1	-1.75	168.82
100.00	19 16 2	2299.83	-27.64	45.11	50.46	101.85	19 54 22	1699.8	-25.73	36.84
100.00	10 59 22	4025.83	3.03	157.53	45.58	60.25	12 6 28	3425.8	-.95	151.00
110.00	20 42 23	2029.63	-30.54	23.77	49.64	106.17	21 16 13	1429.6	-28.02	15.48
110.00	11 49 30	3868.79	5.56	144.04	44.01	56.22	12 53 59	3268.8	1.09	137.82

DIFFERENTIAL CORRECTIONS
TDE .1011 TRA 4.7666 TC-16.3992 BAU 2.6790
RDE .3021 RRA .1744 RC3 .2158 FAU .13531
FDE -.5940 FRA 3.5694 FC3-9.5873 BSP 49252
BDE .3185 BRA 4.7697 BC316.4006 FSP 2703

MID-COURSE EXECUTION ACCURACY
SGT14031.4 SGR 596.2 SG3 785.0
RRT .0891 RRF .0551 RTF .9857
SGB14044.1 R23 -.0330 R13 .9857
SG114031.5 SG2 593.8 THA .22

ORBIT DETERMINATION ACCURACY
ST 2456.3 SR 503.0 SS 914.4
CRT .2394 CRS .3088 CST -.8485
LSA 2581.8 MSA 675.0 SSA 28.5
EL1 2459.3 EL2 487.8 ALF 2.92

LAUNCH DATE NOV 27 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 850.713 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.118 GAL -3.62 AZL 88.07 HCA 253.20 SMA 189.18 ECC .22827 INC 1.9318 V1 30.186
RP 207.48 LAP -1.85 LOP 317.98 VP 24.038 GAP -11.99 AZP 90.56 TAL 340.33 TAP 233.53 RCA 146.00 APO 232.37 V2 26.402
RC 322.286 GL 18.33 GP -2.34 ZAL 120.29 ZAP 33.80 ETS 175.51 ZAE 54.25 ETE 177.97 ZAC 83.65 ETC 256.94 CLP 33.73

PLANETOCENTRIC CONIC

C3 12.551 VHL 3.543 DLA 14.08 RAL 193.69 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 5.193 DPA 2.58 RAP 172.06 ECC 1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 13	2562.18	-26.21	64.73	51.92	101.13	18 41 55	1962.2	-24.41	56.53
90.00	9 42 32	4299.66	3.25	177.54	47.48	61.85	10 54 11	3699.7	-.54	170.91
100.00	19 28 2	2275.76	-27.29	43.41	51.67	102.69	20 5 58	1675.8	-25.27	35.19
100.00	10 56 24	4061.32	4.23	159.48	46.94	60.38	12 4 5	3461.3	.25	152.95
110.00	20 53 1	2009.84	-30.15	22.36	50.81	106.92	21 26 31	1409.8	-27.54	14.14
110.00	11 47 54	3900.00	6.74	145.69	45.39	56.41	12 52 54	3300.0	2.28	139.44

DIFFERENTIAL CORRECTIONS
TDE -.0135 TRA 5.0030 TC-16.1351 BAU 2.7077
RDE .3093 RRA .1722 RC3 .2280 FAU .12814
FDE -.6513 FRA 3.5239 FC3-8.8387 BSP 49735
BDE .3096 BRA 5.0059 BC316.1367 FSP 2586

MID-COURSE EXECUTION ACCURACY
SGT14152.3 SGR 598.9 SG3 747.5
RRT .0834 RRF .0286 RTF .9852
SGB14165.0 R23 -.0340 R13 .9852
SG114152.4 SG2 597.7 THA .15

ORBIT DETERMINATION ACCURACY
ST 2526.0 SR 507.6 SS 925.2
CRT .1583 CRS .3592 CST -.8637
LSA 2653.8 MSA 671.6 SSA 27.8
EL1 2527.4 EL2 500.9 ALF 1.90

LAUNCH DATE NOV 27 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 855.011 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.125 GAL -3.79 AZL 88.08 HCA 254.46 SMA 189.30 ECC .22956 INC 1.9201 V1 30.186
RP 207.36 LAP -1.85 LOP 319.24 VP 24.061 GAP -12.11 AZP 90.51 TAL 339.45 TAP 233.92 RCA 145.85 APO 232.76 V2 26.416
RC 323.141 GL 17.95 GP -2.29 ZAL 121.70 ZAP 33.21 ETS 175.49 ZAE 53.35 ETE 177.97 ZAC 83.84 ETC 256.88 CLP 33.14

PLANETOCENTRIC CONIC

C3 12.911 VHL 3.593 DLA 13.18 RAL 194.81 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 5.278 DPA 2.36 RAP 172.69 ECC 1.2125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 37	2536.98	-25.86	62.97	53.16	101.95	18 53 54	1937.0	-23.96	54.82
90.00	9 39 6	4336.97	4.45	179.63	48.87	62.01	10 51 23	3737.0	.67	172.99
100.00	19 39 49	2252.51	-26.94	41.78	52.89	103.48	20 17 22	1652.5	-24.81	33.62
100.00	10 53 35	4096.66	5.41	161.44	48.34	60.56	12 1 52	3496.7	1.45	154.89
110.00	21 3 30	1990.66	-29.76	21.00	52.00	107.64	21 36 41	1390.7	-27.06	12.85
110.00	11 46 23	3931.28	7.92	147.35	46.80	56.64	12 51 55	3331.3	3.47	141.08

DIFFERENTIAL CORRECTIONS
TDE -.1296 TRA 5.2468 TC-15.8518 BAU 2.7364
RDE .3170 RRA .1698 RC3 .2386 FAU .12122
FDE -.7020 FRA 3.4751 FC3-8.1283 BSP 50223
BDE .3425 BRA 5.2496 BC315.8536 FSP 2473

MID-COURSE EXECUTION ACCURACY
SGT14270.5 SGR 601.8 SG3 711.2
RRT .0386 RRF .0030 RTF .9847
SGB14283.2 R23 -.0351 R13 .9847
SG114270.5 SG2 601.4 THA .09

ORBIT DETERMINATION ACCURACY
ST 2608.6 SR 512.3 SS 934.4
CRT .0814 CRS .4042 CST -.8779
LSA 2738.0 MSA 665.7 SSA 27.2
EL1 2609.0 EL2 510.5 ALF .95

LAUNCH DATE NOV 27 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 859.305 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.131 GAL -3.97 AZL 88.09 HCA 255.72 SMA 189.42 ECC .23091 INC 1.9084 V1 30.186
RP 207.26 LAP -1.85 LOP 320.50 VP 24.084 GAP -12.23 AZP 90.47 TAL 338.56 TAP 234.29 RCA 145.68 APO 233.16 V2 26.428
RC 323.990 GL 17.57 GP -2.24 ZAL 123.11 ZAP 32.63 ETS 175.47 ZAE 52.47 ETE 177.97 ZAC 84.03 ETC 256.82 CLP 32.56

PLANETOCENTRIC CONIC

C3 13.299 VHL 3.647 DLA 12.28 RAL 195.93 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 5.364 DPA 2.12 RAP 173.33 ECC 1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 47	2512.70	-25.51	61.28	54.42	102.73	19 5 40	1912.7	-23.50	53.18
90.00	9 35 51	4374.04	5.63	181.72	50.29	62.20	10 48 45	3774.0	1.86	175.06
100.00	19 51 25	2230.09	-26.57	40.21	54.14	104.22	20 28 35	1630.1	-24.35	32.11
100.00	10 50 55	4131.89	6.59	163.39	49.77	60.78	11 59 47	3531.9	2.64	156.82
110.00	21 13 51	1972.13	-29.38	19.69	53.21	108.32	21 46 43	1372.1	-26.59	11.62
110.00	11 44 58	3962.61	9.09	149.02	48.24	56.90	12 51 0	3362.6	4.67	142.72

DIFFERENTIAL CORRECTIONS
TDE -.2491 TRA 5.4980 TC-15.5515 BAU 2.7653
RDE .3252 RRA .1670 RC3 .2477 FAU .11447
FDE -.7479 FRA 3.4227 FC3-7.4522 BSP 50706
BDE .4096 BRA 5.5006 BC315.5535 FSP 2363

MID-COURSE EXECUTION ACCURACY
SGT14386.1 SGR 604.8 SG3 676.0
RRT .0144 RRF -.0220 RTF .9841
SGB14398.8 R23 -.0362 R13 .9841
SG114386.1 SG2 604.7 THA .03

ORBIT DETERMINATION ACCURACY
ST 2702.4 SR 517.2 SS 942.2
CRT .0085 CRS .4452 CST -.8908
LSA 2832.7 MSA 658.2 SSA 26.5
EL1 2702.4 EL2 517.2 ALF .10

LAUNCH DATE NOV 27 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 863.595 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.138	GAL	-4.16	AZL	88.10	HCA	256.99	SMA	189.55	ECC	.23232	INC	1.8969
RP	207.16	LAP	-1.85	LOP	321.77	VP	24.106	GAP	-12.35	AZP	90.43	TAL	337.66	TAP	234.65	RCA	145.51	APO	233.58
RC	324.833	GL	17.18	GP	-2.19	ZAL	124.52	ZAP	32.06	ETS	175.45	ZAE	51.60	ETE	177.97	ZAC	84.23	ETC	256.76

V1	30.186	V2	26.439	CLP	32.00														

PLANETOCENTRIC CONIC

C3	13.717	VHL	3.704	DLA	11.38	RAL	197.04	RAD	6567.5	VEL	11.623	PTH	2.04	VHP	5.452	DPA	1.88	RAP	173.98
ECC	1.2257																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 44	2489.33	-25.15	59.66	55.70	103.46	19 17 13	1889.3	-23.05	51.62
90.00	9 32 46	4410.90	6.79	183.80	51.76	62.44	10 46 17	3810.9	3.05	177.12
100.00	20 2 49	2208.47	-26.20	38.71	55.41	104.93	20 39 37	1608.5	-23.89	30.67
100.00	10 48 22	4166.99	7.75	165.35	51.24	61.04	11 57 49	3567.0	3.83	158.76
110.00	21 24 4	1954.25	-28.99	18.45	54.45	108.97	21 56 38	1354.3	-26.12	10.44
110.00	11 43 37	3993.98	10.25	150.71	49.72	57.21	12 50 11	3394.0	5.86	144.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3701	TRA	5.7576	TC-15.2343	BAU	2.7941	SGT14499.0	SGR	607.9	SG3	641.9	ST	2805.7	SR	522.3	SS	948.1
RDE	.3338	RRA	.1640	RC3 .2554	FAU	.10796	RRT -.0089	RRF	-.0464	RTF	.9834	CRT	-.0586	CRS	.4823	CST	-.9021
FDE	-.7884	FRA	3.3670	FC3-6.8137	BSP	51183	SGB14511.7	R23	.0376	R13	-.9834	LSA	2936.1	MSA	649.8	SSA	25.8
BDE	.4984	BRA	5.7599	BC315.2364	FSP	2254	SG114499.0	SG2	607.8	THA	179.98	EL1	2805.9	EL2	521.3	ALF	179.35

LAUNCH DATE NOV 27 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 867.881 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.145	GAL	-4.35	AZL	88.11	HCA	258.25	SMA	189.67	ECC	.23379	INC	1.8854
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.126	GAP	-12.47	AZP	90.38	TAL	336.74	TAP	234.99	RCA	145.33	APO	234.01
RC	325.671	GL	16.79	GP	-2.15	ZAL	125.92	ZAP	31.51	ETS	175.43	ZAE	50.74	ETE	177.97	ZAC	84.42	ETC	256.70

V1	30.186	V2	26.449	CLP	31.45														

PLANETOCENTRIC CONIC

C3	14.167	VHL	3.764	DLA	10.49	RAL	198.14	RAD	6567.6	VEL	11.643	PTH	2.04	VHP	5.541	DPA	1.62	RAP	174.65
ECC	1.2332																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 28	2466.85	-24.78	58.12	57.00	104.15	19 28 35	1866.9	-22.59	50.13
90.00	9 29 50	4447.57	7.94	185.88	53.25	62.73	10 43 58	3847.6	4.23	179.17
100.00	20 14 2	2187.67	-25.83	37.28	56.70	105.60	20 50 29	1587.7	-23.44	29.29
100.00	10 45 57	4201.99	8.90	167.31	52.74	61.34	11 55 59	3602.0	5.00	160.69
110.00	21 34 7	1937.03	-28.60	17.26	55.71	109.58	22 6 24	1337.0	-25.66	9.31
110.00	11 42 21	4025.38	11.40	152.41	51.24	57.55	12 49 26	3425.4	7.04	146.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4938	TRA	6.0240	TC-14.9024	BAU	2.8230	SGT14607.8	SGR	611.0	SG3	608.8	ST	2916.4	SR	527.4	SS	951.7
RDE	.3430	RRA	.1607	RC3 .2616	FAU	.10164	RRT -.0316	RRF	-.0701	RTF	.9826	CRT	-.1207	CRS	.5159	CST	-.9120
FDE	-.8239	FRA	3.3075	FC3-6.2109	BSP	51632	SGB14620.6	R23	.0390	R13	-.9826	LSA	3046.1	MSA	640.5	SSA	25.2
BDE	.6012	BRA	6.0261	BC314.9047	FSP	2149	SG114607.8	SG2	610.6	THA	179.92	EL1	2917.2	EL2	523.4	ALF	178.71

LAUNCH DATE NOV 27 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 872.161 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.152	GAL	-4.54	AZL	88.13	HCA	259.51	SMA	189.79	ECC	.23533	INC	1.8741
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.146	GAP	-12.60	AZP	90.34	TAL	335.81	TAP	235.32	RCA	145.13	APO	234.46
RC	326.503	GL	16.40	GP	-2.10	ZAL	127.31	ZAP	30.98	ETS	175.41	ZAE	49.90	ETE	177.96	ZAC	84.62	ETC	256.64

V1	30.186	V2	26.459	CLP	30.91														

PLANETOCENTRIC CONIC

C3	14.652	VHL	3.828	DLA	9.61	RAL	199.24	RAD	6567.6	VEL	11.663	PTH	2.05	VHP	5.631	DPA	1.36	RAP	175.34
ECC	1.2411																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 59	2445.25	-24.42	56.64	58.33	104.81	19 39 45	1845.3	-22.14	48.71
90.00	9 27 2	4484.06	9.07	187.96	54.79	63.06	10 41 46	3884.1	5.39	181.22
100.00	20 25 3	2167.67	-25.45	35.91	58.01	106.23	21 1 11	1567.7	-22.99	27.98
100.00	10 43 39	4236.87	10.03	169.28	54.28	61.69	11 54 16	3636.9	6.17	162.62
110.00	21 44 3	1920.49	-28.22	16.12	56.99	110.15	22 16 3	1320.5	-25.21	8.24
110.00	11 41 9	4056.82	12.54	154.13	52.79	57.94	12 48 46	3456.8	8.22	147.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6194	TRA	6.2985	TC-14.5607	BAU	2.8526	SGT14715.6	SGR	614.1	SG3	576.8	ST	3033.2	SR	532.7	SS	953.0
RDE	.3526	RRA	.1571	RC3 .2667	FAU	.09549	RRT -.0536	RRF	-.0932	RTF	.9818	CRT	-.1771	CRS	.5464	CST	-.9204
FDE	-.8544	FRA	3.2448	FC3-5.6424	BSP	52072	SGB14728.4	R23	.0405	R13	-.9818	LSA	3161.3	MSA	631.1	SSA	24.6
BDE	.7127	BRA	6.3005	BC314.5632	FSP	2046	SG114715.6	SG2	613.2	THA	179.87	EL1	3034.7	EL2	524.0	ALF	178.16

LAUNCH DATE NOV 27 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 876.435 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.159	GAL	-4.74	AZL	88.14	HCA	260.78	SMA	189.92	ECC	.23693	INC	1.8628
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.165	GAP	-12.72	AZP	90.30	TAL	334.86	TAP	235.64	RCA	144.92	APO	234.92
RC	327.330	GL	16.01	GP	-2.06	ZAL	128.69	ZAP	30.45	ETS	175.39	ZAE	49.07	ETE	177.96	ZAC	84.82	ETC	256.58

V1	30.186	V2	26.467	CLP	30.39														

PLANETOCENTRIC CONIC

C3	15.172	VHL	3.895	DLA	8.73	RAL	200.32	RAD	6567.6	VEL	11.686	PTH	2.06	VHP	5.724	DPA	1.09	RAP	176.03
ECC	1.2497																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 19	2424.52	-24.05	55.23	59.67	105.42	19 50 43	1824.5	-21.70	47.35
90.00	9 24 22	4520.37	10.19	190.05	56.36	63.44	10 39 42	3920.4	6.54	183.27
100.00	20 35 54	2148.47	-25.08	34.60	59.34	106.82	21 11 43	1548.5	-22.54	26.73
100.00	10 41 28	4271.65	11.15	171.26	55.86	62.08	11 52 39	3671.7	7.32	164.56
110.00	21 53 49	1904.63	-27.84	15.04	58.30	110.69	22 25 34	1304.6	-24.77	7.22
110.00	11 40 2	4088.26	13.67	155.87	54.38	58.36	12 48 10	3488.3	9.39	149.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7482	TRA	6.5805	TC-14.2102	BAU	2.8828	SGT14821.0	SGR	617.2	SG3	545.8	ST	3154.8	SR	538.0	SS	952.2
RDE	.3627	RRA	.1531	RC3 .2704	FAU	.08957	RRT -.0752	RRF	-.1160	RTF	.9808	CRT	-.2289	CRS	.5745	CST	-.9277
FDE	-.8809	FRA	3.1788	FC3-5.1109	BSP	52488	SGB14833.9	R23	.0422	R13	-.9808	LSA	3280.6	MSA	621.5	SSA	24.0
BDE	.8314	BRA	6.5823	BC314.2128	FSP	1945	SG114821.1	SG2	615.5	THA	179.82	EL1	3157.3	EL2	523.3	ALF	177.70

LAUNCH DATE NOV 27 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 880.702 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.166 GAL -4.94 AZL 88.15 HCA 262.05 SMA 190.05 ECC .23860 INC 1.8517 V1 30.186
RP 206.86 LAP -1.83 LOP 326.83 VP 24.182 GAP -12.85 AZP 90.26 TAL 333.90 TAP 235.95 RCA 144.70 APO 235.39 V2 26.474
RC 328.152 GL 15.62 GP -2.02 ZAL 130.06 ZAP 29.94 ETS 175.36 ZAE 48.26 ETE 177.96 ZAC 85.02 ETC 256.52 CLP 29.88

PLANETOCENTRIC CONIC

C3 15.730 VHL 3.966 DLA 7.86 RAL 201.40 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 5.817 DPA .81 RAP 176.74 ECC 1.2589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 26	2404.65	-23.68	53.89	61.04	106.00	20 1 31	1804.7	-21.26	46.06
90.00	9 21 49	4556.52	11.28	192.15	57.96	63.85	10 37 45	3956.5	7.68	185.32
100.00	20 46 34	2130.08	-24.71	33.36	60.70	107.37	21 22 4	1530.1	-22.10	25.54
100.00	10 39 22	4306.33	12.24	173.25	57.47	62.52	11 51 8	3706.3	8.47	166.50
110.00	22 3 27	1889.46	-27.47	14.02	59.62	111.19	22 34 57	1289.5	-24.34	6.25
110.00	11 38 58	4119.71	14.79	157.62	55.99	58.82	12 47 38	3519.7	10.55	151.08

DIFFERENTIAL CORRECTIONS
TDE -.8783 TRA 6.8707 TC-13.8506 BAU 2.9133
RDE .3733 RRA .1488 RC3 .2730 FAU .08381
FDE -.9026 FRA 3.1086 FC3-4.6126 BSP 52905
BDE .9544 BRA 6.8723 BC313.8533 FSP 1848

MID-COURSE EXECUTION ACCURACY
SGT14923.5 SGR 620.4 SG3 515.8
RRT -.0961 RRF -.1382 RTF .9796
SGB14936.4 R23 .0442 R13 -.9796
SG114923.6 SG2 617.5 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 3279.4 SR 543.3 SS 948.6
CRT -.2755 CRS .6002 CST -.9337
LSA 3402.0 MSA 612.2 SSA 23.4
EL1 3282.9 EL2 521.7 ALF 177.32

LAUNCH DATE NOV 27 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 884.962 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.173 GAL -5.15 AZL 88.16 HCA 263.31 SMA 190.17 ECC .24035 INC 1.8406 V1 30.186
RP 206.81 LAP -1.83 LOP 328.10 VP 24.199 GAP -12.99 AZP 90.21 TAL 332.93 TAP 236.24 RCA 144.47 APO 235.88 V2 26.480
RC 328.970 GL 15.23 GP -1.98 ZAL 131.43 ZAP 29.45 ETS 175.34 ZAE 47.45 ETE 177.95 ZAC 85.22 ETC 256.46 CLP 29.39

PLANETOCENTRIC CONIC

C3 16.328 VHL 4.041 DLA 7.00 RAL 202.46 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 5.913 DPA .53 RAP 177.45 ECC 1.2687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 22	2385.64	-23.32	52.62	62.42	106.54	20 12 8	1785.6	-20.83	44.83
90.00	9 19 22	4592.51	12.35	194.25	59.60	64.32	10 35 55	3992.5	8.79	187.37
100.00	20 57 4	2112.49	-24.35	32.18	62.07	107.89	21 32 16	1512.5	-21.68	24.40
100.00	10 37 22	4340.89	13.32	175.25	59.11	62.99	11 49 43	3740.9	9.59	168.45
110.00	22 12 57	1874.99	-27.11	13.05	60.97	111.67	22 44 12	1275.0	-23.93	5.33
110.00	11 37 58	4151.15	15.89	159.39	57.65	59.33	12 47 9	3551.2	11.70	152.79

DIFFERENTIAL CORRECTIONS
TDE-1.0108 TRA 7.1696 TC-13.4846 BAU 2.9442
RDE .3844 RRA .1441 RC3 .2746 FAU .07822
FDE -.9199 FRA 3.0347 FC3-4.1472 BSP 53285
BDE 1.0814 BRA 7.1710 BC313.4874 FSP 1752

MID-COURSE EXECUTION ACCURACY
SGT15023.9 SGR 623.5 SG3 486.7
RRT -.1165 RRF -.1601 RTF .9784
SGB15036.8 R23 .0462 R13 -.9784
SG115024.1 SG2 619.2 THA 179.72

ORBIT DETERMINATION ACCURACY
ST 3406.2 SR 548.6 SS 942.4
CRT -.3177 CRS .6238 CST -.9387
LSA 3525.2 MSA 603.1 SSA 22.8
EL1 3410.7 EL2 519.5 ALF 177.00

LAUNCH DATE NOV 27 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 889.213 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.180 GAL -5.36 AZL 88.17 HCA 264.58 SMA 190.30 ECC .24217 INC 1.8295 V1 30.186
RP 206.77 LAP -1.82 LOP 329.37 VP 24.214 GAP -13.12 AZP 90.17 TAL 331.94 TAP 236.52 RCA 144.22 APO 236.39 V2 26.486
RC 329.784 GL 14.83 GP -1.95 ZAL 132.77 ZAP 28.97 ETS 175.31 ZAE 46.66 ETE 177.95 ZAC 85.43 ETC 256.41 CLP 28.91

PLANETOCENTRIC CONIC

C3 16.970 VHL 4.119 DLA 6.14 RAL 203.51 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 6.010 DPA .23 RAP 178.18 ECC 1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 7	2367.47	-22.96	51.41	63.83	107.04	20 22 34	1767.5	-20.41	43.66
90.00	9 17 2	4628.34	13.40	196.36	61.28	64.82	10 34 11	4028.3	9.90	189.43
100.00	21 7 23	2095.70	-24.00	31.06	63.47	108.38	21 42 18	1495.7	-21.26	23.33
100.00	10 35 28	4375.35	14.38	177.27	60.79	63.51	11 48 23	3775.3	10.70	170.40
110.00	22 22 18	1861.23	-26.76	12.13	62.34	112.11	22 53 19	1261.2	-23.52	4.46
110.00	11 37 2	4182.58	16.97	161.18	59.34	59.87	12 46 45	3582.6	12.84	154.51

DIFFERENTIAL CORRECTIONS
TDE-1.1452 TRA 7.4756 TC-13.1175 BAU 2.9766
RDE .3960 RRA .1391 RC3 .2752 FAU .07281
FDE -.9332 FRA 2.9574 FC3-3.7147 BSP 53643
BDE 1.2117 BRA 7.4769 BC313.1204 FSP 1658

MID-COURSE EXECUTION ACCURACY
SGT15122.8 SGR 626.6 SG3 458.5
RRT -.1364 RRF -.1816 RTF .9769
SGB15135.8 R23 .0485 R13 -.9769
SG115123.0 SG2 620.7 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3533.4 SR 553.9 SS 933.8
CRT -.3558 CRS .6456 CST -.9429
LSA 3648.3 MSA 594.4 SSA 22.3
EL1 3539.0 EL2 516.8 ALF 176.74

LAUNCH DATE NOV 27 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 893.455 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.187 GAL -5.58 AZL 88.18 HCA 265.85 SMA 190.43 ECC .24408 INC 1.8185 V1 30.186
RP 206.73 LAP -1.81 LOP 330.63 VP 24.229 GAP -13.26 AZP 90.13 TAL 330.93 TAP 236.78 RCA 143.95 APO 236.91 V2 26.490
RC 330.595 GL 14.44 GP -1.91 ZAL 134.11 ZAP 28.50 ETS 175.29 ZAE 45.89 ETE 177.94 ZAC 85.63 ETC 256.36 CLP 28.44

PLANETOCENTRIC CONIC

C3 17.656 VHL 4.202 DLA 5.30 RAL 204.56 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 6.109 DPA -.07 RAP 178.93 ECC 1.2906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 41	2350.14	-22.61	50.26	65.25	107.52	20 32 51	1750.1	-20.00	42.55
90.00	9 14 48	4664.01	14.42	198.48	62.98	65.36	10 32 32	4064.0	10.98	191.49
100.00	21 17 31	2079.71	-23.65	30.00	64.88	108.84	21 52 11	1479.7	-20.86	22.31
100.00	10 33 38	4409.68	15.41	179.29	62.50	64.06	11 47 8	3809.7	11.80	172.36
110.00	22 31 30	1848.18	-26.42	11.26	63.73	112.52	23 2 18	1248.2	-23.14	3.64
110.00	11 36 9	4213.98	18.03	163.00	61.06	60.46	12 46 23	3614.0	13.97	156.25

DIFFERENTIAL CORRECTIONS
TDE-1.2813 TRA 7.7913 TC-12.7431 BAU 3.0086
RDE .4080 RRA .1337 RC3 .2749 FAU .06755
FDE -.9425 FRA 2.8767 FC3-3.3125 BSP 54004
BDE 1.3447 BRA 7.7925 BC312.7461 FSP 1566

MID-COURSE EXECUTION ACCURACY
SGT15217.7 SGR 629.6 SG3 431.3
RRT -.1558 RRF -.2026 RTF .9753
SGB15230.8 R23 .0511 R13 -.9753
SG115218.1 SG2 621.9 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 3660.8 SR 559.1 SS 922.7
CRT -.3901 CRS .6658 CST -.9463
LSA 3771.1 MSA 586.1 SSA 21.8
EL1 3667.5 EL2 513.9 ALF 176.52

LAUNCH DATE NOV 27 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 897.687 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.195	GAL	-5.81	AZL	88.19	HCA	267.12	SMA	190.56	ECC	.24606	INC	1.8075
RP	206.70	LAP	-1.81	LOP	331.90	VP	24.242	GAP	-13.41	AZP	90.09	TAL	329.91	TAP	237.03	RCA	143.67	APO	237.45
RC	331.403	GL	14.06	GP	-1.88	ZAL	135.43	ZAP	28.04	ETS	175.27	ZAE	45.12	ETE	177.94	ZAC	85.84	ETC	256.30

V1	30.186	V2	26.493	CLP	27.98														

PLANETOCENTRIC CONIC

C3	18.390	VHL	4.288	DLA	4.48	RAL	205.59	RAD	6567.7	VEL	11.823	PTH	2.09	VHP	6.210	DPA	-.38	RAP	179.68
ECC	1.3027																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 4	2333.64	-22.27	49.17	66.70	107.96	20 42 57	1733.6	-19.61	41.51
90.00	9 12 39	4699.53	15.42	200.61	64.73	65.95	10 30 59	4099.5	12.04	193.56
100.00	21 27 30	2064.50	-23.31	28.99	66.32	109.26	22 1 55	1464.5	-20.47	21.35
100.00	10 31 54	4443.90	16.42	181.33	64.25	64.66	11 45 58	3843.9	12.87	174.34
110.00	22 40 34	1835.83	-26.10	10.45	65.13	112.90	23 11 10	1235.8	-22.77	2.88
110.00	11 35 19	4245.33	19.08	164.83	62.82	61.08	12 46 5	3645.3	15.07	158.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.4193	TRA	8.1154	TC	-12.3700	BAU	3.0421	SGT	15311.4	SGR	632.6	SG3	404.9	ST	3787.2	SR	564.3	SS	908.9
RDE	.4205	RRA	.1279	RC3	.2737	FAU	.06245	RRT	-.1747	RRF	-.2234	RTF	.9734	CRT	-.4211	CRS	.6846	CST	-.9490
FDE	-.9479	FRA	2.7921	FC3	-2.9399	BSP	54336	SGB	15324.5	R23	.0539	R13	-.9734	LSA	3892.6	MSA	578.3	SSA	21.3
BDE	1.4803	BRA	8.1164	BC3	12.3730	FSP	1476	SG1	15311.8	SG2	622.8	THA	179.59	EL1	3794.8	EL2	510.7	ALF	176.34

LAUNCH DATE NOV 27 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 901.908 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.202	GAL	-6.04	AZL	88.20	HCA	268.39	SMA	190.70	ECC	.24813	INC	1.7965
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.255	GAP	-13.55	AZP	90.05	TAL	328.88	TAP	237.27	RCA	143.38	APO	238.01
RC	332.208	GL	13.67	GP	-1.85	ZAL	136.73	ZAP	27.59	ETS	175.24	ZAE	44.37	ETE	177.93	ZAC	86.05	ETC	256.25

V1	30.186	V2	26.495	CLP	27.54														

PLANETOCENTRIC CONIC

C3	19.176	VHL	4.379	DLA	3.66	RAL	206.61	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	6.313	DPA	-.69	RAP	180.44
ECC	1.3156																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 16	2317.96	-21.94	48.14	68.16	108.37	20 52 54	1718.0	-19.22	40.52
90.00	9 10 36	4734.88	16.39	202.75	66.50	66.58	10 29 31	4134.9	13.08	195.63
100.00	21 37 19	2050.08	-22.98	28.05	67.77	109.66	22 11 29	1450.1	-20.09	20.44
100.00	10 30 14	4478.00	17.40	183.39	66.03	65.30	11 44 52	3878.0	13.92	176.32
110.00	22 49 29	1824.20	-25.79	9.69	66.56	113.26	23 19 53	1224.2	-22.42	2.16
110.00	11 34 33	4276.64	20.10	166.69	64.61	61.75	12 45 50	3676.6	16.16	159.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.5596	TRA	8.4473	TC	-11.9975	BAU	3.0765	SGT	15402.3	SGR	635.5	SG3	379.4	ST	3911.9	SR	569.3	SS	892.9
RDE	.4335	RRA	.1217	RC3	.2718	FAU	.05749	RRT	-.1933	RRF	-.2439	RTF	.9712	CRT	-.4494	CRS	.7022	CST	-.9511
FDE	-.9497	FRA	2.7039	FC3	-2.5956	BSP	54632	SGB	15415.4	R23	.0569	R13	-.9713	LSA	4012.2	MSA	570.8	SSA	20.9
BDE	1.6188	BRA	8.4482	BC3	12.0006	FSP	1388	SG1	15402.8	SG2	623.5	THA	179.54	EL1	3920.4	EL2	507.5	ALF	176.19

LAUNCH DATE NOV 27 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 906.116 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.209	GAL	-6.27	AZL	88.21	HCA	269.66	SMA	190.83	ECC	.25029	INC	1.7855
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.266	GAP	-13.71	AZP	90.01	TAL	327.84	TAP	237.49	RCA	143.06	APO	238.59
RC	333.009	GL	13.29	GP	-1.82	ZAL	138.02	ZAP	27.16	ETS	175.21	ZAE	43.63	ETE	177.93	ZAC	86.26	ETC	256.21

V1	30.186	V2	26.497	CLP	27.10														

PLANETOCENTRIC CONIC

C3	20.015	VHL	4.474	DLA	2.85	RAL	207.62	RAD	6567.8	VEL	11.891	PTH	2.11	VHP	6.418	DPA	-1.01	RAP	181.21
ECC	1.3294																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 18	2303.09	-21.61	47.17	69.64	108.75	21 2 41	1703.1	-18.85	39.58
90.00	9 8 38	4770.06	17.33	204.91	68.31	67.25	10 28 8	4170.1	14.09	197.72
100.00	21 46 58	2036.43	-22.67	27.16	69.24	110.03	22 20 55	1436.4	-19.73	19.59
100.00	10 28 38	4511.96	18.35	185.46	67.84	65.98	11 43 50	3912.0	14.95	178.32
110.00	22 58 16	1813.27	-25.49	8.98	68.01	113.58	23 28 29	1213.3	-22.08	1.48
110.00	11 33 50	4307.89	21.09	168.56	66.44	62.46	12 45 38	3707.9	17.24	161.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7021	TRA	8.7884	TC	-11.6273	BAU	3.1121	SGT	15491.5	SGR	638.4	SG3	354.7	ST	4034.7	SR	574.2	SS	874.8
RDE	.4470	RRA	.1150	RC3	.2693	FAU	.05268	RRT	-.2116	RRF	-.2643	RTF	.9688	CRT	-.4750	CRS	.7190	CST	-.9527
FDE	-.9485	FRA	2.6118	FC3	-2.2788	BSP	54895	SGB	15504.6	R23	.0604	R13	-.9688	LSA	4129.9	MSA	563.8	SSA	20.5
BDE	1.7598	BRA	8.7892	BC3	11.6305	FSP	1302	SG1	15492.1	SG2	623.9	THA	179.50	EL1	4044.1	EL2	504.1	ALF	176.07

LAUNCH DATE NOV 27 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 910.311 EARTH TO MARS

RL	147.60	LAL	-.00	LOL	64.79	VL	33.216	GAL	-6.52	AZL	88.23	HCA	270.93	SMA	190.96	ECC	.25255	INC	1.7746
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.276	GAP	-13.86	AZP	89.97	TAL	326.78	TAP	237.70	RCA	142.73	APO	239.19
RC	333.807	GL	12.91	GP	-1.79	ZAL	139.29	ZAP	26.74	ETS	175.19	ZAE	42.89	ETE	177.92	ZAC	86.48	ETC	256.16

V1	30.186	V2	26.497	CLP	26.68														

PLANETOCENTRIC CONIC

C3	20.911	VHL	4.573	DLA	2.06	RAL	208.62	RAD	6567.8	VEL	11.929	PTH	2.12	VHP	6.525	DPA	-1.34	RAP	182.00
ECC	1.3441																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 10	2289.02	-21.30	46.25	71.14	109.11	21 12 19	1689.0	-18.50	38.70
90.00	9 6 44	4805.08	18.23	207.07	70.15	67.95	10 26 49	4205.1	15.08	199.81
100.00	21 56 28	2023.54	-22.37	26.32	70.73	110.37	22 30 11	1423.5	-19.39	18.79
100.00	10 27 7	4545.79	19.28	187.55	69.69	66.70	11 42 53	3945.8	15.96	180.32
110.00	23 6 55	1803.04	-25.21	8.31	69.47	113.89	23 36 58	1203.0	-21.77	.86
110.00	11 33 9	4339.06	22.06	170.46	68.30	63.20	12 45 28	3739.1	18.29	163.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8456	TRA	9.1387	TC	-11.2592	BAU	3.1486	SGT	15577.7	SGR	641.1	SG3	330.7	ST	4154.3	SR	579.0	SS	854.1
RDE	.4609	RRA	.1080	RC3	.2661	FAU	.04799	RRT	-.2293	RRF	-.2843	RTF	.9659	CRT	-.4981	CRS	.7347	CST	-.9537
FDE	-.9433	FRA	2.5160	FC3	-1.9868	BSP	55147	SGB	15590.9	R23	.0642	R13	-.9659	LSA	4244.0	MSA	557.2	SSA	20.0
BDE	1.9023	BRA	9.1393	BC3	11.2624	FSP	1218	SG1	15578.4	SG2	624.0	THA	179.46	EL1	4164.4	EL2	500.8	ALF	175.97

LAUNCH DATE NOV 27 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 914.492 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.224 GAL -6.77 AZL 88.24 HCA 272.20 SMA 191.10 ECC .25490 INC 1.7636 V1 30.186
RP 206.68 LAP -1.76 LOP 336.98 VP 24.285 GAP -14.02 AZP 89.93 TAL 325.70 TAP 237.90 RCA 142.39 APO 239.81 V2 26.496
RC 334.601 GL 12.54 GP -1.76 ZAL 140.55 ZAP 26.33 ETS 175.16 ZAE 42.17 ETE 177.91 ZAC 86.69 ETC 256.12 CLP 26.27

PLANETOCENTRIC CONIC

C3 21.869 VHL 4.676 DLA 1.29 RAL 209.61 RAD 6567.9 VEL 11.969 PTH 2.13 VHP 6.634 DPA -1.67 RAP 182.79 ECC 1.3599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 52	2275.72	-21.00	45.39	72.66	109.44	21 21 47	1675.7	-18.16	37.87
90.00	9 4 55	4839.93	19.11	209.26	72.02	68.70	10 25 35	4239.9	16.05	201.92
100.00	22 5 48	2011.42	-22.08	25.53	72.24	110.68	22 39 20	1411.4	-19.06	18.03
100.00	10 25 39	4579.47	20.17	189.65	71.57	67.46	11 41 59	3979.5	16.94	182.35
110.00	23 15 25	1793.50	-24.95	7.70	70.94	114.16	23 45 19	1193.5	-21.47	.27
110.00	11 32 32	4370.15	23.00	172.39	70.19	63.99	12 45 22	3770.1	19.32	165.19

DIFFERENTIAL CORRECTIONS
TDE-1.9927 TRA 9.4975 TC-10.8962 BAU 3.1866
RDE .4753 RRA .1005 RC3 .2624 FAU .04344
FDE -.9353 FRA 2.4163 FC3-1.7199 BSP 55343
BDE 2.0486 BRA 9.4980 BC310.8994 FSP 1135

MID-COURSE EXECUTION ACCURACY
SGT15661.8 SGR 643.9 SG3 307.5
RRT -.2469 RRF -.3043 RTF .9625
SGB15675.1 R23 .0684 R13 -.9625
SG115662.7 SG2 623.9 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 4271.7 SR 583.6 SS 831.5
CRT -.5195 CRS .7499 CST -.9544
LSA 4356.1 MSA 550.8 SSA 19.6
EL1 4282.6 EL2 497.4 ALF 175.88

LAUNCH DATE NOV 27 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 918.657 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.231 GAL -7.02 AZL 88.25 HCA 273.46 SMA 191.23 ECC .25735 INC 1.7527 V1 30.186
RP 206.69 LAP -1.75 LOP 338.25 VP 24.294 GAP -14.19 AZP 89.89 TAL 324.61 TAP 238.08 RCA 142.02 APO 240.45 V2 26.494
RC 335.390 GL 12.17 GP -1.73 ZAL 141.79 ZAP 25.93 ETS 175.14 ZAE 41.47 ETE 177.90 ZAC 86.91 ETC 256.08 CLP 25.88

PLANETOCENTRIC CONIC

C3 22.890 VHL 4.784 DLA .53 RAL 210.58 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 6.745 DPA -2.01 RAP 183.59 ECC 1.3767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 24	2263.20	-20.72	44.58	74.19	109.75	21 31 7	1663.2	-17.84	37.09
90.00	9 3 10	4874.61	19.95	211.45	73.92	69.48	10 24 24	4274.6	16.98	204.04
100.00	22 14 59	2000.03	-21.80	24.80	73.76	110.97	22 48 19	1400.0	-18.75	17.33
100.00	10 24 16	4613.01	21.03	191.77	73.48	68.25	11 41 9	4013.0	17.89	184.38
110.00	23 23 48	1784.66	-24.70	7.13	72.44	114.42	23 53 32	1184.7	-21.20	359.74
110.00	11 31 57	4401.15	23.91	174.33	72.12	64.81	12 45 18	3801.1	20.32	167.03

DIFFERENTIAL CORRECTIONS
TDE-2.1396 TRA 9.8668 TC-10.5373 BAU 3.2256
RDE .4901 RRA .0926 RC3 .2583 FAU .03900
FDE -.9236 FRA 2.3129 FC3-1.4752 BSP 55547
BDE 2.1950 BRA 9.8673 BC310.5405 FSP 1055

MID-COURSE EXECUTION ACCURACY
SGT15743.6 SGR 646.5 SG3 285.1
RRT -.2639 RRF -.3239 RTF .9586
SGB15756.9 R23 .0732 R13 -.9586
SG115744.6 SG2 623.5 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 4384.5 SR 588.0 SS 806.6
CRT -.5385 CRS .7642 CST -.9545
LSA 4463.5 MSA 544.9 SSA 19.2
EL1 4396.0 EL2 494.1 ALF 175.82

LAUNCH DATE NOV 27 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 922.805 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.239 GAL -7.29 AZL 88.26 HCA 274.73 SMA 191.37 ECC .25990 INC 1.7416 V1 30.186
RP 206.72 LAP -1.74 LOP 339.52 VP 24.301 GAP -14.36 AZP 89.86 TAL 323.51 TAP 238.25 RCA 141.63 APO 241.11 V2 26.491
RC 336.176 GL 11.81 GP -1.70 ZAL 143.01 ZAP 25.54 ETS 175.11 ZAE 40.77 ETE 177.89 ZAC 87.13 ETC 256.04 CLP 25.49

PLANETOCENTRIC CONIC

C3 23.981 VHL 4.897 DLA -.22 RAL 211.55 RAD 6568.0 VEL 12.056 PTH 2.15 VHP 6.858 DPA -2.36 RAP 184.41 ECC 1.3947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 47	2251.42	-20.45	43.83	75.74	110.03	21 40 18	1651.4	-17.53	36.36
90.00	9 1 29	4909.11	20.76	213.66	75.85	70.30	10 23 18	4309.1	17.89	206.16
100.00	22 24 1	1989.37	-21.54	24.12	75.30	111.24	22 57 11	1389.4	-18.46	16.67
100.00	10 22 56	4646.40	21.86	193.90	75.42	69.09	11 40 22	4046.4	18.82	186.43
110.00	23 32 2	1776.49	-24.47	6.61	73.95	114.65	24 1 38	1176.5	-20.94	359.24
110.00	11 31 24	4432.04	24.80	176.30	74.08	65.68	12 45 16	3832.0	21.30	168.89

DIFFERENTIAL CORRECTIONS
TDE-2.2888 TRA10.2454 TC-10.1850 BAU 3.2663
RDE .5054 RRA .0842 RC3 .2537 FAU .03469
FDE -.9091 FRA 2.2058 FC3-1.2523 BSP 55692
BDE 2.3439 BRA10.2457 BC310.1881 FSP 976

MID-COURSE EXECUTION ACCURACY
SGT15823.1 SGR 649.0 SG3 263.4
RRT -.2806 RRF -.3435 RTF .9539
SGB15836.5 R23 .0785 R13 -.9539
SG115824.2 SG2 622.9 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4493.7 SR 592.2 SS 779.9
CRT -.5560 CRS .7781 CST -.9543
LSA 4567.4 MSA 539.2 SSA 18.8
EL1 4505.9 EL2 490.8 ALF 175.76

LAUNCH DATE NOV 27 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 926.935 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.246 GAL -7.55 AZL 88.27 HCA 276.00 SMA 191.51 ECC .26257 INC 1.7306 V1 30.186
RP 206.75 LAP -1.72 LOP 340.79 VP 24.307 GAP -14.54 AZP 89.82 TAL 322.40 TAP 238.40 RCA 141.22 APO 241.79 V2 26.488
RC 336.957 GL 11.45 GP -1.68 ZAL 144.21 ZAP 25.17 ETS 175.09 ZAE 40.08 ETE 177.88 ZAC 87.35 ETC 256.00 CLP 25.12

PLANETOCENTRIC CONIC

C3 25.144 VHL 5.014 DLA -.95 RAL 212.50 RAD 6568.0 VEL 12.105 PTH 2.17 VHP 6.974 DPA -2.71 RAP 185.23 ECC 1.4138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 1	2240.38	-20.19	43.12	77.30	110.29	21 49 21	1640.4	-17.24	35.68
90.00	8 59 52	4943.43	21.53	215.88	77.81	71.15	10 22 15	4343.4	18.76	208.30
100.00	22 32 55	1979.42	-21.29	23.48	76.85	111.49	23 5 54	1379.4	-18.19	16.06
100.00	10 21 39	4679.62	22.65	196.05	77.39	69.95	11 39 39	4079.6	19.71	188.49
110.00	23 40 9	1768.98	-24.26	6.13	75.47	114.86	24 9 37	1169.0	-20.70	358.79
110.00	11 30 55	4462.83	25.64	178.29	76.08	66.58	12 45 18	3862.8	22.25	170.78

DIFFERENTIAL CORRECTIONS
TDE-2.4401 TRA10.6347 TC3-9.8396 BAU 3.3086
RDE .5212 RRA .0753 RC3 .2489 FAU .03046
FDE -.8915 FRA 2.0947 FC3-1.0489 BSP 55825
BDE 2.4951 BRA10.6350 BC3 9.8427 FSP 899

MID-COURSE EXECUTION ACCURACY
SGT15901.2 SGR 651.4 SG3 242.4
RRT -.2971 RRF -.3628 RTF .9483
SGB15914.6 R23 .0844 R13 -.9483
SG115902.4 SG2 622.0 THA 179.30

ORBIT DETERMINATION ACCURACY
ST 4599.4 SR 596.1 SS 751.3
CRT -.5721 CRS .7916 CST -.9535
LSA 4667.8 MSA 533.8 SSA 18.5
EL1 4612.1 EL2 487.6 ALF 175.71

LAUNCH DATE NOV 27 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 931.045 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.254 GAL -7.83 AZL 88.28 HCA 277.27 SMA 191.65 ECC .26535 INC 1.7195 V1 30.186
RP 206.79 LAP -1.71 LOP 342.06 VP 24.312 GAP -14.72 AZP 89.78 TAL 321.27 TAP 238.54 RCA 140.79 APO 242.50 V2 26.483
RC 337.733 GL 11.10 GP -1.65 ZAL 145.39 ZAP 24.80 ETS 175.06 ZAE 39.41 ETE 177.87 ZAC 87.57 ETC 255.97 CLP 24.75

PLANETOCENTRIC CONIC

C3 26.384 VHL 5.137 DLA -1.67 RAL 213.45 RAD 6568.1 VEL 12.156 PTH 2.18 VHP 7.093 DPA -3.06 RAP 186.06 ECC 1.4342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 6	2230.06	-19.94	42.46	78.87	110.53	21 58 16	1630.1	-16.97	35.05
90.00	8 58 19	4977.56	22.27	218.11	79.80	72.04	10 21 16	4377.6	19.60	210.45
100.00	22 41 40	1970.17	-21.06	22.89	78.41	111.72	23 14 30	1370.2	-17.93	15.50
100.00	10 20 26	4712.67	23.40	198.22	79.39	70.85	11 38 59	4112.7	20.58	190.57
110.00	23 48 7	1762.12	-24.06	5.70	77.01	115.05	24 17 30	1162.1	-20.48	358.38
110.00	11 30 28	4493.49	26.46	180.30	78.11	67.52	12 45 21	3893.5	23.18	172.68

DIFFERENTIAL CORRECTIONS
TDE-2.5922 TRA11.0338 TC3-9.5010 BAU 3.3524
RDE .5373 RRA .0660 RC3 .2437 FAU .02632
FDE -.8710 FRA 1.9799 FC3 -.8638 BSP 55926
BDE 2.6473 BRA11.0340 BC3 9.5041 FSP 825

MID-COURSE EXECUTION ACCURACY
SGT15976.1 SGR 653.7 SG3 222.2
RRT -.3131 RRF -.3818 RTF .9414
SGB15989.4 R23 .0912 R13 -.9414
SG115977.4 SG2 620.8 THA 179.26

ORBIT DETERMINATION ACCURACY
ST 4700.1 SR 599.8 SS 720.9
CRT -.5866 CRS .8048 CST -.9523
LSA 4763.4 MSA 528.7 SSA 18.1
EL1 4713.4 EL2 484.4 ALF 175.67

LAUNCH DATE NOV 27 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 935.134 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.261 GAL -8.12 AZL 88.29 HCA 278.54 SMA 191.78 ECC .26824 INC 1.7083 V1 30.186
RP 206.84 LAP -1.69 LOP 343.33 VP 24.316 GAP -14.91 AZP 89.75 TAL 320.13 TAP 238.66 RCA 140.34 APO 243.23 V2 26.477
RC 338.506 GL 10.75 GP -1.63 ZAL 146.56 ZAP 24.45 ETS 175.03 ZAE 38.74 ETE 177.85 ZAC 87.80 ETC 255.94 CLP 24.40

PLANETOCENTRIC CONIC

C3 27.707 VHL 5.264 DLA -2.37 RAL 214.38 RAD 6568.1 VEL 12.210 PTH 2.19 VHP 7.214 DPA -3.42 RAP 186.91 ECC 1.4560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 2	2220.43	-19.71	41.85	80.46	110.75	22 7 2	1620.4	-16.71	34.46
90.00	8 56 49	5011.49	22.96	220.36	81.81	72.96	10 20 21	4411.5	20.41	212.61
100.00	22 50 16	1961.60	-20.84	22.35	79.99	111.93	23 22 58	1361.6	-17.69	14.98
100.00	10 19 16	4745.56	24.12	200.40	81.41	71.79	11 38 22	4145.6	21.41	192.65
110.00	23 55 59	1755.90	-23.88	5.30	78.56	115.22	24 25 15	1155.9	-20.28	358.01
110.00	11 30 3	4524.02	27.24	182.33	80.16	68.50	12 45 27	3924.0	24.07	174.60

DIFFERENTIAL CORRECTIONS
TDE-2.7470 TRA11.4424 TC3-9.1698 BAU 3.3978
RDE .5539 RRA .0561 RC3 .2383 FAU .02229
FDE -.8480 FRA 1.8607 FC3 -.6966 BSP 55986
BDE 2.8023 BRA11.4426 BC3 9.1728 FSP 752

MID-COURSE EXECUTION ACCURACY
SGT16047.6 SGR 655.9 SG3 202.6
RRT -.3289 RRF -.4009 RTF .9330
SGB16061.0 R23 .0991 R13 -.9330
SG116049.0 SG2 619.4 THA 179.23

ORBIT DETERMINATION ACCURACY
ST 4796.9 SR 603.3 SS 689.1
CRT -.6001 CRS .8180 CST -.9505
LSA 4855.4 MSA 523.7 SSA 17.8
EL1 4810.7 EL2 481.2 ALF 175.64

LAUNCH DATE NOV 27 1964 FLIGHT TIME 430.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 939.200 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.269 GAL -8.41 AZL 88.30 HCA 279.80 SMA 191.93 ECC .27126 INC 1.6971 V1 30.186
RP 206.90 LAP -1.67 LOP 344.60 VP 24.319 GAP -15.11 AZP 89.71 TAL 318.97 TAP 238.77 RCA 139.86 APO 243.99 V2 26.470
RC 339.274 GL 10.41 GP -1.60 ZAL 147.71 ZAP 24.11 ETS 175.01 ZAE 38.09 ETE 177.84 ZAC 88.02 ETC 255.92 CLP 24.06

PLANETOCENTRIC CONIC

C3 29.117 VHL 5.396 DLA -3.06 RAL 215.30 RAD 6568.2 VEL 12.267 PTH 2.21 VHP 7.337 DPA -3.78 RAP 187.76 ECC 1.4792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 50	2211.47	-19.49	41.28	82.06	110.95	22 15 41	1611.5	-16.47	33.91
90.00	8 55 23	5045.23	23.62	222.61	83.85	73.91	10 19 29	4445.2	21.18	214.79
100.00	22 58 45	1953.68	-20.64	21.85	81.58	112.11	23 31 18	1353.7	-17.46	14.50
100.00	10 18 10	4778.26	24.80	202.59	83.46	72.75	11 37 48	4178.3	22.20	194.76
110.00	0 7 39	1750.29	-23.72	4.95	80.12	115.37	0 36 49	1150.3	-20.10	357.67
110.00	11 29 41	4554.41	27.98	184.39	82.25	69.51	12 45 35	3954.4	24.93	176.54

DIFFERENTIAL CORRECTIONS
TDE-2.9020 TRA11.8634 TC3-8.8474 BAU 3.4452
RDE .5710 RRA .0458 RC3 .2327 FAU .01833
FDE -.8222 FRA 1.7377 FC3 -.5451 BSP 56022
BDE 2.9576 BRA11.8635 BC3 8.8504 FSP 681

MID-COURSE EXECUTION ACCURACY
SGT16118.1 SGR 658.0 SG3 183.7
RRT -.3444 RRF -.4195 RTF .9224
SGB16131.5 R23 .1081 R13 -.9224
SG116119.7 SG2 617.7 THA 179.19

ORBIT DETERMINATION ACCURACY
ST 4888.7 SR 606.5 SS 655.7
CRT -.6122 CRS .8311 CST -.9479
LSA 4942.4 MSA 519.0 SSA 17.5
EL1 4902.9 EL2 478.2 ALF 175.62

LAUNCH DATE NOV 27 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 943.242 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.277 GAL -8.71 AZL 88.31 HCA 281.07 SMA 192.07 ECC .27441 INC 1.6859 V1 30.186
RP 206.97 LAP -1.65 LOP 345.86 VP 24.321 GAP -15.31 AZP 89.68 TAL 317.80 TAP 238.87 RCA 139.36 APO 244.77 V2 26.462
RC 340.039 GL 10.07 GP -1.58 ZAL 148.84 ZAP 23.78 ETS 174.98 ZAE 37.44 ETE 177.82 ZAC 88.25 ETC 255.89 CLP 23.73

PLANETOCENTRIC CONIC

C3 30.620 VHL 5.534 DLA -3.73 RAL 216.22 RAD 6568.2 VEL 12.329 PTH 2.22 VHP 7.464 DPA -4.15 RAP 188.62 ECC 1.5039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 29	2203.17	-19.29	40.76	83.67	111.14	22 24 12	1603.2	-16.25	33.41
90.00	8 54 1	5078.77	24.23	224.88	85.91	74.88	10 18 39	4478.8	21.92	216.97
100.00	23 7 5	1946.40	-20.45	21.39	83.18	112.29	23 39 32	1346.4	-17.25	14.05
100.00	10 17 6	4810.77	25.44	204.80	85.54	73.75	11 37 17	4210.8	22.96	196.87
110.00	0 15 16	1745.29	-23.57	4.63	81.69	115.51	0 44 21	1145.3	-19.94	357.37
110.00	11 29 21	4584.65	28.68	186.46	84.36	70.55	12 45 45	3984.6	25.76	178.50

DIFFERENTIAL CORRECTIONS
TDE-3.0598 TRA12.2945 TC3-8.5347 BAU 3.4950
RDE .5884 RRA .0349 RC3 .2270 FAU .01446
FDE -.7938 FRA 1.6105 FC3 -.4088 BSP 56007
BDE 3.1158 BRA12.2945 BC3 8.5377 FSP 612

MID-COURSE EXECUTION ACCURACY
SGT16186.3 SGR 660.0 SG3 165.6
RRT -.3596 RRF -.4379 RTF .9089
SGB16199.7 R23 .1186 R13 -.9090
SG116188.0 SG2 615.8 THA 179.16

ORBIT DETERMINATION ACCURACY
ST 4976.4 SR 609.4 SS 620.9
CRT -.6235 CRS .8443 CST -.9447
LSA 5025.6 MSA 514.3 SSA 17.2
EL1 4991.0 EL2 475.0 ALF 175.59

LAUNCH DATE NOV 27 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 947.257 EARTH TO MARS

RL 147.60 LAL -.00 LOL 64.79 VL 33.284 GAL -9.02 AZL 88.33 HCA 282.34 SMA 192.21 ECC .27769 INC 1.6745 V1 30.186
RP 207.04 LAP -1.64 LOP 347.13 VP 24.322 GAP -15.52 AZP 89.64 TAL 316.61 TAP 238.95 RCA 138.83 APO 245.58 V2 26.453
RC 340.800 GL 9.74 GP -1.56 ZAL 149.96 ZAP 23.46 ETS 174.96 ZAE 36.81 ETE 177.80 ZAC 88.48 ETC 255.87 CLP 23.41

PLANETOCENTRIC CONIC

C3 32.223 VHL 5.676 DLA -4.39 RAL 217.12 RAD 6568.3 VEL 12.393 PTH 2.24 VHP 7.593 DPA -4.53 RAP 189.49 ECC 1.5303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 1	2195.49	-19.10	40.28	85.30	111.31	22 32 37	1595.5	-16.04	32.94
90.00	8 52 41	5112.09	24.80	227.15	87.99	75.88	10 17 53	4512.1	22.62	219.16
100.00	23 15 18	1939.73	-20.28	20.97	84.79	112.44	23 47 38	1339.7	-17.06	13.65
100.00	10 16 5	4843.09	26.03	207.01	87.63	74.77	11 36 48	4243.1	23.69	199.00
110.00	0 22 45	1740.86	-23.44	4.36	83.28	115.62	0 51 46	1140.9	-19.80	357.11
110.00	11 29 3	4614.72	29.34	188.55	86.51	71.63	12 45 58	4014.7	26.55	180.47

DIFFERENTIAL CORRECTIONS
TDE-3.2174 TRA12.7376 TC3-8.2288 BAU 3.5461
RDE .6062 RRA .0235 RC3 .2211 FAU .01064
FDE -.7628 FRA 1.4792 FC3 -.2860 BSP 55977
BDE 3.2740 BRA12.7376 BC3 8.2318 FSP 545

MID-COURSE EXECUTION ACCURACY
SGT16250.9 SGR 661.8 SG3 148.2
RRT -.3743 RRF -.4555 RTF .8915
SGB16264.3 R23 .1309 R13 -.8915
SG116252.8 SG2 613.6 THA 179.13

ORBIT DETERMINATION ACCURACY
ST 5058.6 SR 612.0 SS 584.8
CRT -.6337 CRS .8578 CST -.9404
LSA 5103.5 MSA 509.9 SSA 16.8
EL1 5073.5 EL2 472.0 ALF 175.58

LAUNCH DATE NOV 28 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 21 1965

HELIOCENTRIC CONIC DISTANCE 394.690 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.967 GAL -4.13 AZL 88.55 HCA 121.78 SMA 262.79 ECC .44317 INC 1.4479 V1 30.191
RP 245.33 LAP 1.23 LOP 187.59 VP 24.018 GAP 26.05 AZP 90.76 TAL 346.53 TAP 108.31 RCA 146.33 APO 379.24 V2 22.354
RC 122.260 GL 8.43 GP 1.13 ZAL 111.75 ZAP 176.21 ETS 161.34 ZAE 154.76 ETE 359.40 ZAC 89.67 ETC 256.10 CLP 176.38

PLANETOCENTRIC CONIC

C3 38.250 VHL 6.185 DLA 8.60 RAL 181.36 RAD 6568.5 VEL 12.634 PTH 2.29 VHP 11.777 DPA .66 RAP 184.64 ECC 1.6295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 43	2645.12	-27.16	70.62	57.26	98.33	18 35 48	2045.1	-25.73	62.24
90.00	8 3 48	4749.04	16.77	203.62	51.66	66.84	9 22 57	4149.0	13.49	196.47
100.00	19 17 14	2369.29	-28.51	50.09	57.02	99.37	19 56 44	1769.3	-26.92	41.65
100.00	9 20 58	4500.11	18.02	184.73	51.09	65.74	10 35 58	3900.1	14.60	177.62
110.00	20 35 1	2125.91	-32.15	30.81	56.22	102.29	21 10 27	1525.9	-30.12	22.18
110.00	10 19 41	4316.25	21.35	169.07	49.38	62.65	11 31 37	3716.2	17.52	162.04

DIFFERENTIAL CORRECTIONS
TDE .7639 TRA-1.9228 TC3 .6415 BAU .3287
RDE -.5722 RRA -.2507 RC3 -.0400 FAU .05450
FDE -.2465 FRA 1.0181 FC3-1.2335 BSP 6670
BDE .9544 BRA 1.9391 BC3 .6428 FSP 416

MID-COURSE EXECUTION ACCURACY
SGT 2091.9 SGR 581.9 SG3 156.7
RRT .0072 RRF -.0261 RTF -.8146
SGB 2171.4 R23 -.0197 R13 -.8146
SG1 2091.9 SG2 581.9 THA .12

ORBIT DETERMINATION ACCURACY
ST 890.8 SR 534.8 SS 375.4
CRT -.7076 CRS -.5117 CST .9656
LSA 1039.8 MSA 371.8 SSA 30.3
EL1 980.7 EL2 343.2 ALF 153.49

LAUNCH DATE NOV 28 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 396.046 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.826 GAL -3.94 AZL 88.56 HCA 122.68 SMA 257.65 ECC .43170 INC 1.4363 V1 30.191
RP 245.12 LAP 1.21 LOP 188.49 VP 23.827 GAP 25.43 AZP 90.78 TAL 346.92 TAP 109.60 RCA 146.42 APO 368.87 V2 22.374
RC 124.216 GL 8.57 GP 1.17 ZAL 111.07 ZAP 175.73 ETS 162.83 ZAE 154.39 ETE 359.64 ZAC 89.79 ETC 256.08 CLP 175.89

PLANETOCENTRIC CONIC

C3 36.184 VHL 6.015 DLA 9.00 RAL 180.79 RAD 6568.4 VEL 12.552 PTH 2.27 VHP 11.499 DPA .52 RAP 185.03 ECC 1.5955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 21	2643.85	-27.15	70.53	55.82	98.38	18 30 25	2043.9	-25.71	62.15
90.00	8 4 40	4722.24	16.04	201.98	50.14	66.35	9 23 23	4122.2	12.71	194.89
100.00	19 12 5	2367.34	-28.49	49.95	55.58	99.44	19 51 32	1767.3	-26.89	41.51
100.00	9 21 38	4473.99	17.28	183.15	49.56	65.23	10 36 12	3874.0	13.80	176.09
110.00	20 30 19	2122.48	-32.10	30.55	54.77	102.44	21 5 42	1522.5	-30.06	21.94
110.00	10 19 52	4291.61	20.58	167.58	47.83	62.08	11 31 24	3691.6	16.68	160.63

DIFFERENTIAL CORRECTIONS
TDE .7418 TRA-1.8988 TC3 .7006 BAU .3395
RDE -.5524 RRA -.2423 RC3 -.0406 FAU .05612
FDE -.2436 FRA 1.0288 FC3-1.3426 BSP 6932
BDE .9249 BRA 1.9142 BC3 .7017 FSP 438

MID-COURSE EXECUTION ACCURACY
SGT 2136.0 SGR 577.8 SG3 165.0
RRT .0121 RRF -.0280 RTF -.8193
SGB 2212.8 R23 -.0173 R13 -.8193
SG1 2136.0 SG2 577.7 THA .20

ORBIT DETERMINATION ACCURACY
ST 895.3 SR 530.8 SS 378.1
CRT -.7013 CRS -.5016 CST .9648
LSA 1042.0 MSA 373.8 SSA 31.0
EL1 982.0 EL2 345.0 ALF 153.97

LAUNCH DATE NOV 28 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 397.598 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.692 GAL -3.75 AZL 88.58 HCA 123.59 SMA 252.93 ECC .42076 INC 1.4245 V1 30.191
RP 244.91 LAP 1.19 LOP 189.39 VP 23.645 GAP 24.82 AZP 90.79 TAL 347.31 TAP 110.90 RCA 146.51 APO 359.35 V2 22.396
RC 126.220 GL 8.70 GP 1.21 ZAL 110.37 ZAP 175.24 ETS 164.02 ZAE 154.08 ETE 359.88 ZAC 89.92 ETC 256.06 CLP 175.40

PLANETOCENTRIC CONIC

C3 34.259 VHL 5.853 DLA 9.40 RAL 180.20 RAD 6568.4 VEL 12.475 PTH 2.26 VHP 11.228 DPA .38 RAP 185.42 ECC 1.5638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 47	2643.14	-27.14	70.48	54.37	98.40	18 24 50	2043.1	-25.70	62.10
90.00	8 5 32	4695.34	15.30	200.36	48.62	65.88	9 23 48	4095.3	11.92	193.31
100.00	19 6 44	2365.92	-28.48	49.85	54.13	99.50	19 46 10	1765.9	-26.87	41.42
100.00	9 22 16	4447.80	16.53	181.57	48.03	64.73	10 36 24	3847.8	12.99	174.56
110.00	20 25 28	2119.53	-32.06	30.33	53.32	102.56	21 0 48	1519.5	-30.00	21.73
110.00	10 20 1	4266.95	19.78	166.11	46.29	61.54	11 31 8	3667.0	15.83	159.22

DIFFERENTIAL CORRECTIONS
TDE .7199 TRA-1.8727 TC3 .7651 BAU .3509
RDE -.5333 RRA -.2342 RC3 -.0410 FAU .05777
FDE -.2388 FRA 1.0399 FC3-1.4600 BSP 7153
BDE .8959 BRA 1.8873 BC3 .7662 FSP 463

MID-COURSE EXECUTION ACCURACY
SGT 2179.8 SGR 573.4 SG3 173.7
RRT .0167 RRF -.0310 RTF -.8246
SGB 2254.0 R23 -.0162 R13 -.8246
SG1 2179.8 SG2 573.3 THA .27

ORBIT DETERMINATION ACCURACY
ST 898.9 SR 526.6 SS 379.6
CRT -.6950 CRS -.4878 CST .9629
LSA 1042.7 MSA 375.8 SSA 31.7
EL1 982.5 EL2 346.4 ALF 154.44

LAUNCH DATE NOV 28 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 399.328 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.563 GAL -3.57 AZL 88.59 HCA 124.49 SMA 248.59 ECC .41032 INC 1.4124 V1 30.191
RP 244.68 LAP 1.16 LOP 190.30 VP 23.472 GAP 24.21 AZP 90.80 TAL 347.72 TAP 112.21 RCA 146.59 APO 350.60 V2 22.418
RC 128.267 GL 8.83 GP 1.25 ZAL 109.64 ZAP 174.75 ETS 164.98 ZAE 153.81 ETE .12 ZAC 90.04 ETC 256.05 CLP 174.90

PLANETOCENTRIC CONIC

C3 32.466 VHL 5.698 DLA 9.81 RAL 179.59 RAD 6568.3 VEL 12.403 PTH 2.24 VHP 10.964 DPA .25 RAP 185.80 ECC 1.5343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 2	2642.99	-27.14	70.46	52.92	98.41	18 19 5	2043.0	-25.70	62.09
90.00	8 6 23	4668.39	14.55	198.74	47.10	65.43	9 24 11	4068.4	11.11	191.74
100.00	19 1 13	2365.04	-28.47	49.79	52.68	99.53	19 40 38	1765.0	-26.86	41.35
100.00	9 22 53	4421.57	15.76	180.00	46.51	64.27	10 36 35	3821.6	12.17	173.05
110.00	20 20 27	2117.07	-32.02	30.15	51.87	102.66	20 55 44	1517.1	-29.95	21.55
110.00	10 20 8	4242.30	18.98	164.65	44.76	61.02	11 30 50	3642.3	14.97	157.83

DIFFERENTIAL CORRECTIONS
TDE .6990 TRA-1.8453 TC3 .8350 BAU .3629
RDE -.5148 RRA -.2263 RC3 -.0412 FAU .05950
FDE -.2328 FRA 1.0509 FC3-1.5865 BSP 7349
BDE .8681 BRA 1.8591 BC3 .8360 FSP 491

MID-COURSE EXECUTION ACCURACY
SGT 2223.9 SGR 568.8 SG3 182.7
RRT .0209 RRF -.0347 RTF -.8301
SGB 2295.5 R23 -.0161 R13 -.8301
SG1 2223.9 SG2 568.6 THA .33

ORBIT DETERMINATION ACCURACY
ST 902.3 SR 522.3 SS 380.4
CRT -.6892 CRS -.4719 CST .9601
LSA 1043.0 MSA 377.7 SSA 32.3
EL1 982.9 EL2 347.4 ALF 154.90

LAUNCH DATE NOV 28 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 401.216 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.441 GAL -3.39 AZL 88.60 HCA 125.40 SMA 244.60 ECC .40035 INC 1.4000 V1 30.191
RP 244.46 LAP 1.14 LOP 191.20 VP 23.307 GAP 23.60 AZP 90.81 TAL 348.13 TAP 113.53 RCA 146.67 APO 342.52 V2 22.440
RC 130.354 GL 8.96 GP 1.29 ZAL 108.89 ZAP 174.25 ETS 165.77 ZAE 153.60 ETE .35 ZAC 90.17 ETC 256.03 CLP 174.40

PLANETOCENTRIC CONIC

C3 30.796 VHL 5.549 DLA 10.23 RAL 178.95 RAD 6568.2 VEL 12.336 PTH 2.22 VHP 10.707 DPA .12 RAP 186.19 ECC 1.5068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 6	2643.40	-27.14	70.49	51.46	98.39	18 13 10	2043.4	-25.70	62.12
90.00	8 7 12	4641.41	13.78	197.13	45.58	65.01	9 24 34	4041.4	10.29	190.18
100.00	18 55 31	2364.69	-28.46	49.76	51.23	99.54	19 34 56	1764.7	-26.85	41.33
100.00	9 23 28	4395.35	14.98	178.44	44.99	63.83	10 36 44	3795.4	11.34	171.54
110.00	20 15 17	2115.09	-31.99	30.00	50.42	102.74	20 50 32	1515.1	-29.91	21.41
110.00	10 20 12	4217.71	18.16	163.21	43.24	60.53	11 30 30	3617.7	14.10	156.46

DIFFERENTIAL CORRECTIONS
TDE .6788 TRA-1.8162 TC3 .9101 BAU .3751
RDE -.4969 RRA -.2188 RC3 -.0411 FAU .06128
FDE -.2258 FRA 1.0614 FC3-1.7227 BSP 7523
BDE .8413 BRA 1.8293 BC3 .9111 FSP 520

MID-COURSE EXECUTION ACCURACY
SGT 2267.7 SGR 563.9 SG3 192.2
RRT .0249 RRF -.0390 RTF -.8357
SGB 2336.7 R23 -.0168 R13 -.8358
SG1 2267.7 SG2 563.8 THA .38

ORBIT DETERMINATION ACCURACY
ST 904.9 SR 517.7 SS 380.6
CRT -.6836 CRS -.4539 CST .9565
LSA 1042.4 MSA 379.5 SSA 32.9
EL1 982.8 EL2 347.9 ALF 155.35

LAUNCH DATE NOV 28 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 403.248 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 35.323 GAL -3.21 AZL 88.61 HCA 126.30 SMA 240.90 ECC .39083 INC 1.3873 V1 30.191
RP 244.23 LAP 1.12 LOP 192.11 VP 23.150 GAP 22.99 AZP 90.82 TAL 348.55 TAP 114.86 RCA 146.75 APO 335.05 V2 22.463
RC 132.477 GL 9.09 GP 1.33 ZAL 108.12 ZAP 173.74 ETS 166.43 ZAE 153.43 ETE .59 ZAC 90.30 ETC 256.01 CLP 173.89

PLANETOCENTRIC CONIC

C3 29.240 VHL 5.407 DLA 10.65 RAL 178.28 RAD 6568.2 VEL 12.273 PTH 2.21 VHP 10.457 DPA -.01 RAP 186.57 ECC 1.4812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 0	2644.36	-27.15	70.56	50.00	98.36	18 7 5	2044.4	-25.72	62.19
90.00	8 8 0	4614.46	12.99	195.54	44.08	64.62	9 24 55	4014.5	9.47	188.63
100.00	18 49 40	2364.88	-28.47	49.77	49.77	99.53	19 29 4	1764.9	-26.85	41.34
100.00	9 24 2	4369.17	14.19	176.90	43.48	63.41	10 36 51	3769.2	10.51	170.05
110.00	20 9 58	2113.60	-31.97	29.89	48.97	102.80	20 45 11	1513.6	-29.88	21.31
110.00	10 20 13	4193.21	17.33	161.80	41.72	60.07	11 30 6	3593.2	13.22	155.10

DIFFERENTIAL CORRECTIONS
TDE .6581 TRA-1.7864 TC3 .9902 BAU .3874
RDE -.4797 RRA -.2116 RC3 -.0407 FAU .06317
FDE -.2179 FRA 1.0711 FC3-1.8703 BSP 7699
BDE .8144 BRA 1.7988 BC3 .9911 FSP 552

MID-COURSE EXECUTION ACCURACY
SGT 2311.4 SGR 558.9 SG3 202.2
RRT .0293 RRF -.0437 RTF -.8413
SGB 2378.0 R23 -.0175 R13 -.8413
SG1 2311.4 SG2 558.6 THA .43

ORBIT DETERMINATION ACCURACY
ST 906.1 SR 512.9 SS 380.1
CRT -.6776 CRS -.4343 CST .9524
LSA 1040.3 MSA 381.2 SSA 33.5
EL1 981.2 EL2 348.3 ALF 155.77

LAUNCH DATE NOV 28 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 405.411 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	35.210	GAL	-3.04	AZL	88.63	HCA	127.21	SMA	237.48	ECC	.38175	INC	1.3743	V1	30.191
RP	243.99	LAP	1.09	LOP	193.02	VP	23.001	GAP	22.39	AZP	90.83	TAL	348.98	TAP	116.20	RCA	146.82	APO	328.14	V2	22.486
RC	134.631	GL	9.21	GP	1.37	ZAL	107.32	ZAP	173.23	ETS	166.98	ZAE	153.31	ETE	.82	ZAC	90.43	ETC	256.00	CLP	173.37

PLANETOCENTRIC CONIC

C3	27.791	VHL	5.272	DLA	11.08	RAL	177.59	RAD	6568.1	VEL	12.213	PTH	2.19	VHP	10.212	DPA	-.13	RAP	186.94	ECC	1.4574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 44	2645.87	-27.17	70.67	48.55	98.31	18 0 50	2045.9	-25.74	62.29
90.00	8 8 46	4587.57	12.20	193.96	42.58	64.25	9 25 14	3987.6	8.64	187.09
100.00	18 43 38	2365.59	-28.47	49.82	48.31	99.51	19 23 4	1765.6	-26.87	41.39
100.00	9 24 33	4343.08	13.39	175.38	41.98	63.02	10 36 56	3743.1	9.66	168.57
110.00	20 4 29	2112.59	-31.95	29.82	47.52	102.85	20 39 42	1512.6	-29.86	21.24
110.00	10 20 11	4168.84	16.50	160.40	40.22	59.63	11 29 40	3568.8	12.34	153.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6370	TRA	-1.7569	TC3	1.0738	BAU	.3992	SGT	2355.3	SGR	553.5	SG3	212.7	ST	906.2	SR	507.9	SS	379.1
RDE	-.4631	RRA	-.2046	RC3	-.0399	FAU	.06512	RRT	.0344	RRF	-.0492	RTF	-.8465	CRT	-.6710	CRS	-.4121	CST	.9476
FDE	-.2088	FRA	1.0807	FC3	-2.0286	BSP	7872	SGB	2419.5	R23	-.0184	R13	-.8466	LSA	1036.8	MSA	383.2	SSA	34.1
BDE	.7875	BRA	1.7688	BC3	1.0746	FSP	585	SG1	2355.4	SG2	553.2	THA	.49	EL1	978.5	EL2	348.7	ALF	156.18

LAUNCH DATE NOV 28 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 407.693 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	35.103	GAL	-2.87	AZL	88.64	HCA	128.13	SMA	234.31	ECC	.37307	INC	1.3609	V1	30.191
RP	243.75	LAP	1.07	LOP	193.93	VP	22.859	GAP	21.79	AZP	90.84	TAL	349.42	TAP	117.55	RCA	146.89	APO	321.72	V2	22.510
RC	136.814	GL	9.32	GP	1.42	ZAL	106.50	ZAP	172.71	ETS	167.45	ZAE	153.23	ETE	1.06	ZAC	90.56	ETC	255.98	CLP	172.85

PLANETOCENTRIC CONIC

C3	26.442	VHL	5.142	DLA	11.52	RAL	176.88	RAD	6568.1	VEL	12.158	PTH	2.18	VHP	9.974	DPA	-.25	RAP	187.31	ECC	1.4352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 18	2647.92	-27.19	70.82	47.09	98.24	17 54 26	2047.9	-25.77	62.44
90.00	8 9 31	4560.77	11.41	192.39	41.09	63.91	9 25 31	3960.8	7.81	185.56
100.00	18 37 28	2366.81	-28.49	49.91	46.86	99.46	19 16 55	1766.8	-26.89	41.48
100.00	9 25 2	4317.12	12.58	173.87	40.48	62.66	10 36 59	3717.1	8.82	167.10
110.00	19 58 53	2112.05	-31.94	29.78	46.07	102.87	20 34 5	1512.1	-29.84	21.20
110.00	10 20 7	4144.64	15.66	159.02	38.72	59.22	11 29 11	3544.6	11.46	152.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6165	TRA	-1.7253	TC3	1.1638	BAU	.4116	SGT	2398.6	SGR	548.0	SG3	223.7	ST	905.3	SR	502.7	SS	377.4
RDE	-.4470	RRA	-.1979	RC3	-.0387	FAU	.06720	RRT	.0393	RRF	-.0550	RTF	-.8519	CRT	-.6647	CRS	-.3883	CST	.9419
FDE	-.1990	FRA	1.0889	FC3	-2.2001	BSP	8029	SGB	2460.4	R23	-.0197	R13	-.8519	LSA	1032.1	MSA	385.0	SSA	34.7
BDE	.7615	BRA	1.7366	BC3	1.1645	FSP	619	SG1	2398.7	SG2	547.6	THA	.54	EL1	975.0	EL2	348.7	ALF	156.57

LAUNCH DATE NOV 28 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 410.082 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	35.000	GAL	-2.70	AZL	88.65	HCA	129.04	SMA	231.35	ECC	.36479	INC	1.3472	V1	30.191
RP	243.50	LAP	1.05	LOP	194.85	VP	22.725	GAP	21.19	AZP	90.85	TAL	349.87	TAP	118.90	RCA	146.96	APO	315.75	V2	22.535
RC	139.022	GL	9.43	GP	1.47	ZAL	105.66	ZAP	172.17	ETS	167.85	ZAE	153.20	ETE	1.31	ZAC	90.69	ETC	255.97	CLP	172.31

PLANETOCENTRIC CONIC

C3	25.185	VHL	5.018	DLA	11.95	RAL	176.14	RAD	6568.0	VEL	12.106	PTH	2.17	VHP	9.742	DPA	-.36	RAP	187.68	ECC	1.4145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 43	2650.50	-27.21	71.00	45.63	98.15	17 47 53	2050.5	-25.81	62.62
90.00	8 10 13	4534.12	10.60	190.85	39.61	63.59	9 25 47	3934.1	6.97	184.05
100.00	18 31 8	2368.54	-28.51	50.04	45.41	99.40	19 10 37	1768.5	-26.91	41.60
100.00	9 25 28	4291.31	11.77	172.39	39.00	62.32	10 37 0	3691.3	7.97	165.66
110.00	19 53 8	2111.97	-31.94	29.77	44.62	102.87	20 28 20	1512.0	-29.84	21.19
110.00	10 19 58	4120.64	14.82	157.67	37.23	58.84	11 28 39	3520.6	10.59	151.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5943	TRA	-1.6937	TC3	1.2569	BAU	.4234	SGT	2441.0	SGR	542.3	SG3	235.2	ST	901.9	SR	497.3	SS	374.8
RDE	-.4316	RRA	-.1914	RC3	-.0371	FAU	.06935	RRT	.0455	RRF	-.0619	RTF	-.8568	CRT	-.6570	CRS	-.3604	CST	.9350
FDE	-.1874	FRA	1.0963	FC3	-2.3840	BSP	8201	SGB	2500.6	R23	-.0209	R13	-.8568	LSA	1024.7	MSA	387.2	SSA	35.4
BDE	.7345	BRA	1.7045	BC3	1.2574	FSP	657	SG1	2441.2	SG2	541.7	THA	.61	EL1	969.0	EL2	349.0	ALF	156.93

LAUNCH DATE NOV 28 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 412.571 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	34.901	GAL	-2.54	AZL	88.67	HCA	129.95	SMA	228.61	ECC	.35688	INC	1.3331	V1	30.191
RP	243.25	LAP	1.02	LOP	195.76	VP	22.597	GAP	20.60	AZP	90.86	TAL	350.32	TAP	120.27	RCA	147.02	APO	310.19	V2	22.560
RC	141.251	GL	9.53	GP	1.52	ZAL	104.80	ZAP	171.63	ETS	168.19	ZAE	153.22	ETE	1.55	ZAC	90.83	ETC	255.95	CLP	171.77

PLANETOCENTRIC CONIC

C3	24.015	VHL	4.900	DLA	12.39	RAL	175.38	RAD	6568.0	VEL	12.058	PTH	2.16	VHP	9.516	DPA	-.47	RAP	188.04	ECC	1.3952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 59	2653.58	-27.24	71.22	44.18	98.04	17 41 13	2053.6	-25.85	62.83
90.00	8 10 52	4507.65	9.80	189.32	38.13	63.30	9 26 0	3907.7	6.14	182.55
100.00	18 24 41	2370.74	-28.53	50.20	43.96	99.32	19 4 12	1770.7	-26.95	41.75
100.00	9 25 52	4265.72	10.96	170.92	37.53	62.01	10 36 57	3665.7	7.13	164.23
110.00	19 47 16	2112.33	-31.95	29.80	43.18	102.86	20 22 28	1512.3	-29.85	21.22
110.00	10 19 46	4096.89	13.98	156.34	35.76	58.48	11 28 3	3496.9	9.71	149.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5731	TRA	-1.6619	TC3	1.3549	BAU	.4351	SGT	2484.0	SGR	536.4	SG3	247.2	ST	898.2	SR	491.7	SS	372.0
RDE	-.4167	RRA	-.1852	RC3	-.0349	FAU	.07162	RRT	.0519	RRF	-.0691	RTF	-.8616	CRT	-.6494	CRS	-.3316	CST	.9275
FDE	-.1756	FRA	1.1027	FC3	-2.5821	BSP	8354	SGB	2541.2	R23	-.0223	R13	-.8616	LSA	1016.9	MSA	389.2	SSA	36.1
BDE	.7086	BRA	1.6722	BC3	1.3554	FSP	695	SG1	2484.1	SG2	535.6	THA	.67	EL1	962.7	EL2	348.9	ALF	157.28

LAUNCH DATE NOV 28 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 415.150 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.807 GAL -2.38 AZL 88.68 HCA 130.87 SMA 226.04 ECC .34933 INC 1.3186 V1 30.191
RP 243.00 LAP 1.00 LOP 196.68 VP 22.477 GAP 20.01 AZP 90.86 TAL 350.77 TAP 121.65 RCA 147.08 APO 305.01 V2 22.585
RC 143.499 GL 9.62 GP 1.58 ZAL 103.92 ZAP 171.09 ETS 168.48 ZAE 153.27 ETE 1.81 ZAC 90.96 ETC 255.94 CLP 171.23

PLANETOCENTRIC CONIC

C3 20.925 VHL 4.788 DLA 12.83 RAL 174.60 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 9.295 DPA -.58 RAP 188.40 ECC 1.3773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 7	2657.13	-27.28	71.48	42.73	97.92	17 34 24	2057.1	-25.90	63.08
90.00	8 11 29	4481.41	8.99	187.81	36.67	63.04	9 26 11	3881.4	5.30	181.07
100.00	18 18 6	2373.41	-28.56	50.39	42.51	99.22	18 57 39	1773.4	-26.99	41.94
100.00	9 26 12	4240.37	10.14	169.48	36.06	61.73	10 36 52	3640.4	6.29	162.82
110.00	19 41 17	2113.11	-31.96	29.86	41.74	102.83	20 16 30	1513.1	-29.87	21.27
110.00	10 19 30	4073.43	13.14	155.04	34.29	58.16	11 27 24	3473.4	8.84	148.59

DIFFERENTIAL CORRECTIONS
TDE .5508 TRA-1.6299 TC3 1.4571 BAU .4467
RDE -.4024 RRA -.1792 RC3 -.0320 FAU .07402
FDE -.1624 FRA 1.1087 FC3-2.7954 BSP 8528
BDE .6821 BRA 1.6397 BC3 1.4574 FSP 737

MID-COURSE EXECUTION ACCURACY
SGT 2526.4 SGR 530.2 SG3 260.0
RRT .0595 RRF -.0774 RTF -.8662
SGB 2581.4 R23 -.0235 R13 -.8663
SG1 2526.6 SG2 529.3 THA .75

ORBIT DETERMINATION ACCURACY
ST 892.4 SR 486.0 SS 368.8
CRT -.6406 CRS -.2990 CST .9187
LSA 1006.9 MSA 391.6 SSA 36.8
EL1 954.3 EL2 349.0 ALF 157.61

LAUNCH DATE NOV 28 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 417.813 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.716 GAL -2.23 AZL 88.70 HCA 131.79 SMA 223.65 ECC .34212 INC 1.3036 V1 30.191
RP 242.74 LAP .97 LOP 197.60 VP 22.363 GAP 19.42 AZP 90.87 TAL 351.24 TAP 123.03 RCA 147.14 APO 300.16 V2 22.611
RC 145.763 GL 9.71 GP 1.64 ZAL 103.02 ZAP 170.53 ETS 168.73 ZAE 153.37 ETE 2.08 ZAC 91.10 ETC 255.93 CLP 170.67

PLANETOCENTRIC CONIC

C3 21.910 VHL 4.681 DLA 13.26 RAL 173.79 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 9.079 DPA -.67 RAP 188.76 ECC 1.3606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 7	2661.17	-27.31	71.77	41.28	97.78	17 27 28	2061.2	-25.96	63.36
90.00	8 12 3	4455.40	8.19	186.33	35.22	62.80	9 26 19	3855.4	4.48	179.61
100.00	18 11 22	2376.52	-28.59	50.62	41.06	99.11	18 50 59	1776.5	-27.04	42.16
100.00	9 26 29	4215.28	9.33	168.06	34.61	61.47	10 36 44	3615.3	5.45	161.42
110.00	19 35 11	2114.30	-31.98	29.95	40.31	102.78	20 10 25	1514.3	-29.89	21.36
110.00	10 19 10	4050.26	12.31	153.77	32.83	57.85	11 26 40	3450.3	7.97	147.35

DIFFERENTIAL CORRECTIONS
TDE .5403 TRA-1.5855 TC3 1.5847 BAU .4643
RDE -.3888 RRA -.1736 RC3 -.0289 FAU .07642
FDE -.1454 FRA 1.1157 FC3-3.0194 BSP 8404
BDE .6657 BRA 1.5949 BC3 1.5850 FSP 785

MID-COURSE EXECUTION ACCURACY
SGT 2571.7 SGR 524.3 SG3 273.1
RRT .0597 RRF -.0876 RTF -.8745
SGB 2624.7 R23 -.0332 R13 -.8746
SG1 2571.9 SG2 523.4 THA .73

ORBIT DETERMINATION ACCURACY
ST 892.9 SR 480.4 SS 364.6
CRT -.6426 CRS -.2562 CST .8994
LSA 1002.5 MSA 393.2 SSA 36.9
EL1 953.5 EL2 344.7 ALF 157.89

LAUNCH DATE NOV 28 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 420.551 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.630 GAL -2.08 AZL 88.71 HCA 132.71 SMA 221.41 ECC .33524 INC 1.2882 V1 30.191
RP 242.47 LAP .95 LOP 198.52 VP 22.255 GAP 18.84 AZP 90.87 TAL 351.70 TAP 124.42 RCA 147.19 APO 295.64 V2 22.638
RC 148.041 GL 9.78 GP 1.70 ZAL 102.11 ZAP 169.96 ETS 168.95 ZAE 153.51 ETE 2.35 ZAC 91.24 ETC 255.92 CLP 170.10

PLANETOCENTRIC CONIC

C3 20.966 VHL 4.579 DLA 13.70 RAL 172.97 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 8.868 DPA -.77 RAP 189.10 ECC 1.3451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 2	2665.58	-27.35	72.08	39.84	97.62	17 20 27	2065.6	-26.02	63.67
90.00	8 12 33	4429.78	7.39	184.87	33.78	62.59	9 26 23	3829.8	3.66	178.18
100.00	18 4 35	2380.00	-28.63	50.87	39.62	98.98	18 44 15	1780.0	-27.09	42.40
100.00	9 26 41	4190.59	8.52	166.67	33.17	61.24	10 36 32	3590.6	4.62	160.06
110.00	19 29 0	2115.83	-32.00	30.06	38.88	102.71	20 4 16	1515.8	-29.92	21.46
110.00	10 18 45	4027.52	11.48	152.53	31.39	57.58	11 25 53	3427.5	7.12	146.15

DIFFERENTIAL CORRECTIONS
TDE .5118 TRA-1.5591 TC3 1.6838 BAU .4720
RDE -.3754 RRA -.1680 RC3 -.0245 FAU .07912
FDE -.1316 FRA 1.1180 FC3-3.2668 BSP 8706
BDE .6347 BRA 1.5681 BC3 1.6839 FSP 827

MID-COURSE EXECUTION ACCURACY
SGT 2611.5 SGR 517.7 SG3 287.2
RRT .0733 RRF -.0971 RTF -.8766
SGB 2662.3 R23 -.0304 R13 -.8767
SG1 2611.8 SG2 516.3 THA .87

ORBIT DETERMINATION ACCURACY
ST 880.4 SR 474.2 SS 360.8
CRT -.6270 CRS -.2211 CST .8920
LSA 985.8 MSA 396.4 SSA 38.0
EL1 938.0 EL2 346.8 ALF 158.21

LAUNCH DATE NOV 28 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 423.361 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.547 GAL -1.93 AZL 88.73 HCA 133.64 SMA 219.32 ECC .32867 INC 1.2722 V1 30.191
RP 242.20 LAP .92 LOP 199.44 VP 22.154 GAP 18.26 AZP 90.88 TAL 352.17 TAP 125.81 RCA 147.23 APO 291.40 V2 22.664
RC 150.330 GL 9.85 GP 1.76 ZAL 101.18 ZAP 169.38 ETS 169.13 ZAE 153.68 ETE 2.64 ZAC 91.38 ETC 255.91 CLP 169.53

PLANETOCENTRIC CONIC

C3 20.088 VHL 4.482 DLA 14.13 RAL 172.12 RAD 6567.8 VEL 11.894 PTH 2.11 VHP 8.663 DPA -.85 RAP 189.45 ECC 1.3306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 50	2670.36	-27.40	72.43	38.40	97.45	17 13 21	2070.4	-26.08	64.01
90.00	8 13 0	4404.53	6.59	183.44	32.35	62.40	9 26 24	3804.5	2.84	176.76
100.00	17 57 41	2383.84	-28.67	51.15	38.19	98.84	18 37 25	1783.8	-27.15	42.67
100.00	9 26 50	4166.29	7.73	165.31	31.74	61.03	10 36 16	3566.3	3.80	158.72
110.00	19 22 44	2117.69	-32.03	30.20	37.45	102.64	19 58 2	1517.7	-29.96	21.60
110.00	10 18 16	4005.19	10.66	151.32	29.97	57.33	11 25 1	3405.2	6.28	144.96

DIFFERENTIAL CORRECTIONS
TDE .4861 TRA-1.5287 TC3 1.7913 BAU .4811
RDE -.3626 RRA -.1626 RC3 -.0193 FAU .08191
FDE -.1157 FRA 1.1194 FC3-3.5301 BSP 8949
BDE .6065 BRA 1.5373 BC3 1.7914 FSP 874

MID-COURSE EXECUTION ACCURACY
SGT 2650.5 SGR 511.1 SG3 301.9
RRT .0858 RRF -.1081 RTF -.8795
SGB 2699.3 R23 -.0299 R13 -.8796
SG1 2650.9 SG2 509.1 THA .98

ORBIT DETERMINATION ACCURACY
ST 868.3 SR 468.0 SS 356.5
CRT -.6133 CRS -.1800 CST .8803
LSA 969.0 MSA 399.5 SSA 39.0
EL1 923.1 EL2 347.7 ALF 158.51

LAUNCH DATE NOV 28 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 426.236 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.468 GAL -1.79 AZL 88.74 HCA 134.56 SMA 217.35 ECC .32240 INC 1.2558 V1 30.191
RP 241.93 LAP .89 LOP 200.37 VP 22.058 GAP 17.69 AZP 90.88 TAL 352.65 TAP 127.21 RCA 147.28 APO 287.43 V2 22.692
RC 152.629 GL 9.90 GP 1.83 ZAL 100.24 ZAP 168.79 ETS 169.29 ZAE 153.89 ETE 2.94 ZAC 91.52 ETC 255.90 CLP 168.94

PLANETOCENTRIC CONIC

C3 19.270 VHL 4.390 DLA 14.55 RAL 171.25 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 8.463 DPA -.93 RAP 189.78 ECC 1.3171

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 34	2675.49	-27.44	72.80	36.97	97.27	17 6 10	2075.5	-26.15	64.37
90.00	8 13 21	4379.68	5.81	182.04	30.94	62.24	9 26 21	3779.7	2.04	175.38
100.00	17 50 43	2387.99	-28.71	51.45	36.76	98.69	18 30 31	1788.0	-27.22	42.96
100.00	9 26 54	4142.41	6.94	163.98	30.32	60.85	10 35 56	3542.4	3.00	157.40
110.00	19 16 25	2119.85	-32.06	30.36	36.04	102.55	19 51 45	1519.9	-30.00	21.75
110.00	10 17 41	3983.31	9.85	150.13	28.55	57.10	11 24 4	3383.3	5.45	143.81

DIFFERENTIAL CORRECTIONS
TDE .4631 TRA-1.4962 TC3 1.9068 BAU .4912
RDE -.3504 RRA -.1575 RC3 -.0132 FAU .08484
FDE -.0988 FRA 1.1202 FC3-3.8116 BSP 9113
BDE .5807 BRA 1.5045 BC3 1.9068 FSP 923

MID-COURSE EXECUTION ACCURACY
SGT 2690.5 SGR 504.4 SG3 317.4
RRT .0978 RRF -.1203 RTF -.8830
SGB 2737.3 R23 -.0310 R13 -.8831
SG1 2690.9 SG2 501.9 THA 1.09

ORBIT DETERMINATION ACCURACY
ST 856.8 SR 461.7 SS 352.2
CRT -.6012 CRS -.1354 CST .8655
LSA 952.8 MSA 402.5 SSA 39.9
EL1 909.1 EL2 347.8 ALF 158.80

LAUNCH DATE NOV 28 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 429.172 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.392 GAL -1.65 AZL 88.76 HCA 135.49 SMA 215.51 ECC .31642 INC 1.2388 V1 30.191
RP 241.65 LAP .87 LOP 201.29 VP 21.968 GAP 17.12 AZP 90.88 TAL 353.12 TAP 128.61 RCA 147.32 APO 283.70 V2 22.720
RC 154.936 GL 9.95 GP 1.90 ZAL 99.29 ZAP 168.19 ETS 169.42 ZAE 154.14 ETE 3.26 ZAC 91.66 ETC 255.89 CLP 168.35

PLANETOCENTRIC CONIC

C3 18.510 VHL 4.302 DLA 14.97 RAL 170.37 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 8.267 DPA -1.00 RAP 190.12 ECC 1.3046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 14	2680.89	-27.49	73.18	35.54	97.09	16 58 55	2080.9	-26.22	64.75
90.00	8 13 38	4355.32	5.03	180.66	29.54	62.10	9 26 13	3755.3	1.26	174.02
100.00	17 43 41	2392.41	-28.76	51.77	35.34	98.52	18 23 34	1792.4	-27.28	43.28
100.00	9 26 52	4119.02	6.16	162.68	28.92	60.69	10 35 31	3519.0	2.21	156.12
110.00	19 10 2	2122.26	-32.10	30.54	34.62	102.45	19 45 24	1522.3	-30.05	21.92
110.00	10 17 1	3961.94	9.06	148.99	27.14	56.90	11 23 3	3361.9	4.64	142.69

DIFFERENTIAL CORRECTIONS
TDE .4398 TRA-1.4632 TC3 2.0257 BAU .5013
RDE -.3386 RRA -.1526 RC3 -.0062 FAU .08789
FDE -.0796 FRA 1.1201 FC3-4.1106 BSP 9291
BDE .5550 BRA 1.4711 BC3 2.0257 FSP 977

MID-COURSE EXECUTION ACCURACY
SGT 2729.4 SGR 497.6 SG3 333.6
RRT .1111 RRF -.1343 RTF -.8865
SGB 2774.4 R23 -.0327 R13 -.8866
SG1 2730.0 SG2 494.5 THA 1.20

ORBIT DETERMINATION ACCURACY
ST 843.8 SR 455.3 SS 347.8
CRT -.5881 CRS -.0839 CST .8470
LSA 934.7 MSA 406.1 SSA 40.7
EL1 893.5 EL2 347.8 ALF 159.08

LAUNCH DATE NOV 28 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 432.164 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.319 GAL -1.52 AZL 88.78 HCA 136.42 SMA 213.78 ECC .31071 INC 1.2212 V1 30.191
RP 241.36 LAP .84 LOP 202.22 VP 21.884 GAP 16.56 AZP 90.88 TAL 353.60 TAP 130.02 RCA 147.36 APO 280.20 V2 22.748
RC 157.250 GL 9.98 GP 1.98 ZAL 98.33 ZAP 167.58 ETS 169.53 ZAE 154.43 ETE 3.60 ZAC 91.81 ETC 255.88 CLP 167.74

PLANETOCENTRIC CONIC

C3 17.802 VHL 4.219 DLA 15.38 RAL 169.47 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 8.076 DPA -1.07 RAP 190.44 ECC 1.2930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 52	2686.51	-27.53	73.59	34.12	96.89	16 51 38	2086.5	-26.29	65.14
90.00	8 13 49	4331.48	4.27	179.33	28.14	61.98	9 26 1	3731.5	.49	172.69
100.00	17 36 37	2397.04	-28.81	52.10	33.92	98.35	18 16 34	1797.0	-27.35	43.60
100.00	9 26 45	4096.18	5.40	161.41	27.52	60.55	10 35 1	3496.2	1.43	154.86
110.00	19 3 36	2124.87	-32.13	30.73	33.22	102.34	19 39 1	1524.9	-30.10	22.11
110.00	10 16 15	3941.11	8.29	147.87	25.75	56.72	11 21 56	3341.1	3.85	141.59

DIFFERENTIAL CORRECTIONS
TDE .4171 TRA-1.4296 TC3 2.1480 BAU .5112
RDE -.3273 RRA -.1479 RC3 .0019 FAU .09110
FDE -.0596 FRA 1.1189 FC3-4.4303 BSP 9448
BDE .5302 BRA 1.4373 BC3 2.1480 FSP 1033

MID-COURSE EXECUTION ACCURACY
SGT 2767.8 SGR 490.9 SG3 350.6
RRT .1256 RRF -.1498 RTF -.8899
SGB 2811.0 R23 -.0347 R13 -.8901
SG1 2768.5 SG2 486.9 THA 1.32

ORBIT DETERMINATION ACCURACY
ST 829.9 SR 448.9 SS 343.7
CRT -.5746 CRS -.0289 CST .8256
LSA 915.7 MSA 409.9 SSA 41.6
EL1 877.1 EL2 347.6 ALF 159.35

LAUNCH DATE NOV 28 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 435.209 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.250 GAL -1.38 AZL 88.80 HCA 137.35 SMA 212.15 ECC .30526 INC 1.2028 V1 30.191
RP 241.08 LAP .82 LOP 203.15 VP 21.805 GAP 16.00 AZP 90.88 TAL 354.08 TAP 131.43 RCA 147.39 APO 276.91 V2 22.777
RC 159.568 GL 10.00 GP 2.06 ZAL 97.36 ZAP 166.96 ETS 169.62 ZAE 154.75 ETE 3.96 ZAC 91.95 ETC 255.87 CLP 167.12

PLANETOCENTRIC CONIC

C3 17.144 VHL 4.141 DLA 15.79 RAL 168.55 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 7.889 DPA -1.12 RAP 190.76 ECC 1.2821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 28	2692.29	-27.58	74.01	32.70	96.68	16 44 20	2092.3	-26.37	65.55
90.00	8 13 54	4308.24	3.53	178.02	26.76	61.89	9 25 42	3708.2	-.26	171.39
100.00	17 29 32	2401.83	-28.85	52.45	32.52	98.18	18 9 34	1801.8	-27.42	43.94
100.00	9 26 31	4073.93	4.65	160.18	26.14	60.44	10 34 25	3473.9	.68	153.64
110.00	18 57 10	2127.64	-32.18	30.94	31.82	102.22	19 32 37	1527.6	-30.16	22.30
110.00	10 15 22	3920.89	7.53	146.80	24.37	56.56	11 20 43	3320.9	3.08	140.54

DIFFERENTIAL CORRECTIONS
TDE .3957 TRA-1.3946 TC3 2.2733 BAU .5211
RDE -.3165 RRA -.1434 RC3 .0113 FAU .09448
FDE -.0390 FRA 1.1151 FC3-4.7709 BSP 9587
BDE .5067 BRA 1.4019 BC3 2.2734 FSP 1092

MID-COURSE EXECUTION ACCURACY
SGT 2804.5 SGR 484.2 SG3 368.4
RRT .1409 RRF -.1666 RTF -.8933
SGB 2846.0 R23 -.0373 R13 -.8935
SG1 2805.4 SG2 479.2 THA 1.44

ORBIT DETERMINATION ACCURACY
ST 815.4 SR 442.3 SS 339.7
CRT -.5616 CRS .0279 CST .8014
LSA 896.2 MSA 413.5 SSA 42.5
EL1 860.4 EL2 346.8 ALF 159.60

LAUNCH DATE NOV 28 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 438.304 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.183 GAL -1.25 AZL 88.82 HCA 138.28 SMA 210.62 ECC .30005 INC 1.1838 V1 30.191
RP 240.79 LAP .79 LOP 204.09 VP 21.731 GAP 15.45 AZP 90.88 TAL 354.56 TAP 132.84 RCA 147.42 APO 273.81 V2 22.806
RC 161.890 GL 10.00 GP 2.15 ZAL 96.38 ZAP 166.32 ETS 169.69 ZAE 155.11 ETE 4.34 ZAC 92.10 ETC 255.87 CLP 166.49

PLANETOCENTRIC CONIC

C3 16.531 VHL 4.066 DLA 16.18 RAL 167.62 RAD 6567.7 VEL 11.744 PTH 2.07 VHP 7.707 DPA -1.17 RAP 191.07 ECC 1.2721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 2	2698.21	-27.63	74.43	31.29	96.47	16 37 1	2098.2	-26.44	65.97
90.00	8 13 52	4285.58	2.80	176.76	25.39	61.81	9 25 18	3685.6	-.99	170.13
100.00	17 22 25	2406.75	-28.90	52.81	31.11	97.99	18 2 32	1806.7	-27.49	44.29
100.00	9 26 10	4052.28	3.92	158.98	24.77	60.34	10 33 43	3452.3	-.06	152.46
110.00	18 50 42	2130.54	-32.22	31.15	30.43	102.10	19 26 12	1530.5	-30.22	22.51
110.00	10 14 23	3901.25	6.79	145.76	23.00	56.42	11 19 24	3301.2	2.33	139.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3891 TRA-1.3448 TC3 2.4408 BAU .5395 SGT 2851.9 SGR 477.9 SG3 387.1 ST 809.1 SR 436.0 SS 336.7
RDE -.3063 RRA -.1393 RC3 .0215 FAU .09799 RRT .1476 RRF -.1853 RTF -.9010 CRT -.5680 CRS .0938 CST .7555
FDE -.0154 FRA 1.1120 FC3-5.1316 BSP 9324 SGB 2891.7 R23 -.0491 R13 -.9013 LSA 884.8 MSA 416.5 SSA 42.3
BDE .4952 BRA 1.3519 BC3 2.4409 FSP 1155 SG1 2852.8 SG2 472.5 THA 1.46 EL1 853.9 EL2 340.0 ALF 159.61

LAUNCH DATE NOV 28 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 441.442 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.120 GAL -1.13 AZL 88.84 HCA 139.22 SMA 209.18 ECC .29510 INC 1.1640 V1 30.191
RP 240.49 LAP .76 LOP 205.02 VP 21.662 GAP 14.90 AZP 90.88 TAL 355.04 TAP 134.26 RCA 147.45 APO 270.90 V2 22.836
RC 164.213 GL 9.99 GP 2.24 ZAL 95.40 ZAP 165.67 ETS 169.74 ZAE 155.50 ETE 4.76 ZAC 92.26 ETC 255.86 CLP 165.85

PLANETOCENTRIC CONIC

C3 15.963 VHL 3.995 DLA 16.55 RAL 166.68 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 7.529 DPA -1.21 RAP 191.37 ECC 1.2627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 41	2704.06	-27.67	74.86	29.90	96.27	16 29 45	2104.1	-26.51	66.38
90.00	8 13 42	4263.77	2.10	175.54	24.04	61.75	9 24 46	3663.8	-1.70	168.91
100.00	17 15 23	2411.61	-28.95	53.16	29.72	97.81	17 55 34	1811.6	-27.56	44.63
100.00	9 25 42	4031.46	3.22	157.84	23.42	60.27	10 32 53	3431.5	-.76	151.31
110.00	18 44 17	2133.42	-32.26	31.37	29.05	101.98	19 19 51	1533.4	-30.27	22.71
110.00	10 13 17	3882.41	6.08	144.76	21.65	56.30	11 17 59	3282.4	1.61	138.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3540 TRA-1.3246 TC3 2.5317 BAU .5403 SGT 2877.0 SGR 471.0 SG3 406.7 ST 784.1 SR 429.0 SS 334.0
RDE -.2962 RRA -.1349 RC3 .0341 FAU .10171 RRT .1766 RRF -.2063 RTF -.8999 CRT -.5339 CRS .1545 CST .7408
FDE .0064 FRA 1.1051 FC3-5.5160 BSP 9797 SGB 2915.3 R23 -.0438 R13 -.9001 LSA 854.6 MSA 422.1 SSA 44.2
BDE .4616 BRA 1.3314 BC3 2.5319 FSP 1219 SG1 2878.2 SG2 463.4 THA 1.70 EL1 824.6 EL2 345.0 ALF 160.09

LAUNCH DATE NOV 28 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 444.624 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.059 GAL -1.01 AZL 88.86 HCA 140.16 SMA 207.82 ECC .29037 INC 1.1434 V1 30.191
RP 240.19 LAP .73 LOP 205.96 VP 21.598 GAP 14.36 AZP 90.88 TAL 355.52 TAP 135.68 RCA 147.47 APO 268.16 V2 22.866
RC 166.536 GL 9.96 GP 2.33 ZAL 94.42 ZAP 165.01 ETS 169.78 ZAE 155.92 ETE 5.20 ZAC 92.41 ETC 255.85 CLP 165.19

PLANETOCENTRIC CONIC

C3 15.434 VHL 3.929 DLA 16.91 RAL 165.72 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 7.355 DPA -1.24 RAP 191.67 ECC 1.2540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 22	2709.89	-27.71	75.28	28.51	96.06	16 22 32	2109.9	-26.58	66.79
90.00	8 13 24	4242.70	1.42	174.36	22.70	61.72	9 24 6	3642.7	-2.37	167.73
100.00	17 8 22	2416.44	-28.99	53.52	28.34	97.63	17 48 39	1816.4	-27.63	44.98
100.00	9 25 5	4011.38	2.54	156.73	22.08	60.21	10 31 57	3411.4	-1.44	150.21
110.00	18 37 54	2136.31	-32.30	31.58	27.68	101.86	19 13 31	1536.3	-30.33	22.92
110.00	10 12 2	3864.28	5.39	143.80	20.31	56.19	11 16 27	3264.3	.92	137.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3305 TRA-1.2932 TC3 2.6573 BAU .5484 SGT 2911.6 SGR 464.7 SG3 427.4 ST 765.5 SR 422.3 SS 332.5
RDE -.2866 RRA -.1309 RC3 .0479 FAU .10562 RRT .1998 RRF -.2296 RTF -.9023 CRT -.5136 CRS .2223 CST .7090
FDE .0310 FRA 1.0981 FC3-5.9247 BSP 9997 SGB 2948.5 R23 -.0458 R13 -.9026 LSA 830.7 MSA 427.5 SSA 45.2
BDE .4375 BRA 1.2998 BC3 2.6577 FSP 1289 SG1 2913.2 SG2 455.1 THA 1.87 EL1 803.2 EL2 345.3 ALF 160.42

LAUNCH DATE NOV 28 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 447.846 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 34.001 GAL -.89 AZL 88.88 HCA 141.10 SMA 206.53 ECC .28586 INC 1.1219 V1 30.191
RP 239.88 LAP .70 LOP 206.90 VP 21.539 GAP 13.83 AZP 90.87 TAL 356.00 TAP 137.09 RCA 147.49 APO 265.57 V2 22.897
RC 168.857 GL 9.92 GP 2.44 ZAL 93.43 ZAP 164.33 ETS 169.81 ZAE 156.38 ETE 5.68 ZAC 92.57 ETC 255.84 CLP 164.52

PLANETOCENTRIC CONIC

C3 14.942 VHL 3.865 DLA 17.25 RAL 164.75 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 7.185 DPA -1.26 RAP 191.96 ECC 1.2459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 8	2715.57	-27.75	75.69	27.13	95.86	16 15 23	2115.6	-26.65	67.19
90.00	8 12 56	4222.48	.76	173.23	21.37	61.69	9 23 18	3622.5	-3.03	166.60
100.00	17 1 26	2421.16	-29.03	53.86	26.96	97.45	17 41 47	1821.2	-27.70	45.31
100.00	9 24 19	3992.13	1.89	155.68	20.75	60.16	10 30 51	3392.1	-2.10	149.15
110.00	18 31 34	2139.11	-32.34	31.79	26.31	101.74	19 7 13	1539.1	-30.38	23.12
110.00	10 10 40	3846.94	4.74	142.89	18.98	56.11	11 14 47	3246.9	.25	136.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3113 TRA-1.2572 TC3 2.7858 BAU .5566 SGT 2942.5 SGR 458.6 SG3 448.9 ST 748.2 SR 415.4 SS 331.1
RDE -.2774 RRA -.1270 RC3 .0633 FAU .10970 RRT .2225 RRF -.2545 RTF -.9050 CRT -.4988 CRS .2863 CST .6727
FDE .0546 FRA 1.0871 FC3-6.3560 BSP 10136 SGB 2978.1 R23 -.0496 R13 -.9053 LSA 808.4 MSA 431.6 SSA 46.2
BDE .4170 BRA 1.2636 BC3 2.7865 FSP 1363 SG1 2944.4 SG2 446.9 THA 2.03 EL1 783.7 EL2 343.7 ALF 160.65

LAUNCH DATE NOV 28 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 451.106 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.945 GAL -.78 AZL 88.90 HCA 142.04 SMA 205.32 ECC .28156 INC 1.0997 V1 30.191
RP 239.58 LAP .68 LOP 207.85 VP 21.484 GAP 13.30 AZP 90.87 TAL 356.47 TAP 138.51 RCA 147.51 APO 263.13 V2 22.928
RC 171.174 GL 9.85 GP 2.55 ZAL 92.45 ZAP 163.64 ETS 169.82 ZAE 156.87 ETE 6.21 ZAC 92.74 ETC 255.84 CLP 163.83

PLANETOCENTRIC CONIC

C3 14.485 VHL 3.806 DLA 17.58 RAL 163.78 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 7.019 DPA -1.26 RAP 192.24 ECC 1.2384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 59	2721.03	-27.79	76.08	25.76	95.66	16 8 20	2121.0	-26.72	67.58
90.00	8 12 17	4203.18	.14	172.16	20.06	61.68	9 22 21	3603.2	-3.64	165.52
100.00	16 54 35	2425.67	-29.07	54.19	25.59	97.28	17 35 0	1825.7	-27.76	45.63
100.00	9 23 23	3973.77	1.27	154.67	19.43	60.13	10 29 37	3373.8	-2.72	148.15
110.00	18 25 19	2141.77	-32.37	31.99	24.95	101.63	19 1 1	1541.8	-30.43	23.31
110.00	10 9 8	3830.44	4.11	142.03	17.66	56.03	11 12 59	3230.4	-.38	135.82

DIFFERENTIAL CORRECTIONS
TDE .2949 TRA-1.2174 TC3 2.9275 BAU .5671
RDE .2687 RRA -.1233 RC3 .0806 FAU .11402
FDE .0810 FRA 1.0746 FC3-6.8150 BSP 10115
BDE .3989 BRA 1.2236 BC3 2.9286 FSP 1435

MID-COURSE EXECUTION ACCURACY
SGT 2976.3 SGR 453.1 SG3 471.7
RRT .2458 RRF -.2822 RTF -.9089
SGB 3010.6 R23 -.0555 R13 -.9092
SG1 2978.4 SG2 438.9 THA 2.19

ORBIT DETERMINATION ACCURACY
ST 730.9 SR 408.7 SS 331.2
CRT -.4879 CRS .3555 CST .6261
LSA 786.1 MSA 436.7 SSA 46.8
EL1 764.8 EL2 340.9 ALF 160.77

LAUNCH DATE NOV 28 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 454.401 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.891 GAL -.66 AZL 88.92 HCA 142.99 SMA 204.18 ECC .27746 INC 1.0761 V1 30.191
RP 239.26 LAP .65 LOP 208.79 VP 21.433 GAP 12.78 AZP 90.86 TAL 356.94 TAP 139.93 RCA 147.53 APO 260.83 V2 22.959
RC 173.485 GL 9.77 GP 2.66 ZAL 91.47 ZAP 162.93 ETS 169.81 ZAE 157.38 ETE 6.79 ZAC 92.90 ETC 255.83 CLP 163.13

PLANETOCENTRIC CONIC

C3 14.060 VHL 3.750 DLA 17.88 RAL 162.80 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.858 DPA -1.26 RAP 192.51 ECC 1.2314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 0	2726.13	-27.82	76.45	24.40	95.48	16 1 26	2126.1	-26.77	67.94
90.00	8 11 27	4184.93	-.45	171.14	18.75	61.69	9 21 12	3584.9	-4.23	164.50
100.00	16 47 52	2429.86	-29.11	54.50	24.23	97.13	17 28 22	1829.9	-27.81	45.93
100.00	9 22 16	3956.43	.68	153.72	18.13	60.11	10 28 12	3356.4	-3.30	147.19
110.00	18 19 11	2144.19	-32.41	32.17	23.60	101.52	18 54 55	1544.2	-30.48	23.48
110.00	10 7 27	3814.87	3.52	141.21	16.35	55.98	11 11 2	3214.9	-.97	135.00

DIFFERENTIAL CORRECTIONS
TDE .2708 TRA-1.1883 TC3 3.0416 BAU .5720
RDE -.2602 RRA -.1197 RC3 .1002 FAU .11852
FDE .1076 FRA 1.0621 FC3-7.2978 BSP 10394
BDE .3756 BRA 1.1943 BC3 3.0432 FSP 1520

MID-COURSE EXECUTION ACCURACY
SGT 3002.4 SGR 448.0 SG3 495.5
RRT .2776 RRF -.3130 RTF -.9100
SGB 3035.6 R23 -.0573 R13 -.9104
SG1 3005.0 SG2 430.0 THA 2.42

ORBIT DETERMINATION ACCURACY
ST 709.6 SR 401.8 SS 332.9
CRT -.4608 CRS .4219 CST .5919
LSA 759.9 MSA 442.8 SSA 48.1
EL1 740.4 EL2 341.8 ALF 161.24

LAUNCH DATE NOV 28 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 457.729 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.840 GAL -.56 AZL 88.95 HCA 143.94 SMA 203.10 ECC .27356 INC 1.0516 V1 30.191
RP 238.95 LAP .62 LOP 209.74 VP 21.387 GAP 12.26 AZP 90.85 TAL 357.41 TAP 141.34 RCA 147.54 APO 258.66 V2 22.991
RC 175.790 GL 9.67 GP 2.79 ZAL 90.50 ZAP 162.21 ETS 169.80 ZAE 157.93 ETE 7.42 ZAC 93.08 ETC 255.83 CLP 162.42

PLANETOCENTRIC CONIC

C3 13.665 VHL 3.697 DLA 18.16 RAL 161.81 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 6.700 DPA -1.24 RAP 192.78 ECC 1.2249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 10	2730.81	-27.85	76.79	23.04	95.31	15 54 41	2130.8	-26.83	68.28
90.00	8 10 24	4167.76	-1.00	170.18	17.46	61.70	9 19 52	3567.8	-4.78	163.54
100.00	16 41 19	2433.67	-29.14	54.78	22.89	96.98	17 21 53	1833.7	-27.87	46.20
100.00	9 20 57	3940.13	.13	152.82	16.83	60.11	10 26 37	3340.1	-3.85	146.29
110.00	18 13 9	2146.32	-32.44	32.33	22.26	101.43	18 48 56	1546.3	-30.52	23.64
110.00	10 5 36	3800.25	2.96	140.45	15.06	55.93	11 8 56	3200.2	-1.53	134.24

DIFFERENTIAL CORRECTIONS
TDE .2497 TRA-1.1540 TC3 3.1635 BAU .5784
RDE -.2522 RRA -.1162 RC3 .1217 FAU .12317
FDE .1377 FRA 1.0465 FC3-7.8036 BSP 10505
BDE .3549 BRA 1.1599 BC3 3.1659 FSP 1606

MID-COURSE EXECUTION ACCURACY
SGT 3027.2 SGR 443.7 SG3 520.2
RRT .3098 RRF -.3468 RTF -.9122
SGB 3059.5 R23 -.0616 R13 -.9126
SG1 3030.4 SG2 421.4 THA 2.65

ORBIT DETERMINATION ACCURACY
ST 688.2 SR 395.0 SS 336.4
CRT -.4376 CRS .4923 CST .5470
LSA 733.5 MSA 450.0 SSA 49.0
EL1 716.4 EL2 341.2 ALF 161.58

LAUNCH DATE NOV 28 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 461.089 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.792 GAL -.45 AZL 88.97 HCA 144.89 SMA 202.08 ECC .26984 INC 1.0259 V1 30.191
RP 238.63 LAP .59 LOP 210.69 VP 21.344 GAP 11.75 AZP 90.84 TAL 357.87 TAP 142.76 RCA 147.55 APO 256.61 V2 23.024
RC 178.086 GL 9.55 GP 2.92 ZAL 89.53 ZAP 161.46 ETS 169.77 ZAE 158.51 ETE 8.12 ZAC 93.25 ETC 255.82 CLP 161.69

PLANETOCENTRIC CONIC

C3 13.298 VHL 3.647 DLA 18.42 RAL 160.82 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 6.545 DPA -1.21 RAP 193.03 ECC 1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 33	2734.96	-27.88	77.09	21.70	95.16	15 48 8	2135.0	-26.87	68.57
90.00	8 9 7	4151.76	-1.52	169.29	16.18	61.72	9 18 19	3551.8	-5.29	162.64
100.00	16 34 57	2436.99	-29.17	55.02	21.55	96.86	17 15 34	1837.0	-27.91	46.44
100.00	9 19 24	3924.96	-.39	151.99	15.55	60.11	10 24 49	3325.0	-4.36	145.46
110.00	18 7 17	2148.08	-32.46	32.46	20.93	101.36	18 43 5	1548.1	-30.55	23.76
110.00	10 3 33	3786.64	2.44	139.73	13.78	55.89	11 6 40	3186.6	-2.05	133.53

DIFFERENTIAL CORRECTIONS
TDE .2329 TRA-1.1195 TC3 3.2901 BAU .5855
RDE -.2444 RRA -.1128 RC3 .1459 FAU .12819
FDE .1639 FRA 1.0285 FC3-8.3455 BSP 10561
BDE .3376 BRA 1.1251 BC3 3.2934 FSP 1691

MID-COURSE EXECUTION ACCURACY
SGT 3054.3 SGR 440.1 SG3 546.5
RRT .3431 RRF -.3825 RTF -.9145
SGB 3085.9 R23 -.0669 R13 -.9150
SG1 3058.1 SG2 412.9 THA 2.88

ORBIT DETERMINATION ACCURACY
ST 669.6 SR 388.1 SS 339.6
CRT -.4199 CRS .5496 CST .5050
LSA 710.5 MSA 455.0 SSA 50.0
EL1 695.8 EL2 339.0 ALF 161.88

LAUNCH DATE NOV 28 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 464.479 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.745 GAL -.35 AZL 89.00 HCA 145.84 SMA 201.12 ECC .26629 INC .9988 V1 30.191
RP 238.31 LAP .56 LOP 211.64 VP 21.306 GAP 11.24 AZP 90.83 TAL 358.33 TAP 144.17 RCA 147.56 APO 254.67 V2 23.056
RC 180.373 GL 9.40 GP 3.06 ZAL 88.57 ZAP 160.70 ETS 169.73 ZAE 159.12 ETE 8.89 ZAC 93.44 ETC 255.82 CLP 160.94

PLANETOCENTRIC CONIC

C3 12.957 VHL 3.600 DLA 18.65 RAL 159.83 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 6.394 DPA -1.17 RAP 193.27 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 10	2738.45	-27.90	77.34	20.37	95.04	15 41 48	2138.4	-26.91	68.82
90.00	8 7 35	4137.04	-1.99	168.47	14.91	61.75	9 16 32	3537.0	-5.76	161.81
100.00	16 28 48	2439.73	-29.19	55.22	20.22	96.76	17 9 27	1839.7	-27.95	46.64
100.00	9 17 38	3910.99	-.86	151.22	14.28	60.12	10 22 49	3311.0	-4.83	144.69
110.00	18 1 36	2149.38	-32.48	32.56	19.61	101.30	18 37 25	1549.4	-30.58	23.86
110.00	10 1 19	3774.10	1.96	139.08	12.52	55.87	11 4 13	3174.1	-2.53	132.88

DIFFERENTIAL CORRECTIONS
TDE .2188 TRA-1.0834 TC3 3.4244 BAU .5939
RDE -.2369 RRA -.1095 RC3 .1729 FAU .13356
FDE .1897 FRA 1.0065 FC3-8.9242 BSP 10633
BDE .3225 BRA 1.0889 BC3 3.4288 FSP 1786

MID-COURSE EXECUTION ACCURACY
SGT 3084.1 SGR 437.7 SG3 574.6
RRT .3781 RRF -.4207 RTF -.9172
SGB 3115.0 R23 -.0733 R13 -.9177
SG1 3088.6 SG2 404.6 THA 3.13

ORBIT DETERMINATION ACCURACY
ST 651.8 SR 381.2 SS 343.1
CRT -.4062 CRS .6024 CST .4597
LSA 688.6 MSA 459.5 SSA 51.0
EL1 676.4 EL2 335.7 ALF 162.09

LAUNCH DATE NOV 28 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 467.897 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.700 GAL -.25 AZL 89.03 HCA 146.80 SMA 200.20 ECC .26292 INC .9701 V1 30.191
RP 237.98 LAP .53 LOP 212.60 VP 21.271 GAP 10.75 AZP 90.81 TAL 358.78 TAP 145.58 RCA 147.57 APO 252.84 V2 23.089
RC 182.651 GL 9.24 GP 3.21 ZAL 87.62 ZAP 159.92 ETS 169.67 ZAE 159.76 ETE 9.76 ZAC 93.63 ETC 255.81 CLP 160.17

PLANETOCENTRIC CONIC

C3 12.640 VHL 3.555 DLA 18.85 RAL 158.83 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 6.247 DPA -1.11 RAP 193.51 ECC 1.2080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 3	2741.19	-27.92	77.54	19.04	94.94	15 35 44	2141.2	-26.94	69.01
90.00	8 5 46	4123.66	-2.42	167.72	13.65	61.78	9 14 29	3523.7	-6.18	161.05
100.00	16 22 53	2441.80	-29.20	55.37	18.89	96.68	17 3 35	1841.8	-27.97	46.78
100.00	9 15 36	3898.29	-1.29	150.53	13.02	60.13	10 20 34	3298.3	-5.26	143.98
110.00	17 56 6	2150.17	-32.49	32.62	18.29	101.27	18 31 56	1550.2	-30.59	23.91
110.00	9 58 53	3762.68	1.52	138.48	11.26	55.85	11 1 35	3162.7	-2.97	132.28

DIFFERENTIAL CORRECTIONS
TDE .2115 TRA-1.0456 TC3 3.5518 BAU .6012
RDE -.2297 RRA -.1064 RC3 .2022 FAU .13887
FDE .2130 FRA .9845 FC3-9.5113 BSP 10615
BDE .3122 BRA 1.0510 BC3 3.5575 FSP 1885

MID-COURSE EXECUTION ACCURACY
SGT 3108.8 SGR 436.5 SG3 602.7
RRT .4122 RRF -.4607 RTF -.9198
SGB 3139.3 R23 -.0826 R13 -.9204
SG1 3114.1 SG2 397.0 THA 3.37

ORBIT DETERMINATION ACCURACY
ST 638.1 SR 374.2 SS 346.4
CRT -.4055 CRS .6465 CST .4079
LSA 671.3 MSA 462.5 SSA 51.6
EL1 662.3 EL2 329.6 ALF 162.03

LAUNCH DATE NOV 28 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 471.341 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.658 GAL -.16 AZL 89.06 HCA 147.75 SMA 199.34 ECC .25970 INC .9400 V1 30.191
RP 237.65 LAP .50 LOP 213.56 VP 21.240 GAP 10.25 AZP 90.80 TAL 359.23 TAP 146.98 RCA 147.57 APO 251.11 V2 23.123
RC 184.919 GL 9.04 GP 3.38 ZAL 86.69 ZAP 159.12 ETS 169.61 ZAE 160.42 ETE 10.73 ZAC 93.82 ETC 255.81 CLP 159.38

PLANETOCENTRIC CONIC

C3 12.345 VHL 3.514 DLA 19.02 RAL 157.84 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 6.104 DPA -1.03 RAP 193.73 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 16	2742.99	-27.93	77.67	17.73	94.88	15 29 59	2143.0	-26.96	69.14
90.00	8 3 38	4111.81	-2.81	167.06	12.41	61.81	9 12 10	3511.8	-6.55	160.39
100.00	16 17 18	2443.01	-29.21	55.46	17.59	96.63	16 58 1	1843.0	-27.99	46.87
100.00	9 13 17	3887.02	-1.68	149.91	11.78	60.15	10 18 4	3287.0	-5.64	143.36
110.00	17 50 51	2150.29	-32.49	32.63	16.99	101.26	18 26 41	1550.3	-30.60	23.92
110.00	9 56 13	3752.51	1.14	137.95	10.02	55.83	10 58 46	3152.5	-3.35	131.75

DIFFERENTIAL CORRECTIONS
TDE .1785 TRA-1.0265 TC3 3.6209 BAU .5989
RDE -.2230 RRA -.1034 RC3 .2349 FAU .14436
FDE .2519 FRA .9682 FC-10.1233 BSP 11033
BDE .2857 BRA 1.0317 BC3 3.6285 FSP 2004

MID-COURSE EXECUTION ACCURACY
SGT 3113.5 SGR 437.4 SG3 632.3
RRT .4625 RRF -.5065 RTF -.9189
SGB 3144.1 R23 -.0845 R13 -.9196
SG1 3120.2 SG2 387.0 THA 3.78

ORBIT DETERMINATION ACCURACY
ST 610.5 SR 367.7 SS 359.7
CRT -.3434 CRS .7069 CST .3910
LSA 639.3 MSA 475.1 SSA 53.0
EL1 628.9 EL2 335.2 ALF 163.51

LAUNCH DATE NOV 28 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 474.810 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.617 GAL -.07 AZL 89.09 HCA 148.72 SMA 198.52 ECC .25665 INC .9082 V1 30.191
RP 237.31 LAP .47 LOP 214.52 VP 21.213 GAP 9.77 AZP 90.78 TAL 359.67 TAP 148.38 RCA 147.57 APO 249.48 V2 23.157
RC 187.176 GL 8.82 GP 3.55 ZAL 85.77 ZAP 158.30 ETS 169.53 ZAE 161.10 ETE 11.82 ZAC 94.03 ETC 255.80 CLP 158.58

PLANETOCENTRIC CONIC

C3 12.071 VHL 3.474 DLA 19.16 RAL 156.85 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 5.963 DPA -.93 RAP 193.95 ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 49	2743.80	-27.93	77.73	16.43	94.85	15 24 33	2143.8	-26.97	69.20
90.00	8 1 10	4101.50	-3.14	166.48	11.17	61.84	9 9 32	3501.5	-6.88	159.80
100.00	16 12 0	2443.34	-29.22	55.48	16.29	96.62	16 52 43	1843.3	-27.99	46.89
100.00	9 10 41	3877.19	-2.01	149.37	10.54	60.17	10 15 18	3277.2	-5.96	142.81
110.00	17 45 51	2149.72	-32.48	32.59	15.69	101.29	18 21 41	1549.7	-30.59	23.88
110.00	9 53 19	3743.57	.79	137.49	8.79	55.82	10 55 43	3143.6	-3.69	131.28

DIFFERENTIAL CORRECTIONS
TDE .1550 TRA -.9908 TC3 3.7593 BAU .6083
RDE -.2166 RRA -.1001 RC3 .2720 FAU .15076
FDE .2872 FRA .9341 FC-10.8123 BSP 11306
BDE .2664 BRA .9959 BC3 3.7691 FSP 2135

MID-COURSE EXECUTION ACCURACY
SGT 3143.5 SGR 440.3 SG3 665.5
RRT .5091 RRF -.5526 RTF -.9221
SGB 3174.2 R23 -.0886 R13 -.9229
SG1 3151.6 SG2 378.0 THA 4.14

ORBIT DETERMINATION ACCURACY
ST 583.8 SR 361.1 SS 369.5
CRT -.3021 CRS .7572 CST .3594
LSA 609.2 MSA 483.5 SSA 54.1
EL1 598.8 EL2 335.6 ALF 164.41

LAUNCH DATE NOV 28 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 478.307 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.578 GAL .02 AZL 89.13 HCA 149.68 SMA 197.75 ECC .25374 INC .8744 V1 30.191
RP 236.98 LAP .44 LOP 215.48 VP 21.188 GAP 9.29 AZP 90.75 TAL .10 TAP 149.78 RCA 147.57 APO 247.93 V2 23.191
RC 189.421 GL 8.57 GP 3.74 ZAL 84.86 ZAP 157.46 ETS 169.44 ZAE 161.81 ETE 13.06 ZAC 94.24 ETC 255.80 CLP 157.75

PLANETOCENTRIC CONIC

C3 11.816 VHL 3.437 DLA 19.26 RAL 155.86 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 5.827 DPA -.82 RAP 194.15 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 46	2743.47	-27.93	77.71	15.14	94.86	15 19 30	2143.5	-26.96	69.18
90.00	7 58 21	4092.84	-3.41	166.00	9.94	61.87	9 6 34	3492.8	-7.15	159.31
100.00	16 7 3	2442.65	-29.21	55.43	14.99	96.65	16 47 46	1842.7	-27.98	46.85
100.00	9 7 45	3868.90	-2.29	148.91	9.32	60.19	10 12 14	3268.9	-6.24	142.35
110.00	17 41 7	2148.36	-32.46	32.48	14.39	101.35	18 16 56	1548.4	-30.56	23.78
110.00	9 50 10	3735.96	.50	137.09	7.57	55.82	10 52 26	3136.0	-3.98	130.88

DIFFERENTIAL CORRECTIONS
TDE .1524 TRA -.6955 TC3 3.9563 BAU .6270
RDE -.2101 RRA -.0889 RC3 .3142 FAU .15811
FDE .3084 FRA .6095 FC-11.5839 BSP 9793
BDE .2596 BRA .7012 BC3 3.9688 FSP 2095

MID-COURSE EXECUTION ACCURACY
SGT 2995.1 SGR 440.4 SG3 695.8
RRT .5240 RRF -.5834 RTF -.9475
SGB 3027.3 R23 -.0928 R13 -.9484
SG1 3004.1 SG2 374.0 THA 4.48

ORBIT DETERMINATION ACCURACY
ST 454.9 SR 353.5 SS 328.4
CRT -.4423 CRS .8534 CST .0265
LSA 516.1 MSA 412.3 SSA 58.4
EL1 498.0 EL2 289.6 ALF 149.98

LAUNCH DATE NOV 28 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 481.824 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.541 GAL .10 AZL 89.16 HCA 150.65 SMA 197.02 ECC .25097 INC .8385 V1 30.191
RP 236.64 LAP .41 LOP 216.45 VP 21.168 GAP 8.82 AZP 90.73 TAL .52 TAP 151.17 RCA 147.57 APO 246.46 V2 23.226
RC 191.655 GL 8.30 GP 3.94 ZAL 83.97 ZAP 156.59 ETS 169.33 ZAE 162.54 ETE 14.48 ZAC 94.47 ETC 255.79 CLP 156.91

PLANETOCENTRIC CONIC

C3 11.579 VHL 3.403 DLA 19.33 RAL 154.88 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 5.693 DPA -.68 RAP 194.34 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 8	2741.88	-27.92	77.59	13.86	94.92	15 14 50	2141.9	-26.95	69.06
90.00	7 55 8	4085.96	-3.64	165.61	8.72	61.90	9 3 14	3486.0	-7.37	158.92
100.00	16 2 30	2440.83	-29.20	55.30	13.71	96.71	16 43 11	1840.8	-27.96	46.71
100.00	9 4 28	3862.24	-2.51	148.55	8.10	60.20	10 8 50	3262.2	-6.46	141.98
110.00	17 36 42	2146.10	-32.43	32.31	13.11	101.44	18 12 28	1546.1	-30.52	23.62
110.00	9 46 45	3729.74	.27	136.77	6.36	55.82	10 48 54	3129.7	-4.22	130.55

DIFFERENTIAL CORRECTIONS
TDE .1627 TRA -.8894 TC3 4.0023 BAU .6220
RDE -.2030 RRA -.0927 RC3 .3578 FAU .16413
FDE .3030 FRA .8268 FC-12.2714 BSP 10392
BDE .2602 BRA .8942 BC3 4.0182 FSP 2262

MID-COURSE EXECUTION ACCURACY
SGT 3164.2 SGR 451.1 SG3 734.1
RRT .5828 RRF -.6397 RTF -.9280
SGB 3196.2 R23 -.1126 R13 -.9292
SG1 3175.3 SG2 365.3 THA 4.81

ORBIT DETERMINATION ACCURACY
ST 555.3 SR 345.5 SS 354.4
CRT -.3620 CRS .7963 CST .2284
LSA 576.3 MSA 466.9 SSA 57.1
EL1 575.5 EL2 310.8 ALF 161.84

LAUNCH DATE NOV 28 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 485.362 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.506 GAL .19 AZL 89.20 HCA 151.62 SMA 196.33 ECC .24834 INC .8004 V1 30.191
RP 236.29 LAP .38 LOP 217.42 VP 21.150 GAP 8.35 AZP 90.70 TAL .93 TAP 152.55 RCA 147.57 APO 245.08 V2 23.261
RC 193.877 GL 7.98 GP 4.16 ZAL 83.09 ZAP 155.70 ETS 169.22 ZAE 163.28 ETE 16.10 ZAC 94.70 ETC 255.79 CLP 156.04

PLANETOCENTRIC CONIC

C3 11.359 VHL 3.370 DLA 19.35 RAL 153.90 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 5.563 DPA -.52 RAP 194.52 ECC 1.1869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 59	2738.84	-27.90	77.37	12.58	95.02	15 10 38	2138.8	-26.91	68.85
90.00	7 51 30	4081.00	-3.79	165.34	7.51	61.92	8 59 31	3481.0	-7.52	158.64
100.00	15 58 22	2437.71	-29.17	55.07	12.43	96.83	16 39 0	1837.7	-27.92	46.49
100.00	9 0 48	3857.37	-2.68	148.28	6.89	60.22	10 5 5	3257.4	-6.62	141.71
110.00	17 32 38	2142.82	-32.39	32.07	11.83	101.58	18 8 20	1542.8	-30.45	23.39
110.00	9 43 2	3725.02	.08	136.52	5.17	55.82	10 45 7	3125.0	-4.40	130.31

DIFFERENTIAL CORRECTIONS
TDE .1518 TRA -.8745 TC3 4.0814 BAU .6228
RDE -.1969 RRA -.0900 RC3 .4072 FAU .17103
FDE .3232 FRA .8057 FC-13.0358 BSP 10961
BDE .2486 BRA .8792 BC3 4.1016 FSP 2443

MID-COURSE EXECUTION ACCURACY
SGT 3180.9 SGR 462.2 SG3 770.9
RRT .6287 RRF -.6864 RTF -.9273
SGB 3214.3 R23 -.1234 R13 -.9286
SG1 3194.3 SG2 357.9 THA 5.29

ORBIT DETERMINATION ACCURACY
ST 544.8 SR 338.3 SS 360.0
CRT -.3400 CRS .8179 CST .2104
LSA 563.1 MSA 469.6 SSA 58.4
EL1 562.4 EL2 308.2 ALF 162.75

LAUNCH DATE NOV 28 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 488.923 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.472 GAL .26 AZL 89.24 HCA 152.59 SMA 195.67 ECC .24584 INC .7597 V1 30.191
RP 235.94 LAP .35 LOP 218.39 VP 21.135 GAP 7.89 AZP 90.67 TAL 1.34 TAP 153.93 RCA 147.57 APO 243.77 V2 23.297
RC 196.086 GL 7.64 GP 4.40 ZAL 82.24 ZAP 154.78 ETS 169.08 ZAE 164.04 ETE 17.98 ZAC 94.95 ETC 255.78 CLP 155.15

PLANETOCENTRIC CONIC

C3 11.153 VHL 3.340 DLA 19.33 RAL 152.93 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 5.437 DPA -.34 RAP 194.69 ECC 1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 19	2734.29	-27.88	77.04	11.31	95.19	15 6 54	2134.3	-26.87	68.52
90.00	7 47 25	4078.00	-3.89	165.17	6.31	61.93	8 55 23	3478.0	-7.62	158.47
100.00	15 54 41	2433.22	-29.13	54.74	11.16	97.00	16 35 14	1833.2	-27.86	46.17
100.00	8 56 44	3854.31	-2.78	148.11	5.69	60.23	10 0 58	3254.3	-6.73	141.54
110.00	17 28 54	2138.46	-32.33	31.74	10.55	101.77	18 4 32	1538.5	-30.37	23.07
110.00	9 39 1	3721.83	-.04	136.35	3.98	55.82	10 41 3	3121.8	-4.52	130.14

DIFFERENTIAL CORRECTIONS
TDE .1431 TRA -.8357 TC3 4.1730 BAU .6260
RDE -.1910 RRA -.0866 RC3 .4613 FAU .17814
FDE .3465 FRA .7564 FC-13.8278 BSP 10874
BDE .2387 BRA .8402 BC3 4.1984 FSP 2568

MID-COURSE EXECUTION ACCURACY
SGT 3184.0 SGR 476.6 SG3 808.4
RRT .6706 RRF -.7304 RTF -.9293
SGB 3219.5 R23 -.1342 R13 -.9309
SG1 3200.2 SG2 351.8 THA 5.80

ORBIT DETERMINATION ACCURACY
ST 524.4 SR 331.3 SS 364.0
CRT -.3347 CRS .8449 CST .1608
LSA 541.7 MSA 469.3 SSA 59.5
EL1 541.7 EL2 302.2 ALF 162.44

LAUNCH DATE NOV 28 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 492.503 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.439 GAL .34 AZL 89.28 HCA 153.56 SMA 195.05 ECC .24346 INC .7158 V1 30.191
RP 235.59 LAP .32 LOP 219.36 VP 21.124 GAP 7.44 AZP 90.64 TAL 1.73 TAP 155.30 RCA 147.56 APO 242.53 V2 23.333
RC 198.280 GL 7.25 GP 4.66 ZAL 81.41 ZAP 153.84 ETS 168.94 ZAE 164.80 ETE 20.15 ZAC 95.22 ETC 255.77 CLP 154.23

PLANETOCENTRIC CONIC

C3 10.962 VHL 3.311 DLA 19.27 RAL 151.97 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 5.313 DPA -.13 RAP 194.86 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 13	2728.00	-27.84	76.59	10.05	95.41	15 3 41	2128.0	-26.80	68.08
90.00	7 42 51	4077.18	-3.92	165.12	5.11	61.93	8 50 48	3477.2	-7.64	158.42
100.00	15 51 30	2427.17	-29.08	54.30	9.90	97.23	16 31 58	1827.2	-27.78	45.74
100.00	8 52 14	3853.24	-2.82	148.05	4.50	60.23	9 56 28	3253.2	-6.76	141.48
110.00	17 25 35	2132.86	-32.25	31.32	9.27	102.00	18 1 8	1532.9	-30.26	22.67
110.00	9 34 40	3720.32	-.10	136.27	2.80	55.82	10 36 40	3120.3	-4.58	130.06

DIFFERENTIAL CORRECTIONS
TDE .1319 TRA -.8109 TC3 4.2106 BAU .6218
RDE -.1851 RRA -.0833 RC3 .5203 FAU .18519
FDE .3631 FRA .7124 FC-14.6259 BSP 10960
BDE .2273 BRA .8151 BC3 4.2426 FSP 2704

MID-COURSE EXECUTION ACCURACY
SGT 3167.9 SGR 494.6 SG3 846.1
RRT .7112 RRF -.7716 RTF -.9284
SGB 3206.3 R23 -.1471 R13 -.9303
SG1 3187.6 SG2 345.6 THA 6.41

ORBIT DETERMINATION ACCURACY
ST 507.9 SR 323.8 SS 365.2
CRT -.3153 CRS .8629 CST .1376
LSA 523.7 MSA 467.1 SSA 61.2
EL1 523.4 EL2 298.2 ALF 162.95

LAUNCH DATE NOV 28 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 496.103 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.409 GAL .41 AZL 89.33 HCA 154.54 SMA 194.46 ECC .24120 INC .6692 V1 30.191
RP 235.24 LAP .29 LOP 220.34 VP 21.115 GAP 7.00 AZP 90.60 TAL 2.12 TAP 156.66 RCA 147.56 APO 241.36 V2 23.369
RC 200.460 GL 6.82 GP 4.94 ZAL 80.60 ZAP 152.87 ETS 168.77 ZAE 165.57 ETE 22.70 ZAC 95.50 ETC 255.77 CLP 153.29

PLANETOCENTRIC CONIC

C3 10.784 VHL 3.284 DLA 19.15 RAL 151.01 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.193 DPA .12 RAP 195.00 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 41	2719.88	-27.78	76.00	8.80	95.70	15 1 1	2119.9	-26.70	67.50
90.00	7 37 45	4078.60	-3.87	165.20	3.92	61.93	8 45 44	3478.6	-7.60	158.50
100.00	15 48 51	2419.47	-29.02	53.74	8.63	97.52	16 29 10	1819.5	-27.67	45.19
100.00	8 47 17	3854.24	-2.78	148.11	3.32	60.23	9 51 31	3254.2	-6.73	141.54
110.00	17 22 40	2125.93	-32.15	30.81	8.00	102.29	17 58 6	1525.9	-30.12	22.18
110.00	9 29 57	3720.54	-.09	136.29	1.63	55.82	10 31 57	3120.5	-4.57	130.07

DIFFERENTIAL CORRECTIONS
TDE .1271 TRA -.7853 TC3 4.2821 BAU .6231
RDE -.1792 RRA -.0801 RC3 .5872 FAU .19311
FDE .3737 FRA .6687 FC-15.5032 BSP 11009
BDE .2197 BRA .7894 BC3 4.3222 FSP 2853

MID-COURSE EXECUTION ACCURACY
SGT 3172.1 SGR 518.1 SG3 888.0
RRT .7483 RRF -.8101 RTF -.9289
SGB 3214.1 R23 -.1612 R13 -.9311
SG1 3196.0 SG2 341.1 THA 7.05

ORBIT DETERMINATION ACCURACY
ST 495.6 SR 316.1 SS 363.3
CRT -.3134 CRS .8747 CST .1055
LSA 512.2 MSA 459.6 SSA 62.9
EL1 510.5 EL2 291.4 ALF 163.02

LAUNCH DATE NOV 28 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 499.722 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.379 GAL .48 AZL 89.38 HCA 155.52 SMA 193.90 ECC .23905 INC .6187 V1 30.191
RP 234.89 LAP .26 LOP 221.32 VP 21.109 GAP 6.56 AZP 90.56 TAL 2.49 TAP 158.01 RCA 147.55 APO 240.25 V2 23.405
RC 202.623 GL 6.35 GP 5.25 ZAL 79.81 ZAP 151.87 ETS 168.59 ZAE 166.32 ETE 25.68 ZAC 95.80 ETC 255.76 CLP 152.32

PLANETOCENTRIC CONIC

C3 10.618 VHL 3.258 DLA 18.98 RAL 150.07 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.077 DPA .39 RAP 195.14 ECC 1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 46	2709.76	-27.71	75.27	7.54	96.06	14 58 56	2109.8	-26.58	66.78
90.00	7 32 7	4082.41	-3.75	165.41	2.74	61.91	8 40 9	3482.4	-7.48	158.72
100.00	15 46 45	2409.94	-28.93	53.04	7.37	97.87	16 26 55	1809.9	-27.54	44.52
100.00	8 41 49	3857.45	-2.68	148.28	2.14	60.22	9 46 7	3257.5	-6.62	141.72
110.00	17 20 12	2117.53	-32.03	30.18	6.72	102.64	17 55 30	1517.5	-29.96	21.58
110.00	9 24 51	3722.63	-.01	136.39	.47	55.82	10 26 54	3122.6	-4.49	130.18

DIFFERENTIAL CORRECTIONS
TDE .1229 TRA -.7569 TC3 4.3377 BAU .6228
RDE -.1733 RRA -.0764 RC3 .6608 FAU .20120
FDE .3808 FRA .6140 FC-16.4053 BSP 11035
BDE .2125 BRA .7608 BC3 4.3878 FSP 3009

MID-COURSE EXECUTION ACCURACY
SGT 3165.3 SGR 546.4 SG3 930.8
RRT .7815 RRF -.8444 RTF -.9292
SGB 3212.1 R23 -.1761 R13 -.9319
SG1 3194.3 SG2 337.8 THA 7.77

ORBIT DETERMINATION ACCURACY
ST 481.8 SR 308.0 SS 358.6
CRT -.3151 CRS .8847 CST .0689
LSA 501.1 MSA 447.6 SSA 64.9
EL1 496.6 EL2 283.7 ALF 162.87

LAUNCH DATE NOV 28 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 503.358 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.351 GAL .55 AZL 89.44 HCA 156.51 SMA 193.37 ECC .23702 INC .5635 V1 30.191
RP 234.53 LAP .22 LOP 222.31 VP 21.106 GAP 6.13 AZP 90.52 TAL 2.85 TAP 159.36 RCA 147.54 APO 239.20 V2 23.442
RC 204.770 GL 5.82 GP 5.58 ZAL 79.04 ZAP 150.83 ETS 168.40 ZAE 167.05 ETE 29.19 ZAC 96.13 ETC 255.75 CLP 151.33

PLANETOCENTRIC CONIC

C3 10.463 VHL 3.235 DLA 18.74 RAL 149.13 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.963 DPA .70 RAP 195.27 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 31	2697.46	-27.62	74.38	6.29	96.50	14 57 28	2097.5	-26.43	65.91
90.00	7 25 52	4088.76	-3.55	165.77	1.55	61.89	8 34 1	3488.8	-7.28	159.08
100.00	15 45 14	2398.44	-28.82	52.21	6.11	98.30	16 25 13	1798.4	-27.37	43.70
100.00	8 35 50	3863.02	-2.49	148.59	.97	60.20	9 40 13	3263.0	-6.44	142.03
110.00	17 18 14	2107.51	-31.88	29.44	5.44	103.06	17 53 21	1507.5	-29.75	20.88
110.00	9 19 20	3726.71	.15	136.61	359.32	55.82	10 21 27	3126.7	-4.34	130.39

DIFFERENTIAL CORRECTIONS
TDE .1269 TRA -.7252 TC3 4.3889 BAU .6227
RDE -.1668 RRA -.0722 RC3 .7432 FAU .20981
FDE .3680 FRA .5467 FC-17.3597 BSP 11053
BDE .2095 BRA .7288 BC3 4.4514 FSP 3166

MID-COURSE EXECUTION ACCURACY
SGT 3154.8 SGR 580.2 SG3 976.0
RRT .8096 RRF -.8743 RTF -.9296
SGB 3207.7 R23 -.1924 R13 -.9328
SG1 3189.9 SG2 336.8 THA 8.57

ORBIT DETERMINATION ACCURACY
ST 472.6 SR 298.5 SS 341.1
CRT -.3450 CRS .8839 CST .0187
LSA 496.3 MSA 421.7 SSA 68.2
EL1 489.0 EL2 270.8 ALF 162.03

LAUNCH DATE NOV 28 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 507.012 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.324 GAL .61 AZL 89.50 HCA 157.49 SMA 192.87 ECC .23508 INC .5039 V1 30.191
RP 234.17 LAP .19 LOP 223.29 VP 21.105 GAP 5.70 AZP 90.47 TAL 3.20 TAP 160.70 RCA 147.53 APO 238.21 V2 23.479
RC 206.900 GL 5.24 GP 5.95 ZAL 78.30 ZAP 149.77 ETS 168.18 ZAE 167.74 ETE 33.34 ZAC 96.48 ETC 255.74 CLP 150.31

PLANETOCENTRIC CONIC

C3 10.319 VHL 3.212 DLA 18.44 RAL 148.19 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 4.853 DPA 1.05 RAP 195.39 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 57	2682.81	-27.50	73.32	5.03	97.02	14 56 40	2082.8	-26.25	64.88
90.00	7 19 0	4097.83	-3.25	166.28	.38	61.86	8 27 18	3497.8	-6.99	159.59
100.00	15 44 22	2384.77	-28.68	51.21	4.84	98.81	16 24 7	1784.8	-27.17	42.74
100.00	8 29 16	3871.10	-2.21	149.03	359.80	60.18	9 33 47	3271.1	-6.17	142.48
110.00	17 16 46	2095.72	-31.69	28.57	4.16	103.54	17 51 41	1495.7	-29.50	20.05
110.00	9 13 22	3732.92	.39	136.93	358.17	55.82	10 15 35	3132.9	-4.10	130.72

DIFFERENTIAL CORRECTIONS
TDE .1267 TRA -.6961 TC3 4.4224 BAU .6209
RDE -.1604 RRA -.0678 RC3 .8343 FAU .21858
FDE .3596 FRA .4768 FC-18.3370 BSP 11001
BDE .2044 BRA .6994 BC3 4.5004 FSP 3326

MID-COURSE EXECUTION ACCURACY
SGT 3136.3 SGR 620.8 SG3 1022.3
RRT .8346 RRF -.9001 RTF -.9297
SGB 3197.2 R23 -.2090 R13 -.9335
SG1 3179.3 SG2 337.3 THA 9.49

ORBIT DETERMINATION ACCURACY
ST 460.9 SR 289.1 SS 327.1
CRT -.3622 CRS .8844 CST -.0255
LSA 487.9 MSA 399.9 SSA 71.5
EL1 478.1 EL2 259.9 ALF 161.58

LAUNCH DATE NOV 28 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 510.682 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.299 GAL .67 AZL 89.56 HCA 158.48 SMA 192.40 ECC .23325 INC .4396 V1 30.191
RP 233.80 LAP .16 LOP 224.28 VP 21.106 GAP 5.28 AZP 90.41 TAL 3.54 TAP 162.03 RCA 147.52 APO 237.27 V2 23.517
RC 209.011 GL 4.59 GP 6.36 ZAL 77.59 ZAP 148.67 ETS 167.94 ZAE 168.37 ETE 38.21 ZAC 96.86 ETC 255.73 CLP 149.25

PLANETOCENTRIC CONIC

C3 10.186 VHL 3.192 DLA 18.07 RAL 147.27 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.747 DPA 1.45 RAP 195.50 ECC 1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 7	2665.61	-27.35	72.09	3.76	97.62	14 56 33	2065.6	-26.02	63.67
90.00	7 11 26	4109.80	-2.87	166.95	359.20	61.82	8 19 56	3509.8	-6.62	160.27
100.00	15 44 11	2368.75	-28.51	50.05	3.57	99.39	16 23 39	1768.8	-26.92	41.61
100.00	8 22 4	3881.88	-1.85	149.63	358.63	60.16	9 26 46	3281.9	-5.81	143.08
110.00	17 15 50	2081.96	-31.47	27.56	2.86	104.10	17 50 32	1482.0	-29.21	19.08
110.00	9 6 54	3741.44	.71	137.38	357.03	55.82	10 9 15	3141.4	-3.78	131.17

DIFFERENTIAL CORRECTIONS
TDE .1322 TRA -.6713 TC3 4.4392 BAU .6178
RDE -.1534 RRA -.0634 RC3 .9350 FAU .22750
FDE .3346 FRA .4090 FC-19.3362 BSP 10978
BDE .2025 BRA .6743 BC3 4.5366 FSP 3499

MID-COURSE EXECUTION ACCURACY
SGT 3113.3 SGR 668.1 SG3 1069.7
RRT .8546 RRF -.9217 RTF -.9290
SGB 3184.2 R23 -.2274 R13 -.9338
SG1 3165.8 SG2 341.2 THA 10.52

ORBIT DETERMINATION ACCURACY
ST 456.3 SR 278.3 SS 304.6
CRT -.3952 CRS .8726 CST -.0677
LSA 484.2 MSA 371.8 SSA 75.8
EL1 474.6 EL2 245.8 ALF 161.24

LAUNCH DATE NOV 28 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 514.368 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.275 GAL .73 AZL 89.63 HCA 159.48 SMA 191.95 ECC .23151 INC .3688 V1 30.191
RP 233.44 LAP .13 LOP 225.28 VP 21.110 GAP 4.87 AZP 90.35 TAL 3.87 TAP 163.35 RCA 147.51 APO 236.39 V2 23.555
RC 211.104 GL 3.87 GP 6.81 ZAL 76.90 ZAP 147.53 ETS 167.67 ZAE 168.90 ETE 43.89 ZAC 97.28 ETC 255.72 CLP 148.17

PLANETOCENTRIC CONIC

C3 10.062 VHL 3.172 DLA 17.62 RAL 146.35 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.644 DPA 1.89 RAP 195.61 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 4	2645.63	-27.17	70.65	2.49	98.31	14 57 10	2045.6	-25.74	62.28
90.00	7 3 8	4124.89	-2.38	167.79	358.03	61.78	8 11 53	3524.9	-6.14	161.12
100.00	15 44 42	2350.15	-28.29	48.71	2.28	100.07	16 23 52	1750.2	-26.61	40.31
100.00	8 14 12	3895.59	-1.38	150.38	357.47	60.14	9 19 7	3295.6	-5.35	143.83
110.00	17 15 30	2066.04	-31.20	26.40	1.55	104.74	17 49 56	1466.0	-28.86	17.98
110.00	8 59 52	3752.48	1.13	137.95	355.89	55.83	10 2 25	3152.5	-3.36	131.74

DIFFERENTIAL CORRECTIONS
TDE .1375 TRA -.6426 TC3 4.4520 BAU .6153
RDE -.1459 RRA -.0579 RC3 1.0482 FAU .23689
FDE .3013 FRA .3247 FC-20.3816 BSP 10923
BDE .2005 BRA .6452 BC3 4.5737 FSP 3674

MID-COURSE EXECUTION ACCURACY
SGT 3085.8 SGR 723.7 SG3 1119.4
RRT .8716 RRF -.9396 RTF -.9288
SGB 3169.5 R23 -.2439 R13 -.9346
SG1 3150.4 SG2 347.5 THA 11.70

ORBIT DETERMINATION ACCURACY
ST 449.8 SR 266.4 SS 278.2
CRT -.4318 CRS .8515 CST -.1117
LSA 478.4 MSA 339.4 SSA 81.6
EL1 469.3 EL2 230.3 ALF 160.89

LAUNCH DATE NOV 28 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 518.070 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.252 GAL .78 AZL 89.71 HCA 160.47 SMA 191.52 ECC .22986 INC .2905 V1 30.191
RP 233.07 LAP .10 LOP 226.27 VP 21.117 GAP 4.47 AZP 90.27 TAL 4.18 TAP 164.65 RCA 147.50 APO 235.55 V2 23.593
RC 213.179 GL 3.07 GP 7.31 ZAL 76.24 ZAP 146.35 ETS 167.38 ZAE 169.30 ETE 50.40 ZAC 97.74 ETC 255.70 CLP 147.06

PLANETOCENTRIC CONIC

C3 9.948 VHL 3.154 DLA 17.07 RAL 145.43 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.545 DPA 2.39 RAP 195.71 ECC 1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 51	2622.61	-26.93	69.01	1.19	99.11	14 58 34	2022.6	-25.39	60.68
90.00	6 54 2	4143.37	-1.79	168.82	356.85	61.73	8 3 5	3543.4	-5.55	162.17
100.00	15 45 59	2328.72	-28.03	47.17	.98	100.84	16 24 48	1728.7	-26.25	38.83
100.00	8 5 35	3912.49	-.81	151.31	356.31	60.12	9 10 47	3312.5	-4.78	144.77
110.00	17 15 48	2047.69	-30.87	25.07	.21	105.46	17 49 56	1447.7	-28.44	16.71
110.00	8 52 15	3766.28	1.66	138.67	354.76	55.85	9 55 1	3166.3	-2.83	132.47

DIFFERENTIAL CORRECTIONS
TDE .1474 TRA -.6157 TC3 4.4531 BAU .6125
RDE -.1373 RRA -.0518 RC3 1.1752 FAU .24660
FDE .2481 FRA .2339 FC-21.4604 BSP 10844
BDE .2014 BRA .6179 BC3 4.6056 FSP 3851

MID-COURSE EXECUTION ACCURACY
SGT 3054.8 SGR 788.3 SG3 1170.9
RRT .8849 RRF -.9540 RTF -.9282
SGB 3154.8 R23 -.2600 R13 -.9354
SG1 3134.5 SG2 357.9 THA 13.04

ORBIT DETERMINATION ACCURACY
ST 449.4 SR 252.1 SS 243.9
CRT -.4812 CRS .8005 CST -.1419
LSA 476.3 MSA 300.0 SSA 90.0
EL1 469.9 EL2 211.3 ALF 160.89

LAUNCH DATE NOV 28 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 521.787 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.230 GAL .83 AZL 89.80 HCA 161.47 SMA 191.12 ECC .22830 INC .2029 V1 30.191
RP 232.70 LAP .07 LOP 227.27 VP 21.125 GAP 4.07 AZP 90.19 TAL 4.48 TAP 165.95 RCA 147.49 APO 234.76 V2 23.631
RC 215.236 GL 2.17 GP 7.86 ZAL 75.61 ZAP 145.12 ETS 167.06 ZAE 169.53 ETE 57.67 ZAC 98.25 ETC 255.69 CLP 145.91

PLANETOCENTRIC CONIC

C3 9.844 VHL 3.138 DLA 16.42 RAL 144.51 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.449 DPA 2.96 RAP 195.80 ECC 1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 31	2596.25	-26.63	67.14	359.88	100.00	15 0 47	1996.3	-24.98	58.86
90.00	6 44 2	4165.55	-1.07	170.06	355.68	61.70	7 53 28	3565.6	-4.85	163.41
100.00	15 48 6	2304.14	-27.70	45.42	359.65	101.70	16 26 30	1704.1	-25.81	37.13
100.00	7 56 8	3932.90	-.12	152.43	355.15	60.11	9 1 41	3332.9	-4.10	145.90
110.00	17 16 47	2026.65	-30.48	23.56	358.86	106.28	17 50 34	1426.6	-27.95	15.27
110.00	8 43 56	3783.16	2.31	139.55	353.63	55.89	9 46 59	3183.2	-2.19	133.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1583 TRA -.5893 TC3 4.4338 BAU .6087 SGT 3013.9 SGR 862.9 SG3 1223.4 ST 451.4 SR 235.6 SS 208.3
RDE -.1275 RRA -.0447 RC3 1.3171 FAU .25647 RRT .8951 RRF -.9654 RTF -.9272 CRT -.5325 CRS .6960 CST -.1383
FDE .1796 FRA .1327 FC-22.5543 BSP 10794 SGB 3135.0 R23 -.2749 R13 -.9362 LSA 475.4 MSA 257.6 SSA 101.6
BDE .2032 BRA .5910 BC3 4.6253 FSP 4038 SG1 3112.8 SG2 372.5 THA 14.59 EL1 472.2 EL2 190.7 ALF 161.31

LAUNCH DATE NOV 28 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 525.518 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.209 GAL .88 AZL 89.89 HCA 162.47 SMA 190.74 ECC .22681 INC .1026 V1 30.191
RP 232.32 LAP .03 LOP 228.27 VP 21.136 GAP 3.68 AZP 90.10 TAL 4.77 TAP 167.24 RCA 147.48 APO 234.01 V2 23.670
RC 217.275 GL 1.15 GP 8.48 ZAL 75.02 ZAP 143.85 ETS 166.71 ZAE 169.54 ETE 65.49 ZAC 98.82 ETC 255.67 CLP 144.73

PLANETOCENTRIC CONIC

C3 9.751 VHL 3.123 DLA 15.65 RAL 143.59 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 4.357 DPA 3.60 RAP 195.90 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 8	2566.18	-26.26	65.02	358.54	101.00	15 3 54	1966.2	-24.47	56.80
90.00	6 33 4	4191.85	-.22	171.53	354.50	61.68	7 42 56	3591.8	-4.01	164.89
100.00	15 51 6	2276.06	-27.30	43.43	358.29	102.68	16 29 2	1676.1	-25.28	35.21
100.00	7 45 47	3957.21	.71	153.76	353.98	60.12	8 51 44	3357.2	-3.28	147.23
110.00	17 18 31	2002.55	-30.01	21.84	357.47	107.20	17 51 53	1402.5	-27.36	13.65
110.00	8 34 52	3803.48	3.08	140.61	352.50	55.94	9 38 15	3203.5	-1.41	134.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1729 TRA -.5651 TC3 4.4061 BAU .6058 SGT 2971.9 SGR 949.6 SG3 1277.7 ST 460.2 SR 215.4 SS 177.4
RDE -.1159 RRA -.0367 RC3 1.4777 FAU .26668 RRT .9026 RRF -.9744 RTF -.9259 CRT -.5887 CRS .4558 CST -.0417
FDE .0864 FRA .0250 FC-23.6771 BSP 10697 SGB 3120.0 R23 -.2875 R13 -.9372 LSA 480.3 MSA 212.5 SSA 117.7
BDE .2081 BRA .5663 BC3 4.6473 FSP 4221 SG1 3095.2 SG2 392.5 THA 16.36 EL1 479.9 EL2 167.0 ALF 162.39

LAUNCH DATE NOV 28 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 529.264 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.189 GAL .93 AZL 90.00 HCA 163.48 SMA 190.38 ECC .22541 INC .0000 V1 30.191
RP 231.95 LAP .00 LOP 229.28 VP 21.148 GAP 3.29 AZP 90.00 TAL 5.04 TAP 168.52 RCA 147.47 APO 233.30 V2 23.709
RC 219.295 GL .01 GP 9.18 ZAL 74.45 ZAP 142.53 ETS 166.31 ZAE 169.29 ETE 73.52 ZAC 99.45 ETC 255.64 CLP 143.51

PLANETOCENTRIC CONIC

C3 9.669 VHL 3.110 DLA 14.74 RAL 142.66 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.270 DPA 4.32 RAP 196.00 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 47	2531.95	-25.79	62.62	357.16	102.11	15 7 59	1932.0	-23.86	54.48
90.00	6 21 0	4222.75	.77	173.25	353.33	61.69	7 31 22	3622.7	-3.02	166.62
100.00	15 55 4	2244.02	-26.80	41.18	356.90	103.76	16 32 28	1644.0	-24.64	33.05
100.00	7 34 24	3985.91	1.68	155.33	352.82	60.15	8 40 50	3385.9	-2.31	148.81
110.00	17 21 3	1974.98	-29.44	19.89	356.05	108.22	17 53 58	1375.0	-26.66	11.80
110.00	8 24 54	3827.72	4.01	141.88	351.37	56.02	9 28 42	3227.7	-.48	135.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1910 TRA -.5404 TC3 4.3623 BAU .6033 SGT 2923.0 SGR 1049.7 SG3 1333.0 ST 475.3 SR 190.5 SS 173.6
RDE -.1017 RRA -.0270 RC3 1.6588 FAU .27704 RRT .9079 RRF -.9813 RTF -.9243 CRT -.6477 CRS .0138 CST .1942
FDE -.0354 FRA -.0973 FC-24.8052 BSP 10635 SGB 3105.8 R23 -.2969 R13 -.9387 LSA 493.6 MSA 176.3 SSA 132.6
BDE .2164 BRA .5411 BC3 4.6670 FSP 4414 SG1 3077.5 SG2 418.0 THA 18.41 EL1 492.5 EL2 140.1 ALF 164.13

LAUNCH DATE NOV 28 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 533.023 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.171 GAL .97 AZL 90.12 HCA 164.49 SMA 190.05 ECC .22409 INC .1193 V1 30.191
RP 231.57 LAP -.03 LOP 230.29 VP 21.163 GAP 2.92 AZP 89.88 TAL 5.30 TAP 169.79 RCA 147.46 APO 232.63 V2 23.748
RC 221.297 GL -1.30 GP 9.97 ZAL 73.92 ZAP 141.16 ETS 165.88 ZAE 168.76 ETE 81.35 ZAC 100.17 ETC 255.61 CLP 142.26

PLANETOCENTRIC CONIC

C3 9.601 VHL 3.098 DLA 13.67 RAL 141.71 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 4.187 DPA 5.14 RAP 196.11 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 34	2493.01	-25.21	59.92	355.75	103.35	15 13 7	1893.0	-23.12	51.87
90.00	6 7 40	4258.90	1.94	175.27	352.16	61.74	7 18 39	3658.9	-1.85	168.64
100.00	16 0 6	2207.49	-26.18	38.64	355.47	104.96	16 36 53	1607.5	-23.87	30.60
100.00	7 21 49	4019.65	2.82	157.19	351.67	60.23	8 28 49	3419.7	-1.16	150.67
110.00	17 24 29	1943.43	-28.74	17.70	354.58	109.35	17 56 53	1343.4	-25.84	9.73
110.00	8 13 55	3856.48	5.10	143.39	350.25	56.15	9 18 12	3256.5	.62	137.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2110 TRA -.5187 TC3 4.2910 BAU .6003 SGT 2863.2 SGR 1164.0 SG3 1386.3 ST 496.3 SR 160.5 SS 217.2
RDE -.0846 RRA -.0161 RC3 1.8606 FAU .28698 RRT .9107 RRF -.9865 RTF -.9220 CRT -.6976 CRS -.3850 CST .4426
FDE -.1817 FRA -.2224 FC-25.8779 BSP 10598 SGB 3090.7 R23 -.3035 R13 -.9404 LSA 520.1 MSA 190.7 SSA 111.3
BDE .2273 BRA .5190 BC3 4.6770 FSP 4621 SG1 3057.8 SG2 450.1 THA 20.79 EL1 509.4 EL2 112.0 ALF 166.63

LAUNCH DATE NOV 28 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 536.796 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.153	GAL	1.01	AZL	90.26	HCA	165.50	SMA	189.73	ECC	.22283	INC	.2570	V1	30.191
RP	231.20	LAP	-.06	LOP	231.30	VP	21.179	GAP	2.55	AZP	89.75	TAL	5.55	TAP	171.05	RCA	147.45	APO	232.00	V2	23.788
RC	223.281	GL	-2.79	GP	10.88	ZAL	73.43	ZAP	139.71	ETS	165.39	ZAE	167.94	ETE	88.59	ZAC	100.99	ETC	255.57	CLP	140.97

PLANETOCENTRIC CONIC

C3	9.549	VHL	3.090	DLA	12.41	RAL	140.75	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	4.110	DPA	6.08	RAP	196.23	ECC	1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 37	2448.64	-24.47	56.87	354.29	104.71	15 19 26	1848.6	-22.22	48.93
90.00	5 52 54	4301.14	3.30	177.63	350.99	61.86	7 4 35	3701.1	-.49	170.99
100.00	16 6 20	2165.76	-25.42	35.78	354.00	106.28	16 42 25	1565.8	-22.94	27.85
100.00	7 7 52	4059.25	4.16	159.37	350.52	60.37	8 15 32	3459.3	.18	152.84
110.00	17 28 57	1907.25	-27.90	15.22	353.07	110.60	18 0 44	1307.3	-24.84	7.38
110.00	8 1 45	3890.53	6.39	145.19	349.14	56.35	9 6 35	3290.5	1.92	138.95

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2351	TRA	-.4970	TC3	4.2058	BAU .5997	SGT 2799.4	SGR 1298.3	SG3 1441.8	ST 525.5	SR 121.9 SS 313.4
RDE	-.0623	RRA	-.0021	RC3	2.0924	FAU .29729	RRT .9120	RRF -.9904	RTF -.9192	CRT -.7337	CRS -.5698 CST .6093
FDE	-.3754	FRA	-.3707	FC-26.9529		BSP 10538	SGB 3085.8	R23 -.3058	R13 -.9428	LSA 574.3	MSA 230.4 SSA 79.6
BDE	.2432	BRA	.4970	BC3 4.6975		FSP 4806	SG1 3046.8	SG2 489.3	THA 23.57	EL1 533.3	EL2 81.6 ALF 170.11

LAUNCH DATE NOV 28 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 540.584 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.136	GAL	1.05	AZL	90.42	HCA	166.52	SMA	189.42	ECC	.22165	INC	.4202	V1	30.191
RP	230.82	LAP	-.10	LOP	232.32	VP	21.198	GAP	2.18	AZP	89.59	TAL	5.78	TAP	172.30	RCA	147.44	APO	231.41	V2	23.827
RC	225.247	GL	-4.51	GP	11.91	ZAL	72.99	ZAP	138.20	ETS	164.84	ZAE	166.82	ETE	94.99	ZAC	101.93	ETC	255.53	CLP	139.63

PLANETOCENTRIC CONIC

C3	9.519	VHL	3.085	DLA	10.92	RAL	139.74	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	4.038	DPA	7.15	RAP	196.38	ECC	1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 5	2398.00	-23.56	53.45	352.77	106.19	15 27 3	1798.0	-21.11	45.63
90.00	5 36 26	4350.54	4.88	180.40	349.84	62.07	6 48 56	3750.5	1.10	173.75
100.00	16 13 53	2118.03	-24.47	32.55	352.46	107.73	16 49 11	1518.0	-21.81	24.76
100.00	6 52 18	4105.75	5.72	161.94	349.38	60.61	8 0 44	3505.8	1.76	155.39
110.00	17 34 32	1865.69	-26.88	12.42	351.50	111.96	18 5 37	1265.7	-23.65	4.74
110.00	7 48 9	3930.85	7.90	147.33	348.04	56.63	8 53 40	3330.8	3.46	141.06

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2774	TRA	-.4636	TC3	4.1585	BAU .6086	SGT 2760.2	SGR 1459.1	SG3 1500.8	ST 583.6	SR 73.8 SS 464.6
RDE	-.0316	RRA	.0166	RC3	2.3621	FAU .30824	RRT .9143	RRF -.9934	RTF -.9194	CRT -.6818	CRS -.4474 CST .7314
FDE	-.6385	FRA	-.5523	FC-28.0345		BSP 10164	SGB 3122.1	R23 -.2965	R13 -.9485	LSA 698.8	MSA 265.9 SSA 53.5
BDE	.2792	BRA	.4639	BC3 4.7825		FSP 4935	SG1 3076.8	SG2 530.1	THA 26.65	EL1 585.8	EL2 53.8 ALF 175.03

LAUNCH DATE NOV 28 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 544.382 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.120	GAL	1.08	AZL	90.61	HCA	167.53	SMA	189.14	ECC	.22053	INC	.6053	V1	30.191
RP	230.43	LAP	-.13	LOP	233.33	VP	21.218	GAP	1.82	AZP	89.41	TAL	6.00	TAP	173.53	RCA	147.43	APO	230.85	V2	23.867
RC	227.193	GL	-6.51	GP	13.11	ZAL	72.60	ZAP	136.61	ETS	164.22	ZAE	165.40	ETE	100.41	ZAC	103.02	ETC	255.47	CLP	138.26

PLANETOCENTRIC CONIC

C3	9.517	VHL	3.085	DLA	9.15	RAL	138.69	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.973	DPA	8.39	RAP	196.56	ECC	1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 15	2339.81	-22.40	49.57	351.20	107.79	15 36 15	1739.8	-19.76	41.90
90.00	5 17 55	4408.67	6.72	183.67	348.72	62.43	6 31 23	3808.7	2.98	176.99
100.00	16 23 4	2063.04	-23.28	28.90	350.88	109.30	16 57 27	1463.0	-20.43	21.26
100.00	6 34 47	4160.67	7.54	165.00	348.27	60.99	7 44 8	3560.7	3.61	158.41
110.00	17 41 29	1817.63	-25.61	9.26	349.88	113.45	18 11 47	1217.6	-22.22	1.75
110.00	7 32 51	3978.85	9.69	149.89	346.97	57.06	8 39 10	3378.9	5.28	143.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.3028	TRA	-.4495	TC3	3.9924	BAU .6100	SGT 2664.4	SGR 1638.9	SG3 1548.7	ST 621.4	SR 54.4 SS 632.4
RDE	.0054	RRA	.0374	RC3	2.6537	FAU .31697	RRT .9113	RRF -.9954	RTF -.9137	CRT .1158	CRS .5193 CST .7866
FDE	-.9234	FRA	-.7243	FC-28.8333		BSP 10349	SGB 3128.1	R23 -.2911	R13 -.9520	LSA 838.2	MSA 291.5 SSA 38.4
BDE	.3029	BRA	.4510	BC3 4.7939		FSP 5137	SG1 3072.9	SG2 585.0	THA 30.50	EL1 621.5	EL2 54.0 ALF .59

LAUNCH DATE NOV 28 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 548.192 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.105	GAL	1.11	AZL	90.82	HCA	168.56	SMA	188.87	ECC	.21947	INC	.8224	V1	30.191
RP	230.05	LAP	-.16	LOP	234.36	VP	21.239	GAP	1.47	AZP	89.19	TAL	6.20	TAP	174.76	RCA	147.42	APO	230.32	V2	23.907
RC	229.120	GL	-8.86	GP	14.52	ZAL	72.29	ZAP	134.92	ETS	163.52	ZAE	163.66	ETE	104.84	ZAC	104.30	ETC	255.40	CLP	136.83

PLANETOCENTRIC CONIC

C3	9.557	VHL	3.091	DLA	7.03	RAL	137.58	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	3.917	DPA	9.82	RAP	196.80	ECC	1.1573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 24	2272.60	-20.93	45.19	349.58	109.52	15 47 17	1672.6	-18.08	37.68
90.00	4 56 53	4477.51	8.87	187.59	347.65	63.00	6 11 30	3877.5	5.18	180.85
100.00	16 34 6	1999.40	-21.79	24.76	349.25	110.99	17 7 26	1399.4	-18.74	17.29
100.00	6 14 52	4225.94	9.68	168.66	347.22	61.58	7 25 17	3625.9	5.81	162.01
110.00	17 50 2	1761.79	-24.05	5.67	348.20	115.06	18 19 23	1161.8	-20.47	358.36
110.00	7 15 25	4036.31	11.80	153.01	345.95	57.68	8 22 42	3436.3	7.45	146.61

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.3365	TRA	-.4356	TC3	3.8223	BAU .6201	SGT 2576.0	SGR 1856.4	SG3 1597.3	ST 673.4	SR 124.8 SS 850.6
RDE	.0570	RRA	.0648	RC3	2.9912	FAU .32583	RRT .9072	RRF -.9969	RTF -.9075	CRT .7259	CRS .9650 CST .8315
FDE	-1.2936	FRA	-.9263	FC-29.5163		BSP 10533	SGB 3175.2	R23 -.2780	R13 -.9574	LSA 1047.2	MSA 308.7 SSA 27.4
BDE	.3413	BRA	.4404	BC3 4.8536		FSP 5292	SG1 3108.5	SG2 647.2	THA 34.91	EL1 679.6	EL2 85.1 ALF 7.78

LAUNCH DATE NOV 28 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 552.014 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.091 GAL 1.14 AZL 91.09 HCA 169.58 SMA 188.62 ECC .21847 INC 1.0869 V1 30.191
RP 229.67 LAP -.20 LOP 235.38 VP 21.263 GAP 1.12 AZP 88.93 TAL 6.39 TAP 175.97 RCA 147.41 APO 229.82 V2 23.948
RC 231.027 GL -11.65 GP 16.18 ZAL 72.06 ZAP 133.11 ETS 162.73 ZAE 161.60 ETE 108.35 ZAC 105.82 ETC 255.30 CLP 135.36

PLANETOCENTRIC CONIC

C3 9.657 VHL 3.107 DLA 4.48 RAL 136.38 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.871 DPA 11.51 RAP 197.11 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 0	2194.28	-19.07	40.20	347.93	111.34	16 0 34	1594.3	-16.00	32.87
90.00	4 32 40	4559.91	11.38	192.34	346.67	63.90	5 48 39	3959.9	7.78	185.51
100.00	16 47 27	1925.13	-19.90	20.05	347.57	112.78	17 19 32	1325.1	-16.64	12.77
100.00	5 51 54	4304.29	12.18	173.13	346.26	62.49	7 3 38	3704.3	8.40	166.38
110.00	18 0 31	1696.45	-22.11	1.60	346.48	116.76	18 28 47	1096.5	-18.34	354.49
110.00	6 55 19	4105.74	14.29	156.84	345.03	58.61	8 3 45	3505.7	10.04	150.33

DIFFERENTIAL CORRECTIONS
TDE .3744 TRA -.4229 TC3 3.5960 BAU .6346
RDE .1254 RRA .0983 RC3 3.3519 FAU .33163
FDE-1.7228 FRA-1.1316 FC-29.7319 BSP 10860
BDE .3948 BRA .4342 BC3 4.9159 FSP 5468

MID-COURSE EXECUTION ACCURACY
SGT 2466.4 SGR 2103.8 SG3 1630.0
RRT .9006 RRF -.9979 RTF -.8995
SGB 3241.8 R23 -.2576 R13 -.9641
SG1 3162.4 SG2 713.2 THA 39.97

ORBIT DETERMINATION ACCURACY
ST 732.1 SR 245.7 SS 1098.9
CRT .8396 CRS .9955 CST .8659
LSA 1304.9 MSA 317.3 SSA 19.9
EL1 761.5 EL2 128.3 ALF 16.21

LAUNCH DATE NOV 28 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 555.848 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.077 GAL 1.17 AZL 91.41 HCA 170.61 SMA 188.38 ECC .21753 INC 1.4069 V1 30.191
RP 229.28 LAP -.23 LOP 236.41 VP 21.288 GAP .79 AZP 88.61 TAL 6.56 TAP 177.17 RCA 147.40 APO 229.36 V2 23.988
RC 232.913 GL -15.00 GP 18.17 ZAL 71.95 ZAP 131.15 ETS 161.81 ZAE 159.17 ETE 111.02 ZAC 107.65 ETC 255.16 CLP 133.83

PLANETOCENTRIC CONIC

C3 9.849 VHL 3.138 DLA 1.39 RAL 135.04 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.840 DPA 13.51 RAP 197.54 ECC 1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 44	2102.01	-16.69	34.48	346.27	113.21	16 16 46	1502.0	-13.40	27.34
90.00	4 4 17	4660.00	14.31	198.24	345.87	65.30	5 21 57	4060.0	10.86	191.26
100.00	17 3 44	1837.55	-17.50	14.65	345.89	114.63	17 34 21	1237.5	-14.03	7.58
100.00	5 24 58	4399.70	15.11	178.70	345.48	63.90	6 38 18	3799.7	11.48	171.79
110.00	18 13 27	1619.31	-19.67	356.94	344.75	118.54	18 40 27	1019.3	-15.70	350.06
110.00	6 31 44	4190.70	17.25	161.65	344.29	60.02	7 41 35	3590.7	13.13	154.96

DIFFERENTIAL CORRECTIONS
TDE .4205 TRA -.4082 TC3 3.3447 BAU .6623
RDE .2242 RRA .1461 RC3 3.7560 FAU .33629
FDE-2.2689 FRA-1.3867 FC-29.5588 BSP 11301
BDE .4766 BRA .4335 BC3 5.0293 FSP 5569

MID-COURSE EXECUTION ACCURACY
SGT 2356.3 SGR 2407.6 SG3 1657.0
RRT .8928 RRF -.9986 RTF -.8905
SGB 3368.8 R23 -.2282 R13 -.9722
SG1 3277.3 SG2 779.9 THA 45.69

ORBIT DETERMINATION ACCURACY
ST 802.1 SR 423.1 SS 1409.3
CRT .8865 CRS .9993 CST .8937
LSA 1644.4 MSA 322.8 SSA 14.3
EL1 889.5 EL2 176.5 ALF 26.17

LAUNCH DATE NOV 28 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 559.693 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.065 GAL 1.20 AZL 91.81 HCA 171.64 SMA 188.16 ECC .21664 INC 1.8059 V1 30.191
RP 228.89 LAP -.26 LOP 237.44 VP 21.314 GAP .45 AZP 88.21 TAL 6.72 TAP 178.36 RCA 147.39 APO 228.92 V2 24.029
RC 234.778 GL -19.06 GP 20.57 ZAL 72.00 ZAP 129.00 ETS 160.77 ZAE 156.31 ETE 112.93 ZAC 109.87 ETC 254.97 CLP 132.24

PLANETOCENTRIC CONIC

C3 10.193 VHL 3.193 DLA -2.39 RAL 133.53 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 3.828 DPA 15.91 RAP 198.11 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 43	1991.66	-13.61	27.84	344.68	115.07	16 36 55	1391.7	-10.12	20.90
90.00	3 30 13	4784.00	17.69	205.77	345.38	67.52	4 49 57	4184.0	14.49	198.55
100.00	17 23 57	1732.86	-14.42	8.40	344.27	116.47	17 52 50	1132.9	-10.75	1.53
100.00	4 52 40	4518.04	18.52	185.83	345.00	66.11	6 7 58	3918.0	15.14	178.68
110.00	18 29 38	1527.23	-16.58	351.58	343.06	120.33	18 55 6	927.2	-12.43	344.93
110.00	6 3 28	4296.43	20.73	167.87	343.87	62.19	7 15 5	3696.4	16.85	160.90

DIFFERENTIAL CORRECTIONS
TDE .4794 TRA -.3942 TC3 3.0528 BAU .7061
RDE .3701 RRA .2132 RC3 4.1867 FAU .33822
FDE-2.9507 FRA-1.6819 FC-28.7280 BSP 11876
BDE .6057 BRA .4481 BC3 5.1815 FSP 5574

MID-COURSE EXECUTION ACCURACY
SGT 2245.3 SGR 2781.0 SG3 1670.1
RRT .8826 RRF -.9991 RTF -.8795
SGB 3574.2 R23 -.1923 R13 -.9805
SG1 3472.9 SG2 845.2 THA 51.86

ORBIT DETERMINATION ACCURACY
ST 888.2 SR 678.8 SS 1786.3
CRT .9152 CRS .9999 CST .9165
LSA 2081.8 MSA 326.5 SSA 10.3
EL1 1095.7 EL2 221.7 ALF 36.72

LAUNCH DATE NOV 28 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 563.549 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.053 GAL 1.22 AZL 92.32 HCA 172.67 SMA 187.95 ECC .21581 INC 2.3190 V1 30.191
RP 228.51 LAP -.30 LOP 238.48 VP 21.342 GAP .13 AZP 87.70 TAL 6.87 TAP 179.54 RCA 147.39 APO 228.51 V2 24.070
RC 236.623 GL -24.03 GP 23.54 ZAL 72.30 ZAP 126.60 ETS 159.57 ZAE 152.91 ETE 114.20 ZAC 112.61 ETC 254.69 CLP 130.57

PLANETOCENTRIC CONIC

C3 10.791 VHL 3.285 DLA -7.06 RAL 131.75 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.846 DPA 18.84 RAP 198.91 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 53	1856.91	-9.59	19.98	343.31	116.77	17 2 50	1256.9	-5.92	13.22
90.00	2 47 54	4941.83	21.50	215.78	345.44	71.11	4 10 16	4341.8	18.72	208.20
100.00	17 49 51	1605.37	-10.43	1.04	342.87	118.17	18 16 36	1005.4	-6.59	354.36
100.00	4 12 37	4668.59	22.39	195.34	345.10	69.66	5 30 26	4068.6	19.42	187.80
110.00	18 50 23	1415.86	-12.65	345.35	341.56	122.02	19 13 59	815.9	-8.33	338.91
110.00	5 28 34	4430.88	24.76	176.23	344.03	65.65	6 42 25	3830.9	21.26	168.82

DIFFERENTIAL CORRECTIONS
TDE .5482 TRA -.3827 TC3 2.6943 BAU .7688
RDE .5857 RRA .3076 RC3 4.5976 FAU .33479
FDE-3.7527 FRA-2.0026 FC-26.8599 BSP 12809
BDE .8022 BRA .4910 BC3 5.3288 FSP 5505

MID-COURSE EXECUTION ACCURACY
SGT 2121.3 SGR 3234.1 SG3 1654.4
RRT .8687 RRF -.9994 RTF -.8648
SGB 3867.7 R23 -.1536 R13 -.9876
SG1 3760.7 SG2 903.6 THA 58.28

ORBIT DETERMINATION ACCURACY
ST 978.6 SR 1038.3 SS 2210.3
CRT .9338 CRS 1.0000 CST .9331
LSA 2610.1 MSA 329.1 SSA 7.4
EL1 1403.1 EL2 259.2 ALF 46.81

LAUNCH DATE NOV 28 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 567.415 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.042	GAL	1.24	AZL	93.00	HCA	173.71	SMA	187.75	ECC	.21502	INC	3.0030	V1	30.191
RP	228.12	LAP	-.33	LOP	239.52	VP	21.371	GAP	-.19	AZP	87.01	TAL	7.00	TAP	180.71	RCA	147.38	APO	228.12	V2	24.111
RC	238.446	GL	-30.18	GP	27.25	ZAL	72.94	ZAP	123.85	ETS	158.21	ZAE	148.81	ETE	114.90	ZAC	116.05	ETC	254.28	CLP	128.79

PLANETOCENTRIC CONIC

C3	11.852	VHL	3.443	DLA	-12.84	RAL	129.59	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	3.911	DPA	22.46	RAP	200.03	ECC	1.1951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 7	1686.44	-4.24	10.32	342.52	118.02	17 38 13	1086.4	-.46	3.68
90.00	1 52 26	5151.15	25.42	229.85	346.48	77.09	3 18 17	4551.2	23.40	221.76
100.00	18 24 49	1445.43	-5.17	352.08	342.01	119.48	18 48 54	845.4	-1.20	345.54
100.00	3 20 25	4867.39	26.46	208.70	346.20	75.56	4 41 33	4267.4	24.21	200.62
110.00	19 18 6	1278.55	-7.59	337.93	340.52	123.43	19 39 25	678.5	-3.14	331.67
110.00	4 43 38	4607.04	29.18	188.01	345.29	71.35	6 0 25	4007.0	26.35	179.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6296	TRA	-.3748	TC3	2.2494	BAU	.8544	SGT	1976.4	SGR	3777.8	SG3	1590.9	ST	1066.3	SR	1539.7	SS	2652.6
RDE	.9130	RRA	.4447	RC3	4.9008	FAU	.32258	RRT	.8482	RRF	-.9996	RTF	-.8434	CRT	.9460	CRS	1.0000	CST	.9446
FDE	-4.6525	FRA	-2.3337	FC3	-23.5627	BSP	14214	SGB	4263.5	R23	-.1162	R13	-.9929	LSA	3230.2	MSA	331.2	SSA	5.3
BDE	1.1090	BRA	.5815	BC3	5.3924	FSP	5325	SG1	4156.0	SG2	951.6	THA	64.65	EL1	1850.7	EL2	287.6	ALF	55.83

LAUNCH DATE NOV 28 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 571.291 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.031	GAL	1.25	AZL	93.96	HCA	174.75	SMA	187.57	ECC	.21429	INC	3.9580	V1	30.191
RP	227.73	LAP	-.36	LOP	240.56	VP	21.401	GAP	-.51	AZP	86.06	TAL	7.12	TAP	181.87	RCA	147.37	APO	227.76	V2	24.152
RC	240.248	GL	-37.82	GP	31.95	ZAL	74.09	ZAP	120.59	ETS	156.72	ZAE	143.79	ETE	115.18	ZAC	120.41	ETC	253.63	CLP	126.85

PLANETOCENTRIC CONIC

C3	13.831	VHL	3.719	DLA	-20.01	RAL	126.84	RAD	6567.5	VEL	11.628	PTH	2.04	VHP	4.057	DPA	26.99	RAP	201.64	ECC	1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 56	1451.69	3.32	357.21	343.18	118.14	18 33 8	851.7	7.06	350.52
90.00	0 31 38	5452.16	28.21	251.37	349.01	87.49	2 2 30	4852.2	27.57	242.77
100.00	19 17 28	1230.53	2.10	340.27	342.50	119.83	19 37 58	630.5	6.05	333.72
100.00	2 5 47	5148.54	29.61	228.94	348.91	85.72	3 31 36	4548.5	28.70	220.26
110.00	19 58 15	1102.73	-.92	328.70	340.61	124.17	20 16 37	502.7	3.57	322.49
110.00	3 41 30	4849.11	33.14	205.72	348.44	81.10	5 2 19	4249.1	31.56	196.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7430	TRA	-.3648	TC3	1.7542	BAU	.9829	SGT	1835.9	SGR	4488.1	SG3	1478.4	ST	1159.3	SR	2263.6	SS	3098.0
RDE	1.4518	RRA	.6711	RC3	5.0178	FAU	.30134	RRT	.8219	RRF	-.9998	RTF	-.8160	CRT	.9547	CRS	1.0000	CST	.9531
FDE	-5.6647	FRA	-2.7136	FC3	-18.8622	BSP	15780	SGB	4849.1	R23	-.0833	R13	-.9963	LSA	3994.2	MSA	335.1	SSA	3.8
BDE	1.6309	BRA	.7638	BC3	5.3156	FSP	4819	SG1	4747.2	SG2	988.8	THA	70.54	EL1	2524.4	EL2	309.4	ALF	63.51

LAUNCH DATE NOV 28 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 575.055 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.021	GAL	1.26	AZL	95.39	HCA	175.79	SMA	187.40	ECC	.21357	INC	5.3919	V1	30.191
RP	227.34	LAP	-.39	LOP	241.61	VP	21.433	GAP	-.80	AZP	84.62	TAL	7.14	TAP	182.93	RCA	147.37	APO	227.42	V2	24.193
RC	242.030	GL	-47.26	GP	37.93	ZAL	76.03	ZAP	116.72	ETS	155.16	ZAE	137.62	ETE	115.12	ZAC	125.95	ETC	252.56	CLP	124.75

PLANETOCENTRIC CONIC

C3	17.833	VHL	4.223	DLA	-28.87	RAL	123.20	RAD	6567.7	VEL	11.799	PTH	2.09	VHP	4.360	DPA	32.65	RAP	204.08	ECC	1.2935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.14	20 14 58	1023.35	20.65	334.28	350.06	110.64	20 32 1	423.4	23.27	326.55
95.86	21 52 36	707.41	20.66	311.13	350.06	110.62	22 4 23	107.4	23.28	303.40
100.00	21 19 30	813.94	15.56	316.68	347.76	115.85	21 33 4	213.9	18.91	309.49
100.00	23 30 45	5680.09	25.92	267.61	351.93	105.44	25 5 26	5080.1	27.79	259.31
110.00	21 10 50	841.20	9.00	314.95	343.97	123.12	21 24 51	241.2	13.30	308.49
110.00	1 59 51	5225.59	33.29	234.90	353.70	98.24	3 26 56	4625.6	34.07	225.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3068	TRA	-.9322	TC3	-.1093	BAU	.8049	SGT	1506.0	SGR	3774.7	SG3	910.6	ST	600.9	SR	2392.6	SS	2547.2
RDE	1.7561	RRA	.4323	RC3	3.3744	FAU	.19054	RRT	-.0420	RRF	-.9994	RTF	.0684	CRT	.6292	CRS	.9999	CST	.6189
FDE	-4.9572	FRA	-1.4136	FC3	-9.2499	BSP	36678	SGB	4064.0	R23	-.0185	R13	-.9996	LSA	3515.0	MSA	467.5	SSA	2.7
BDE	1.7827	BRA	1.0276	BC3	3.3762	FSP	7335	SG1	3775.3	SG2	1504.4	THA	91.14	EL1	2423.5	EL2	461.1	ALF	80.68

LAUNCH DATE NOV 28 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 579.060 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.012	GAL	1.28	AZL	97.77	HCA	176.83	SMA	187.24	ECC	.21296	INC	7.7686	V1	30.191
RP	226.95	LAP	-.43	LOP	242.66	VP	21.465	GAP	-1.12	AZP	82.24	TAL	7.32	TAP	184.16	RCA	147.36	APO	227.11	V2	24.235
RC	243.792	GL	-58.66	GP	45.59	ZAL	78.56	ZAP	111.64	ETS	154.18	ZAE	129.75	ETE	115.66	ZAC	132.90	ETC	250.74	CLP	121.81

PLANETOCENTRIC CONIC

C3	27.289	VHL	5.224	DLA	-39.28	RAL	117.49	RAD	6568.1	VEL	12.193	PTH	2.19	VHP	4.988	DPA	39.93	RAP	207.53	ECC	1.4491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.55	17 26 16	1577.69	23.98	18.74	354.54	122.10	17 52 34	977.7	28.03	11.48
118.45	23 55 45	5646.67	23.99	264.11	354.55	122.09	25 29 52	5046.7	28.05	256.85
61.55	17 26 16	1577.69	23.98	18.74	354.54	122.10	17 52 34	977.7	28.03	11.48
118.45	23 55 45	5646.67	23.99	264.11	354.55	122.09	25 29 52	5046.7	28.05	256.85
61.55	17 26 16	1577.69	23.98	18.74	354.54	122.10	17 52 34	977.7	28.03	11.48
118.45	23 55 45	5646.67	23.99	264.11	354.55	122.09	25 29 52	5046.7	28.05	256.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0823	TRA	-.3900	TC3	.6129	BAU	1.3955	SGT	1457.6	SGR	6277.1	SG3	923.9	ST	1198.8	SR	4326.2	SS	3181.2
RDE	3.8890	RRA	1.6770	RC3	3.7757	FAU	.19890	RRT	.6860	RRF	-.9998	RTF	-.6738	CRT	.9540	CRS	1.0000	CST	.9516
FDE	-6.6267	FRA	-2.9982	FC3	-6.3100	BSP	21248	SGB	6444.1	R23	-.0435	R13	-.9989	LSA	5490.6	MSA	355.2	SSA	2.2
BDE	4.0368	BRA	1.7217	BC3	3.8252	FSP	3009	SG1	6358.5	SG2	1047.0	THA	80.70	EL1	4475.7	EL2	347.4	ALF	75.10

LAUNCH DATE NOV 28 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 606.803 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.964	GAL	1.27	AZL	81.32	HCA	184.37	SMA	186.41	ECC	.20944	INC	8.6773
RP	224.21	LAP	-.66	LOP	250.12	VP	21.722	GAP	-3.06	AZP	98.65	TAL	7.33	TAP	191.69	RCA	147.37	APO	225.45
RC	255.576	GL	62.39	GP	-40.23	ZAL	79.47	ZAP	105.72	ETS	192.20	ZAE	130.57	ETE	222.23	ZAC	48.85	ETC	251.72

V1	30.191	V2	24.527	CLP	110.78														

PLANETOCENTRIC CONIC

C3	31.487	VHL	5.611	DLA	71.58	RAL	187.17	RAD	6568.3	VEL	12.364	PTH	2.23	VHP	4.049	DPA	-35.08	RAP	162.16
ECC	1.5182																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
16.71	10 26 44	4373.07	-46.69	236.97	119.27	21.66	11 39 37	3773.1	-54.03	232.37
16.71	5 21 47	4704.32	-25.31	244.59	51.84	16.26	6 40 11	4104.3	-32.96	242.34
21.04	8 3 12	4529.30	-35.28	236.56	83.55	22.78	9 18 42	3929.3	-42.59	232.78
158.96	18 38 40	2766.66	-35.28	84.61	83.53	22.77	19 24 47	2166.7	-42.58	80.83
21.04	8 3 12	4529.30	-35.28	236.56	83.55	22.78	9 18 42	3929.3	-42.59	232.78
158.96	18 38 40	2766.66	-35.28	84.61	83.53	22.77	19 24 47	2166.7	-42.58	80.83

DIFFERENTIAL CORRECTIONS

TDE	1.3583	TRA	-.0232	TC3	-.3462	BAU	1.3478
RDE	3.2110	RRA	1.1964	RC3	-3.1830	FAU	.32102
FDE	8.7245	FRA	3.1661	FC3	-8.8266	BSP	21284
BDE	3.4865	BRA	1.1966	BC3	3.2018	FSP	4945

MID-COURSE EXECUTION ACCURACY

SGT	1442.2	SGR	6201.0	SG3	1451.2		
RRT	.6312	RRF	.9998	RTF	.6372		
SGB	6366.5	R23	.0189	R13	.9997		
SG1	6269.7	SG2	1106.3	THA	81.38		

ORBIT DETERMINATION ACCURACY

ST	1387.1	SR	3479.4	SS	3297.9
CRT	.9370	CRS	-1.0000	CST	-.9398
LSA	4969.1	MSA	463.0	SSA	3.0
EL1	3718.2	EL2	453.4	ALF	69.19

LAUNCH DATE NOV 28 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 610.779 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.960	GAL	1.26	AZL	82.70	HCA	185.44	SMA	186.32	ECC	.20908	INC	7.3030
RP	223.82	LAP	-.69	LOP	251.20	VP	21.763	GAP	-3.31	AZP	97.27	TAL	7.30	TAP	192.74	RCA	147.37	APO	225.28
RC	257.180	GL	57.24	GP	-34.94	ZAL	78.17	ZAP	105.69	ETS	189.86	ZAE	133.00	ETE	216.93	ZAC	53.83	ETC	253.01

V1	30.191	V2	24.569	CLP	109.27														

PLANETOCENTRIC CONIC

C3	24.818	VHL	4.982	DLA	68.06	RAL	176.10	RAD	6568.0	VEL	12.091	PTH	2.16	VHP	3.672	DPA	-30.32	RAP	164.93
ECC	1.4084																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.12	7 27 51	4458.85	-37.96	229.97	67.80	28.29	8 42 10	3858.9	-44.89	225.05
154.88	17 45 46	2718.53	-37.95	82.32	67.78	28.29	18 31 5	2118.5	-44.88	77.40
25.12	7 27 51	4458.85	-37.96	229.97	67.80	28.29	8 42 10	3858.9	-44.89	225.05
154.88	17 45 46	2718.53	-37.95	82.32	67.78	28.29	18 31 5	2118.5	-44.88	77.40
25.12	7 27 51	4458.85	-37.96	229.97	67.80	28.29	8 42 10	3858.9	-44.89	225.05
154.88	17 45 46	2718.53	-37.95	82.32	67.78	28.29	18 31 5	2118.5	-44.88	77.40

DIFFERENTIAL CORRECTIONS

TDE	1.2687	TRA	-.0839	TC3	-.5272	BAU	1.1768
RDE	2.9111	RRA	.8728	RC3	-3.5074	FAU	.38641
FDE	10.8707	FRA	3.1776	FC3	-13.4794	BSP	18879
BDE	3.1755	BRA	.8768	BC3	3.5468	FSP	6058

MID-COURSE EXECUTION ACCURACY

SGT	1572.2	SGR	5535.3	SG3	1796.5		
RRT	.6926	RRF	.9998	RTF	.6966		
SGB	5754.2	R23	.0346	R13	.9992		
SG1	5645.8	SG2	1111.8	THA	78.42		

ORBIT DETERMINATION ACCURACY

ST	1461.3	SR	3445.3	SS	4076.7
CRT	.9583	CRS	-1.0000	CST	-.9599
LSA	5519.5	MSA	399.7	SSA	3.5
EL1	3722.4	EL2	386.6	ALF	67.63

LAUNCH DATE NOV 28 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 614.767 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.955	GAL	1.25	AZL	83.62	HCA	186.52	SMA	186.25	ECC	.20875	INC	6.3792
RP	223.44	LAP	-.72	LOP	252.28	VP	21.803	GAP	-3.57	AZP	96.34	TAL	7.25	TAP	193.77	RCA	147.37	APO	225.13
RC	258.763	GL	53.10	GP	-30.75	ZAL	77.18	ZAP	105.01	ETS	187.80	ZAE	134.11	ETE	211.84	ZAC	57.73	ETC	253.84

V1	30.191	V2	24.611	CLP	107.54														

PLANETOCENTRIC CONIC

C3	20.958	VHL	4.578	DLA	64.84	RAL	169.52	RAD	6567.9	VEL	11.931	PTH	2.12	VHP	3.440	DPA	-26.38	RAP	166.64
ECC	1.3449																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.87	7 10 3	4405.28	-39.24	223.84	56.98	33.29	8 23 28	3805.3	-45.77	217.97
151.13	17 11 3	2689.88	-39.24	80.33	56.96	33.28	17 55 53	2089.9	-45.76	74.46
28.87	7 10 3	4405.28	-39.24	223.84	56.98	33.29	8 23 28	3805.3	-45.77	217.97
151.13	17 11 3	2689.88	-39.24	80.33	56.96	33.28	17 55 53	2089.9	-45.76	74.46
28.87	7 10 3	4405.28	-39.24	223.84	56.98	33.29	8 23 28	3805.3	-45.77	217.97
151.13	17 11 3	2689.88	-39.24	80.33	56.96	33.28	17 55 53	2089.9	-45.76	74.46

DIFFERENTIAL CORRECTIONS

TDE	1.2340	TRA	-.1135	TC3	-.7687	BAU	1.0407
RDE	2.5013	RRA	.6834	RC3	-3.6338	FAU	.43356
FDE	11.8974	FRA	3.1604	FC3	-17.9099	BSP	17440
BDE	2.7891	BRA	.6927	BC3	3.7142	FSP	7100

MID-COURSE EXECUTION ACCURACY

SGT	1729.8	SGR	4991.8	SG3	2075.8		
RRT	.7533	RRF	.9997	RTF	.7563		
SGB	5283.0	R23	.0534	R13	.9983		
SG1	5167.4	SG2	1099.0	THA	74.66		

ORBIT DETERMINATION ACCURACY

ST	1547.8	SR	3189.7	SS	4504.6
CRT	.9675	CRS	-1.0000	CST	-.9687
LSA	5720.3	MSA	373.3	SSA	4.0
EL1	3527.7	EL2	354.1	ALF	64.58

LAUNCH DATE NOV 28 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 618.767 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.952	GAL	1.24	AZL	84.28	HCA	187.60	SMA	186.18	ECC	.20845	INC	5.7148
RP	223.05	LAP	-.75	LOP	253.37	VP	21.845	GAP	-3.81	AZP	95.67	TAL	7.18	TAP	194.79	RCA	147.37	APO	224.99
RC	260.326	GL	49.72	GP	-27.40	ZAL	76.44	ZAP	103.90	ETS	186.05	ZAE	134.28	ETE	207.22	ZAC	60.81	ETC	254.42

V1	30.191	V2	24.653	CLP	105.70														

PLANETOCENTRIC CONIC

C3	18.491	VHL	4.300	DLA	62.04	RAL	165.27	RAD	6567.7	VEL	11.827	PTH	2.09	VHP	3.284	DPA	-23.10	RAP	167.69
ECC	1.3043																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.18	7 0 56	4362.64	-39.74	218.42	49.10	37.57	8 13 38	3762.6	-45.88	211.84
147.82	16 46 15	2673.08	-39.73	78.73	49.08	37.56	17 30 48	2073.1	-45.87	72.15
32.18	7 0 56	4362.64	-39.74	218.42	49.10	37.57	8 13 38	3762.6	-45.88	211.84
147.82	16 46 15	2673.08	-39.73	78.73	49.08	37.56	17 30 48	2073.1	-45.87	72.15
32.18	7 0 56	4362.64	-39.74	218.42	49.10	37.57	8 13 38	3762.6	-45.88	211.84
147.82	16 46 15	2673.08	-39.73	78.73	49.08	37.56	17 30 48	2073.1	-45.87	72.15

DIFFERENTIAL CORRECTIONS

TDE	1.2327	TRA	-.1301	TC3	-1.0586	BAU	.9452
RDE	2.1285	RRA	.5471	RC3	-3.6741	FAU	.47227
FDE	12.2682	FRA	3.0527	FC3	-22.1115	BSP	16094
BDE	2.4597	BRA	.5623	BC3	3.8235	FSP	7842

MID-COURSE EXECUTION ACCURACY

SGT	1913.9	SGR	4521.6	SG3	2292.6		
RRT	.8043	RRF	.9996	RTF	.8064		
SGB	4910.0	R23	.0764	R13	.9967		
SG1	4791.2	SG2	1073.3	THA	70.16		

ORBIT DETERMINATION ACCURACY

ST	1646.5	SR	2875.8	SS	4699.7
CRT	.9735	CRS	-1.0000	CST	-.9746
LSA	5739.4	MSA	356.3	SSA	4.6
EL1	3297.4	EL2	328.6	ALF	60.55

LAUNCH DATE NOV 28 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 622.778 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.948 GAL 1.22 AZL 84.79 HCA 188.69 SMA 186.13 ECC .20817 INC 5.2144 V1 30.191
RP 222.66 LAP -.79 LOP 254.46 VP 21.887 GAP -4.05 AZP 95.15 TAL 7.10 TAP 195.79 RCA 147.38 APO 224.87 V2 24.695
RC 261.869 GL 46.92 GP -24.67 ZAL 75.89 ZAP 102.52 ETS 184.59 ZAE 133.78 ETE 203.18 ZAC 63.28 ETC 254.84 CLP 103.80

PLANETOCENTRIC CONIC

C3 16.798 VHL 4.099 DLA 59.61 RAL 162.36 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 3.175 DPA -20.34 RAP 168.31 ECC 1.2765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.07	6 56 30	4327.45	-39.78	213.73	43.15	41.17	8 8 37	3727.4	-45.57	206.63
144.93	16 27 27	2663.71	-39.77	77.53	43.13	41.16	17 11 51	2063.7	-45.56	70.44
35.07	6 56 30	4327.45	-39.78	213.73	43.15	41.17	8 8 37	3727.4	-45.57	206.63
144.93	16 27 27	2663.71	-39.77	77.53	43.13	41.16	17 11 51	2063.7	-45.56	70.44
35.07	6 56 30	4327.45	-39.78	213.73	43.15	41.17	8 8 37	3727.4	-45.57	206.63
144.93	16 27 27	2663.71	-39.77	77.53	43.13	41.16	17 11 51	2063.7	-45.56	70.44

DIFFERENTIAL CORRECTIONS
TDE 1.2553 TRA -.1374 TC3-1.3901 BAU .8728
RDE 1.8296 RRA .4571 RC3-3.6293 FAU .50077
FDE12.3428 FRA 2.9731 FC-25.8080 BSP 15247
BDE 2.2188 BRA .4773 BC3 3.8864 FSP 8509

MID-COURSE EXECUTION ACCURACY
SGT 2126.5 SGR 4121.7 SG3 2463.2
RRT .8441 RRF .9995 RTF .8456
SGB 4637.9 R23 .1028 R13 .9942
SG1 4519.9 SG2 1039.7 THA 65.06

ORBIT DETERMINATION ACCURACY
ST 1758.9 SR 2587.1 SS 4784.3
CRT .9775 CRS-1.0000 CST -.9786
LSA 5705.8 MSA 347.2 SSA 5.2
EL1 3113.2 EL2 308.1 ALF 56.01

LAUNCH DATE NOV 28 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 626.799 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.945 GAL 1.20 AZL 85.18 HCA 189.79 SMA 186.07 ECC .20792 INC 4.8231 V1 30.191
RP 222.28 LAP -.82 LOP 255.55 VP 21.930 GAP -4.29 AZP 94.75 TAL 7.00 TAP 196.79 RCA 147.39 APO 224.76 V2 24.737
RC 263.392 GL 44.57 GP -22.42 ZAL 75.50 ZAP 100.95 ETS 183.36 ZAE 132.80 ETE 199.71 ZAC 65.29 ETC 255.16 CLP 101.86

PLANETOCENTRIC CONIC

C3 15.574 VHL 3.946 DLA 57.51 RAL 160.28 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 3.095 DPA -17.97 RAP 168.63 ECC 1.2563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.60	6 54 47	4297.59	-39.58	209.67	38.53	44.18	8 6 25	3697.6	-45.06	202.20
142.40	16 12 37	2659.08	-39.57	76.67	38.52	44.17	16 56 56	2059.1	-45.05	69.19
37.60	6 54 47	4297.59	-39.58	209.67	38.53	44.18	8 6 25	3697.6	-45.06	202.20
142.40	16 12 37	2659.08	-39.57	76.67	38.52	44.17	16 56 56	2059.1	-45.05	69.19
37.60	6 54 47	4297.59	-39.58	209.67	38.53	44.18	8 6 25	3697.6	-45.06	202.20
142.40	16 12 37	2659.08	-39.57	76.67	38.52	44.17	16 56 56	2059.1	-45.05	69.19

DIFFERENTIAL CORRECTIONS
TDE 1.2869 TRA -.1421 TC3-1.7588 BAU .8261
RDE 1.5880 RRA .3878 RC3-3.5565 FAU .52496
FDE12.2249 FRA 2.8642 FC-29.1820 BSP 14585
BDE 2.0440 BRA .4131 BC3 3.9676 FSP 8993

MID-COURSE EXECUTION ACCURACY
SGT 2359.1 SGR 3780.8 SG3 2599.8
RRT .8747 RRF .9993 RTF .8757
SGB 4456.5 R23 .1299 R13 .9909
SG1 4343.9 SG2 995.1 THA 59.61

ORBIT DETERMINATION ACCURACY
ST 1872.4 SR 2328.5 SS 4790.2
CRT .9805 CRS-1.0000 CST -.9816
LSA 5635.5 MSA 340.1 SSA 6.0
EL1 2974.1 EL2 287.7 ALF 51.31

LAUNCH DATE NOV 28 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 630.829 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.943 GAL 1.18 AZL 85.49 HCA 190.89 SMA 186.03 ECC .20770 INC 4.5087 V1 30.191
RP 221.89 LAP -.85 LOP 256.65 VP 21.973 GAP -4.52 AZP 94.43 TAL 6.88 TAP 197.77 RCA 147.39 APO 224.67 V2 24.779
RC 264.895 GL 42.57 GP -20.53 ZAL 75.22 ZAP 99.26 ETS 182.32 ZAE 131.50 ETE 196.74 ZAC 66.94 ETC 255.43 CLP 99.90

PLANETOCENTRIC CONIC

C3 14.650 VHL 3.828 DLA 55.68 RAL 158.77 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.035 DPA -15.92 RAP 168.73 ECC 1.2411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.83	6 54 48	4271.61	-39.24	206.14	34.89	46.72	8 6 0	3671.6	-44.45	198.39
140.17	16 0 32	2657.64	-39.23	76.06	34.88	46.71	16 44 49	2057.6	-44.44	68.32
39.83	6 54 48	4271.61	-39.24	206.14	34.89	46.72	8 6 0	3671.6	-44.45	198.39
140.17	16 0 32	2657.64	-39.23	76.06	34.88	46.71	16 44 49	2057.6	-44.44	68.32
39.83	6 54 48	4271.61	-39.24	206.14	34.89	46.72	8 6 0	3671.6	-44.45	198.39
140.17	16 0 32	2657.64	-39.23	76.06	34.88	46.71	16 44 49	2057.6	-44.44	68.32

DIFFERENTIAL CORRECTIONS
TDE 1.3258 TRA -.1440 TC3-2.1580 BAU .7986
RDE 1.3924 RRA .3361 RC3-3.4594 FAU .54454
FDE11.9964 FRA 2.7639 FC-32.1796 BSP 14173
BDE 1.9227 BRA .3657 BC3 4.0773 FSP 9347

MID-COURSE EXECUTION ACCURACY
SGT 2610.4 SGR 3486.2 SG3 2709.1
RRT .8978 RRF .9991 RTF .8984
SGB 4355.2 R23 .1556 R13 .9869
SG1 4252.0 SG2 942.5 THA 54.05

ORBIT DETERMINATION ACCURACY
ST 1988.6 SR 2103.0 SS 4748.8
CRT .9828 CRS-1.0000 CST -.9838
LSA 5551.2 MSA 335.4 SSA 6.7
EL1 2881.9 EL2 268.1 ALF 46.63

LAUNCH DATE NOV 28 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 634.870 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.940 GAL 1.16 AZL 85.75 HCA 191.99 SMA 185.99 ECC .20750 INC 4.2508 V1 30.191
RP 221.51 LAP -.88 LOP 257.76 VP 22.016 GAP -4.74 AZP 94.16 TAL 6.76 TAP 198.74 RCA 147.40 APO 224.59 V2 24.820
RC 266.379 GL 40.85 GP -18.92 ZAL 75.05 ZAP 97.49 ETS 181.43 ZAE 129.97 ETE 194.21 ZAC 68.32 ETC 255.65 CLP 97.92

PLANETOCENTRIC CONIC

C3 13.929 VHL 3.732 DLA 54.07 RAL 157.65 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 2.990 DPA -14.11 RAP 168.68 ECC 1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.81	6 55 56	4248.58	-38.83	203.03	31.98	48.88	8 6 45	3648.6	-43.80	195.10
138.19	15 50 28	2658.35	-38.82	75.67	31.97	48.87	16 34 47	2058.4	-43.80	67.73
41.81	6 55 56	4248.58	-38.83	203.03	31.98	48.88	8 6 45	3648.6	-43.80	195.10
138.19	15 50 28	2658.35	-38.82	75.67	31.97	48.87	16 34 47	2058.4	-43.80	67.73
41.81	6 55 56	4248.58	-38.83	203.03	31.98	48.88	8 6 45	3648.6	-43.80	195.10
138.19	15 50 28	2658.35	-38.82	75.67	31.97	48.87	16 34 47	2058.4	-43.80	67.73

DIFFERENTIAL CORRECTIONS
TDE 1.3725 TRA -.1398 TC3-2.5749 BAU .7853
RDE 1.2359 RRA .2987 RC3-3.3395 FAU .55899
FDE11.7359 FRA 2.6960 FC-34.7431 BSP 14123
BDE 1.8470 BRA .3298 BC3 4.2169 FSP 9683

MID-COURSE EXECUTION ACCURACY
SGT 2875.4 SGR 3228.6 SG3 2795.5
RRT .9159 RRF .9988 RTF .9161
SGB 4323.4 R23 .1769 R13 .9830
SG1 4232.9 SG2 880.2 THA 48.61

ORBIT DETERMINATION ACCURACY
ST 2110.7 SR 1913.2 SS 4691.4
CRT .9847 CRS-1.0000 CST -.9857
LSA 5478.6 MSA 331.0 SSA 7.6
EL1 2838.0 EL2 248.1 ALF 42.15

LAUNCH DATE NOV 28 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 638.920 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.939	GAL	1.13	AZL	85.97	HCA	193.09	SMA	185.96	ECC	.20733	INC	4.0348
RP	221.13	LAP	-.91	LOP	258.86	VP	22.061	GAP	-4.96	AZP	93.93	TAL	6.61	TAP	199.70	RCA	147.41	APO	224.52
RC	267.844	GL	39.36	GP	-17.52	ZAL	74.96	ZAP	95.67	ETS	180.68	ZAE	128.27	ETE	192.06	ZAC	69.49	ETC	255.84

V1	30.191	V2	24.862	CLP	95.95														

PLANETOCENTRIC CONIC

C3	13.351	VHL	3.654	DLA	52.64	RAL	156.83	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	2.957	DPA	-12.50	RAP	168.52
ECC	1.2197																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.58	6 57 53	4227.86	-38.39	200.28	29.62	50.74	8 8 20	3627.9	-43.15	192.20
136.42	15 41 58	2660.58	-38.38	75.43	29.61	50.73	16 26 19	2060.6	-43.15	67.36
43.58	6 57 53	4227.86	-38.39	200.28	29.62	50.74	8 8 20	3627.9	-43.15	192.20
136.42	15 41 58	2660.58	-38.38	75.43	29.61	50.73	16 26 19	2060.6	-43.15	67.36
43.58	6 57 53	4227.86	-38.39	200.28	29.62	50.74	8 8 20	3627.9	-43.15	192.20
136.42	15 41 58	2660.58	-38.38	75.43	29.61	50.73	16 26 19	2060.6	-43.15	67.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4188	TRA	-.1364	TC3	-3.0198	BAU	.7874	SGT	3153.3	SGR	3002.2	SG3	2864.4	ST	2228.2	SR	1747.8
RDE	1.1057	RRA	.2691	RC3	-3.2160	FAU	.57088	RRT	.9294	RRF	.9984	RTF	.9294	CRT	.9860	CRS	-1.0000
FDE	11.4268	FRA	2.6322	FC	-37.0182	BSP	14208	SGB	4354.0	R23	.1932	R13	.9796	LSA	5401.7	MSA	328.7
BDE	1.7988	BRA	.3017	BC3	4.4116	FSP	9891	SG1	4276.6	SG2	817.0	THA	43.49	EL1	2822.6	EL2	230.0

SS	4611.6	CST	-.9870	SSA	8.4
ALF	38.02				

LAUNCH DATE NOV 28 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 642.979 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.937	GAL	1.11	AZL	86.15	HCA	194.20	SMA	185.94	ECC	.20718	INC	3.8514
RP	220.75	LAP	-.94	LOP	259.97	VP	22.105	GAP	-5.18	AZP	93.73	TAL	6.45	TAP	200.65	RCA	147.41	APO	224.46
RC	269.292	GL	38.06	GP	-16.31	ZAL	74.94	ZAP	93.81	ETS	180.03	ZAE	126.45	ETE	190.23	ZAC	70.48	ETC	256.01

V1	30.191	V2	24.903	CLP	93.97														

PLANETOCENTRIC CONIC

C3	12.876	VHL	3.588	DLA	51.36	RAL	156.23	RAD	6567.5	VEL	11.587	PTH	2.03	VHP	2.932	DPA	-11.05	RAP	168.27
ECC	1.2119																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.18	7 0 22	4208.99	-37.93	197.81	27.70	52.35	8 10 31	3609.0	-42.52	189.63
134.82	15 34 43	2663.82	-37.92	75.32	27.69	52.34	16 19 7	2063.8	-42.51	67.14
45.18	7 0 22	4208.99	-37.93	197.81	27.70	52.35	8 10 31	3609.0	-42.52	189.63
134.82	15 34 43	2663.82	-37.92	75.32	27.69	52.34	16 19 7	2063.8	-42.51	67.14
45.18	7 0 22	4208.99	-37.93	197.81	27.70	52.35	8 10 31	3609.0	-42.52	189.63
134.82	15 34 43	2663.82	-37.92	75.32	27.69	52.34	16 19 7	2063.8	-42.51	67.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4678	TRA	-.1290	TC3	-3.4793	BAU	.8007	SGT	3440.4	SGR	2799.3	SG3	2916.3	ST	2346.9	SR	1604.5
RDE	.9971	RRA	.2456	RC3	-3.0868	FAU	.57958	RRT	.9403	RRF	.9979	RTF	.9401	CRT	.9872	CRS	-1.0000
FDE	11.0948	FRA	2.5764	FC	-38.9673	BSP	14526	SGB	4435.4	R23	.2032	R13	.9770	LSA	5330.2	MSA	325.4
BDE	1.7744	BRA	.2774	BC3	4.6512	FSP	10074	SG1	4371.5	SG2	750.0	THA	38.77	EL1	2835.1	EL2	211.8

SS	4520.5	CST	-.9882	SSA	9.3
ALF	34.23				

LAUNCH DATE NOV 28 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 647.046 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.936	GAL	1.08	AZL	86.31	HCA	195.32	SMA	185.92	ECC	.20705	INC	3.6936
RP	220.37	LAP	-.97	LOP	261.09	VP	22.150	GAP	-5.39	AZP	93.56	TAL	6.27	TAP	201.59	RCA	147.42	APO	224.41
RC	270.721	GL	36.91	GP	-15.24	ZAL	75.00	ZAP	91.93	ETS	179.47	ZAE	124.55	ETE	188.66	ZAC	71.35	ETC	256.17

V1	30.191	V2	24.945	CLP	92.00														

PLANETOCENTRIC CONIC

C3	12.479	VHL	3.533	DLA	50.20	RAL	155.82	RAD	6567.5	VEL	11.570	PTH	2.02	VHP	2.915	DPA	-9.73	RAP	167.97
ECC	1.2054																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.64	7 3 19	4191.55	-37.48	195.57	26.13	53.76	8 13 10	3591.6	-41.90	187.32
133.36	15 28 26	2667.85	-37.47	75.30	26.12	53.75	16 12 54	2067.8	-41.89	67.05
46.64	7 3 19	4191.55	-37.48	195.57	26.13	53.76	8 13 10	3591.6	-41.90	187.32
133.36	15 28 26	2667.85	-37.47	75.30	26.12	53.75	16 12 54	2067.8	-41.89	67.05
46.64	7 3 19	4191.55	-37.48	195.57	26.13	53.76	8 13 10	3591.6	-41.90	187.32
133.36	15 28 26	2667.85	-37.47	75.30	26.12	53.75	16 12 54	2067.8	-41.89	67.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5174	TRA	-.1194	TC3	-3.9525	BAU	.8231	SGT	3734.5	SGR	2617.3	SG3	2954.3	ST	2464.1	SR	1481.9
RDE	.9065	RRA	.2289	RC3	-2.9527	FAU	.58509	RRT	.9483	RRF	.9973	RTF	.9482	CRT	.9880	CRS	-1.0000
FDE	10.7633	FRA	2.5580	FC	-40.5899	BSP	15018	SGB	4560.4	R23	.2083	R13	.9753	LSA	5270.3	MSA	324.3
BDE	1.7675	BRA	.2582	BC3	4.9337	FSP	10212	SG1	4508.1	SG2	688.3	THA	34.53	EL1	2868.7	EL2	196.2

SS	4428.6	CST	-.9890	SSA	10.3
ALF	30.88				

LAUNCH DATE NOV 28 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 651.124 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.935	GAL	1.04	AZL	86.44	HCA	196.43	SMA	185.90	ECC	.20694	INC	3.5565
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.195	GAP	-5.60	AZP	93.41	TAL	6.08	TAP	202.52	RCA	147.43	APO	224.37
RC	272.134	GL	35.89	GP	-14.28	ZAL	75.11	ZAP	90.04	ETS	178.98	ZAE	122.59	ETE	187.31	ZAC	72.10	ETC	256.31

V1	30.191	V2	24.986	CLP	90.04

PLANETOCENTRIC CONIC

C3	12.141	VHL	3.484	DLA	49.15	RAL	155.54	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	2.904	DPA	-8.53	RAP	167.62
ECC	1.1998																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.99	7 6 36	4175.30	-37.03	193.53	24.84	55.02	8 16 11	3575.3	-41.30	185.21
132.01	15 22 59	2672.45	-37.02	75.36	24.83	55.01	16 7 31	2072.5	-41.30	67.05
47.99	7 6 36	4175.30	-37.03	193.53	24.84	55.02	8 16 11	3575.3	-41.30	185.21
132.01	15 22 59	2672.45	-37.02	75.36	24.83	55.01	16 7 31	2072.5	-41.30	67.05
47.99	7 6 36	4175.30	-37.03	193.53	24.84	55.02	8 16 11	3575.3	-41.30	185.21
132.01	15 22 59	2672.45	-37.02	75.36	24.83	55.01	16 7 31	2072.5	-41.30	67.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5668	TRA	-.1071	TC3	-4.4353	BAU	.8534	SGT	4032.8	SGR	2452.4	SG3	2980.2	ST	2579.2	SR	1371.7
RDE	.8276	RRA	.2144	RC3	-2.8236	FAU	.58911	RRT	.9548	RRF	.9966	RTF	.9548	CRT	.9888	CRS	-.9999
FDE	10.3981	FRA	2.5316	FC	-42.0057	BSP	15634	SGB	4719.9	R23	.2086	R13	.9745	LSA	5206.4	MSA	322.0
BDE	1.7719	BRA	.2397	BC3	5.2578	FSP	10279	SG1	4677.9	SG2	628.6	THA	30.76	EL1	2915.7	EL2	180.9

SS	4321.6	CST	-.9898	SSA	11.2
ALF	27.86				

LAUNCH DATE NOV 28 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 655.210 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.935 GAL 1.01 AZL 86.56 HCA 197.56 SMA 185.90 ECC .20686 INC 3.4360 V1 30.191
RP 219.62 LAP -1.04 LOP 263.33 VP 22.241 GAP -5.80 AZP 93.28 TAL 5.88 TAP 203.44 RCA 147.44 APO 224.35 V2 25.027
RC 273.529 GL 34.98 GP -13.43 ZAL 75.27 ZAP 88.15 ETS 178.55 ZAE 120.60 ETE 186.14 ZAC 72.76 ETC 256.45 CLP 88.10

PLANETOCENTRIC CONIC

C3 11.850 VHL 3.442 DLA 48.18 RAL 155.39 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 2.898 DPA -7.42 RAP 167.25 ECC 1.1950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.23	7 10 13	4159.94	-36.59	191.63	23.79	56.14	8 19 33	3559.9	-40.74	183.28
130.77	15 18 11	2677.55	-36.58	75.49	23.78	56.13	16 2 48	2077.6	-40.72	67.14
49.23	7 10 13	4159.94	-36.59	191.63	23.79	56.14	8 19 33	3559.9	-40.74	183.28
130.77	15 18 11	2677.55	-36.58	75.49	23.78	56.13	16 2 48	2077.6	-40.72	67.14
49.23	7 10 13	4159.94	-36.59	191.63	23.79	56.14	8 19 33	3559.9	-40.74	183.28
130.77	15 18 11	2677.55	-36.58	75.49	23.78	56.13	16 2 48	2077.6	-40.72	67.14

DIFFERENTIAL CORRECTIONS
TDE 1.6160 TRA -.0919 TC3-4.9268 BAU .8893
RDE .7623 RRA .2047 RC3-2.6902 FAU .58987
FDE10.0657 FRA 2.5443 FC-43.0965 BSP 16392
BDE 1.7868 BRA .2244 BC3 5.6134 FSP 10350

MID-COURSE EXECUTION ACCURACY
SGT 4335.1 SGR 2302.5 SG3 2994.7
RRT .9596 RRF .9956 RTF .9600
SGB 4908.6 R23 .2051 R13 .9744
SG1 4874.6 SG2 576.3 THA 27.42

ORBIT DETERMINATION ACCURACY
ST 2692.6 SR 1279.3 SS 4228.0
CRT .9894 CRS -.9999 CST -.9903
LSA 5163.2 MSA 321.5 SSA 12.2
EL1 2976.3 EL2 168.2 ALF 25.26

LAUNCH DATE NOV 28 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 659.305 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.935 GAL .97 AZL 86.67 HCA 198.68 SMA 185.89 ECC .20680 INC 3.3288 V1 30.191
RP 219.25 LAP -1.07 LOP 264.45 VP 22.286 GAP -6.00 AZP 93.15 TAL 5.66 TAP 204.34 RCA 147.45 APO 224.34 V2 25.067
RC 274.906 GL 34.16 GP -12.66 ZAL 75.48 ZAP 86.27 ETS 178.18 ZAE 118.58 ETE 185.13 ZAC 73.34 ETC 256.58 CLP 86.17

PLANETOCENTRIC CONIC

C3 11.594 VHL 3.405 DLA 47.29 RAL 155.35 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 2.897 DPA -6.40 RAP 166.85 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.40	7 14 4	4145.41	-36.16	189.87	22.93	57.16	8 23 9	3545.4	-40.19	181.49
129.60	15 13 58	2682.98	-36.15	75.67	22.92	57.15	15 58 41	2083.0	-40.18	67.28
50.40	7 14 4	4145.41	-36.16	189.87	22.93	57.16	8 23 9	3545.4	-40.19	181.49
129.60	15 13 58	2682.98	-36.15	75.67	22.92	57.15	15 58 41	2083.0	-40.18	67.28
50.40	7 14 4	4145.41	-36.16	189.87	22.93	57.16	8 23 9	3545.4	-40.19	181.49
129.60	15 13 58	2682.98	-36.15	75.67	22.92	57.15	15 58 41	2083.0	-40.18	67.28

DIFFERENTIAL CORRECTIONS
TDE 1.6594 TRA -.0782 TC3-5.4383 BAU .9321
RDE .7026 RRA .1947 RC3-2.5666 FAU .59030
FDE 9.6793 FRA 2.5275 FC-44.0765 BSP 17104
BDE 1.8020 BRA .2098 BC3 6.0135 FSP 10286

MID-COURSE EXECUTION ACCURACY
SGT 4642.2 SGR 2164.8 SG3 2999.9
RRT .9633 RRF .9945 RTF .9643
SGB 5122.2 R23 .1985 R13 .9748
SG1 5094.7 SG2 529.3 THA 24.47

ORBIT DETERMINATION ACCURACY
ST 2795.0 SR 1192.3 SS 4110.5
CRT .9898 CRS -.9999 CST -.9907
LSA 5101.7 MSA 320.2 SSA 13.2
EL1 3034.7 EL2 156.2 ALF 22.96

LAUNCH DATE NOV 28 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 663.408 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.935 GAL .93 AZL 86.77 HCA 199.81 SMA 185.90 ECC .20675 INC 3.2334 V1 30.191
RP 218.89 LAP -1.10 LOP 265.58 VP 22.332 GAP -6.19 AZP 93.04 TAL 5.43 TAP 205.24 RCA 147.46 APO 224.33 V2 25.108
RC 276.266 GL 33.43 GP -11.96 ZAL 75.74 ZAP 84.40 ETS 177.85 ZAE 116.56 ETE 184.26 ZAC 73.87 ETC 256.70 CLP 84.27

PLANETOCENTRIC CONIC

C3 11.369 VHL 3.372 DLA 46.45 RAL 155.40 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 2.901 DPA -5.45 RAP 166.45 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.50	7 18 8	4131.53	-35.74	188.22	22.24	58.09	8 27 0	3531.5	-39.66	179.81
128.50	15 10 16	2688.68	-35.73	75.88	22.24	58.07	15 55 5	2088.7	-39.65	67.48
51.50	7 18 8	4131.53	-35.74	188.22	22.24	58.09	8 27 0	3531.5	-39.66	179.81
128.50	15 10 16	2688.68	-35.73	75.88	22.24	58.07	15 55 5	2088.7	-39.65	67.48
51.50	7 18 8	4131.53	-35.74	188.22	22.24	58.09	8 27 0	3531.5	-39.66	179.81
128.50	15 10 16	2688.68	-35.73	75.88	22.24	58.07	15 55 5	2088.7	-39.65	67.48

DIFFERENTIAL CORRECTIONS
TDE 1.7049 TRA -.0581 TC3-5.9434 BAU .9765
RDE .6520 RRA .1889 RC3-2.4401 FAU .58772
FDE 9.3167 FRA 2.5561 FC-44.7549 BSP 17997
BDE 1.8253 BRA .1976 BC3 6.4248 FSP 10285

MID-COURSE EXECUTION ACCURACY
SGT 4947.5 SGR 2037.7 SG3 2994.6
RRT .9660 RRF .9931 RTF .9676
SGB 5350.6 R23 .1901 R13 .9753
SG1 5328.2 SG2 489.5 THA 21.89

ORBIT DETERMINATION ACCURACY
ST 2899.9 SR 1117.8 SS 4003.1
CRT .9902 CRS -.9999 CST -.9910
LSA 5057.8 MSA 320.4 SSA 14.2
EL1 3104.5 EL2 145.9 ALF 20.94

LAUNCH DATE NOV 28 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 667.519 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.935 GAL .89 AZL 86.85 HCA 200.94 SMA 185.90 ECC .20673 INC 3.1476 V1 30.191
RP 218.52 LAP -1.12 LOP 266.71 VP 22.378 GAP -6.38 AZP 92.94 TAL 5.18 TAP 206.12 RCA 147.47 APO 224.34 V2 25.148
RC 277.609 GL 32.76 GP -11.32 ZAL 76.05 ZAP 82.55 ETS 177.57 ZAE 114.53 ETE 183.49 ZAC 74.34 ETC 256.81 CLP 82.40

PLANETOCENTRIC CONIC

C3 11.168 VHL 3.342 DLA 45.67 RAL 155.52 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 2.909 DPA -4.57 RAP 166.05 ECC 1.1838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.54	7 22 27	4118.12	-35.34	186.65	21.70	58.94	8 31 5	3518.1	-39.15	178.23
127.46	15 6 58	2694.71	-35.33	76.14	21.69	58.93	15 51 53	2094.7	-39.14	67.72
52.54	7 22 27	4118.12	-35.34	186.65	21.70	58.94	8 31 5	3518.1	-39.15	178.23
127.46	15 6 58	2694.71	-35.33	76.14	21.69	58.93	15 51 53	2094.7	-39.14	67.72
52.54	7 22 27	4118.12	-35.34	186.65	21.70	58.94	8 31 5	3518.1	-39.15	178.23
127.46	15 6 58	2694.71	-35.33	76.14	21.69	58.93	15 51 53	2094.7	-39.14	67.72

DIFFERENTIAL CORRECTIONS
TDE 1.7471 TRA -.0365 TC3-6.4572 BAU 1.0242
RDE .6074 RRA .1836 RC3-2.3168 FAU .58357
FDE 8.9508 FRA 2.5799 FC-45.2393 BSP 18891
BDE 1.8496 BRA .1872 BC3 6.8602 FSP 10210

MID-COURSE EXECUTION ACCURACY
SGT 5254.1 SGR 1919.7 SG3 2980.2
RRT .9678 RRF .9915 RTF .9705
SGB 5593.8 R23 .1791 R13 .9762
SG1 5575.3 SG2 455.2 THA 19.61

ORBIT DETERMINATION ACCURACY
ST 2998.3 SR 1051.1 SS 3893.2
CRT .9905 CRS -.9999 CST -.9912
LSA 5014.9 MSA 320.0 SSA 15.2
EL1 3174.3 EL2 136.5 ALF 19.19

LAUNCH DATE NOV 28 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 671.639 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.936	GAL	.84	AZL	86.93	HCA	202.08	SMA	185.92	ECC	.20673	INC	3.0698
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.424	GAP	-6.56	AZP	92.85	TAL	4.91	TAP	206.99	RCA	147.48	APO	224.35
RC	278.933	GL	32.15	GP	-10.73	ZAL	76.39	ZAP	80.72	ETS	177.31	ZAE	112.52	ETE	182.82	ZAC	74.76	ETC	256.92

V1	30.191	V2	25.188	CLP	80.56														

PLANETOCENTRIC CONIC

C3	10.987	VHL	3.315	DLA	44.93	RAL	155.72	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	2.921	DPA	-3.75	RAP	165.65
ECC	1.1808																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.54	7 26 59	4105.05	-34.94	185.15	21.28	59.73	8 35 24	3505.0	-38.65	176.72
126.46	15 4 1	2701.06	-34.92	76.44	21.28	59.71	15 49 2	2101.1	-38.64	68.01
53.54	7 26 59	4105.05	-34.94	185.15	21.28	59.73	8 35 24	3505.0	-38.65	176.72
126.46	15 4 1	2701.06	-34.92	76.44	21.28	59.71	15 49 2	2101.1	-38.64	68.01
53.54	7 26 59	4105.05	-34.94	185.15	21.28	59.73	8 35 24	3505.0	-38.65	176.72
126.46	15 4 1	2701.06	-34.92	76.44	21.28	59.71	15 49 2	2101.1	-38.64	68.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7856	TRA	-.0131	TC3	-6.9761	BAU	1.0744	SGT	5560.2	SGR	1811.0	SG3	2959.6	ST	3089.7	SR	990.8	SS	3778.9
RDE	.5676	RRA	.1795	RC3	-2.1989	FAU	.57845	RRT	.9689	RRF	.9895	RTF	.9729	CRT	.9907	CRS	-.9999	CST	-.9913
FDE	8.5765	FRA	2.6094	FC	-45.5807	BSP	19796	SGB	5847.6	R23	.1669	R13	.9770	LSA	4970.4	MSA	320.3	SSA	16.2
BDE	1.8737	BRA	.1800	BC3	7.3144	FSP	10106	SG1	5832.0	SG2	427.5	THA	17.61	EL1	3242.2	EL2	128.2	ALF	17.65

LAUNCH DATE NOV 28 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 675.765 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.937	GAL	.79	AZL	87.00	HCA	203.22	SMA	185.93	ECC	.20675	INC	2.9992
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.470	GAP	-6.74	AZP	92.76	TAL	4.63	TAP	207.85	RCA	147.49	APO	224.38
RC	280.240	GL	31.59	GP	-10.19	ZAL	76.78	ZAP	78.93	ETS	177.09	ZAE	110.52	ETE	182.24	ZAC	75.15	ETC	257.02

V1	30.191	V2	25.228	CLP	78.75														

PLANETOCENTRIC CONIC

C3	10.823	VHL	3.290	DLA	44.22	RAL	155.99	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	2.936	DPA	-2.99	RAP	165.27
ECC	1.1781																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.50	7 31 45	4092.28	-34.54	183.71	20.98	60.47	8 39 57	3492.3	-38.17	175.27
125.50	15 1 23	2707.67	-34.53	76.77	20.97	60.45	15 46 31	2107.7	-38.16	68.33
54.50	7 31 45	4092.28	-34.54	183.71	20.98	60.47	8 39 57	3492.3	-38.17	175.27
125.50	15 1 23	2707.67	-34.53	76.77	20.97	60.45	15 46 31	2107.7	-38.16	68.33
54.50	7 31 45	4092.28	-34.54	183.71	20.98	60.47	8 39 57	3492.3	-38.17	175.27
125.50	15 1 23	2707.67	-34.53	76.77	20.97	60.45	15 46 31	2107.7	-38.16	68.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8304	TRA	.0217	TC3	-7.4696	BAU	1.1214	SGT	5858.3	SGR	1707.9	SG3	2924.3	ST	3191.4	SR	944.8	SS	3704.0
RDE	.5367	RRA	.1809	RC3	-2.0672	FAU	.56775	RRT	.9682	RRF	.9871	RTF	.9746	CRT	.9909	CRS	-.9998	CST	-.9912
FDE	8.2905	FRA	2.7340	FC	-45.4161	BSP	20959	SGB	6102.2	R23	.1552	R13	.9777	LSA	4969.0	MSA	325.5	SSA	16.9
BDE	1.9075	BRA	.1822	BC3	7.7504	FSP	10177	SG1	6088.3	SG2	410.9	THA	15.84	EL1	3326.1	EL2	122.1	ALF	16.37

LAUNCH DATE NOV 28 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 679.903 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.938	GAL	.74	AZL	87.07	HCA	204.37	SMA	185.96	ECC	.20679	INC	2.9346
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.517	GAP	-6.92	AZP	92.67	TAL	4.34	TAP	208.71	RCA	147.50	APO	224.41
RC	281.529	GL	31.07	GP	-9.69	ZAL	77.20	ZAP	77.16	ETS	176.90	ZAE	108.54	ETE	181.72	ZAC	75.51	ETC	257.12

V1	30.191	V2	25.268	CLP	76.97														

PLANETOCENTRIC CONIC

C3	10.674	VHL	3.267	DLA	43.54	RAL	156.31	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	2.954	DPA	-2.28	RAP	164.90
ECC	1.1757																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.43	7 36 41	4079.75	-34.15	182.32	20.77	61.16	8 44 41	3479.8	-37.70	173.87
124.57	14 59 1	2714.54	-34.14	77.13	20.77	61.15	15 44 16	2114.5	-37.69	68.68
55.43	7 36 41	4079.75	-34.15	182.32	20.77	61.16	8 44 41	3479.8	-37.70	173.87
124.57	14 59 1	2714.54	-34.14	77.13	20.77	61.15	15 44 16	2114.5	-37.69	68.68
55.43	7 36 41	4079.75	-34.15	182.32	20.77	61.16	8 44 41	3479.8	-37.70	173.87
124.57	14 59 1	2714.54	-34.14	77.13	20.77	61.15	15 44 16	2114.5	-37.69	68.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8597	TRA	.0480	TC3	-7.9979	BAU	1.1752	SGT	6161.3	SGR	1614.5	SG3	2893.5	ST	3265.4	SR	891.9	SS	3568.5
RDE	.5028	RRA	.1763	RC3	-1.9640	FAU	.56197	RRT	.9683	RRF	.9844	RTF	.9764	CRT	.9911	CRS	-.9998	CST	-.9912
FDE	7.8757	FRA	2.7333	FC	-45.5815	BSP	21795	SGB	6369.3	R23	.1406	R13	.9787	LSA	4907.9	MSA	323.8	SSA	18.0
BDE	1.9265	BRA	.1827	BC3	8.2356	FSP	9924	SG1	6357.3	SG2	390.7	THA	14.29	EL1	3383.1	EL2	114.5	ALF	15.17

LAUNCH DATE NOV 28 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 684.048 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.940	GAL	.69	AZL	87.12	HCA	205.51	SMA	185.98	ECC	.20685	INC	2.8754
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.563	GAP	-7.09	AZP	92.60	TAL	4.03	TAP	209.55	RCA	147.51	APO	224.45
RC	282.801	GL	30.60	GP	-9.22	ZAL	77.66	ZAP	75.42	ETS	176.72	ZAE	106.58	ETE	181.27	ZAC	75.85	ETC	257.21

V1	30.191	V2	25.307	CLP	75.22														

PLANETOCENTRIC CONIC

C3	10.537	VHL	3.246	DLA	42.89	RAL	156.69	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	2.975	DPA	-1.62	RAP	164.55
ECC	1.1734																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.34	7 41 51	4067.30	-33.77	180.95	20.66	61.82	8 49 39	3467.3	-37.23	172.51
123.66	14 56 52	2721.77	-33.76	77.52	20.65	61.80	15 42 14	2121.8	-37.23	69.08
56.34	7 41 51	4067.30	-33.77	180.95	20.66	61.82	8 49 39	3467.3	-37.23	172.51
123.66	14 56 52	2721.77	-33.76	77.52	20.65	61.80	15 42 14	2121.8	-37.23	69.08
56.34	7 41 51	4067.30	-33.77	180.95	20.66	61.82	8 49 39	3467.3	-37.23	172.51
123.66	14 56 52	2721.77	-33.76	77.52	20.65	61.80	15 42 14	2121.8	-37.23	69.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8899	TRA	.0806	TC3	-8.5135	BAU	1.2276	SGT	6458.6	SGR	1527.2	SG3	2855.4	ST	3340.4	SR	847.2	SS	3448.9
RDE	.4742	RRA	.1738	RC3	-1.8588	FAU	.55382	RRT	.9675	RRF	.9811	RTF	.9779	CRT	.9914	CRS	-.9997	CST	-.9912
FDE	7.4997	FRA	2.7635	FC	-45.5012	BSP	22763	SGB	6636.7	R23	.1256	R13	.9796	LSA	4864.7	MSA	323.1	SSA	19.0
BDE	1.9485	BRA	.1916	BC3	8.7140	FSP	9773	SG1	6626.1	SG2	376.2	THA	12.93	EL1	3444.4	EL2	107.8	ALF	14.13

LAUNCH DATE NOV 28 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 688.201 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.942 GAL .64 AZL 87.18 HCA 206.67 SMA 186.01 ECC .20693 INC 2.8206 V1 30.191
RP 216.74 LAP -1.27 LOP 272.44 VP 22.609 GAP -7.26 AZP 92.52 TAL 3.71 TAP 210.38 RCA 147.52 APO 224.50 V2 25.346
RC 284.057 GL 30.16 GP -8.79 ZAL 78.16 ZAP 73.71 ETS 176.57 ZAE 104.64 ETE 180.87 ZAC 76.15 ETC 257.30 CLP 73.51

PLANETOCENTRIC CONIC

C3 10.412 VHL 3.227 DLA 42.25 RAL 157.12 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 2.999 DPA -1.00 RAP 164.22 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.23	7 47 17	4054.84	-33.39	179.61	20.62	62.44	8 54 52	3454.8	-36.78	171.17
122.77	14 54 53	2729.40	-33.37	77.95	20.61	62.43	15 40 22	2129.4	-36.77	69.51
57.23	7 47 17	4054.84	-33.39	179.61	20.62	62.44	8 54 52	3454.8	-36.78	171.17
122.77	14 54 53	2729.40	-33.37	77.95	20.61	62.43	15 40 22	2129.4	-36.77	69.51
57.23	7 47 17	4054.84	-33.39	179.61	20.62	62.44	8 54 52	3454.8	-36.78	171.17
122.77	14 54 53	2729.40	-33.37	77.95	20.61	62.43	15 40 22	2129.4	-36.77	69.51

DIFFERENTIAL CORRECTIONS
TDE 1.9159 TRA .1152 TC3-9.0294 BAU 1.2804
RDE .4488 RRA .1717 RC3-1.7552 FAU .54428
FDE 7.1317 FRA 2.7922 FC-45.2551 BSP 23678
BDE 1.9677 BRA .2068 BC3 9.1985 FSP 9562

MID-COURSE EXECUTION ACCURACY
SGT 6753.2 SGR 1444.9 SG3 2810.6
RRT .9659 RRF .9772 RTF .9792
SGB 6906.0 R23 .1104 R13 .9805
SG1 6896.3 SG2 366.1 THA 11.71

ORBIT DETERMINATION ACCURACY
ST 3407.4 SR 807.1 SS 3330.5
CRT .9916 CRS -.9997 CST -.9911
LSA 4821.8 MSA 322.3 SSA 20.0
EL1 3500.2 EL2 101.6 ALF 13.23

LAUNCH DATE NOV 28 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 692.361 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.944 GAL .58 AZL 87.23 HCA 207.82 SMA 186.05 ECC .20703 INC 2.7700 V1 30.191
RP 216.39 LAP -1.29 LOP 273.59 VP 22.655 GAP -7.42 AZP 92.45 TAL 3.38 TAP 211.20 RCA 147.53 APO 224.56 V2 25.385
RC 285.296 GL 29.74 GP -8.39 ZAL 78.69 ZAP 72.04 ETS 176.44 ZAE 102.74 ETE 180.52 ZAC 76.44 ETC 257.38 CLP 71.84

PLANETOCENTRIC CONIC

C3 10.297 VHL 3.209 DLA 41.63 RAL 157.60 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 3.026 DPA -.43 RAP 163.91 ECC 1.1695

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.11	7 52 55	4042.39	-33.00	178.29	20.66	63.04	9 0 17	3442.4	-36.32	169.85
121.89	14 53 4	2737.37	-32.99	78.41	20.65	63.02	15 38 41	2137.4	-36.31	69.97
58.11	7 52 55	4042.39	-33.00	178.29	20.66	63.04	9 0 17	3442.4	-36.32	169.85
121.89	14 53 4	2737.37	-32.99	78.41	20.65	63.02	15 38 41	2137.4	-36.31	69.97
58.11	7 52 55	4042.39	-33.00	178.29	20.66	63.04	9 0 17	3442.4	-36.32	169.85
121.89	14 53 4	2737.37	-32.99	78.41	20.65	63.02	15 38 41	2137.4	-36.31	69.97

DIFFERENTIAL CORRECTIONS
TDE 1.9390 TRA .1553 TC3-9.5377 BAU 1.3326
RDE .4257 RRA .1712 RC3-1.6539 FAU .53360
FDE 6.7644 FRA 2.8473 FC-44.8636 BSP 24633
BDE 1.9852 BRA .2311 BC3 9.6801 FSP 9376

MID-COURSE EXECUTION ACCURACY
SGT 7042.2 SGR 1368.1 SG3 2760.9
RRT .9633 RRF .9727 RTF .9802
SGB 7173.8 R23 .0968 R13 .9812
SG1 7164.7 SG2 361.0 THA 10.63

ORBIT DETERMINATION ACCURACY
ST 3468.8 SR 770.6 SS 3210.9
CRT .9918 CRS -.9996 CST -.9908
LSA 4778.2 MSA 323.9 SSA 21.0
EL1 3552.1 EL2 96.2 ALF 12.43

LAUNCH DATE NOV 28 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 696.529 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.946 GAL .52 AZL 87.28 HCA 208.98 SMA 186.09 ECC .20714 INC 2.7230 V1 30.191
RP 216.05 LAP -1.32 LOP 274.75 VP 22.702 GAP -7.59 AZP 92.38 TAL 3.03 TAP 212.01 RCA 147.54 APO 224.63 V2 25.423
RC 286.520 GL 29.36 GP -8.02 ZAL 79.26 ZAP 70.41 ETS 176.32 ZAE 100.87 ETE 180.20 ZAC 76.72 ETC 257.45 CLP 70.21

PLANETOCENTRIC CONIC

C3 10.191 VHL 3.192 DLA 41.02 RAL 158.12 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 3.056 DPA .10 RAP 163.63 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.99	7 58 50	4029.75	-32.62	176.97	20.77	63.61	9 5 59	3429.8	-35.87	168.53
121.01	14 51 21	2745.85	-32.61	78.91	20.76	63.60	15 37 6	2145.8	-35.86	70.48
58.99	7 58 50	4029.75	-32.62	176.97	20.77	63.61	9 5 59	3429.8	-35.87	168.53
121.01	14 51 21	2745.85	-32.61	78.91	20.76	63.60	15 37 6	2145.8	-35.86	70.48
58.99	7 58 50	4029.75	-32.62	176.97	20.77	63.61	9 5 59	3429.8	-35.87	168.53
121.01	14 51 21	2745.85	-32.61	78.91	20.76	63.60	15 37 6	2145.8	-35.86	70.48

DIFFERENTIAL CORRECTIONS
TDE 1.9599 TRA .1992 TC-10.0361 BAU 1.3837
RDE .4054 RRA .1710 RC3-1.5557 FAU .52211
FDE 6.4133 FRA 2.9067 FC-44.3545 BSP 25572
BDE 2.0013 BRA .2626 BC310.1560 FSP 9151

MID-COURSE EXECUTION ACCURACY
SGT 7325.1 SGR 1296.8 SG3 2707.9
RRT .9598 RRF .9674 RTF .9811
SGB 7439.0 R23 .0838 R13 .9818
SG1 7430.3 SG2 358.8 THA 9.67

ORBIT DETERMINATION ACCURACY
ST 3525.7 SR 738.4 SS 3096.2
CRT .9920 CRS -.9994 CST -.9904
LSA 4738.7 MSA 325.8 SSA 21.9
EL1 3601.0 EL2 91.2 ALF 11.74

LAUNCH DATE NOV 28 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 700.705 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.948 GAL .46 AZL 87.32 HCA 210.15 SMA 186.13 ECC .20728 INC 2.6790 V1 30.191
RP 215.71 LAP -1.34 LOP 275.92 VP 22.748 GAP -7.74 AZP 92.32 TAL 2.66 TAP 212.81 RCA 147.55 APO 224.71 V2 25.461
RC 287.729 GL 29.00 GP -7.66 ZAL 79.86 ZAP 68.82 ETS 176.22 ZAE 99.03 ETE 179.93 ZAC 76.97 ETC 257.52 CLP 68.62

PLANETOCENTRIC CONIC

C3 10.093 VHL 3.177 DLA 40.42 RAL 158.69 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.088 DPA .59 RAP 163.38 ECC 1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.87	8 5 0	4016.94	-32.23	175.65	20.94	64.17	9 11 57	3416.9	-35.41	167.22
120.13	14 49 43	2754.80	-32.22	79.46	20.93	64.15	15 35 38	2154.8	-35.40	71.03
59.87	8 5 0	4016.94	-32.23	175.65	20.94	64.17	9 11 57	3416.9	-35.41	167.22
120.13	14 49 43	2754.80	-32.22	79.46	20.93	64.15	15 35 38	2154.8	-35.40	71.03
59.87	8 5 0	4016.94	-32.23	175.65	20.94	64.17	9 11 57	3416.9	-35.41	167.22
120.13	14 49 43	2754.80	-32.22	79.46	20.93	64.15	15 35 38	2154.8	-35.40	71.03

DIFFERENTIAL CORRECTIONS
TDE 1.9770 TRA .2457 TC-10.5330 BAU 1.4349
RDE .3875 RRA .1711 RC3-1.4612 FAU .51013
FDE 6.0765 FRA 2.9640 FC-43.7557 BSP 26486
BDE 2.0146 BRA .2994 BC310.6339 FSP 8927

MID-COURSE EXECUTION ACCURACY
SGT 7605.4 SGR 1230.7 SG3 2652.3
RRT .9553 RRF .9613 RTF .9818
SGB 7704.3 R23 .0719 R13 .9824
SG1 7695.9 SG2 359.6 THA 8.81

ORBIT DETERMINATION ACCURACY
ST 3575.3 SR 709.8 SS 2985.5
CRT .9923 CRS -.9992 CST -.9900
LSA 4700.2 MSA 327.6 SSA 22.9
EL1 3644.1 EL2 86.4 ALF 11.15

LAUNCH DATE NOV 28 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 704.888 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.951 GAL .39 AZL 87.36 HCA 211.31 SMA 186.17 ECC .20744 INC 2.6380 V1 30.191
RP 215.38 LAP -1.37 LOP 277.08 VP 22.793 GAP -7.90 AZP 92.25 TAL 2.28 TAP 213.59 RCA 147.55 APO 224.79 V2 25.498
RC 288.924 GL 28.65 GP -7.33 ZAL 80.50 ZAP 67.27 ETS 176.13 ZAE 97.23 ETE 179.68 ZAC 77.22 ETC 257.58 CLP 67.07

PLANETOCENTRIC CONIC

C3 10.003 VHL 3.163 DLA 39.82 RAL 159.30 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.122 DPA 1.04 RAP 163.16 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.75	8 11 26	4003.89	-31.84	174.32	21.17	64.71	9 18 9	3403.9	-34.96	165.90
119.25	14 48 8	2764.28	-31.83	80.04	21.16	64.70	15 34 13	2164.3	-34.95	71.63
60.75	8 11 26	4003.89	-31.84	174.32	21.17	64.71	9 18 9	3403.9	-34.96	165.90
119.25	14 48 8	2764.28	-31.83	80.04	21.16	64.70	15 34 13	2164.3	-34.95	71.63
60.75	8 11 26	4003.89	-31.84	174.32	21.17	64.71	9 18 9	3403.9	-34.96	165.90
119.25	14 48 8	2764.28	-31.83	80.04	21.16	64.70	15 34 13	2164.3	-34.95	71.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9898 TRA .2961 TC-11.0209 BAU 1.4852 SGT 7879.2 SGR 1168.8 SG3 2594.3 ST 3616.7 SR 683.2 SS 2869.9
RDE .3709 RRA .1708 RC3-1.3713 FAU .49800 RRT .9502 RRF .9542 RTF .9826 CRT .9926 CRS -.9990 CST -.9895
FDE 5.7364 FRA 3.0086 FC-43.0998 BSP 27425 SGB 7965.4 R23 .0597 R13 .9830 LSA 4655.7 MSA 328.0 SSA 23.8
BDE 2.0240 BRA .3419 BC311.1059 FSP 8721 SG1 7957.2 SG2 360.8 THA 8.04 EL1 3679.8 EL2 81.3 ALF 10.62

LAUNCH DATE NOV 28 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 709.078 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.954 GAL .32 AZL 87.40 HCA 212.48 SMA 186.22 ECC .20761 INC 2.5996 V1 30.191
RP 215.05 LAP -1.40 LOP 278.26 VP 22.839 GAP -8.05 AZP 92.19 TAL 1.89 TAP 214.37 RCA 147.56 APO 224.89 V2 25.535
RC 290.105 GL 28.33 GP -7.03 ZAL 81.18 ZAP 65.75 ETS 176.05 ZAE 95.46 ETE 179.47 ZAC 77.45 ETC 257.64 CLP 65.55

PLANETOCENTRIC CONIC

C3 9.921 VHL 3.150 DLA 39.23 RAL 159.95 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.159 DPA 1.46 RAP 162.97 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.64	8 18 10	3990.42	-31.45	172.97	21.45	65.23	9 24 41	3390.4	-34.50	164.57
118.36	14 46 34	2774.45	-31.44	80.68	21.45	65.22	15 32 49	2174.4	-34.49	72.28
61.64	8 18 10	3990.42	-31.45	172.97	21.45	65.23	9 24 41	3390.4	-34.50	164.57
118.36	14 46 34	2774.45	-31.44	80.68	21.45	65.22	15 32 49	2174.4	-34.49	72.28
61.64	8 18 10	3990.42	-31.45	172.97	21.45	65.23	9 24 41	3390.4	-34.50	164.57
118.36	14 46 34	2774.45	-31.44	80.68	21.45	65.22	15 32 49	2174.4	-34.49	72.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9985 TRA .3517 TC-11.5005 BAU 1.5348 SGT 8147.6 SGR 1111.0 SG3 2533.4 ST 3650.3 SR 658.3 SS 2750.1
RDE .3555 RRA .1716 RC3-1.2837 FAU .48520 RRT .9436 RRF .9461 RTF .9831 CRT .9930 CRS -.9986 CST -.9887
FDE 5.3923 FRA 3.0734 FC-42.3416 BSP 28348 SGB 8223.0 R23 .0499 R13 .9834 LSA 4605.5 MSA 331.6 SSA 24.7
BDE 2.0299 BRA .3913 BC311.5719 FSP 8515 SG1 8214.9 SG2 364.7 THA 7.35 EL1 3708.4 EL2 76.8 ALF 10.16

LAUNCH DATE NOV 28 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 713.276 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.957 GAL .25 AZL 87.44 HCA 213.66 SMA 186.28 ECC .20781 INC 2.5633 V1 30.191
RP 214.72 LAP -1.42 LOP 279.43 VP 22.884 GAP -8.20 AZP 92.13 TAL 1.48 TAP 215.14 RCA 147.57 APO 224.99 V2 25.572
RC 291.272 GL 28.02 GP -6.74 ZAL 81.88 ZAP 64.27 ETS 175.98 ZAE 93.72 ETE 179.28 ZAC 77.68 ETC 257.69 CLP 64.08

PLANETOCENTRIC CONIC

C3 9.845 VHL 3.138 DLA 38.63 RAL 160.64 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.197 DPA 1.84 RAP 162.81 ECC 1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.54	8 25 14	3976.50	-31.05	171.59	21.79	65.75	9 31 31	3376.5	-34.03	163.20
117.46	14 44 59	2785.34	-31.04	81.37	21.79	65.74	15 31 24	2185.3	-34.03	72.98
62.54	8 25 14	3976.50	-31.05	171.59	21.79	65.75	9 31 31	3376.5	-34.03	163.20
117.46	14 44 59	2785.34	-31.04	81.37	21.79	65.74	15 31 24	2185.3	-34.03	72.98
62.54	8 25 14	3976.50	-31.05	171.59	21.79	65.75	9 31 31	3376.5	-34.03	163.20
117.46	14 44 59	2785.34	-31.04	81.37	21.79	65.74	15 31 24	2185.3	-34.03	72.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0043 TRA .4112 TC-11.9614 BAU 1.5822 SGT 8406.0 SGR 1056.0 SG3 2465.9 ST 3678.1 SR 636.6 SS 2636.8
RDE .3421 RRA .1723 RC3-1.1953 FAU .47087 RRT .9355 RRF .9365 RTF .9835 CRT .9934 CRS -.9980 CST -.9879
FDE 5.0688 FRA 3.1351 FC-41.4067 BSP 29235 SGB 8472.1 R23 .0415 R13 .9838 LSA 4557.8 MSA 334.7 SSA 25.5
BDE 2.0332 BRA .4458 BC312.0209 FSP 8270 SG1 8464.0 SG2 370.7 THA 6.72 EL1 3732.1 EL2 72.2 ALF 9.76

LAUNCH DATE NOV 28 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 717.481 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.960 GAL .18 AZL 87.47 HCA 214.83 SMA 186.33 ECC .20802 INC 2.5292 V1 30.191
RP 214.40 LAP -1.44 LOP 280.61 VP 22.929 GAP -8.34 AZP 92.08 TAL 1.06 TAP 215.89 RCA 147.57 APO 225.09 V2 25.608
RC 292.426 GL 27.72 GP -6.46 ZAL 82.63 ZAP 62.83 ETS 175.91 ZAE 92.03 ETE 179.11 ZAC 77.89 ETC 257.73 CLP 62.65

PLANETOCENTRIC CONIC

C3 9.776 VHL 3.127 DLA 38.04 RAL 161.36 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.238 DPA 2.20 RAP 162.68 ECC 1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.46	8 32 40	3961.97	-30.64	170.18	22.18	66.25	9 38 42	3362.0	-33.56	161.80
116.54	14 43 18	2797.09	-30.63	82.13	22.17	66.24	15 29 56	2197.1	-33.55	73.75
63.46	8 32 40	3961.97	-30.64	170.18	22.18	66.25	9 38 42	3362.0	-33.56	161.80
116.54	14 43 18	2797.09	-30.63	82.13	22.17	66.24	15 29 56	2197.1	-33.55	73.75
63.46	8 32 40	3961.97	-30.64	170.18	22.18	66.25	9 38 42	3362.0	-33.56	161.80
116.54	14 43 18	2797.09	-30.63	82.13	22.17	66.24	15 29 56	2197.1	-33.55	73.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0038 TRA .4720 TC-12.4236 BAU 1.6303 SGT 8662.9 SGR 1006.3 SG3 2403.7 ST 3694.0 SR 615.9 SS 2515.3
RDE .3294 RRA .1724 RC3-1.1165 FAU .45831 RRT .9270 RRF .9258 RTF .9840 CRT .9938 CRS -.9973 CST -.9870
FDE 4.7376 FRA 3.1716 FC-40.5856 BSP 30089 SGB 8721.2 R23 .0318 R13 .9842 LSA 4498.7 MSA 336.2 SSA 26.4
BDE 2.0307 BRA .5025 BC312.4736 FSP 8022 SG1 8713.1 SG2 375.3 THA 6.16 EL1 3744.4 EL2 67.3 ALF 9.41

LAUNCH DATE NOV 28 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 721.692 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.964	GAL	.11	AZL	87.50	HCA	216.02	SMA	186.39	ECC	.20826	INC	2.4970
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.974	GAP	-8.49	AZP	92.02	TAL	.62	TAP	216.64	RCA	147.57	APO	225.21
RC	293.566	GL	27.44	GP	-6.21	ZAL	83.40	ZAP	61.43	ETS	175.86	ZAE	90.36	ETE	178.96	ZAC	78.10	ETC	257.77

V1	30.191	V2	25.644	CLP	61.25														

PLANETOCENTRIC CONIC

C3	9.714	VHL	3.117	DLA	37.44	RAL	162.12	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.280	DPA	2.52	RAP	162.59

ECC	1.1599	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		64.41	8 40 28	3946.81	-30.22	168.73	22.62	66.75	9 46 14	3346.8	-33.08	160.37							
		115.59	14 41 33	2809.74	-30.21	82.95	22.61	66.74	15 28 23	2209.7	-33.07	74.59							
		64.41	8 40 28	3946.81	-30.22	168.73	22.62	66.75	9 46 14	3346.8	-33.08	160.37							
		115.59	14 41 33	2809.74	-30.21	82.95	22.61	66.74	15 28 23	2209.7	-33.07	74.59							
		64.41	8 40 28	3946.81	-30.22	168.73	22.62	66.75	9 46 14	3346.8	-33.08	160.37							
		115.59	14 41 33	2809.74	-30.21	82.95	22.61	66.74	15 28 23	2209.7	-33.07	74.59							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0015	TRA	.5376	TC-12.8739	BAU	1.6774	SGT	8915.6	SGR	961.4	SG3	2342.8	ST	3706.1	SR	598.0	SS	2402.5
RDE	.3185	RRA	.1728	RC3-1.0414	FAU	.44588	RRT	.9172	RRF	.9139	RTF	.9845	CRT	.9944	CRS	-.9964	CST	-.9860
FDE	4.4301	FRA	3.2138	FC-39.7366	BSP	30955	SGB	8967.3	R23	.0233	R13	.9846	LSA	4444.0	MSA	338.1	SSA	27.2
BDE	2.0267	BRA	.5647	BC312.9160	FSP	7777	SG1	8959.2	SG2	381.1	THA	5.66	EL1	3753.5	EL2	62.5	ALF	9.12

LAUNCH DATE NOV 28 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 725.912 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.967	GAL	.03	AZL	87.53	HCA	217.20	SMA	186.45	ECC	.20852	INC	2.4664
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.019	GAP	-8.63	AZP	91.97	TAL	.17	TAP	217.37	RCA	147.57	APO	225.33
RC	294.693	GL	27.16	GP	-5.96	ZAL	84.21	ZAP	60.07	ETS	175.81	ZAE	88.74	ETE	178.82	ZAC	78.31	ETC	257.80

V1	30.191	V2	25.679	CLP	59.89														

PLANETOCENTRIC CONIC

C3	9.659	VHL	3.108	DLA	36.84	RAL	162.90	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.325	DPA	2.81	RAP	162.53

ECC	1.1590	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		65.38	8 48 40	3930.83	-29.79	167.22	23.10	67.24	9 54 11	3330.8	-32.59	158.88							
		114.62	14 39 38	2823.46	-29.78	83.86	23.09	67.23	15 26 42	2223.5	-32.58	75.51							
		65.38	8 48 40	3930.83	-29.79	167.22	23.10	67.24	9 54 11	3330.8	-32.59	158.88							
		114.62	14 39 38	2823.46	-29.78	83.86	23.09	67.23	15 26 42	2223.5	-32.58	75.51							
		65.38	8 48 40	3930.83	-29.79	167.22	23.10	67.24	9 54 11	3330.8	-32.59	158.88							
		114.62	14 39 38	2823.46	-29.78	83.86	23.09	67.23	15 26 42	2223.5	-32.58	75.51							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9931	TRA	.5803	TC-13.3417	BAU	1.7275	SGT	9168.3	SGR	915.3	SG3	2283.4	ST	3704.5	SR	578.7	SS	2261.7
RDE	.3076	RRA	.1652	RC3 -.9804	FAU	.43714	RRT	.9111	RRF	.8999	RTF	.9864	CRT	.9953	CRS	-.9957	CST	-.9870
FDE	4.0996	FRA	3.0131	FC-39.1814	BSP	31899	SGB	9213.9	R23	-.0008	R13	.9864	LSA	4367.5	MSA	312.3	SSA	28.4
BDE	2.0166	BRA	.6033	BC313.3776	FSP	7673	SG1	9206.3	SG2	375.7	THA	5.21	EL1	3749.0	EL2	55.2	ALF	8.84

LAUNCH DATE NOV 28 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 730.135 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.971	GAL	-.05	AZL	87.56	HCA	218.39	SMA	186.52	ECC	.20880	INC	2.4373
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.063	GAP	-8.76	AZP	91.91	TAL	359.71	TAP	218.09	RCA	147.57	APO	225.46
RC	295.805	GL	26.89	GP	-5.73	ZAL	85.05	ZAP	58.75	ETS	175.77	ZAE	87.14	ETE	178.70	ZAC	78.51	ETC	257.83

V1	30.191	V2	25.714	CLP	58.57														

PLANETOCENTRIC CONIC

C3	9.610	VHL	3.100	DLA	36.23	RAL	163.73	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.371	DPA	3.07	RAP	162.50

ECC	1.1582	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		66.39	8 57 19	3913.94	-29.35	165.65	23.62	67.73	10 2 33	3313.9	-32.09	157.32							
		113.61	14 37 32	2838.35	-29.34	84.85	23.62	67.72	15 24 51	2238.4	-32.09	76.52							
		66.39	8 57 19	3913.94	-29.35	165.65	23.62	67.73	10 2 33	3313.9	-32.09	157.32							
		113.61	14 37 32	2838.35	-29.34	84.85	23.62	67.72	15 24 51	2238.4	-32.09	76.52							
		66.39	8 57 19	3913.94	-29.35	165.65	23.62	67.73	10 2 33	3313.9	-32.09	157.32							
		113.61	14 37 32	2838.35	-29.34	84.85	23.62	67.72	15 24 51	2238.4	-32.09	76.52							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9979	TRA	.6885	TC-13.7229	BAU	1.7668	SGT	9408.1	SGR	886.1	SG3	2218.8	ST	3731.5	SR	575.4	SS	2251.8
RDE	.3043	RRA	.1758	RC3 -.8930	FAU	.41856	RRT	.8904	RRF	.8864	RTF	.9857	CRT	.9957	CRS	-.9939	CST	-.9843
FDE	3.9751	FRA	3.3523	FC-37.7064	BSP	32926	SGB	9449.8	R23	.0156	R13	.9857	LSA	4382.7	MSA	341.6	SSA	28.6
BDE	2.0209	BRA	.7106	BC313.7519	FSP	7588	SG1	9441.2	SG2	401.8	THA	4.80	EL1	3775.2	EL2	52.8	ALF	8.73

LAUNCH DATE NOV 28 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 734.366 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	32.975	GAL	-.13	AZL	87.59	HCA	219.58	SMA	186.59	ECC	.20910	INC	2.4097
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.107	GAP	-8.90	AZP	91.86	TAL	359.23	TAP	218.81	RCA	147.57	APO	225.60
RC	296.904	GL	26.63	GP	-5.52	ZAL	85.93	ZAP	57.46	ETS	175.73	ZAE	85.59	ETE	178.60	ZAC	78.70	ETC	257.85

V1	30.191	V2	25.748	CLP	57.29														

PLANETOCENTRIC CONIC

C3	9.568	VHL	3.093	DLA	35.61	RAL	164.58	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.419	DPA	3.30	RAP	162.50

ECC	1.1575	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		67.44	9 6 28	3895.87	-28.89	164.00	24.19	68.21	10 11 24	3295.9	-31.58	155.69							
		112.56	14 35 10	2854.70	-28.88	85.94	24.19	68.20	15 22 45	2254.7	-31.57	77.64							
		67.44	9 6 28	3895.87	-28.89	164.00	24.19	68.21	10 11 24	3295.9	-31.58	155.69							
		112.56	14 35 10	2854.70	-28.88	85.94	24.19	68.20	15 22 45	2254.7	-31.57	77.64							
		67.44	9 6 28	3895.87	-28.89	164.00	24.19	68.21	10 11 24	3295.9	-31.58	155.69							
		112.56	14 35 10	2854.70	-28.88	85.94	24.19	68.20	15 22 45	2254.7	-31.57	77.64							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9780	TRA	.7703	TC-14.1251	BAU	1.8099	SGT	9636.6	SGR	847.8	SG3	2146.6	ST	3710.8	SR	559.3	SS	2119.8
RDE	.2946	RRA	.1775	RC3 -.8198	FAU	.40379	RRT	.8741	RRF	.8690	RTF	.9854	CRT	.9962	CRS	-.9912	CST	-.9817
FDE	3.6445	FRA	3.4230	FC-36.5363	BSP	33529	SGB	9673.8	R23	.0123	R13	.9855	LSA	4295.5	MSA	352.2	SSA	29.3
BDE	1.9998	BRA	.7905	BC314.1488	FSP	7198	SG1	9665.1	SG2	410.5	THA	4.41	EL1	3752.4	EL2	48.4	ALF	8.54

LAUNCH DATE NOV 28 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 738.602 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.979 GAL -.22 AZL 87.62 HCA 220.77 SMA 186.66 ECC .20942 INC 2.3834 V1 30.191
RP 212.87 LAP -1.56 LOP 286.55 VP 23.150 GAP -9.03 AZP 91.81 TAL 358.73 TAP 219.51 RCA 147.57 APO 225.75 V2 25.782
RC 297.989 GL 26.37 GP -5.31 ZAL 86.84 ZAP 56.21 ETS 175.70 ZAE 84.06 ETE 178.50 ZAC 78.89 ETC 257.87 CLP 56.05

PLANETOCENTRIC CONIC

C3 9.533 VHL 3.087 DLA 34.99 RAL 165.46 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.468 DPA 3.51 RAP 162.53 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.54	9 16 14	3876.39	-28.43	162.24	24.80	68.69	10 20 50	3276.4	-31.06	153.95
111.46	14 32 26	2872.73	-28.42	87.16	24.80	68.68	15 20 19	2272.7	-31.05	78.88
68.54	9 16 14	3876.39	-28.43	162.24	24.80	68.69	10 20 50	3276.4	-31.06	153.95
111.46	14 32 26	2872.73	-28.42	87.16	24.80	68.68	15 20 19	2272.7	-31.05	78.88
68.54	9 16 14	3876.39	-28.43	162.24	24.80	68.69	10 20 50	3276.4	-31.06	153.95
111.46	14 32 26	2872.73	-28.42	87.16	24.80	68.68	15 20 19	2272.7	-31.05	78.88

DIFFERENTIAL CORRECTIONS
TDE 1.9689 TRA .8669 TC-14.4585 BAU 1.8451
RDE .2880 RRA .1793 RC3 -.7456 FAU .38766
FDE 3.3901 FRA 3.4939 FC-35.2068 BSP 34580
BDE 1.9898 BRA .8852 BC314.4777 FSP 7006

MID-COURSE EXECUTION ACCURACY
SGT 9844.6 SGR 813.9 SG3 2071.5
RRT .8562 RRF .8499 RTF .9856
SGB 9878.2 R23 .0087 R13 .9856
SG1 9869.3 SG2 419.5 THA 4.06

ORBIT DETERMINATION ACCURACY
ST 3710.6 SR 548.3 SS 2024.3
CRT .9968 CRS -.9882 CST -.9797
LSA 4247.1 MSA 357.5 SSA 29.8
EL1 3750.6 EL2 43.1 ALF 8.38

LAUNCH DATE NOV 28 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 742.846 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.983 GAL -.31 AZL 87.64 HCA 221.97 SMA 186.73 ECC .20976 INC 2.3581 V1 30.191
RP 212.57 LAP -1.58 LOP 287.75 VP 23.193 GAP -9.16 AZP 91.75 TAL 358.23 TAP 220.20 RCA 147.56 APO 225.90 V2 25.815
RC 299.061 GL 26.12 GP -5.12 ZAL 87.78 ZAP 55.00 ETS 175.67 ZAE 82.57 ETE 178.42 ZAC 79.08 ETC 257.87 CLP 54.84

PLANETOCENTRIC CONIC

C3 9.504 VHL 3.083 DLA 34.35 RAL 166.36 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.519 DPA 3.69 RAP 162.60 ECC 1.1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.69	9 26 36	3855.34	-27.95	160.38	25.45	69.17	10 30 51	3255.3	-30.52	152.11
110.31	14 29 18	2892.61	-27.94	88.51	25.45	69.15	15 17 31	2292.6	-30.51	80.25
69.69	9 26 36	3855.34	-27.95	160.38	25.45	69.17	10 30 51	3255.3	-30.52	152.11
110.31	14 29 18	2892.61	-27.94	88.51	25.45	69.15	15 17 31	2292.6	-30.51	80.25
69.69	9 26 36	3855.34	-27.95	160.38	25.45	69.17	10 30 51	3255.3	-30.52	152.11
110.31	14 29 18	2892.61	-27.94	88.51	25.45	69.15	15 17 31	2292.6	-30.51	80.25

DIFFERENTIAL CORRECTIONS
TDE 1.9385 TRA .9489 TC-14.8557 BAU 1.8896
RDE .2808 RRA .1795 RC3 -.6828 FAU .37488
FDE 3.1008 FRA 3.5100 FC-34.1472 BSP 35228
BDE 1.9587 BRA .9658 BC314.8714 FSP 6766

MID-COURSE EXECUTION ACCURACY
SGT10071.9 SGR 782.8 SG3 2005.8
RRT .8370 RRF .8289 RTF .9858
SGB10102.3 R23 .0042 R13 .9858
SG110093.3 SG2 427.5 THA 3.73

ORBIT DETERMINATION ACCURACY
ST 3669.5 SR 535.9 SS 1904.3
CRT .9973 CRS -.9840 CST -.9770
LSA 4152.9 MSA 361.9 SSA 30.6
EL1 3708.2 EL2 38.8 ALF 8.29

LAUNCH DATE NOV 28 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 747.096 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.988 GAL -.40 AZL 87.67 HCA 223.17 SMA 186.81 ECC .21013 INC 2.3341 V1 30.191
RP 212.29 LAP -1.60 LOP 288.95 VP 23.236 GAP -9.29 AZP 91.70 TAL 357.70 TAP 220.88 RCA 147.55 APO 226.06 V2 25.847
RC 300.120 GL 25.87 GP -4.94 ZAL 88.75 ZAP 53.82 ETS 175.64 ZAE 81.12 ETE 178.35 ZAC 79.26 ETC 257.88 CLP 53.66

PLANETOCENTRIC CONIC

C3 9.483 VHL 3.080 DLA 33.70 RAL 167.30 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.572 DPA 3.85 RAP 162.69 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.92	9 37 43	3832.33	-27.46	158.38	26.14	69.64	10 41 35	3232.3	-29.97	150.13
109.08	14 25 37	2914.75	-27.44	90.03	26.13	69.63	15 14 12	2314.8	-29.96	81.79
70.92	9 37 43	3832.33	-27.46	158.38	26.14	69.64	10 41 35	3232.3	-29.97	150.13
109.08	14 25 37	2914.75	-27.44	90.03	26.13	69.63	15 14 12	2314.8	-29.96	81.79
110.00	15 14 44	2764.61	-30.67	79.56	27.34	74.12	16 0 48	2164.6	-32.54	70.84
110.00	13 47 47	3030.47	-24.32	97.59	24.69	65.20	14 38 18	2430.5	-27.45	89.82

DIFFERENTIAL CORRECTIONS
TDE 1.9088 TRA 1.0385 TC-15.2228 BAU 1.9316
RDE .2750 RRA .1799 RC3 -.6239 FAU .36275
FDE 2.8404 FRA 3.5295 FC-33.1148 BSP 35926
BDE 1.9285 BRA 1.0540 BC315.2356 FSP 6525

MID-COURSE EXECUTION ACCURACY
SGT10291.3 SGR 755.8 SG3 1943.9
RRT .8169 RRF .8066 RTF .9861
SGB10319.0 R23 -.0007 R13 .9861
SG110309.8 SG2 435.2 THA 3.44

ORBIT DETERMINATION ACCURACY
ST 3630.0 SR 525.8 SS 1796.9
CRT .9977 CRS -.9787 CST -.9741
LSA 4067.8 MSA 366.0 SSA 31.3
EL1 3667.7 EL2 35.0 ALF 8.22

LAUNCH DATE NOV 28 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 751.352 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.992 GAL -.49 AZL 87.69 HCA 224.38 SMA 186.89 ECC .21052 INC 2.3110 V1 30.191
RP 212.01 LAP -1.62 LOP 290.15 VP 23.278 GAP -9.41 AZP 91.65 TAL 357.17 TAP 221.55 RCA 147.54 APO 226.23 V2 25.879
RC 301.167 GL 25.61 GP -4.77 ZAL 89.76 ZAP 52.67 ETS 175.62 ZAE 79.69 ETE 178.28 ZAC 79.44 ETC 257.88 CLP 52.52

PLANETOCENTRIC CONIC

C3 9.470 VHL 3.077 DLA 33.04 RAL 168.25 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.626 DPA 3.98 RAP 162.82 ECC 1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.22	9 49 43	3806.90	-26.95	156.20	26.86	70.12	10 53 10	3206.9	-29.40	147.98
107.78	14 21 16	2939.62	-26.94	91.74	26.86	70.10	15 10 16	2339.6	-29.39	83.52
72.22	9 49 43	3806.90	-26.95	156.20	26.86	70.12	10 53 10	3206.9	-29.40	147.98
107.78	14 21 16	2939.62	-26.94	91.74	26.86	70.10	15 10 16	2339.6	-29.39	83.52
110.00	15 41 52	2691.96	-31.91	74.25	28.54	77.03	16 26 44	2092.0	-33.36	65.33
110.00	13 28 17	3102.57	-22.18	102.10	24.61	63.30	14 19 59	2502.6	-25.58	94.59

DIFFERENTIAL CORRECTIONS
TDE 1.8733 TRA 1.1334 TC-15.5733 BAU 1.9729
RDE .2697 RRA .1805 RC3 -.5657 FAU .35021
FDE 2.5832 FRA 3.5539 FC-32.0163 BSP 36555
BDE 1.8927 BRA 1.1477 BC315.5836 FSP 6274

MID-COURSE EXECUTION ACCURACY
SGT10505.8 SGR 730.8 SG3 1880.5
RRT .7942 RRF .7821 RTF .9862
SGB10531.2 R23 -.0043 R13 .9862
SG110521.8 SG2 443.4 THA 3.17

ORBIT DETERMINATION ACCURACY
ST 3580.3 SR 516.5 SS 1689.5
CRT .9980 CRS -.9715 CST -.9702
LSA 3974.9 MSA 372.5 SSA 32.0
EL1 3617.2 EL2 32.7 ALF 8.19

LAUNCH DATE NOV 28 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 755.613 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 32.997 GAL -.59 AZL 87.71 HCA 225.59 SMA 186.97 ECC .21094 INC 2.2888 V1 30.191
RP 211.73 LAP -1.63 LOP 291.36 VP 23.319 GAP -9.53 AZP 91.60 TAL 356.62 TAP 222.20 RCA 147.53 APO 226.41 V2 25.911
RC 302.203 GL 25.36 GP -4.60 ZAL 90.80 ZAP 51.56 ETS 175.60 ZAE 78.30 ETE 178.23 ZAC 79.62 ETC 257.87 CLP 51.41

PLANETOCENTRIC CONIC

C3 9.464 VHL 3.076 DLA 32.36 RAL 169.23 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.681 DPA 4.10 RAP 162.97 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.63	10 2 46	3778.48	-26.42	153.81	27.62	70.59	11 5 44	3178.5	-28.82	145.61
106.37	14 16 3	2967.81	-26.41	93.70	27.62	70.58	15 5 30	2367.8	-28.81	85.50
73.63	10 2 46	3778.48	-26.42	153.81	27.62	70.59	11 5 44	3178.5	-28.82	145.61
106.37	14 16 3	2967.81	-26.41	93.70	27.62	70.58	15 5 30	2367.8	-28.81	85.50
110.00	16 3 4	2637.41	-32.67	70.18	29.55	79.33	16 47 1	2037.4	-33.80	61.13
110.00	13 14 55	3156.88	-20.48	105.40	24.79	62.02	14 7 32	2556.9	-24.06	98.08

DIFFERENTIAL CORRECTIONS
TDE 1.8372 TRA 1.2358 TC-15.8953 BAU 2.0122
RDE .2656 RRA .1814 RC3 -.5092 FAU .33761
FDE 2.3543 FRA 3.5848 FC-30.8827 BSP 37241
BDE 1.8563 BRA 1.2491 BC315.9034 FSP 6049

MID-COURSE EXECUTION ACCURACY
SGT10713.6 SGR 709.2 SG3 1818.0
RRT .7696 RRF .7562 RTF .9864
SGB10737.1 R23 -.0067 R13 .9864
SG110727.6 SG2 452.3 THA 2.92

ORBIT DETERMINATION ACCURACY
ST 3530.2 SR 509.1 SS 1595.7
CRT .9979 CRS -.9626 CST -.9659
LSA 3888.9 MSA 378.9 SSA 32.5
EL1 3566.6 EL2 32.7 ALF 8.19

LAUNCH DATE NOV 28 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 759.879 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.002 GAL -.69 AZL 87.73 HCA 226.80 SMA 187.05 ECC .21138 INC 2.2675 V1 30.191
RP 211.47 LAP -1.65 LOP 292.57 VP 23.360 GAP -9.65 AZP 91.55 TAL 356.05 TAP 222.85 RCA 147.51 APO 226.59 V2 25.941
RC 303.228 GL 25.11 GP -4.45 ZAL 91.86 ZAP 50.47 ETS 175.58 ZAE 76.93 ETE 178.18 ZAC 79.80 ETC 257.86 CLP 50.33

PLANETOCENTRIC CONIC

C3 9.467 VHL 3.077 DLA 31.68 RAL 170.24 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.738 DPA 4.19 RAP 163.16 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.18	10 17 10	3746.04	-25.88	151.13	28.42	71.07	11 19 36	3146.0	-28.22	142.95
104.82	14 9 39	3000.35	-25.87	95.96	28.42	71.05	14 59 39	2400.3	-28.21	87.79
75.18	10 17 10	3746.04	-25.88	151.13	28.42	71.07	11 19 36	3146.0	-28.22	142.95
104.82	14 9 39	3000.35	-25.87	95.96	28.42	71.05	14 59 39	2400.3	-28.21	87.79
110.00	16 21 32	2591.16	-33.20	66.68	30.49	81.34	17 4 43	1991.2	-34.04	57.54
110.00	13 4 27	3203.22	-18.98	108.15	25.11	61.02	13 57 50	2603.2	-22.70	100.98

DIFFERENTIAL CORRECTIONS
TDE 1.7972 TRA 1.3429 TC-16.1952 BAU 2.0504
RDE .2620 RRA .1822 RC3 -.4554 FAU .32539
FDE 2.1301 FRA 3.6083 FC-29.7575 BSP 37946
BDE 1.8162 BRA 1.3552 BC316.2016 FSP 5838

MID-COURSE EXECUTION ACCURACY
SGT10915.7 SGR 689.6 SG3 1756.7
RRT .7436 RRF .7285 RTF .9866
SGB10937.5 R23 -.0096 R13 .9866
SG110927.8 SG2 460.5 THA 2.69

ORBIT DETERMINATION ACCURACY
ST 3473.9 SR 502.4 SS 1502.5
CRT .9974 CRS -.9511 CST -.9607
LSA 3798.4 MSA 386.1 SSA 33.0
EL1 3509.8 EL2 35.5 ALF 8.21

LAUNCH DATE NOV 28 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 764.150 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.007 GAL -.79 AZL 87.75 HCA 228.01 SMA 187.14 ECC .21185 INC 2.2469 V1 30.191
RP 211.20 LAP -1.67 LOP 293.79 VP 23.400 GAP -9.77 AZP 91.50 TAL 355.47 TAP 223.48 RCA 147.49 APO 226.78 V2 25.971
RC 304.242 GL 24.85 GP -4.30 ZAL 92.96 ZAP 49.42 ETS 175.56 ZAE 75.60 ETE 178.13 ZAC 79.98 ETC 257.84 CLP 49.29

PLANETOCENTRIC CONIC

C3 9.477 VHL 3.079 DLA 30.97 RAL 171.26 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.796 DPA 4.26 RAP 163.37 ECC 1.1560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.90	10 33 19	3708.29	-25.32	148.07	29.25	71.54	11 35 8	3108.3	-27.60	139.92
103.10	14 1 39	3038.55	-25.31	98.64	29.25	71.52	14 52 18	2438.5	-27.59	90.49
76.90	10 33 19	3708.29	-25.32	148.07	29.25	71.54	11 35 8	3108.3	-27.60	139.92
103.10	14 1 39	3038.55	-25.31	98.64	29.25	71.52	14 52 18	2438.5	-27.59	90.49
110.00	16 38 24	2549.89	-33.58	63.52	31.38	83.17	17 20 54	1949.9	-34.16	54.32
110.00	12 55 45	3244.94	-17.59	110.58	25.54	60.20	13 49 50	2644.9	-21.42	103.55

DIFFERENTIAL CORRECTIONS
TDE 1.7515 TRA 1.4548 TC-16.4764 BAU 2.0882
RDE .2590 RRA .1830 RC3 -.4035 FAU .31332
FDE 1.9161 FRA 3.6318 FC-28.6205 BSP 38597
BDE 1.7705 BRA 1.4662 BC316.4813 FSP 5628

MID-COURSE EXECUTION ACCURACY
SGT11113.5 SGR 672.2 SG3 1696.2
RRT .7156 RRF .6993 RTF .9868
SGB11133.8 R23 -.0116 R13 .9867
SG111123.9 SG2 469.1 THA 2.48

ORBIT DETERMINATION ACCURACY
ST 3408.2 SR 496.6 SS 1414.1
CRT .9964 CRS -.9363 CST -.9545
LSA 3702.0 MSA 394.4 SSA 33.5
EL1 3443.9 EL2 41.6 ALF 8.26

LAUNCH DATE NOV 28 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 768.425 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.012 GAL -.90 AZL 87.77 HCA 229.23 SMA 187.23 ECC .21234 INC 2.2271 V1 30.191
RP 210.95 LAP -1.69 LOP 295.01 VP 23.440 GAP -9.89 AZP 91.45 TAL 354.88 TAP 224.11 RCA 147.47 APO 226.98 V2 26.001
RC 305.247 GL 24.60 GP -4.16 ZAL 94.09 ZAP 48.40 ETS 175.54 ZAE 74.30 ETE 178.09 ZAC 80.15 ETC 257.82 CLP 48.27

PLANETOCENTRIC CONIC

C3 9.497 VHL 3.082 DLA 30.25 RAL 172.31 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.855 DPA 4.31 RAP 163.61 ECC 1.1563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.88	10 51 57	3662.86	-24.75	144.46	30.12	72.02	11 53 0	3062.9	-26.97	136.33
101.12	13 51 21	3084.79	-24.73	101.89	30.12	72.00	14 42 46	2484.8	-26.96	93.77
78.88	10 51 57	3662.86	-24.75	144.46	30.12	72.02	11 53 0	3062.9	-26.97	136.33
101.12	13 51 21	3084.79	-24.73	101.89	30.12	72.00	14 42 46	2484.8	-26.96	93.77
110.00	16 54 11	2512.00	-33.84	60.59	32.25	84.89	17 36 3	1912.0	-34.18	51.36
110.00	12 48 18	3283.65	-16.26	112.80	26.05	59.51	13 43 2	2683.7	-20.19	105.88

DIFFERENTIAL CORRECTIONS
TDE 1.7025 TRA 1.5726 TC-16.7301 BAU 2.1247
RDE .2565 RRA .1838 RC3 -.3535 FAU .30136
FDE 1.7095 FRA 3.6544 FC-27.4709 BSP 39271
BDE 1.7217 BRA 1.5834 BC316.7339 FSP 5433

MID-COURSE EXECUTION ACCURACY
SGT11305.1 SGR 656.9 SG3 1636.2
RRT .6862 RRF .6686 RTF .9868
SGB11324.2 R23 -.0135 R13 .9868
SG111314.1 SG2 477.4 THA 2.29

ORBIT DETERMINATION ACCURACY
ST 3338.6 SR 491.5 SS 1329.4
CRT .9946 CRS -.9172 CST -.9467
LSA 3604.2 MSA 404.6 SSA 33.9
EL1 3374.2 EL2 50.3 ALF 8.33

LAUNCH DATE NOV 28 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 772.705 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.017 GAL -1.00 AZL 87.79 HCA 230.45 SMA 187.32 ECC .21286 INC 2.2079 V1 30.191
RP 210.70 LAP -1.70 LOP 296.23 VP 23.479 GAP -10.01 AZP 91.41 TAL 354.27 TAP 224.72 RCA 147.45 APO 227.19 V2 26.029
RC 306.243 GL 24.33 GP -4.03 ZAL 95.24 ZAP 47.41 ETS 175.53 ZAE 73.02 ETE 178.06 ZAC 80.33 ETC 257.80 CLP 47.28

PLANETOCENTRIC CONIC

C3 9.526 VHL 3.086 DLA 29.52 RAL 173.37 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.916 DPA 4.34 RAP 163.87 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.29	11 14 35	3604.72	-24.15	139.93	31.02	72.49	12 14 39	3004.7	-26.32	131.83
98.71	13 37 12	3144.13	-24.14	106.09	31.02	72.47	14 29 36	2544.1	-26.31	98.00
100.00	14 26 51	2985.24	-26.79	95.13	31.84	76.22	15 16 36	2385.2	-28.42	86.71
100.00	13 7 36	3238.84	-21.55	112.13	30.03	68.77	14 1 35	2638.8	-24.25	104.37
110.00	17 9 11	2476.58	-34.03	57.84	33.11	86.51	17 50 27	1876.6	-34.14	48.60
110.00	12 41 46	3320.27	-14.99	114.87	26.64	58.91	13 37 6	2720.3	-19.00	108.05

DIFFERENTIAL CORRECTIONS
TDE 1.6491 TRA 1.6948 TC-16.9605 BAU 2.1604
RDE .2547 RRA .1844 RC3 -.3056 FAU .28966
FDE 1.5152 FRA 3.6674 FC-26.3242 BSP 39903
BDE 1.6687 BRA 1.7048 BC316.9633 FSP 5227

MID-COURSE EXECUTION ACCURACY
SGT11491.6 SGR 643.3 SG3 1577.1
RRT .6553 RRF .6364 RTF .9870
SGB11509.6 R23 -.0153 R13 .9870
SG111499.4 SG2 485.6 THA 2.10

ORBIT DETERMINATION ACCURACY
ST 3263.0 SR 487.3 SS 1250.4
CRT .9918 CRS -.8937 CST -.9379
LSA 3503.7 MSA 414.2 SSA 34.3
EL1 3298.6 EL2 61.5 ALF 8.43

LAUNCH DATE NOV 28 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 776.990 EARTH TO MARS

RL 147.57 LAL -.08 LOL 65.80 VL 33.022 GAL -1.12 AZL 87.81 HCA 231.67 SMA 187.41 ECC .21341 INC 2.1893 V1 30.191
RP 210.46 LAP -1.72 LOP 297.45 VP 23.517 GAP -10.12 AZP 91.36 TAL 353.65 TAP 225.32 RCA 147.42 APO 227.41 V2 26.057
RC 307.229 GL 24.07 GP -3.90 ZAL 96.43 ZAP 46.45 ETS 175.51 ZAE 71.77 ETE 178.03 ZAC 80.51 ETC 257.77 CLP 46.32

PLANETOCENTRIC CONIC

C3 9.565 VHL 3.093 DLA 28.77 RAL 174.44 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.978 DPA 4.35 RAP 164.16 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.68	11 46 0	3518.28	-23.54	133.34	31.95	72.97	12 44 38	2918.3	-25.65	125.27
95.32	13 14 23	3232.18	-23.53	112.38	31.95	72.95	14 8 15	2632.2	-25.64	104.31
100.00	15 0 12	2891.98	-28.13	88.53	33.21	79.45	15 48 24	2292.0	-29.30	79.92
100.00	12 42 51	3333.71	-19.10	118.10	30.20	66.56	13 38 25	2733.7	-22.11	110.60
110.00	17 23 35	2443.05	-34.13	55.23	33.97	88.05	18 4 18	1843.1	-34.03	45.98
110.00	12 35 58	3355.40	-13.74	116.83	27.29	58.39	13 31 53	2755.4	-17.82	110.10

DIFFERENTIAL CORRECTIONS
TDE 1.5920 TRA 1.8231 TC-17.1701 BAU 2.1959
RDE .2534 RRA .1851 RC3 -.2603 FAU .27846
FDE 1.3299 FRA 3.6837 FC-25.2032 BSP 40538
BDE 1.6121 BRA 1.8324 BC317.1721 FSP 5038

MID-COURSE EXECUTION ACCURACY
SGT11676.6 SGR 631.9 SG3 1520.5
RRT .6237 RRF .6036 RTF .9871
SGB11693.7 R23 -.0168 R13 .9870
SG111683.3 SG2 493.7 THA 1.94

ORBIT DETERMINATION ACCURACY
ST 3183.7 SR 483.9 SS 1177.9
CRT .9877 CRS -.8641 CST -.9271
LSA 3402.2 MSA 426.1 SSA 34.6
EL1 3219.4 EL2 74.8 ALF 8.54

LAUNCH DATE NOV 28 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 781.279 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.028 GAL -1.23 AZL 87.83 HCA 232.89 SMA 187.51 ECC .21399 INC 2.1713 V1 30.191
RP 210.22 LAP -1.73 LOP 298.67 VP 23.555 GAP -10.24 AZP 91.31 TAL 353.01 TAP 225.91 RCA 147.38 APO 227.63 V2 26.085
RC 308.206 GL 23.80 GP -3.78 ZAL 97.64 ZAP 45.51 ETS 175.50 ZAE 70.54 ETE 178.00 ZAC 80.68 ETC 257.74 CLP 45.39

PLANETOCENTRIC CONIC

C3 9.615 VHL 3.101 DLA 28.01 RAL 175.54 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 4.041 DPA 4.34 RAP 164.48 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 21	3256.71	-25.27	114.69	33.60	76.77	14 5 38	2656.7	-26.84	106.38
90.00	11 57 45	3495.77	-20.59	130.64	32.10	70.12	12 56 0	2895.8	-23.12	122.87
100.00	15 24 51	2826.34	-28.86	83.79	34.37	81.85	16 11 57	2226.3	-29.69	75.08
100.00	12 26 56	3401.37	-17.21	122.24	30.63	65.18	13 23 37	2801.4	-20.42	114.92
110.00	17 37 32	2411.05	-34.18	52.73	34.84	89.53	18 17 43	1811.0	-33.87	43.50
110.00	12 30 44	3389.43	-12.52	118.71	28.00	57.93	13 27 14	2789.4	-16.67	112.06

DIFFERENTIAL CORRECTIONS
TDE 1.5302 TRA 1.9566 TC-17.3498 BAU 2.2303
RDE .2525 RRA .1857 RC3 -.2166 FAU .26732
FDE 1.1518 FRA 3.6945 FC-24.0700 BSP 41158
BDE 1.5509 BRA 1.9654 BC317.3512 FSP 4853

MID-COURSE EXECUTION ACCURACY
SGT11854.6 SGR 621.9 SG3 1464.0
RRT .5908 RRF .5696 RTF .9871
SGB11870.9 R23 -.0182 R13 .9871
SG111860.3 SG2 501.5 THA 1.78

ORBIT DETERMINATION ACCURACY
ST 3099.7 SR 481.0 SS 1110.3
CRT .9819 CRS -.8273 CST -.9143
LSA 3298.2 MSA 439.3 SSA 34.8
EL1 3135.5 EL2 90.1 ALF 8.67

LAUNCH DATE NOV 28 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 785.571 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.033 GAL -1.35 AZL 87.85 HCA 234.12 SMA 187.60 ECC .21459 INC 2.1539 V1 30.191
RP 209.99 LAP -1.75 LOP 299.90 VP 23.592 GAP -10.35 AZP 91.26 TAL 352.36 TAP 226.49 RCA 147.34 APO 227.86 V2 26.111
RC 309.174 GL 23.52 GP -3.67 ZAL 98.88 ZAP 44.60 ETS 175.49 ZAE 69.34 ETE 177.98 ZAC 80.86 ETC 257.70 CLP 44.48

PLANETOCENTRIC CONIC

C3 9.675 VHL 3.110 DLA 27.23 RAL 176.64 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.106 DPA 4.32 RAP 164.82 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 52	3152.57	-26.69	107.40	35.03	80.16	14 40 25	2552.6	-27.77	98.90
90.00	11 30 3	3602.37	-17.98	137.37	32.33	67.75	12 30 5	3002.4	-20.84	129.86
100.00	15 45 57	2771.92	-29.32	79.81	35.45	83.90	16 32 9	2171.9	-29.86	71.04
100.00	12 14 39	3458.26	-15.55	125.66	31.20	64.15	13 12 18	2854.3	-18.91	118.47
110.00	17 51 6	2380.30	-34.17	50.33	35.71	90.95	18 30 46	1780.3	-33.66	41.12
110.00	12 26 0	3422.64	-11.31	120.53	28.77	57.53	13 23 3	2822.6	-15.52	113.95

DIFFERENTIAL CORRECTIONS
TDE 1.4653 TRA 2.0960 TC-17.5018 BAU 2.2639
RDE .2522 RRA .1862 RC3 -.1750 FAU .25652
FDE .9847 FRA 3.7030 FC-22.9535 BSP 41770
BDE 1.4869 BRA 2.1043 BC317.5027 FSP 4674

MID-COURSE EXECUTION ACCURACY
SGT12028.4 SGR 613.6 SG3 1409.2
RRT .5575 RRF .5352 RTF .9872
SGB12044.0 R23 -.0194 R13 .9872
SG112033.3 SG2 509.2 THA 1.63

ORBIT DETERMINATION ACCURACY
ST 3014.8 SR 478.8 SS 1050.5
CRT .9739 CRS -.7831 CST -.8998
LSA 3196.0 MSA 453.6 SSA 34.9
EL1 3050.7 EL2 107.4 ALF 8.80

LAUNCH DATE NOV 28 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 789.867 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.039 GAL -1.47 AZL 87.86 HCA 235.35 SMA 187.70 ECC .21523 INC 2.1370 V1 30.191
RP 209.77 LAP -1.76 LOP 301.13 VP 23.629 GAP -10.46 AZP 91.22 TAL 351.70 TAP 227.05 RCA 147.30 APO 228.10 V2 26.137
RC 310.132 GL 23.23 GP -3.56 ZAL 100.14 ZAP 43.72 ETS 175.47 ZAE 68.17 ETE 177.96 ZAC 81.03 ETC 257.66 CLP 43.60

PLANETOCENTRIC CONIC

C3 9.747 VHL 3.122 DLA 26.43 RAL 177.76 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.172 DPA 4.28 RAP 165.19 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 58	3082.01	-27.41	102.36	36.24	82.59	15 5 20	2482.0	-28.15	93.77
90.00	11 12 53	3675.85	-16.03	141.88	32.84	66.34	12 14 9	3075.9	-19.09	134.54
100.00	16 5 2	2723.98	-29.61	76.27	36.50	85.73	16 50 25	2124.0	-29.89	67.48
100.00	12 4 31	3509.12	-14.02	128.65	31.87	63.33	13 3 0	2909.1	-17.49	121.58
110.00	18 4 21	2350.61	-34.11	48.01	36.59	92.32	18 43 32	1750.6	-33.42	38.84
110.00	12 21 40	3455.25	-10.11	122.29	29.58	57.17	13 19 16	2855.3	-14.37	115.78

DIFFERENTIAL CORRECTIONS
TDE 1.3950 TRA 2.2402 TC-17.6295 BAU 2.2973
RDE .2524 RRA .1865 RC3 -.1355 FAU .24598
FDE .8232 FRA 3.7068 FC-21.8481 BSP 42362
BDE 1.4177 BRA 2.2480 BC317.6300 FSP 4497

MID-COURSE EXECUTION ACCURACY
SGT12198.6 SGR 606.5 SG3 1355.4
RRT .5234 RRF .5001 RTF .9872
SGB12213.7 R23 -.0206 R13 .9872
SG112202.8 SG2 516.6 THA 1.49

ORBIT DETERMINATION ACCURACY
ST 2925.8 SR 477.2 SS 996.5
CRT .9631 CRS -.7293 CST -.8829
LSA 3091.8 MSA 469.7 SSA 35.0
EL1 2961.8 EL2 126.9 ALF 8.94

LAUNCH DATE NOV 28 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 794.165 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.044 GAL -1.59 AZL 87.88 HCA 236.59 SMA 187.80 ECC .21591 INC 2.1205 V1 30.191
RP 209.55 LAP -1.77 LOP 302.37 VP 23.664 GAP -10.57 AZP 91.17 TAL 351.02 TAP 227.61 RCA 147.25 APO 228.35 V2 26.162
RC 311.080 GL 22.94 GP -3.46 ZAL 101.42 ZAP 42.86 ETS 175.46 ZAE 67.02 ETE 177.94 ZAC 81.21 ETC 257.62 CLP 42.74

PLANETOCENTRIC CONIC

C3 9.831 VHL 3.135 DLA 25.62 RAL 178.89 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.238 DPA 4.22 RAP 165.57 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 6	3024.18	-27.85	98.19	37.37	84.64	15 26 31	2424.2	-28.30	89.55
90.00	10 59 46	3737.09	-14.32	145.56	33.49	65.31	12 2 3	3137.1	-17.54	138.36
100.00	16 22 44	2680.40	-29.79	73.04	37.53	87.42	17 7 25	2080.4	-29.83	64.24
100.00	11 55 49	3556.10	-12.57	131.39	32.61	62.65	12 55 5	2956.1	-16.14	124.41
110.00	18 17 20	2321.85	-34.01	45.77	37.48	93.64	18 56 2	1721.8	-33.13	36.64
110.00	12 17 42	3487.42	-8.92	124.02	30.45	56.86	13 15 50	2887.4	-13.22	117.56

DIFFERENTIAL CORRECTIONS
TDE 1.3215 TRA 2.3908 TC-17.7254 BAU 2.3297
RDE .2530 RRA .1868 RC3 -.0979 FAU .23571
FDE .6705 FRA 3.7068 FC-20.7571 BSP 42958
BDE 1.3455 BRA 2.3981 BC317.7256 FSP 4331

MID-COURSE EXECUTION ACCURACY
SGT12363.7 SGR 600.7 SG3 1302.8
RRT .4891 RRF .4647 RTF .9872
SGB12378.3 R23 -.0219 R13 .9872
SG112367.2 SG2 523.8 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 2838.2 SR 476.1 SS 950.2
CRT .9489 CRS -.6663 CST -.8643
LSA 2991.0 MSA 487.4 SSA 34.9
EL1 2874.0 EL2 148.4 ALF 9.07

LAUNCH DATE NOV 28 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 798.467 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.050 GAL -1.72 AZL 87.90 HCA 237.82 SMA 187.90 ECC .21661 INC 2.1045 V1 30.191
RP 209.34 LAP -1.78 LOP 303.61 VP 23.699 GAP -10.68 AZP 91.12 TAL 350.33 TAP 228.15 RCA 147.20 APO 228.60 V2 26.186
RC 312.019 GL 22.64 GP -3.36 ZAL 102.73 ZAP 42.02 ETS 175.45 ZAE 65.89 ETE 177.93 ZAC 81.38 ETC 257.57 CLP 41.91

PLANETOCENTRIC CONIC

C3 9.928 VHL 3.151 DLA 24.80 RAL 180.03 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.307 DPA 4.15 RAP 165.98 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 0	2973.57	-28.11	94.51	38.47	86.46	15 45 34	2373.6	-28.31	85.85
90.00	10 48 57	3791.60	-12.75	148.79	34.24	64.50	11 52 9	3191.6	-16.08	141.70
100.00	16 39 28	2639.99	-29.88	70.04	38.55	89.00	17 23 28	2040.0	-29.70	61.24
100.00	11 48 10	3600.41	-11.17	133.93	33.43	62.09	12 48 11	3000.4	-14.82	127.04
110.00	18 30 5	2293.91	-33.87	43.60	38.39	94.92	19 8 19	1693.9	-32.82	34.52
110.00	12 14 3	3519.26	-7.73	125.72	31.37	56.60	13 12 42	2919.3	-12.07	119.31

DIFFERENTIAL CORRECTIONS
TDE 1.2435 TRA 2.5465 TC-17.7961 BAU 2.3621
RDE .2542 RRA .1869 RC3 -.0624 FAU .22581
FDE .5269 FRA 3.7043 FC-19.6905 BSP 43514
BDE 1.2692 BRA 2.5534 BC317.7962 FSP 4161

MID-COURSE EXECUTION ACCURACY
SGT12526.1 SGR 596.1 SG3 1251.9
RRT .4548 RRF .4294 RTF .9872
SGB12540.2 R23 -.0229 R13 .9872
SG112529.0 SG2 530.8 THA 1.24

ORBIT DETERMINATION ACCURACY
ST 2750.9 SR 475.7 SS 912.3
CRT .9304 CRS -.5945 CST -.8448
LSA 2892.9 MSA 506.3 SSA 34.8
EL1 2786.4 EL2 172.2 ALF 9.17

LAUNCH DATE NOV 28 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 802.771 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.056 GAL -1.85 AZL 87.91 HCA 239.06 SMA 188.01 ECC .21735 INC 2.0888 V1 30.191
RP 209.14 LAP -1.79 LOP 304.84 VP 23.733 GAP -10.79 AZP 91.07 TAL 349.62 TAP 228.68 RCA 147.14 APO 228.87 V2 26.209
RC 312.950 GL 22.34 GP -3.27 ZAL 104.06 ZAP 41.21 ETS 175.43 ZAE 64.78 ETE 177.92 ZAC 81.56 ETC 257.53 CLP 41.10

PLANETOCENTRIC CONIC

C3 10.039 VHL 3.168 DLA 23.96 RAL 181.18 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.376 DPA 4.07 RAP 166.41 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 25	2927.77	-28.26	91.16	39.56	88.13	16 3 13	2327.8	-28.22	82.50
90.00	10 39 42	3841.82	-11.26	151.73	35.07	63.85	11 43 43	3241.8	-14.68	144.72
100.00	16 55 26	2602.05	-29.89	67.22	39.58	90.48	17 38 48	2002.1	-29.50	58.44
100.00	11 41 21	3642.77	-9.81	136.34	34.31	61.62	12 42 4	3042.8	-13.53	129.52
110.00	18 42 38	2266.71	-33.69	41.50	39.32	96.15	19 20 24	1666.7	-32.47	32.47
110.00	12 10 39	3550.88	-6.54	127.40	32.32	56.37	13 9 50	2950.9	-10.92	121.04

DIFFERENTIAL CORRECTIONS
TDE 1.1625 TRA 2.7087 TC-17.8332 BAU 2.3934
RDE .2558 RRA .1869 RC3 -.0286 FAU .21605
FDE .3925 FRA 3.6976 FC-18.6319 BSP 44090
BDE 1.1904 BRA 2.7152 BC317.8332 FSP 4002

MID-COURSE EXECUTION ACCURACY
SGT12682.8 SGR 592.6 SG3 1201.7
RRT .4205 RRF .3942 RTF .9872
SGB12696.7 R23 -.0238 R13 .9872
SG112685.3 SG2 537.6 THA 1.13

ORBIT DETERMINATION ACCURACY
ST 2668.4 SR 475.8 SS 882.4
CRT .9068 CRS -.5153 CST -.8256
LSA 2801.4 MSA 526.0 SSA 34.6
EL1 2703.3 EL2 198.0 ALF 9.23

LAUNCH DATE NOV 28 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 807.077 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.062 GAL -1.98 AZL 87.93 HCA 240.30 SMA 188.11 ECC .21813 INC 2.0735 V1 30.191
RP 208.94 LAP -1.80 LOP 306.09 VP 23.766 GAP -10.90 AZP 91.03 TAL 348.90 TAP 229.20 RCA 147.08 APO 229.14 V2 26.232
RC 313.871 GL 22.02 GP -3.18 ZAL 105.40 ZAP 40.42 ETS 175.42 ZAE 63.70 ETE 177.91 ZAC 81.74 ETC 257.48 CLP 40.31

PLANETOCENTRIC CONIC

C3 10.164 VHL 3.188 DLA 23.11 RAL 182.33 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.446 DPA 3.97 RAP 166.86 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 45	2885.47	-28.32	88.07	40.63	89.68	16 19 51	2285.5	-28.06	79.42
90.00	10 31 34	3889.07	-9.83	154.46	35.96	63.31	11 36 23	3289.1	-13.33	147.53
100.00	17 10 48	2566.10	-29.84	64.55	40.61	91.89	17 53 35	1966.1	-29.26	55.80
100.00	11 35 12	3683.67	-8.48	138.65	35.24	61.23	12 36 35	3083.7	-12.2[illegible]	131.89
110.00	18 54 59	2240.20	-33.48	39.46	40.26	97.34	19 32 19	1640.2	-32.10	30.49
110.00	12 7 31	3582.33	-5.36	129.06	33.33	56.19	13 7 13	2982.3	-9.76	122.74

DIFFERENTIAL CORRECTIONS
TDE 1.0779 TRA 2.8773 TC-17.8437 BAU 2.4246
RDE .2580 RRA .1869 RC3 .0030 FAU .20664
FDE .2660 FRA 3.6905 FC-17.6007 BSP 44633
BDE 1.1084 BRA 2.8834 BC317.8437 FSP 3844

MID-COURSE EXECUTION ACCURACY
SGT12837.8 SGR 590.2 SG3 1153.3
RRT .3866 RRF .3596 RTF .9871
SGB12851.4 R23 -.0246 R13 .9871
SG112839.9 SG2 544.2 THA 1.02

ORBIT DETERMINATION ACCURACY
ST 2591.2 SR 476.4 SS 860.9
CRT .8773 CRS -.4296 CST -.8077
LSA 2717.0 MSA 547.1 SSA 34.3
EL1 2624.9 EL2 225.7 ALF 9.23

LAUNCH DATE NOV 28 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 811.385 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.068 GAL -2.12 AZL 87.94 HCA 241.55 SMA 188.22 ECC .21894 INC 2.0[illegible]86 V1 30.191
RP 208.76 LAP -1.81 LOP 307.33 VP 23.799 GAP -11.01 AZP 90.98 TAL 348.16 TAP 229.70 RCA 147.01 APO 229.43 V2 26.254
RC 314.784 GL 21.70 GP -3.09 ZAL 106.77 ZAP 39.65 ETS 175.41 ZAE 62.63 ETE 177.90 ZAC 81.92 ETC 257.42 CLP 39.55

PLANETOCENTRIC CONIC

C3 10.304 VHL 3.210 DLA 22.25 RAL 183.49 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 4.518 DPA 3.86 RAP 167.33 ECC 1.1696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 16	2845.89	-28.30	85.18	41.71	91.13	16 35 42	2245.9	-27.84	76.54
90.00	10 24 18	3934.16	-8.44	157.04	36.91	62.87	11 29 52	3334.2	-12.01	150.19
100.00	17 25 40	2531.82	-29.73	62.01	41.65	93.22	18 7 52	1931.8	-28.97	53.29
100.00	11 29 35	3723.46	-7.17	140.87	36.22	60.90	12 31 38	3123.5	-10.99	134.17
110.00	19 7 9	2214.35	-33.24	37.48	41.23	98.49	19 44 3	1614.3	-31.71	28.58
110.00	12 4 35	3613.70	-4.17	130.70	34.37	56.04	13 4 49	3013.7	-8.60	124.42

DIFFERENTIAL CORRECTIONS
TDE .9890 TRA 3.0510 TC-17.8253 BAU 2.4556
RDE .2606 RRA .1866 RC3 .0328 FAU .19750
FDE .1464 FRA 3.6761 FC-16.5934 BSP 45178
BDE 1.0228 BRA 3.0567 BC317.8253 FSP 3694

MID-COURSE EXECUTION ACCURACY
SGT12988.4 SGR 588.4 SG3 1105.8
RRT .3529 RRF .3251 RTF .9871
SGB13001.7 R23 -.0256 R13 .9870
SG112990.1 SG2 550.5 THA .92

ORBIT DETERMINATION ACCURACY
ST 2519.9 SR 477.5 SS 845.7
CRT .8406 CRS -.3392 CST -.7922
LSA 2639.8 MSA 568.4 SSA 34.0
EL1 2552.0 EL2 255.4 ALF 9.14

LAUNCH DATE NOV 28 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 815.695 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.074 GAL -2.26 AZL 87.96 HCA 242.79 SMA 188.33 ECC .21979 INC 2.0440 V1 30.191
RP 208.58 LAP -1.82 LOP 308.57 VP 23.830 GAP -11.12 AZP 90.94 TAL 347.41 TAP 230.20 RCA 146.93 APO 229.72 V2 26.274
RC 315.690 GL 21.37 GP -3.01 ZAL 108.15 ZAP 38.90 ETS 175.39 ZAE 61.59 ETE 177.89 ZAC 82.10 ETC 257.37 CLP 38.80

PLANETOCENTRIC CONIC

C3 10.461 VHL 3.234 DLA 21.37 RAL 184.66 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.591 DPA 3.73 RAP 167.82 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 7	2808.51	-28.22	82.45	42.80	92.50	16 50 56	2208.5	-27.57	73.84
90.00	10 17 43	3977.62	-7.08	159.51	37.91	62.51	11 24 1	3377.6	-10.71	152.71
100.00	17 40 7	2498.99	-29.58	59.58	42.70	94.49	18 21 46	1899.0	-28.65	50.90
100.00	11 24 25	3762.38	-5.87	143.04	37.26	60.64	12 27 7	3162.4	-9.74	136.39
110.00	19 19 9	2189.12	-32.97	35.56	42.21	99.59	19 55 39	1589.1	-31.29	26.73
110.00	12 1 52	3645.01	-2.97	132.34	35.46	55.93	13 2 37	3045.0	-7.42	126.09

DIFFERENTIAL CORRECTIONS
TDE .8970 TRA 3.2317 TC-17.7737 BAU 2.4857
RDE .2637 RRA .1861 RC3 .0607 FAU .18854
FDE .0341 FRA 3.6606 FC-15.6037 BSP 45722
BDE .9350 BRA 3.2371 BC317.7738 FSP 3548

MID-COURSE EXECUTION ACCURACY
SGT13134.1 SGR 587.4 SG3 1059.5
RRT .3198 RRF .2912 RTF .9869
SGB13147.3 R23 -.0264 R13 .9869
SG113135.5 SG2 556.5 THA .82

ORBIT DETERMINATION ACCURACY
ST 2458.8 SR 479.0 SS 837.6
CRT .7962 CRS -.2470 CST -.7806
LSA 2574.4 MSA 590.1 SSA 33.5
EL1 2488.6 EL2 286.3 ALF 8.94

LAUNCH DATE NOV 28 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 820.005 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.081 GAL -2.40 AZL 87.97 HCA 244.04 SMA 188.44 ECC .22069 INC 2.0297 V1 30.191
RP 208.40 LAP -1.82 LOP 309.82 VP 23.861 GAP -11.23 AZP 90.89 TAL 346.64 TAP 230.68 RCA 146.85 APO 230.02 V2 26.294
RC 316.588 GL 21.04 GP -2.93 ZAL 109.54 ZAP 38.17 ETS 175.38 ZAE 60.56 ETE 177.88 ZAC 82.28 ETC 257.32 CLP 38.08

PLANETOCENTRIC CONIC

C3 10.635 VHL 3.261 DLA 20.49 RAL 185.82 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 4.665 DPA 3.59 RAP 168.33 ECC 1.1750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 25	2772.99	-28.08	79.86	43.89	93.79	17 5 38	2173.0	-27.26	71.29
90.00	10 11 43	4019.82	-5.75	161.90	38.97	62.22	11 18 43	3419.8	-9.42	155.15
100.00	17 54 11	2467.43	-29.39	57.25	43.77	95.70	18 35 18	1867.4	-28.29	48.62
100.00	11 19 39	3800.61	-4.59	145.15	38.34	60.43	12 22 59	3200.6	-8.50	138.54
110.00	19 31 0	2164.50	-32.67	33.70	43.22	100.66	20 7 5	1564.5	-30.86	24.95
110.00	11 59 18	3676.30	-1.78	133.98	36.58	55.86	13 0 35	3076.3	-6.25	127.74

DIFFERENTIAL CORRECTIONS
TDE .8025 TRA 3.4199 TC-17.6926 BAU 2.5155
RDE .2672 RRA .1856 RC3 .0867 FAU .17987
FDE -.0699 FRA 3.6424 FC-14.6430 BSP 46270
BDE .8458 BRA 3.4250 BC317.6928 FSP 3407

MID-COURSE EXECUTION ACCURACY
SGT13277.4 SGR 587.2 SG3 1014.6
RRT .2876 RRF .2582 RTF .9868
SGB13290.4 R23 -.0273 R13 .9868
SG113278.5 SG2 562.3 THA .73

ORBIT DETERMINATION ACCURACY
ST 2410.6 SR 481.0 SS 835.6
CRT .7437 CRS -.1563 CST -.7744
LSA 2523.1 MSA 610.8 SSA 33.0
EL1 2437.4 EL2 318.0 ALF 8.59

LAUNCH DATE NOV 28 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 824.316 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.087	GAL	-2.55	AZL	87.98	HCA	245.29	SMA	188.55	ECC	.22162	INC	2.0156
RP	208.24	LAP	-1.83	LOP	311.07	VP	23.891	GAP	-11.34	AZP	90.84	TAL	345.86	TAP	231.15	RCA	146.76	APO	230.34
RC	317.480	GL	20.69	GP	-2.86	ZAL	110.95	ZAP	37.46	ETS	175.36	ZAE	59.55	ETE	177.87	ZAC	82.47	ETC	257.26

V1 30.191 V2 26.314 CLP 37.37

PLANETOCENTRIC CONIC

C3	10.826	VHL	3.290	DLA	19.60	RAL	186.99	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	4.740	DPA	3.44	RAP	168.86

ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 15	2739.06	-27.91	77.39	45.00	95.02	17 19 54	2139.1	-26.92	68.86
90.00	10 6 12	4061.02	-4.43	164.22	40.07	62.00	11 13 53	3461.0	-8.15	157.50
100.00	18 7 55	2437.02	-29.17	55.02	44.85	96.86	18 48 32	1837.0	-27.91	46.44
100.00	11 15 13	3838.29	-3.32	147.23	39.46	60.28	12 19 11	3238.3	-7.26	140.65
110.00	19 42 42	2140.47	-32.36	31.89	44.25	101.68	20 18 23	1540.5	-30.41	23.22
110.00	11 56 55	3707.61	-.58	135.61	37.75	55.82	12 58 43	3107.6	-5.06	129.39

DIFFERENTIAL CORRECTIONS

TDE	.7039	TRA	3.6142	TC-17.5820	BAU	2.5448	
RDE	.2713	RRA	.1848	RC3 .1107	FAU	.17146	
FDE	-.1667	FRA	3.6213	FC-13.7112	BSP	46804	
BDE	.7544	BRA	3.6189	BC317.5824	FSP	3271	

MID-COURSE EXECUTION ACCURACY

SGT13416.4	SGR	587.5	SG3	971.0			
RRT	.2560	RRF	.2259	RTF	.9866		
SGB13429.3	R23	-.0280	R13	.9866			
SG113417.3	SG2	567.9	THA	.64			

ORBIT DETERMINATION ACCURACY

ST	2374.8	SR	483.4	SS	838.3		
CRT	.6827	CRS	-.0687	CST	-.7740		
LSA	2485.7	MSA	629.6	SSA	32.4		
EL1	2398.1	EL2	349.8	ALF	8.08		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 828.627 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.093	GAL	-2.70	AZL	88.00	HCA	246.54	SMA	188.66	ECC	.22260	INC	2.0018
RP	208.08	LAP	-1.84	LOP	312.32	VP	23.920	GAP	-11.44	AZP	90.80	TAL	345.07	TAP	231.60	RCA	146.67	APO	230.66
RC	318.367	GL	20.34	GP	-2.79	ZAL	112.36	ZAP	36.77	ETS	175.34	ZAE	58.56	ETE	177.87	ZAC	82.65	ETC	257.20

V1 30.191 V2 26.332 CLP 36.68

PLANETOCENTRIC CONIC

C3	11.037	VHL	3.322	DLA	18.70	RAL	188.16	RAD	6567.4	VEL	11.508	PTH	2.00	VHP	4.817	DPA	3.27	RAP	169.40

ECC 1.1816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 40	2706.55	-27.69	75.04	46.13	96.18	17 33 47	2106.6	-26.54	66.56
90.00	10 1 5	4101.43	-3.14	166.48	41.23	61.84	11 9 26	3501.4	-6.88	159.80
100.00	18 21 21	2407.68	-28.91	52.88	45.96	97.96	19 1 29	1807.7	-27.51	44.36
100.00	11 11 5	3875.54	-2.06	149.28	40.63	60.17	12 15 41	3275.5	-6.02	142.72
110.00	19 54 15	2117.04	-32.02	30.15	45.30	102.66	20 29 32	1517.0	-29.95	21.55
110.00	11 54 41	3738.94	.62	137.25	38.95	55.82	12 57 0	3138.9	-3.87	131.04

DIFFERENTIAL CORRECTIONS

TDE	.6028	TRA	3.8148	TC-17.4448	BAU	2.5742	
RDE	.2759	RRA	.1838	RC3 .1329	FAU	.16333	
FDE	-.2560	FRA	3.5953	FC-12.8112	BSP	47318	
BDE	.6629	BRA	3.8192	BC317.4453	FSP	3138	

MID-COURSE EXECUTION ACCURACY

SGT13552.7	SGR	588.4	SG3	928.6			
RRT	.2252	RRF	.1944	RTF	.9864		
SGB13565.5	R23	-.0289	R13	.9864			
SG113553.4	SG2	573.2	THA	.56			

ORBIT DETERMINATION ACCURACY

ST	2354.4	SR	486.3	SS	844.4		
CRT	.6139	CRS	.0138	CST	-.7791		
LSA	2464.7	MSA	645.6	SSA	31.8		
EL1	2373.8	EL2	380.7	ALF	7.42		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 832.938 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.100	GAL	-2.86	AZL	88.01	HCA	247.79	SMA	188.78	ECC	.22362	INC	1.9883
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.948	GAP	-11.55	AZP	90.75	TAL	344.26	TAP	232.05	RCA	146.56	APO	230.99
RC	319.247	GL	19.98	GP	-2.72	ZAL	113.79	ZAP	36.10	ETS	175.33	ZAE	57.59	ETE	177.87	ZAC	82.84	ETC	257.14

V1 30.191 V2 26.349 CLP 36.01

PLANETOCENTRIC CONIC

C3	11.268	VHL	3.357	DLA	17.79	RAL	189.32	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	4.895	DPA	3.10	RAP	169.97

ECC 1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 44	2675.34	-27.44	72.78	47.27	97.28	17 47 19	2075.3	-26.15	64.36
90.00	9 56 20	4141.20	-1.86	168.70	42.42	61.74	11 5 21	3541.2	-5.62	162.04
100.00	18 34 31	2379.34	-28.62	50.82	47.08	99.01	19 14 11	1779.3	-27.08	42.36
100.00	11 7 13	3912.42	-.81	151.30	41.84	60.12	12 12 26	3312.4	-4.78	144.77
110.00	20 5 39	2094.21	-31.67	28.46	46.38	103.60	20 40 33	1494.2	-29.47	19.94
110.00	11 52 35	3770.32	1.82	138.88	40.19	55.86	12 55 25	3170.3	-2.68	132.68

DIFFERENTIAL CORRECTIONS

TDE	.4984	TRA	4.0227	TC-17.2774	BAU	2.6029	
RDE	.2809	RRA	.1826	RC3 .1533	FAU	.15533	
FDE	-.3392	FRA	3.5676	FC-11.9339	BSP	47847	
BDE	.5721	BRA	4.0269	BC317.2781	FSP	3010	

MID-COURSE EXECUTION ACCURACY

SGT13684.6	SGR	589.7	SG3	887.1			
RRT	.1952	RRF	.1638	RTF	.9861		
SGB13697.3	R23	-.0296	R13	.9861			
SG113685.1	SG2	578.3	THA	.48			

ORBIT DETERMINATION ACCURACY

ST	2350.5	SR	489.5	SS	853.5		
CRT	.5383	CRS	.0910	CST	-.7887		
LSA	2461.3	MSA	658.6	SSA	31.2		
EL1	2365.6	EL2	409.9	ALF	6.59		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 837.248 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.106	GAL	-3.02	AZL	88.02	HCA	249.05	SMA	188.89	ECC	.22469	INC	1.9750
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.975	GAP	-11.67	AZP	90.71	TAL	343.43	TAP	232.48	RCA	146.45	APO	231.34
RC	320.122	GL	19.61	GP	-2.66	ZAL	115.22	ZAP	35.45	ETS	175.31	ZAE	56.64	ETE	177.86	ZAC	83.03	ETC	257.08

V1 30.191 V2 26.366 CLP 35.36

PLANETOCENTRIC CONIC

C3	11.521	VHL	3.394	DLA	16.88	RAL	190.48	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	4.974	DPA	2.91	RAP	170.54

ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 28	2645.31	-27.16	70.63	48.43	98.33	18 0 33	2045.3	-25.73	62.26
90.00	9 51 53	4180.42	-.59	170.89	43.66	61.69	11 1 33	3580.4	-4.37	164.25
100.00	18 47 26	2351.95	-28.32	48.84	48.22	100.00	19 26 38	1751.9	-26.64	40.44
100.00	11 3 36	3949.01	.43	153.31	43.09	60.11	12 9 25	3349.0	-3.55	146.78
110.00	20 16 55	2071.98	-31.30	26.83	47.48	104.50	20 51 27	1472.0	-28.99	18.39
110.00	11 50 36	3801.75	3.02	140.52	41.47	55.93	12 53 58	3201.7	-1.47	134.32

DIFFERENTIAL CORRECTIONS

TDE	.3909	TRA	4.2371	TC-17.0863	BAU	2.6318	
RDE	.2864	RRA	.1812	RC3 .1718	FAU	.14769	
FDE	-.4170	FRA	3.5355	FC-11.0981	BSP	48353	
BDE	.4846	BRA	4.2409	BC317.0872	FSP	2884	

MID-COURSE EXECUTION ACCURACY

SGT13814.4	SGR	591.3	SG3	847.2			
RRT	.1660	RRF	.1337	RTF	.9858		
SGB13827.0	R23	-.0307	R13	.9858			
SG113814.7	SG2	583.1	THA	.41			

ORBIT DETERMINATION ACCURACY

ST	2363.1	SR	493.0	SS	864.5		
CRT	.4574	CRS	.1630	CST	-.8014		
LSA	2475.3	MSA	668.4	SSA	30.5		
EL1	2374.2	EL2	436.3	ALF	5.64		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 841.556 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.113	GAL	-3.18	AZL	88.04	HCA	250.30	SMA	189.01	ECC	.22581	INC	1.9619
RP	207.66	LAP	-1.85	LOP	316.09	VP	24.001	GAP	-11.78	AZP	90.66	TAL	342.60	TAP	232.90	RCA	146.33	APO	231.69
RC	320.992	GL	19.24	GP	-2.60	ZAL	116.65	ZAP	34.81	ETS	175.29	ZAE	55.70	ETE	177.86	ZAC	83.22	ETC	257.02

V1	30.191	V2	26.381	CLP	34.73														

PLANETOCENTRIC CONIC

C3	11.796	VHL	3.435	DLA	15.97	RAL	191.64	RAD	6567.4	VEL	11.541	PTH	2.01	VHP	5.054	DPA	2.72	RAP	171.13

ECC	1.1941	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 29 53	2616.39	-26.86	68.57	49.62	99.32	18 13 29	2016.4	-25.30	60.25							
		90.00	9 47 43	4219.21	.66	173.05	44.94	61.69	10 58 2	3619.2	-3.13	166.42							
		100.00	19 0 6	2325.46	-27.99	46.94	49.39	100.95	19 38 51	1725.5	-26.19	38.60							
		100.00	11 0 11	3985.36	1.66	155.30	44.38	60.15	12 6 37	3385.4	-2.32	148.78							
		110.00	20 28 1	2050.36	-30.92	25.26	48.60	105.36	21 2 12	1450.4	-28.50	16.90							
		110.00	11 48 45	3833.23	4.22	142.17	42.79	56.05	12 52 38	3233.2	-.27	135.96							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2813	TRA	4.4590	TC-16.8676	BAU	2.6602	SGT13940.2	SGR	593.3	SG3	808.2	ST	2393.5	SR	496.8	SS	876.0		
RDE	.2925	RRA	.1796	RC3 .1886	FAU	.14017	RRT	.1378	RRF	.1048	RTF	.9854	CRT	.3739	CRS	.2272	CST	-.8169	
FDE	-.4866	FRA	3.5009	FC-10.2873	BSP	48861	SGB13952.8	R23	-.0315	R13	.9854	LSA	2507.7	MSA	673.5	SSA	29.8		
BDE	.4058	BRA	4.4626	BC316.8686	FSP	2765	SG113940.4	SG2	587.6	THA	.34	EL1	2400.9	EL2	459.3	ALF	4.61		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 845.863 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.120	GAL	-3.35	AZL	88.05	HCA	251.56	SMA	189.13	ECC	.22699	INC	1.9489
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.026	GAP	-11.89	AZP	90.62	TAL	341.74	TAP	233.30	RCA	146.20	APO	232.06
RC	321.856	GL	18.86	GP	-2.54	ZAL	118.09	ZAP	34.19	ETS	175.28	ZAE	54.78	ETE	177.86	ZAC	83.41	ETC	256.96

V1	30.191	V2	26.396	CLP	34.11														

PLANETOCENTRIC CONIC

C3	12.095	VHL	3.478	DLA	15.05	RAL	192.80	RAD	6567.5	VEL	11.553	PTH	2.02	VHP	5.136	DPA	2.51	RAP	171.74

ECC	1.1991	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 43 1	2588.52	-26.54	66.59	50.82	100.26	18 26 10	1988.5	-24.85	58.33							
		90.00	9 43 47	4257.61	1.90	175.19	46.26	61.74	10 54 45	3657.6	-1.89	168.57							
		100.00	19 12 32	2299.87	-27.64	45.12	50.58	101.85	19 50 52	1699.9	-25.73	36.84							
		100.00	10 56 58	4021.50	2.88	157.29	45.71	60.23	12 4 0	3421.5	-1.10	150.77							
		110.00	20 38 59	2029.35	-30.53	23.75	49.75	106.18	21 12 49	1429.4	-28.01	15.46							
		110.00	11 47 0	3864.77	5.41	143.83	44.14	56.20	12 51 25	3264.8	.94	137.61							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1685	TRA	4.6877	TC-16.6265	BAU	2.6887	SGT14063.2	SGR	595.5	SG3	770.4	ST	2439.9	SR	501.0	SS	887.4		
RDE	.2990	RRA	.1777	RC3 .2036	FAU	.13295	RRT	.1103	RRF	.0765	RTF	.9850	CRT	.2892	CRS	.2859	CST	-.8335	
FDE	-.5504	FRA	3.4614	FC3-9.5161	BSP	49352	SGB14075.8	R23	-.0325	R13	.9850	LSA	2556.5	MSA	674.8	SSA	29.1		
BDE	.3432	BRA	4.6910	BC316.6277	FSP	2647	SG114063.3	SG2	591.9	THA	.27	EL1	2444.4	EL2	478.7	ALF	3.53		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 850.168 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.126	GAL	-3.52	AZL	88.06	HCA	252.82	SMA	189.25	ECC	.22821	INC	1.9362
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.050	GAP	-12.00	AZP	90.57	TAL	340.88	TAP	233.70	RCA	146.06	APO	232.44
RC	322.714	GL	18.48	GP	-2.48	ZAL	119.53	ZAP	33.59	ETS	175.26	ZAE	53.87	ETE	177.85	ZAC	83.60	ETC	256.90

V1	30.191	V2	26.409	CLP	33.50														

PLANETOCENTRIC CONIC

C3	12.420	VHL	3.524	DLA	14.13	RAL	193.95	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	5.219	DPA	2.29	RAP	172.36

ECC	1.2044	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 55 54	2561.67	-26.20	64.70	52.04	101.15	18 38 36	1961.7	-24.40	56.49							
		90.00	9 40 5	4295.69	3.12	177.32	47.62	61.84	10 51 41	3695.7	-.67	170.69							
		100.00	19 24 45	2275.14	-27.29	43.37	51.78	102.71	20 2 40	1675.1	-25.26	35.15							
		100.00	10 53 56	4057.45	4.10	159.27	47.08	60.36	12 1 33	3457.5	.12	152.74							
		110.00	20 49 48	2008.99	-30.14	22.29	50.92	106.96	21 23 17	1409.0	-27.52	14.08							
		110.00	11 45 21	3896.37	6.61	145.50	45.53	56.38	12 50 18	3296.4	2.14	139.25							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0534	TRA	4.9240	TC-16.3628	BAU	2.7171	SGT14183.3	SGR	598.0	SG3	733.6	ST	2502.1	SR	505.3	SS	898.7		
RDE	.3060	RRA	.1756	RC3 .2169	FAU	.12588	RRT	.0837	RRF	.0492	RTF	.9845	CRT	.2059	CRS	.3389	CST	-.8498	
FDE	-.6087	FRA	3.4198	FC3-8.7747	BSP	49849	SGB14195.9	R23	-.0335	R13	.9845	LSA	2621.0	MSA	673.1	SSA	28.4		
BDE	.3107	BRA	4.9271	BC316.3642	FSP	2533	SG114183.4	SG2	595.9	THA	.20	EL1	2504.4	EL2	494.1	ALF	2.48		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 854.469 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.133	GAL	-3.69	AZL	88.08	HCA	254.08	SMA	189.37	ECC	.22949	INC	1.9236
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.073	GAP	-12.12	AZP	90.53	TAL	340.00	TAP	234.08	RCA	145.91	APO	232.83
RC	323.566	GL	18.09	GP	-2.43	ZAL	120.96	ZAP	33.00	ETS	175.24	ZAE	52.98	ETE	177.85	ZAC	83.79	ETC	256.84

V1	30.191	V2	26.422	CLP	32.92														

PLANETOCENTRIC CONIC

C3	12.771	VHL	3.574	DLA	13.21	RAL	195.09	RAD	6567.5	VEL	11.583	PTH	2.03	VHP	5.303	DPA	2.06	RAP	173.00

ECC	1.2102	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 8 32	2535.80	-25.85	62.89	53.29	101.99	18 50 47	1935.8	-23.93	54.74							
		90.00	9 36 36	4333.48	4.33	179.44	49.01	61.99	10 48 49	3733.5	.55	172.80							
		100.00	19 36 45	2251.26	-26.92	41.69	53.01	103.52	20 14 16	1651.3	-24.79	33.53							
		100.00	10 51 3	4093.25	5.30	161.25	48.48	60.54	11 59 16	3493.3	1.33	154.70							
		110.00	21 0 29	1989.26	-29.74	20.90	52.12	107.69	21 33 38	1389.3	-27.03	12.76							
		110.00	11 43 49	3928.01	7.80	147.18	46.95	56.61	12 49 17	3328.0	3.35	140.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0631	TRA	5.1681	TC-16.0770	BAU	2.7452	SGT14300.0	SGR	600.6	SG3	698.0	ST	2578.6	SR	510.0	SS	908.3		
RDE	.3136	RRA	.1732	RC3 .2287	FAU	.11903	RRT	.0580	RRF	.0227	RTF	.9840	CRT	.1262	CRS	.3861	CST	-.8654	
FDE	-.6603	FRA	3.3744	FC3-8.0686	BSP	50354	SGB14312.6	R23	-.0346	R13	.9840	LSA	2699.3	MSA	668.4	SSA	27.7		
BDE	.3198	BRA	5.1710	BC316.0787	FSP	2422	SG114300.1	SG2	599.6	THA	.14	EL1	2579.4	EL2	505.7	ALF	1.49		

LAUNCH DATE NOV 28 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 858.768 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.140 GAL -3.87 AZL 88.09 HCA 255.34 SMA 189.49 ECC .23083 INC 1.9111 V1 30.191
RP 207.21 LAP -1.85 LOP 321.13 VP 24.096 GAP -12.24 AZP 90.48 TAL 339.10 TAP 234.44 RCA 145.75 APO 233.23 V2 26.434
RC 324.413 GL 17.70 GP -2.37 ZAL 122.40 ZAP 32.42 ETS 175.22 ZAE 52.10 ETE 177.85 ZAC 83.99 ETC 256.78 CLP 32.35

PLANETOCENTRIC CONIC

C3 13.151 VHL 3.626 DLA 12.30 RAL 196.23 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 5.389 DPA 1.83 RAP 173.65 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 55	2510.88	-25.48	61.15	54.55	102.79	19 2 46	1910.9	-23.47	53.06
90.00	9 33 17	4371.02	5.53	181.55	50.45	62.18	10 46 8	3771.0	1.77	174.89
100.00	19 48 33	2228.22	-26.54	40.08	54.27	104.28	20 25 41	1628.2	-24.31	31.99
100.00	10 48 19	4128.91	6.49	163.22	49.93	60.76	11 57 8	3528.9	2.54	156.66
110.00	21 11 1	1970.19	-29.33	19.56	53.34	108.39	21 43 51	1370.2	-26.54	11.49
110.00	11 42 21	3959.70	8.98	148.87	48.41	56.88	12 48 21	3359.7	4.56	142.57

DIFFERENTIAL CORRECTIONS
TDE -.1835 TRA 5.4192 TC-15.7781 BAU 2.7743
RDE .3216 RRA .1705 RC3 .2387 FAU .11245
FDE -.7074 FRA 3.3256 FC3-7.4025 BSP 50814
BDE .3702 BRA 5.4219 BC315.7799 FSP 2313

MID-COURSE EXECUTION ACCURACY
SGT14416.4 SGR 603.4 SG3 663.6
RRT .0330 RRF -.0032 RTF .9834
SGB14429.1 R23 -.0358 R13 .9834
SG114416.4 SG2 603.1 THA .08

ORBIT DETERMINATION ACCURACY
ST 2667.1 SR 514.8 SS 916.9
CRT .0498 CRS .4294 CST -.8798
LSA 2789.3 MSA 661.8 SSA 27.0
EL1 2667.2 EL2 514.1 ALF .57

LAUNCH DATE NOV 28 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 863.062 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.147 GAL -4.06 AZL 88.10 HCA 256.61 SMA 189.62 ECC .23222 INC 1.8988 V1 30.191
RP 207.12 LAP -1.85 LOP 322.40 VP 24.117 GAP -12.36 AZP 90.44 TAL 338.19 TAP 234.80 RCA 145.58 APO 233.65 V2 26.444
RC 325.253 GL 17.31 GP -2.32 ZAL 123.83 ZAP 31.86 ETS 175.20 ZAE 51.24 ETE 177.84 ZAC 84.19 ETC 256.72 CLP 31.79

PLANETOCENTRIC CONIC

C3 13.561 VHL 3.682 DLA 11.39 RAL 197.36 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 5.476 DPA 1.58 RAP 174.32 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 4	2486.89	-25.11	59.49	55.84	103.54	19 14 31	1886.9	-23.00	51.46
90.00	9 30 8	4408.34	6.71	183.65	51.92	62.43	10 43 36	3808.3	2.97	176.98
100.00	20 0 9	2206.03	-26.16	38.54	55.54	105.01	20 36 55	1606.0	-23.84	30.51
100.00	10 45 44	4164.43	7.66	165.21	51.41	61.02	11 55 9	3564.4	3.74	158.62
110.00	21 21 24	1951.80	-28.93	18.28	54.59	109.05	21 53 56	1351.8	-26.06	10.28
110.00	11 40 59	3991.43	10.15	150.57	49.90	57.18	12 47 30	3391.4	5.76	144.24

DIFFERENTIAL CORRECTIONS
TDE -.3056 TRA 5.6780 TC-15.4574 BAU 2.8027
RDE .3301 RRA .1675 RC3 .2474 FAU .10599
FDE -.7493 FRA 3.2732 FC3-6.7666 BSP 51288
BDE .4498 BRA 5.6805 BC315.4594 FSP 2208

MID-COURSE EXECUTION ACCURACY
SGT14527.3 SGR 606.3 SG3 630.1
RRT .0088 RRF -.0284 RTF .9827
SGB14540.0 R23 -.0371 R13 .9827
SG114527.3 SG2 606.3 THA .02

ORBIT DETERMINATION ACCURACY
ST 2766.2 SR 519.7 SS 923.5
CRT -.0212 CRS .4684 CST -.8924
LSA 2889.1 MSA 653.9 SSA 26.3
EL1 2766.2 EL2 519.6 ALF 179.76

LAUNCH DATE NOV 28 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 867.351 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.154 GAL -4.25 AZL 88.11 HCA 257.87 SMA 189.74 ECC .23368 INC 1.8866 V1 30.191
RP 207.04 LAP -1.84 LOP 323.66 VP 24.137 GAP -12.48 AZP 90.40 TAL 337.27 TAP 235.14 RCA 145.40 APO 234.08 V2 26.454
RC 326.088 GL 16.91 GP -2.28 ZAL 125.25 ZAP 31.32 ETS 175.18 ZAE 50.39 ETE 177.84 ZAC 84.39 ETC 256.66 CLP 31.25

PLANETOCENTRIC CONIC

C3 14.002 VHL 3.742 DLA 10.48 RAL 198.48 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 5.565 DPA 1.33 RAP 174.99 ECC 1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 0	2463.82	-24.73	57.91	57.15	104.25	19 26 4	1863.8	-22.53	49.93
90.00	9 27 9	4445.44	7.88	185.76	53.43	62.71	10 41 14	3845.4	4.16	179.05
100.00	20 11 33	2184.66	-25.77	37.07	56.84	105.69	20 47 58	1584.7	-23.37	29.10
100.00	10 43 16	4199.83	8.83	167.19	52.92	61.32	11 53 16	3599.8	4.93	160.57
110.00	21 31 38	1934.08	-28.53	17.05	55.85	109.68	22 3 52	1334.1	-25.58	9.12
110.00	11 39 41	4023.18	11.32	152.29	51.43	57.53	12 46 44	3423.2	6.96	145.92

DIFFERENTIAL CORRECTIONS
TDE -.4299 TRA 5.9447 TC-15.1230 BAU 2.8314
RDE .3391 RRA .1642 RC3 .2545 FAU .09975
FDE -.7857 FRA 3.2171 FC3-6.1675 BSP 51740
BDE .5475 BRA 5.9470 BC315.1251 FSP 2105

MID-COURSE EXECUTION ACCURACY
SGT14636.2 SGR 609.3 SG3 597.6
RRT -.0147 RRF -.0530 RTF .9819
SGB14648.9 R23 .0385 R13 -.9819
SG114636.2 SG2 609.2 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 2874.1 SR 524.9 SS 927.9
CRT -.0866 CRS .5036 CST -.9036
LSA 2996.7 MSA 644.9 SSA 25.6
EL1 2874.5 EL2 522.8 ALF 179.06

LAUNCH DATE NOV 28 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 871.635 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.161 GAL -4.44 AZL 88.13 HCA 259.14 SMA 189.87 ECC .23520 INC 1.8745 V1 30.191
RP 206.96 LAP -1.84 LOP 324.93 VP 24.156 GAP -12.60 AZP 90.35 TAL 336.33 TAP 235.46 RCA 145.21 APO 234.53 V2 26.463
RC 326.917 GL 16.51 GP -2.23 ZAL 126.66 ZAP 30.79 ETS 175.15 ZAE 49.55 ETE 177.84 ZAC 84.59 ETC 256.60 CLP 30.72

PLANETOCENTRIC CONIC

C3 14.478 VHL 3.805 DLA 9.58 RAL 199.59 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 5.655 DPA 1.06 RAP 175.68 ECC 1.2383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 43	2441.66	-24.35	56.40	58.48	104.91	19 37 24	1841.7	-22.07	48.47
90.00	9 24 18	4482.35	9.02	187.87	54.98	63.05	10 39 0	3882.3	5.33	181.13
100.00	20 22 46	2164.13	-25.39	35.67	58.16	106.34	20 58 50	1564.1	-22.90	27.75
100.00	10 40 56	4235.11	9.97	169.18	54.48	61.67	11 51 31	3635.1	6.11	162.52
110.00	21 41 43	1917.06	-28.14	15.89	57.15	110.27	22 13 40	1317.1	-25.12	8.02
110.00	11 38 28	4054.94	12.48	154.03	52.99	57.91	12 46 3	3454.9	8.15	147.60

DIFFERENTIAL CORRECTIONS
TDE -.5567 TRA 6.2182 TC-14.7789 BAU 2.8610
RDE .3486 RRA .1606 RC3 .2603 FAU .09374
FDE -.8178 FRA 3.1572 FC3-5.6052 BSP 52155
BDE .6569 BRA 6.2203 BC314.7812 FSP 2004

MID-COURSE EXECUTION ACCURACY
SGT14743.2 SGR 612.3 SG3 566.3
RRT -.0376 RRF -.0771 RTF .9810
SGB14755.9 R23 .0401 R13 -.9810
SG114743.3 SG2 611.9 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 2988.7 SR 530.1 SS 930.2
CRT -.1468 CRS .5358 CST -.9132
LSA 3110.3 MSA 635.5 SSA 25.0
EL1 2989.7 EL2 524.2 ALF 178.46

LAUNCH DATE NOV 28 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 875.913 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.168 GAL -4.64 AZL 88.14 HCA 260.40 SMA 190.00 ECC .23679 INC 1.8625 V1 30.191
RP 206.89 LAP -1.84 LOP 326.20 VP 24.175 GAP -12.73 AZP 90.31 TAL 335.38 TAP 235.78 RCA 145.01 APO 234.98 V2 26.471
RC 327.742 GL 16.11 GP -2.19 ZAL 128.07 ZAP 30.27 ETS 175.13 ZAE 48.73 ETE 177.83 ZAC 84.79 ETC 256.54 CLP 30.20

PLANETOCENTRIC CONIC

C3 14.989 VHL 3.872 DLA 8.69 RAL 200.70 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 5.747 DPA .79 RAP 176.38 ECC 1.2467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 13	2420.40	-23.97	54.96	59.84	105.54	19 48 34	1820.4	-21.61	47.08
90.00	9 21 35	4519.07	10.15	189.98	56.57	63.42	10 36 54	3919.1	6.50	183.20
100.00	20 33 47	2144.43	-25.00	34.33	59.51	106.94	21 9 32	1544.4	-22.45	26.46
100.00	10 38 42	4270.27	11.10	171.18	56.07	62.07	11 49 53	3670.3	7.28	164.48
110.00	21 51 39	1900.75	-27.75	14.78	58.46	110.82	22 23 20	1300.7	-24.66	6.97
110.00	11 37 20	4086.72	13.62	155.78	54.59	58.34	12 45 26	3486.7	9.33	149.30

DIFFERENTIAL CORRECTIONS
TDE -.6837 TRA 6.5018 TC-14.4201 BAU 2.8902
RDE .3586 RRA .1566 RC3 .2648 FAU .08785
FDE -.8441 FRA 3.0943 FC3-5.0737 BSP 52623
BDE .7721 BRA 6.5037 BC314.4225 FSP 1906

MID-COURSE EXECUTION ACCURACY
SGT14847.3 SGR 615.3 SG3 535.8
RRT -.0596 RRF -.1003 RTF .9799
SGB14860.0 R23 .0418 R13 -.9799
SG114847.3 SG2 614.2 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3108.5 SR 535.4 SS 929.6
CRT -.2005 CRS .5646 CST -.9212
LSA 3228.2 MSA 626.1 SSA 24.4
EL1 3110.4 EL2 524.2 ALF 177.96

LAUNCH DATE NOV 28 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 880.184 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.175 GAL -4.85 AZL 88.15 HCA 261.67 SMA 190.12 ECC .23845 INC 1.8506 V1 30.191
RP 206.84 LAP -1.83 LOP 327.46 VP 24.192 GAP -12.86 AZP 90.27 TAL 334.41 TAP 236.08 RCA 144.79 APO 235.46 V2 26.477
RC 328.562 GL 15.71 GP -2.15 ZAL 129.46 ZAP 29.77 ETS 175.11 ZAE 47.92 ETE 177.83 ZAC 84.99 ETC 256.48 CLP 29.70

PLANETOCENTRIC CONIC

C3 15.538 VHL 3.942 DLA 7.80 RAL 201.79 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 5.840 DPA .51 RAP 177.09 ECC 1.2557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 31	2400.02	-23.59	53.58	61.21	106.13	19 59 31	1800.0	-21.16	45.76
90.00	9 19 0	4555.61	11.25	192.09	58.18	63.84	10 34 55	3955.6	7.65	185.27
100.00	20 44 37	2125.55	-24.62	33.05	60.87	107.51	21 20 3	1525.6	-21.99	25.24
100.00	10 36 35	4305.32	12.21	173.19	57.69	62.50	11 48 20	3705.3	8.43	166.44
110.00	22 1 27	1885.14	-27.36	13.73	59.80	111.33	22 32 52	1285.1	-24.22	5.97
110.00	11 36 15	4118.49	14.75	157.55	56.22	58.81	12 44 53	3518.5	10.51	151.01

DIFFERENTIAL CORRECTIONS
TDE -.8152 TRA 6.7916 TC-14.0569 BAU 2.9206
RDE .3691 RRA .1523 RC3 .2681 FAU .08218
FDE -.8672 FRA 3.0272 FC3-4.5786 BSP 53020
BDE .8949 BRA 6.7933 BC314.0595 FSP 1810

MID-COURSE EXECUTION ACCURACY
SGT14949.8 SGR 618.4 SG3 506.3
RRT -.0814 RRF -.1234 RTF .9787
SGB14962.6 R23 .0437 R13 -.9788
SG114949.9 SG2 616.3 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 3232.6 SR 540.7 SS 927.1
CRT -.2503 CRS .5915 CST -.9281
LSA 3349.8 MSA 616.6 SSA 23.8
EL1 3235.5 EL2 523.0 ALF 177.54

LAUNCH DATE NOV 28 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 884.448 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.182 GAL -5.05 AZL 88.16 HCA 262.94 SMA 190.25 ECC .24019 INC 1.8388 V1 30.191
RP 206.79 LAP -1.82 LOP 328.73 VP 24.208 GAP -12.99 AZP 90.23 TAL 333.43 TAP 236.37 RCA 144.56 APO 235.95 V2 26.483
RC 329.378 GL 15.31 GP -2.11 ZAL 130.85 ZAP 29.28 ETS 175.09 ZAE 47.12 ETE 177.82 ZAC 85.20 ETC 256.43 CLP 29.21

PLANETOCENTRIC CONIC

C3 16.127 VHL 4.016 DLA 6.92 RAL 202.87 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 5.935 DPA .23 RAP 177.82 ECC 1.2654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 38	2380.53	-23.22	52.28	62.61	106.68	20 10 18	1780.5	-20.71	44.50
90.00	9 16 31	4591.98	12.33	194.21	59.84	64.31	10 33 3	3992.0	8.78	187.34
100.00	20 55 17	2107.50	-24.25	31.84	62.26	108.04	21 30 24	1507.5	-21.55	24.08
100.00	10 34 33	4340.24	13.30	175.21	59.35	62.98	11 46 53	3740.2	9.57	168.41
110.00	22 11 5	1870.26	-26.99	12.73	61.15	111.82	22 42 15	1270.3	-23.79	5.03
110.00	11 35 14	4150.24	15.86	159.34	57.89	59.31	12 44 24	3550.2	11.67	152.74

DIFFERENTIAL CORRECTIONS
TDE -.9485 TRA 7.0895 TC-13.6871 BAU 2.9516
RDE .3801 RRA .1476 RC3 .2703 FAU .07666
FDE -.8855 FRA 2.9569 FC3-4.1154 BSP 53390
BDE 1.0218 BRA 7.0911 BC313.6898 FSP 1716

MID-COURSE EXECUTION ACCURACY
SGT15049.9 SGR 621.5 SG3 477.8
RRT -.1025 RRF -.1458 RTF .9774
SGB15062.7 R23 .0457 R13 -.9774
SG115050.0 SG2 618.2 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 3359.1 SR 546.0 SS 921.7
CRT -.2952 CRS .6159 CST -.9339
LSA 3473.1 MSA 607.1 SSA 23.2
EL1 3363.1 EL2 521.1 ALF 177.19

LAUNCH DATE NOV 28 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 888.703 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.189 GAL -5.27 AZL 88.17 HCA 264.20 SMA 190.38 ECC .24200 INC 1.8269 V1 30.191
RP 206.75 LAP -1.82 LOP 330.00 VP 24.223 GAP -13.12 AZP 90.18 TAL 332.43 TAP 236.64 RCA 144.31 APO 236.45 V2 26.488
RC 330.190 GL 14.91 GP -2.07 ZAL 132.22 ZAP 28.80 ETS 175.06 ZAE 46.34 ETE 177.82 ZAC 85.41 ETC 256.38 CLP 28.73

PLANETOCENTRIC CONIC

C3 16.759 VHL 4.094 DLA 6.06 RAL 203.94 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 6.032 DPA -.07 RAP 178.56 ECC 1.2758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 32	2361.90	-22.85	51.04	64.02	107.20	20 20 54	1761.9	-20.28	43.30
90.00	9 14 9	4628.17	13.39	196.35	61.53	64.82	10 31 17	4028.2	9.89	189.42
100.00	21 5 45	2090.27	-23.88	30.70	63.66	108.54	21 40 36	1490.3	-21.13	22.98
100.00	10 32 37	4375.04	14.37	177.25	61.04	63.50	11 45 32	3775.0	10.69	170.38
110.00	22 20 35	1856.10	-26.63	11.79	62.53	112.27	22 51 31	1256.1	-23.37	4.14
110.00	11 34 17	4181.97	16.95	161.15	59.60	59.86	12 43 59	3582.0	12.82	154.48

DIFFERENTIAL CORRECTIONS
TDE-1.0834 TRA 7.3955 TC-13.3128 BAU 2.9834
RDE .3916 RRA .1426 RC3 .2714 FAU .07134
FDE -.9001 FRA 2.8821 FC3-3.6853 BSP 53748
BDE 1.1519 BRA 7.3968 BC313.3155 FSP 1624

MID-COURSE EXECUTION ACCURACY
SGT15147.6 SGR 624.5 SG3 450.2
RRT -.1231 RRF -.1681 RTF .9759
SGB15160.4 R23 .0481 R13 -.9759
SG115147.8 SG2 619.7 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 3486.6 SR 551.4 SS 914.0
CRT -.3356 CRS .6388 CST -.9386
LSA 3596.9 MSA 598.4 SSA 22.7
EL1 3491.7 EL2 518.6 ALF 176.89

LAUNCH DATE NOV 28 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 892.949 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.196	GAL	-5.49	AZL	88.18	HCA	265.47	SMA	190.51	ECC	.24388	INC	1.8152	V1	30.191
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.237	GAP	-13.26	AZP	90.14	TAL	331.43	TAP	236.90	RCA	144.05	APO	236.98	V2	26.492
RC	331.000	GL	14.52	GP	-2.03	ZAL	133.57	ZAP	28.34	ETS	175.04	ZAE	45.57	ETE	177.81	ZAC	85.62	ETC	256.32	CLP	28.27

PLANETOCENTRIC CONIC

C3	17.436	VHL	4.176	DLA	5.21	RAL	205.00	RAD	6567.7	VEL	11.782	PTH	2.08	VHP	6.130	DPA	-.37	RAP	179.30	ECC	1.2869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 15	2344.13	-22.49	49.86	65.46	107.68	20 31 20	1744.1	-19.86	42.17
90.00	9 11 53	4664.20	14.43	198.49	63.25	65.37	10 29 37	4064.2	10.98	191.50
100.00	21 16 3	2073.85	-23.52	29.61	65.09	109.00	21 50 37	1473.9	-20.71	21.94
100.00	10 30 47	4409.71	15.41	179.29	62.77	64.07	11 44 16	3809.7	11.80	172.37
110.00	22 29 55	1842.66	-26.28	10.90	63.93	112.69	23 0 38	1242.7	-22.97	3.30
110.00	11 33 24	4213.66	18.02	162.98	61.34	60.45	12 43 37	3613.7	13.95	156.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2190	TRA	7.7108	TC	-12.9328	BAU	3.0153	SGT15242.2	SGR	627.5	SG3	423.3	ST	3614.1	SR	556.6	SS 903.4
RDE	.4035	RRA	.1372	RC3	.2716	FAU	.06612	RRT -.1430	RRF	-.1896	RTF	.9742	CRT	-.3716	CRS	.6595	CST -.9424
FDE	-.9099	FRA	2.8042	FC3	-3.2833	BSP	54107	SGB15255.1	R23	.0506	R13	-.9742	LSA	3720.1	MSA	589.9	SSA 22.2
BDE	1.2841	BRA	7.7121	BC3	12.9357	FSP	1534	SG115242.4	SG2	621.1	THA	179.66	EL1	3620.1	EL2	515.9	ALF 176.66

LAUNCH DATE NOV 28 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 897.185 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.204	GAL	-5.71	AZL	88.20	HCA	266.74	SMA	190.65	ECC	.24585	INC	1.8035	V1	30.191
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.250	GAP	-13.40	AZP	90.10	TAL	330.40	TAP	237.14	RCA	143.77	APO	237.52	V2	26.494
RC	331.806	GL	14.12	GP	-1.99	ZAL	134.91	ZAP	27.88	ETS	175.01	ZAE	44.81	ETE	177.81	ZAC	85.83	ETC	256.27	CLP	27.82

PLANETOCENTRIC CONIC

C3	18.160	VHL	4.261	DLA	4.36	RAL	206.05	RAD	6567.7	VEL	11.813	PTH	2.09	VHP	6.231	DPA	-.68	RAP	180.06	ECC	1.2989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 47	2327.22	-22.13	48.75	66.92	108.13	20 41 35	1727.2	-19.45	41.10
90.00	9 9 43	4700.05	15.43	200.64	65.01	65.96	10 28 3	4100.0	12.06	193.59
100.00	21 26 11	2058.25	-23.17	28.58	66.54	109.43	22 0 29	1458.2	-20.31	20.96
100.00	10 29 1	4444.25	16.43	181.35	64.53	64.67	11 43 5	3844.3	12.88	174.36
110.00	22 39 7	1829.96	-25.94	10.07	65.35	113.08	23 9 37	1230.0	-22.59	2.51
110.00	11 32 34	4245.30	19.08	164.83	63.11	61.08	12 43 19	3645.3	15.07	158.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3574	TRA	8.0342	TC	-12.5550	BAU	3.0488	SGT15336.1	SGR	630.5	SG3	397.4	ST	3741.3	SR	561.9	SS 890.5
RDE	.4160	RRA	.1314	RC3	.2709	FAU	.06109	RRT -.1626	RRF	-.2110	RTF	.9722	CRT	-.4045	CRS	.6790	CST -.9455
FDE	-.9165	FRA	2.7224	FC3	-2.9125	BSP	54420	SGB15349.0	R23	.0534	R13	-.9722	LSA	3842.7	MSA	581.9	SSA 21.7
BDE	1.4197	BRA	8.0353	BC3	12.5579	FSP	1446	SG115336.4	SG2	622.1	THA	179.62	EL1	3748.3	EL2	512.9	ALF 176.46

LAUNCH DATE NOV 28 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 901.409 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.211	GAL	-5.94	AZL	88.21	HCA	268.01	SMA	190.78	ECC	.24791	INC	1.7919	V1	30.191
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.262	GAP	-13.55	AZP	90.06	TAL	329.37	TAP	237.38	RCA	143.48	APO	238.07	V2	26.496
RC	332.609	GL	13.73	GP	-1.96	ZAL	136.24	ZAP	27.44	ETS	174.99	ZAE	44.06	ETE	177.80	ZAC	86.04	ETC	256.22	CLP	27.38

PLANETOCENTRIC CONIC

C3	18.934	VHL	4.351	DLA	3.54	RAL	207.08	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	6.333	DPA	-.99	RAP	180.83	ECC	1.3116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 9	2311.15	-21.79	47.69	68.39	108.55	20 51 40	1711.1	-19.05	40.09
90.00	9 7 38	4735.72	16.41	202.80	66.80	66.59	10 26 34	4135.7	13.10	195.68
100.00	21 36 8	2043.45	-22.83	27.61	68.00	109.84	22 10 12	1443.4	-19.92	20.03
100.00	10 27 20	4478.66	17.42	183.43	66.33	65.32	11 41 58	3878.7	13.94	176.36
110.00	22 48 10	1817.98	-25.62	9.28	66.79	113.44	23 18 28	1218.0	-22.23	1.77
110.00	11 31 47	4276.88	20.10	166.70	64.92	61.75	12 43 4	3676.9	16.17	159.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.4979	TRA	8.3664	TC	-12.1754	BAU	3.0828	SGT15426.8	SGR	633.4	SG3	372.3	ST	3867.2	SR	567.0	SS 875.1
RDE	.4289	RRA	.1252	RC3	.2694	FAU	.05620	RRT -.1817	RRF	-.2320	RTF	.9700	CRT	-.4342	CRS	.6972	CST -.9480
FDE	-.9191	FRA	2.6368	FC3	-2.5695	BSP	54728	SGB15439.8	R23	.0564	R13	-.9700	LSA	3963.9	MSA	574.2	SSA 21.2
BDE	1.5581	BRA	8.3673	BC3	12.1784	FSP	1360	SG115427.2	SG2	622.9	THA	179.57	EL1	3875.1	EL2	509.7	ALF 176.29

LAUNCH DATE NOV 28 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 905.622 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.218	GAL	-6.18	AZL	88.22	HCA	269.28	SMA	190.91	ECC	.25005	INC	1.7802	V1	30.191
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.273	GAP	-13.70	AZP	90.02	TAL	328.32	TAP	237.60	RCA	143.17	APO	238.65	V2	26.497
RC	333.409	GL	13.34	GP	-1.93	ZAL	137.54	ZAP	27.02	ETS	174.96	ZAE	43.32	ETE	177.79	ZAC	86.26	ETC	256.18	CLP	26.95

PLANETOCENTRIC CONIC

C3	19.763	VHL	4.446	DLA	2.72	RAL	208.11	RAD	6567.8	VEL	11.880	PTH	2.11	VHP	6.437	DPA	-1.31	RAP	181.61	ECC	1.3252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 19	2295.90	-21.46	46.70	69.89	108.94	21 1 35	1695.9	-18.67	39.13
90.00	9 5 39	4771.22	17.36	204.98	68.62	67.27	10 25 10	4171.2	14.13	197.79
100.00	21 45 56	2029.44	-22.50	26.70	69.48	110.21	22 19 45	1429.4	-19.55	19.15
100.00	10 25 43	4512.92	18.38	185.52	68.16	66.00	11 40 56	3912.9	14.98	178.37
110.00	22 57 5	1806.73	-25.31	8.55	68.24	113.78	23 27 12	1206.7	-21.88	1.08
110.00	11 31 3	4308.39	21.11	168.60	66.76	62.47	12 42 52	3708.4	17.25	161.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.6394	TRA	8.7073	TC	-11.7981	BAU	3.1180	SGT15515.3	SGR	636.3	SG3	348.0	ST	3990.4	SR	572.0	SS 857.4
RDE	.4423	RRA	.1186	RC3	.2672	FAU	.05143	RRT -.2003	RRF	-.2527	RTF	.9674	CRT	-.4609	CRS	.7142	CST -.9499
FDE	-.9181	FRA	2.5478	FC3	-2.2531	BSP	54999	SGB15528.4	R23	.0598	R13	-.9674	LSA	4082.1	MSA	567.0	SSA 20.7
BDE	1.6980	BRA	8.7082	BC3	11.8011	FSP	1276	SG115515.9	SG2	623.4	THA	179.53	EL1	3999.3	EL2	506.5	ALF 176.16

LAUNCH DATE NOV 28 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 909.821 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.226 GAL 6.42 AZL 88.23 HCA 270.55 SMA 191.05 ECC .25229 INC 1.7685 V1 30.191
RP 206.67 LAP -1.77 LOP 336.35 VP 24.282 GAP -13.86 AZP 89.98 TAL 327.25 TAP 237.80 RCA 142.85 APO 239.25 V2 26.497
RC 334.204 GL 12.96 GP -1.89 ZAL 138.83 ZAP 26.60 ETS 174.94 ZAE 42.59 ETE 177.78 ZAC 86.48 ETC 256.13 CLP 26.54

PLANETOCENTRIC CONIC

C3 20.648 VHL 4.544 DLA 1.92 RAL 209.12 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 6.543 DPA -1.64 RAP 182.39 ECC 1.3398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 19	2281.48	-21.13	45.76	71.40	109.30	21 11 21	1681.5	-18.31	38.23
90.00	9 3 44	4806.54	18.27	207.17	70.48	67.98	10 23 50	4206.5	15.13	199.90
100.00	21 55 33	2016.22	-22.19	25.84	70.98	110.56	22 29 9	1416.2	-19.19	18.33
100.00	10 24 11	4547.03	19.31	187.62	70.02	66.73	11 39 58	3947.0	16.00	180.40
110.00	23 5 51	1796.20	-25.02	7.87	69.72	114.08	23 35 47	1196.2	-21.56	.44
110.00	11 30 23	4339.82	22.09	170.51	68.64	63.22	12 42 42	3739.8	18.31	163.41

DIFFERENTIAL CORRECTIONS
TDE-1.7833 TRA 9.0570 TC-11.4242 BAU 3.1544
RDE .4562 RRA .1115 RC3 .2644 FAU .04682
FDE -.9143 FRA 2.4544 FC3-1.9629 BSP 55244
BDE 1.8407 BRA 9.0576 BC311.4272 FSP 1192

MID-COURSE EXECUTION ACCURACY
SGT15601.6 SGR 639.1 SG3 324.4
RRT -.2186 RRF -.2734 RTF .9644
SGB15614.7 R23 .0637 R13 -.9644
SG115602.2 SG2 623.6 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 4111.4 SR 576.8 SS 837.5
CRT -.4853 CRS .7306 CST -.9511
LSA 4198.0 MSA 560.3 SSA 20.3
EL1 4121.0 EL2 503.1 ALF 176.05

LAUNCH DATE NOV 28 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 914.006 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.233 GAL -6.67 AZL 88.24 HCA 271.82 SMA 191.18 ECC .25462 INC 1.7569 V1 30.191
RP 206.68 LAP -1.76 LOP 337.62 VP 24.291 GAP -14.01 AZP 89.94 TAL 326.17 TAP 237.99 RCA 142.50 APO 239.86 V2 26.495
RC 334.996 GL 12.58 GP -1.86 ZAL 140.11 ZAP 26.19 ETS 174.91 ZAE 41.88 ETE 177.77 ZAC 86.70 ETC 256.09 CLP 26.13

PLANETOCENTRIC CONIC

C3 21.593 VHL 4.647 DLA 1.13 RAL 210.13 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 6.651 DPA -1.97 RAP 183.19 ECC 1.3554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 9	2267.86	-20.82	44.88	72.92	109.63	21 20 57	1667.9	-17.96	37.38
90.00	9 1 54	4841.69	19.15	209.37	72.37	68.74	10 22 35	4241.7	16.10	202.03
100.00	22 5 1	2003.78	-21.89	25.04	72.50	110.88	22 38 25	1403.8	-18.86	17.56
100.00	10 22 43	4580.99	20.21	189.75	71.92	67.49	11 39 4	3981.0	16.98	182.44
110.00	23 14 28	1786.39	-24.75	7.24	71.21	114.37	23 44 15	1186.4	-21.25	359.84
110.00	11 29 45	4371.15	23.03	172.45	70.55	64.01	12 42 36	3771.2	19.35	165.25

DIFFERENTIAL CORRECTIONS
TDE-1.9279 TRA 9.4166 TC-11.0535 BAU 3.1919
RDE .4705 RRA .1041 RC3 .2609 FAU .04232
FDE -.9067 FRA 2.3575 FC3-1.6966 BSP 55455
BDE 1.9844 BRA 9.4172 BC311.0565 FSP 1112

MID-COURSE EXECUTION ACCURACY
SGT15685.7 SGR 641.8 SG3 301.6
RRT -.2364 RRF -.2936 RTF .9608
SGB15698.8 R23 .0680 R13 -.9609
SG115686.5 SG2 623.5 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4228.8 SR 581.5 SS 815.3
CRT -.5072 CRS .7459 CST -.9518
LSA 4310.3 MSA 553.9 SSA 19.9
EL1 4239.2 EL2 499.9 ALF 175.95

LAUNCH DATE NOV 28 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 918.175 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.241 GAL -6.93 AZL 88.25 HCA 273.09 SMA 191.32 ECC .25705 INC 1.7852 V1 30.191
RP 206.70 LAP -1.74 LOP 338.89 VP 24.299 GAP -14.18 AZP 89.91 TAL 325.08 TAP 238.17 RCA 142.14 APO 240.50 V2 26.493
RC 335.784 GL 12.20 GP -1.83 ZAL 141.36 ZAP 25.80 ETS 174.89 ZAE 41.17 ETE 177.76 ZAC 86.92 ETC 256.05 CLP 25.74

PLANETOCENTRIC CONIC

C3 22.603 VHL 4.754 DLA .36 RAL 211.12 RAD 6567.9 VEL 11.999 PTH 2.14 VHP 6.762 DPA -2.31 RAP 184.00 ECC 1.3720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 49	2255.02	-20.53	44.06	74.47	109.94	21 30 24	1655.0	-17.63	36.59
90.00	9 0 8	4876.64	20.00	211.58	74.29	69.53	10 21 25	4276.6	17.04	204.16
100.00	22 14 19	1992.10	-21.61	24.29	74.04	111.17	22 47 31	1392.1	-18.54	16.84
100.00	10 21 19	4614.80	21.08	191.88	73.84	68.30	11 38 13	4014.8	17.94	184.49
110.00	23 22 57	1777.28	-24.49	6.66	72.71	114.63	23 52 34	1177.3	-20.96	359.29
110.00	11 29 10	4402.38	23.95	174.41	72.58	64.85	12 42 32	3802.4	20.36	167.11

DIFFERENTIAL CORRECTIONS
TDE-2.0748 TRA 9.7851 TC-10.6885 BAU 3.2308
RDE .4853 RRA .0961 RC3 .2570 FAU .03792
FDE -.8960 FRA 2.2565 FC3-1.4523 BSP 55656
BDE 2.1308 BRA 9.7855 BC310.6916 FSP 1033

MID-COURSE EXECUTION ACCURACY
SGT15767.3 SGR 644.4 SG3 279.5
RRT -.2539 RRF -.3137 RTF .9567
SGB15780.5 R23 .0727 R13 -.9567
SG115768.2 SG2 623.3 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 4343.0 SR 586.0 SS 791.0
CRT -.5273 CRS .7607 CST -.9522
LSA 4419.3 MSA 547.8 SSA 19.5
EL1 4354.1 EL2 496.6 ALF 175.88

LAUNCH DATE NOV 28 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 922.327 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.248 GAL -7.19 AZL 88.27 HCA 274.36 SMA 191.46 ECC .25959 INC 1.7335 V1 30.191
RP 206.73 LAP -1.73 LOP 340.16 VP 24.306 GAP -14.35 AZP 89.87 TAL 323.98 TAP 238.33 RCA 141.76 APO 241.16 V2 26.490
RC 336.567 GL 11.83 GP -1.81 ZAL 142.60 ZAP 25.42 ETS 174.86 ZAE 40.48 ETE 177.75 ZAC 87.14 ETC 256.02 CLP 25.36

PLANETOCENTRIC CONIC

C3 23.680 VHL 4.866 DLA -.39 RAL 212.10 RAD 6568.0 VEL 12.044 PTH 2.15 VHP 6.875 DPA -2.66 RAP 184.82 ECC 1.3897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 19	2242.96	-20.25	43.29	76.03	110.23	21 39 42	1643.0	-17.31	35.84
90.00	8 58 26	4911.40	20.81	213.81	76.23	70.36	10 20 18	4311.4	17.95	206.31
100.00	22 23 28	1981.16	-21.34	23.59	75.58	111.45	22 56 30	1381.2	-18.23	16.17
100.00	10 19 58	4648.43	21.91	194.04	75.80	69.14	11 37 26	4048.4	18.87	186.55
110.00	23 31 18	1768.86	-24.25	6.12	74.23	114.86	24 0 47	1168.9	-20.70	358.78
110.00	11 28 38	4433.50	24.84	176.39	74.47	65.72	12 42 31	3833.5	21.35	168.98

DIFFERENTIAL CORRECTIONS
TDE-2.2226 TRA10.1640 TC-10.3291 BAU 3.2710
RDE .5006 RRA .0878 RC3 .2527 FAU .03363
FDE -.8822 FRA 2.1521 FC3-1.2296 BSP 55820
BDE 2.2783 BRA10.1644 BC310.3322 FSP 956

MID-COURSE EXECUTION ACCURACY
SGT15847.1 SGR 646.9 SG3 258.2
RRT -.2710 RRF -.3334 RTF .9517
SGB15860.3 R23 .0780 R13 -.9517
SG115848.0 SG2 622.7 THA 179.37

ORBIT DETERMINATION ACCURACY
ST 4453.0 SR 590.2 SS 764.8
CRT -.5453 CRS .7748 CST -.9519
LSA 4524.2 MSA 542.1 SSA 19.1
EL1 4464.8 EL2 493.5 ALF 175.81

LAUNCH DATE NOV 28 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 926.462 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.256 GAL -7.46 AZL 88.28 HCA 275.62 SMA 191.60 ECC .26223 INC 1.7218 V1 30.191
RP 206.77 LAP -1.71 LOP 341.43 VP 24.311 GAP -14.52 AZP 89.83 TAL 322.86 TAP 238.48 RCA 141.35 APO 241.84 V2 26.485
RC 337.346 GL 11.47 GP -1.78 ZAL 143.82 ZAP 25.04 ETS 174.84 ZAE 39.80 ETE 177.74 ZAC 87.36 ETC 255.98 CLP 24.99

PLANETOCENTRIC CONIC

C3 24.830 VHL 4.983 DLA -1.13 RAL 213.06 RAD 6568.0 VEL 12.092 PTH 2.16 VHP 6.990 DPA -3.01 RAP 185.65 ECC 1.4086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 11 40	2231.65	-19.98	42.57	77.60	110.49	21 48 51	1631.6	-17.01	35.15
90.00	8 56 49	4945.97	21.59	216.05	78.21	71.22	10 19 15	4346.0	18.83	208.46
100.00	22 32 29	1970.96	-21.08	22.94	77.15	111.70	23 5 20	1371.0	-17.95	15.55
100.00	10 18 41	4681.90	22.70	196.20	77.79	70.01	11 36 43	4081.9	19.77	188.63
110.00	23 39 31	1761.12	-24.03	5.63	75.77	115.08	24 8 52	1161.1	-20.45	358.32
110.00	11 28 8	4464.50	25.69	178.40	76.49	66.63	12 42 33	3864.5	22.30	170.88

DIFFERENTIAL CORRECTIONS
TDE-2 3731 TRA10.5521 TC3-9.9767 BAU 3.3128
RDE 5163 RRA .0789 RC3 .2480 FAU .02946
FDE - 8657 FRA 2.0435 FC3-1.0273 BSP 55944
BDE 2.4286 BRA10.5524 BC3 9.9798 FSP 880

MID-COURSE EXECUTION ACCURACY
SGT15924.0 SGR 649.4 SG3 237.6
RRT -.2878 RRF -.3531 RTF .9458
SGB15937.2 R23 .0841 R13 -.9458
SG115925.1 SG2 621.9 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 4559.5 SR 594.3 SS 736.9
CRT -.5620 CRS .7887 CST -.9512
LSA 4625.7 MSA 536.7 SSA 18.7
EL1 4571.8 EL2 490.2 ALF 175.76

LAUNCH DATE NOV 28 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 930.577 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.263 GAL -7.74 AZL 88.29 HCA 276.89 SMA 191.74 ECC .26499 INC 1.7100 V1 30.191
RP 206.81 LAP -1.70 LOP 342.69 VP 24.316 GAP -14.70 AZP 89.79 TAL 321.72 TAP 238.62 RCA 140.93 APO 242.55 V2 26.480
RC 338.120 GL 11.11 GP -1.75 ZAL 145.01 ZAP 24.68 ETS 174.81 ZAE 39.12 ETE 177.72 ZAC 87.58 ETC 255.95 CLP 24.63

PLANETOCENTRIC CONIC

C3 26.056 VHL 5.105 DLA -1.86 RAL 214.02 RAD 6568.1 VEL 12.142 PTH 2.18 VHP 7.107 DPA -3.36 RAP 186.48 ECC 1.4288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 51	2221.07	-19.73	41.89	79.19	110.74	21 57 52	1621.1	-16.73	34.50
90.00	8 55 15	4980.35	22.32	218.30	80.21	72.11	10 18 16	4380.3	19.67	210.63
100.00	22 41 20	1961.47	-20.84	22.34	78.73	111.93	23 14 1	1361.5	-17.68	14.97
100.00	10 17 28	4715.18	23.46	198.39	79.80	70.92	11 36 3	4115.2	20.64	190.72
110.00	23 47 35	1754.05	-23.83	5.19	77.32	115.27	24 16 49	1154.1	-20.22	357.90
110.00	11 27 42	4495.36	26.51	180.43	78.53	67.58	12 42 37	3895.4	23.23	172.79

DIFFERENTIAL CORRECTIONS
TDE-2.5245 TRA10.9503 TC3-9.6324 BAU 3.3565
RDE .5324 RRA .0696 RC3 .2430 FAU .02538
FDE -.8462 FRA 1.9308 FC3 -.8432 BSP 56030
BDE 2.5800 BRA10.9505 BC3 9.6355 FSP 806

MID-COURSE EXECUTION ACCURACY
SGT15998.9 SGR 651.8 SG3 217.6
RRT -.3042 RRF -.3726 RTF .9385
SGB16012.2 R23 .0910 R13 -.9386
SG116000.1 SG2 620.8 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 4661.3 SR 598.1 SS 707.1
CRT -.5772 CRS .8023 CST -.9500
LSA 4722.5 MSA 531.5 SSA 18.3
EL1 4674.2 EL2 487.1 ALF 175.72

LAUNCH DATE NOV 28 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 934.670 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.271 GAL -8.02 AZL 88.30 HCA 278.16 SMA 191.88 ECC .26787 INC 1.6982 V1 30.191
RP 206.87 LAP -1.68 LOP 343.96 VP 24.319 GAP -14.89 AZP 89.76 TAL 320.58 TAP 238.74 RCA 140.48 APO 243.28 V2 26.474
RC 338.890 GL 10.76 GP -1.73 ZAL 146.20 ZAP 24.33 ETS 174.78 ZAE 38.46 ETE 177.71 ZAC 87.81 ETC 255.93 CLP 24.28

PLANETOCENTRIC CONIC

C3 27.364 VHL 5.231 DLA -2.57 RAL 214.96 RAD 6568.1 VEL 12.196 PTH 2.19 VHP 7.227 DPA -3.72 RAP 187.33 ECC 1.4503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 54	2211.21	-19.49	41.27	80.79	110.96	22 6 45	1611.2	-16.46	33.90
90.00	8 53 45	5014.51	23.02	220.56	82.24	73.04	10 17 20	4414.5	20.48	212.81
100.00	22 50 3	1952.67	-20.62	21.78	80.32	112.14	23 22 35	1352.7	-17.43	14.43
100.00	10 16 18	4748.28	24.18	200.58	81.84	71.87	11 35 26	4148.3	21.47	192.83
110.00	23 55 32	1747.64	-23.64	4.78	78.88	115.44	24 24 40	1147.6	-20.02	357.51
110.00	11 27 17	4526.08	27.29	182.47	80.60	68.56	12 42 43	3926.1	24.13	174.73

DIFFERENTIAL CORRECTIONS
TDE-2.6770 TRA11.3600 TC3-9.2946 BAU 3.4013
RDE .5490 RRA .0597 RC3 .2377 FAU .02138
FDE -.8238 FRA 1.8144 FC3 -.6763 BSP 56114
BDE 2.7327 BRA11.3602 BC3 9.2976 FSP 735

MID-COURSE EXECUTION ACCURACY
SGT16071.3 SGR 654.0 SG3 198.4
RRT -.3202 RRF -.3917 RTF .9296
SGB16084.6 R23 .0988 R13 -.9296
SG116072.7 SG2 619.5 THA 179.25

ORBIT DETERMINATION ACCURACY
ST 4758.6 SR 601.7 SS 675.7
CRT -.5909 CRS .8156 CST -.9481
LSA 4815.1 MSA 526.5 SSA 18.0
EL1 4772.0 EL2 484.0 ALF 175.68

LAUNCH DATE NOV 28 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 938.741 EARTH TO MARS

RL 147.57 LAL -.00 LOL 65.80 VL 33.279 GAL -8.31 AZL 88.31 HCA 279.43 SMA 192.02 ECC .27086 INC 1.6863 V1 30.191
RP 206.93 LAP -1.66 LOP 345.23 VP 24.322 GAP -15.09 AZP 89.72 TAL 319.42 TAP 238.84 RCA 140.01 APO 244.03 V2 26.466
RC 339.657 GL 10.41 GP -1.70 ZAL 147.36 ZAP 24.00 ETS 174.76 ZAE 37.81 ETE 177.69 ZAC 88.04 ETC 255.90 CLP 23.94

PLANETOCENTRIC CONIC

C3 28.758 VHL 5.363 DLA -3.26 RAL 215.90 RAD 6568.2 VEL 12.253 PTH 2.20 VHP 7.350 DPA -4.09 RAP 188.19 ECC 1.4733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 48	2202.03	-19.26	40.69	82.40	111.17	22 15 30	1602.0	-16.21	33.34
90.00	8 52 19	5048.47	23.68	222.83	84.30	74.00	10 16 27	4448.5	21.26	215.00
100.00	22 58 37	1944.55	-20.41	21.27	81.92	112.33	23 51 1	1344.5	-17.20	13.94
100.00	10 15 11	4781.19	24.86	202.79	83.91	72.84	11 34 52	4181.2	22.27	194.95
110.00	0 7 18	1741.85	-23.47	4.42	80.45	115.60	0 36 20	1141.9	-19.83	357.17
110.00	11 26 55	4556.65	28.03	184.54	82.70	69.58	12 42 52	3956.7	24.99	176.68

DIFFERENTIAL CORRECTIONS
TDE-2.8308 TRA11.7793 TC3-8.9663 BAU 3.4484
RDE .5660 RRA .0494 RC3 .2322 FAU .01747
FDE -.7988 FRA 1.6937 FC3 -.5259 BSP 56139
BDE 2.8868 BRA11.7794 BC3 8.9693 FSP 665

MID-COURSE EXECUTION ACCURACY
SGT16140.9 SGR 656.1 SG3 179.8
RRT -.3359 RRF -.4106 RTF .9184
SGB16154.2 R23 .1079 R13 -.9185
SG116142.4 SG2 617.9 THA 179.22

ORBIT DETERMINATION ACCURACY
ST 4851.0 SR 604.9 SS 642.7
CRT -.6035 CRS .8290 CST -.9456
LSA 4902.9 MSA 521.8 SSA 17.7
EL1 4864.8 EL2 481.0 ALF 175.65

LAUNCH DATE NOV 28 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 942.788 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.286	GAL	-8.61	AZL	88.33	HCA	280.69	SMA	192.16	ECC	.27399	INC	1.6743	V1	30.191
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.323	GAP	-15.29	AZP	89.69	TAL	318.25	TAP	238.94	RCA	139.51	APO	244.81	V2	26.458
RC	340.420	GL	10.07	GP	-1.68	ZAL	148.50	ZAP	23.67	ETS	174.73	ZAE	37.17	ETE	177.67	ZAC	88.27	ETC	255.88	CLP	23.61

PLANETOCENTRIC CONIC

C3	30.245	VHL	5.500	DLA	-3.94	RAL	216.82	RAD	6568.2	VEL	12.313	PTH	2.22	VHP	7.476	DPA	-4.46	RAP	189.05	ECC	1.4977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 33	2193.53	-19.05	40.15	84.03	111.35	22 24 7	1593.5	-15.98	32.82
90.00	8 50 56	5082.21	24.29	225.11	86.37	74.98	10 15 38	4482.2	21.99	217.20
100.00	23 7 3	1937.08	-20.21	20.80	83.53	112.50	23 39 20	1337.1	-16.99	13.49
100.00	10 14 7	4813.89	25.50	205.01	86.00	73.84	11 34 21	4213.9	23.04	197.08
110.00	0 15 0	1736.68	-23.32	4.09	82.04	115.73	0 43 56	1136.7	-19.66	356.86
110.00	11 26 36	4587.06	28.74	186.62	84.84	70.64	12 43 3	3987.1	25.82	178.66

DIFFERENTIAL CORRECTIONS

TDE	-2.9858	TRA	12.2107	TC3	-8.6464	BAU	3.4973														
RDE	.5834	RRA	.0386	RC3	.2266	FAU	.01362														
FDE	-.7712	FRA	1.5688	FC3	-.3899	BSP	56155														
BDE	3.0422	BRA	12.2108	BC3	8.6493	FSP	597														

MID-COURSE EXECUTION ACCURACY

SGT	16208.8	SGR	658.1	SG3	162.0																
RRT	-.3512	RRF	-.4289	RTF	.9041																
SGB	16222.2	R23	.1185	R13	-.9042																
SG1	16210.5	SG2	616.1	THA	179.18																

ORBIT DETERMINATION ACCURACY

ST	4938.9	SR	607.9	SS	608.4																
CRT	-.6150	CRS	.8425	CST	-.9422																
LSA	4986.4	HSA	517.2	SSA	17.3																
EL1	4953.1	EL2	478.0	ALF	175.63																

LAUNCH DATE NOV 28 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 946.809 EARTH TO MARS

RL	147.57	LAL	-.00	LOL	65.80	VL	33.294	GAL	-8.92	AZL	88.34	HCA	281.96	SMA	192.31	ECC	.27724	INC	1.6622	V1	30.191
RP	207.08	LAP	-1.63	LOP	347.76	VP	24.324	GAP	-15.50	AZP	89.66	TAL	317.06	TAP	239.01	RCA	138.99	APO	245.62	V2	26.449
RC	341.179	GL	9.74	GP	-1.66	ZAL	149.63	ZAP	23.35	ETS	174.71	ZAE	36.54	ETE	177.65	ZAC	88.50	ETC	255.86	CLP	23.29

PLANETOCENTRIC CONIC

C3	31.829	VHL	5.642	DLA	-4.60	RAL	217.74	RAD	6568.3	VEL	12.377	PTH	2.23	VHP	7.604	DPA	-4.83	RAP	189.92	ECC	1.5238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 10	2185.66	-18.86	39.66	85.66	111.52	22 32 36	1585.7	-15.77	32.34
90.00	8 49 36	5115.74	24.86	227.40	88.47	75.99	10 14 52	4515.7	22.69	219.41
100.00	23 15 21	1930.24	-20.03	20.37	85.16	112.66	23 47 31	1330.2	-16.79	13.08
100.00	10 13 6	4846.40	26.09	207.24	88.11	74.87	11 33 53	4246.4	23.76	199.22
110.00	0 22 34	1732.10	-23.18	3.81	83.63	115.86	0 51 26	1132.1	-19.51	356.59
110.00	11 26 19	4617.29	29.40	188.73	86.99	71.72	12 43 16	4017.3	26.62	180.64

DIFFERENTIAL CORRECTIONS

TDE	-3.1422	TRA	12.6524	TC3	-8.3359	BAU	3.5484														
RDE	.6011	RRA	.0272	RC3	.2208	FAU	.00984														
FDE	-.7412	FRA	1.4399	FC3	-.2675	BSP	56120														
BDE	3.1992	BRA	12.6524	BC3	8.3388	FSP	531														

MID-COURSE EXECUTION ACCURACY

SGT	16273.5	SGR	660.0	SG3	144.8																
RRT	-.3663	RRF	-.4466	RTF	.8854																
SGB	16286.9	R23	.1309	R13	-.8855																
SG1	16275.3	SG2	614.0	THA	179.15																

ORBIT DETERMINATION ACCURACY

ST	5021.8	SR	610.6	SS	572.9																
CRT	-.6255	CRS	.8563	CST	-.9378																
LSA	5065.3	HSA	512.8	SSA	17.0																
EL1	5036.5	EL2	475.0	ALF	175.61																

LAUNCH DATE NOV 29 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 20 1965

HELIOCENTRIC CONIC DISTANCE 391.552 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	36.070	GAL	-4.01	AZL	88.56	HCA	120.32	SMA	266.55	ECC	.45081	INC	1.4383	V1	30.196
RP	245.44	LAP	1.24	LOP	187.14	VP	24.157	GAP	26.44	AZP	90.73	TAL	347.07	TAP	107.38	RCA	146.39	APO	386.71	V2	22.343
RC	121.300	GL	8.30	GP	1.17	ZAL	110.91	ZAP	176.53	ETS	159.08	ZAE	154.85	ETE	359.38	ZAC	89.68	ETC	256.11	CLP	176.73

PLANETOCENTRIC CONIC

C3	39.160	VHL	6.258	DLA	8.42	RAL	181.44	RAD	6568.5	VEL	12.670	PTH	2.30	VHP	11.966	DPA	.73	RAP	184.56	ECC	1.6445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 34	2645.26	-27.16	70.63	57.71	98.33	18 33 39	2045.3	-25.73	62.25
90.00	7 58 48	4760.79	17.08	204.34	52.17	67.07	9 18 9	4160.8	13.83	197.17
100.00	19 14 59	2369.74	-28.52	50.12	57.48	99.36	19 54 29	1769.7	-26.93	41.68
100.00	9 16 4	4511.55	18.34	185.43	51.59	65.97	10 31 15	3911.5	14.94	178.29
110.00	20 32 33	2127.03	-32.17	30.89	56.67	102.25	21 8 0	1527.0	-30.15	22.26
110.00	10 15 0	4327.02	21.69	169.73	49.89	62.91	11 27 7	3727.0	17.88	162.66

DIFFERENTIAL CORRECTIONS

TDE	.7585	TRA	-1.8890	TC3	.6208	BAU	.3257	SGT	2035.4	SGR	589.6
RDE	-.5863	RRA	-.2583	RC3	-.0386	FAU	.05329	RRT	.0064	RRF	-.0296
FDE	-.2325	FRA	.9756	FC3	-1.1781	BSP	6343	SGB	2119.1	R23	-.0240
BDE	.9587	BRA	1.9066	BC3	.6220	FSP	402	SG1	2035.4	SG2	589.6

MID-COURSE EXECUTION ACCURACY

SG3	150.5	ST	870.6	SR	541.5
RTF	-.8101	CRT	-.7110	CRS	-.5045
R13	-.8101	LSA	1020.1	MSA	372.4
THA	.12	EL1	966.2	EL2	343.2

ORBIT DETERMINATION ACCURACY

SS	359.1				
CST	.9621				
SSA	30.0				
ALF	152.36				

LAUNCH DATE NOV 29 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 22 1965

HELIOCENTRIC CONIC DISTANCE 392.768 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	35.924	GAL	-3.82	AZL	88.57	HCA	121.22	SMA	261.07	ECC	.43894	INC	1.4264	V1	30.196
RP	245.23	LAP	1.22	LOP	188.04	VP	23.959	GAP	25.82	AZP	90.74	TAL	347.45	TAP	108.67	RCA	146.48	APO	375.66	V2	22.364
RC	123.232	GL	8.43	GP	1.20	ZAL	110.22	ZAP	176.06	ETS	160.96	ZAE	154.46	ETE	359.62	ZAC	89.80	ETC	256.09	CLP	176.24

PLANETOCENTRIC CONIC

C3	37.022	VHL	6.085	DLA	8.82	RAL	180.88	RAD	6568.4	VEL	12.585	PTH	2.28	VHP	11.682	DPA	.59	RAP	184.95	ECC	1.6093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 10	2643.80	-27.15	70.52	56.25	98.38	18 28 14	2043.8	-25.71	62.15
90.00	7 59 39	4733.86	16.36	202.69	50.62	66.56	9 18 32	4133.9	13.05	195.57
100.00	19 9 49	2367.60	-28.50	49.97	56.01	99.43	19 49 16	1767.6	-26.90	41.53
100.00	9 16 41	4485.30	17.61	183.83	50.04	65.45	10 31 27	3885.3	14.15	176.75
110.00	20 27 50	2123.42	-32.14	30.62	55.21	102.40	21 3 14	1523.4	-30.07	22.00
110.00	10 15 9	4302.24	20.91	168.22	48.32	62.32	11 26 51	3702.2	17.04	161.23

DIFFERENTIAL CORRECTIONS

TDE	.7343	TRA	-1.8676	TC3	.6765	BAU	.3354	SGT	2079.2	SGR	585.7
RDE	-.5662	RRA	-.2496	RC3	-.0391	FAU	.05492	RRT	.0128	RRF	-.0309
FDE	-.2304	FRA	.9845	FC3	-1.2842	BSP	6650	SGB	2160.1	R23	.0196
BDE	.9272	BRA	1.8842	BC3	.6776	FSP	421	SG1	2079.2	SG2	585.7

MID-COURSE EXECUTION ACCURACY

SG3	158.6	ST	874.0	SR	537.9
RTF	-.8139	CRT	-.7032	CRS	-.4961
R13	-.8139	LSA	1021.0	MSA	374.9
THA	.22	EL1	966.2	EL2	345.9

ORBIT DETERMINATION ACCURACY

SS	361.8				
CST	.9623				
SSA	30.8				
ALF	152.83				

LAUNCH DATE NOV 29 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 394.196 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	35.785	GAL	-3.63	AZL	88.59	HCA	122.12	SMA	256.05	ECC	.42761	INC	1.4143	V1	30.196
RP	245.01	LAP	1.20	LOP	188.94	VP	23.770	GAP	25.20	AZP	90.75	TAL	347.85	TAP	109.97	RCA	146.56	APO	365.54	V2	22.385
RC	125.213	GL	8.57	GP	1.24	ZAL	109.52	ZAP	175.58	ETS	162.43	ZAE	154.12	ETE	359.86	ZAC	89.93	ETC	256.07	CLP	175.75

PLANETOCENTRIC CONIC

C3	35.030	VHL	5.919	DLA	9.22	RAL	180.28	RAD	6568.4	VEL	12.506	PTH	2.26	VHP	11.405	DPA	.45	RAP	185.34	ECC	1.5765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 35	2642.90	-27.14	70.46	54.79	98.41	18 22 38	2042.9	-25.70	62.09
90.00	8 0 28	4706.83	15.62	201.05	49.07	66.08	9 18 55	4106.8	12.26	193.99
100.00	19 4 27	2366.00	-28.48	49.85	54.55	99.49	19 43 53	1766.0	-26.87	41.42
100.00	9 17 18	4458.96	16.85	182.24	48.49	64.94	10 31 37	3859.0	13.34	175.21
110.00	20 22 58	2120.30	-32.07	30.39	53.74	102.53	20 58 18	1520.3	-30.01	21.78
110.00	10 15 16	4277.43	20.12	166.73	46.76	61.77	11 26 34	3677.4	16.19	159.82

DIFFERENTIAL CORRECTIONS

TDE	.7118	TRA	-1.8429	TC3	.7383	BAU	.3462	SGT	2122.5	SGR	581.7
RDE	-.5467	RRA	-.2413	RC3	-.0394	FAU	.05657	RRT	.0180	RRF	-.0334
FDE	-.2263	FRA	.9940	FC3	-1.3980	BSP	6893	SGB	2200.8	R23	-.0174
BDE	.8976	BRA	1.8586	BC3	.7393	FSP	444	SG1	2122.6	SG2	581.6

MID-COURSE EXECUTION ACCURACY

SG3	167.0	ST	877.2	SR	534.0
RTF	-.8187	CRT	-.6965	CRS	-.4838
R13	-.8187	LSA	1021.5	MSA	377.2
THA	.31	EL1	966.3	EL2	347.9

ORBIT DETERMINATION ACCURACY

SS	363.4				
CST	.9609				
SSA	31.5				
ALF	153.29				

LAUNCH DATE NOV 29 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 395.814 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	35.653	GAL	-3.45	AZL	88.60	HCA	123.03	SMA	251.45	ECC	.41681	INC	1.4020	V1	30.196
RP	244.80	LAP	1.18	LOP	189.85	VP	23.590	GAP	24.59	AZP	90.76	TAL	348.26	TAP	111.28	RCA	146.64	APO	356.25	V2	22.407
RC	127.239	GL	8.69	GP	1.28	ZAL	108.78	ZAP	175.09	ETS	163.61	ZAE	153.83	ETE	.10	ZAC	90.06	ETC	256.05	CLP	175.26

PLANETOCENTRIC CONIC

C3	33.177	VHL	5.760	DLA	9.63	RAL	179.66	RAD	6568.3	VEL	12.432	PTH	2.25	VHP	11.136	DPA	.32	RAP	185.73	ECC	1.5460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 49	2642.57	-27.14	70.44	53.31	98.42	18 16 52	2042.6	-25.69	62.07
90.00	8 1 16	4679.72	14.86	199.42	47.53	65.62	9 19 16	4079.7	11.45	192.40
100.00	18 58 54	2364.94	-28.47	49.78	53.08	99.53	19 38 19	1764.9	-26.86	41.35
100.00	9 17 53	4432.58	16.09	180.66	46.94	64.46	10 31 45	3832.6	12.52	173.68
110.00	20 17 55	2117.67	-32.03	30.19	52.27	102.64	20 53 13	1517.7	-29.96	21.59
110.00	10 15 21	4252.56	19.32	165.26	45.20	61.23	11 26 13	3652.6	15.33	158.41

DIFFERENTIAL CORRECTIONS

TDE	.6904	TRA	-1.8164	TC3	.8059	BAU	.3579	SGT	2166.2	SGR	577.4
RDE	-.5280	RRA	-.2333	RC3	-.0396	FAU	.05826	RRT	.0227	RRF	-.0369
FDE	-.2205	FRA	1.0035	FC3	-1.5201	BSP	7112	SGB	2241.8	R23	-.0167
BDE	.8692	BRA	1.8314	BC3	.8068	FSP	470	SG1	2166.2	SG2	577.2

MID-COURSE EXECUTION ACCURACY

SG3	175.8	ST	880.2	SR	530.0
RTF	-.8241	CRT	-.6901	CRS	-.4680
R13	-.8241	LSA	1021.3	MSA	379.4
THA	.37	EL1	966.2	EL2	349.4

ORBIT DETERMINATION ACCURACY

SS	364.0				
CST	.9583				
SSA	32.2				
ALF	153.75				

LAUNCH DATE NOV 29 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 397.603 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 35.526 GAL -3.27 AZL 88.61 HCA 123.93 SMA 247.21 ECC .40650 INC 1.3893 V1 30.196
RP 244.57 LAP 1.15 LOP 190.75 VP 23.419 GAP 23.98 AZP 90.78 TAL 348.67 TAP 112.60 RCA 146.72 APO 347.70 V2 22.429
RC 129.306 GL 8.82 GP 1.32 ZAL 108.02 ZAP 174.59 ETS 164.57 ZAE 153.60 ETE .33 ZAC 90.18 ETC 256.03 CLP 174.75

PLANETOCENTRIC CONIC

C3 31.451 VHL 5.608 DLA 10.05 RAL 179.01 RAD 6568.3 VEL 12.362 PTH 2.23 VHP 10.873 DPA .19 RAP 186.11 ECC 1.5176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 52	2642.81	-27.14	70.45	51.84	98.41	18 10 54	2042.8	-25.69	62.08
90.00	8 2 3	4652.59	14.10	197.79	45.99	65.18	9 19 36	4052.6	10.63	190.83
100.00	18 53 10	2364.43	-28.46	49.74	51.60	99.55	19 32 35	1764.4	-26.85	41.31
100.00	9 18 26	4406.20	15.31	179.09	45.40	64.01	10 31 52	3806.2	11.69	172.16
110.00	20 12 43	2115.53	-32.00	30.04	50.80	102.73	20 47 58	1515.5	-29.92	21.44
110.00	10 15 23	4227.86	18.50	163.81	43.65	60.73	11 25 51	3627.9	14.46	157.02

DIFFERENTIAL CORRECTIONS

TDE .6695 TRA-1.7884 TC3 .8786 BAU .3698
RDE -.5099 RRA -.2256 RC3 -.0395 FAU .06001
FDE -.2139 FRA 1.0126 FC3-1.6520 BSP 7304
BDE .8416 BRA 1.8026 BC3 .8795 FSP 498

MID-COURSE EXECUTION ACCURACY

SGT 2209.6 SGR 572.9 SG3 185.0
RRT .0272 RRF -.0408 RTF -.8296
SGB 2282.6 R23 -.0167 R13 -.8296
SG1 2209.6 SG2 572.6 THA .43

ORBIT DETERMINATION ACCURACY

ST 882.4 SR 525.7 SS 364.1
CRT -.6840 CRS -.4505 CST .9550
LSA 1020.3 MSA 381.5 SSA 32.8
EL1 965.5 EL2 350.5 ALF 154.18

LAUNCH DATE NOV 29 1964 FLIGHT TIME 152.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 399.546 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 35.404 GAL -3.09 AZL 88.62 HCA 124.84 SMA 243.30 ECC .39666 INC 1.3763 V1 30.196
RP 244.34 LAP 1.13 LOP 191.66 VP 23.256 GAP 23.37 AZP 90.79 TAL 349.10 TAP 113.94 RCA 146.79 APO 339.81 V2 22.451
RC 131.411 GL 8.94 GP 1.36 ZAL 107.24 ZAP 174.08 ETS 165.37 ZAE 153.41 ETE .57 ZAC 90.31 ETC 256.02 CLP 174.24

PLANETOCENTRIC CONIC

C3 29.845 VHL 5.463 DLA 10.48 RAL 178.33 RAD 6568.2 VEL 12.297 PTH 2.21 VHP 10.618 DPA .06 RAP 186.49 ECC 1.4912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 43	2643.61	-27.15	70.51	50.36	98.38	18 4 47	2043.6	-25.71	62.14
90.00	8 2 49	4625.46	13.31	196.19	44.46	64.78	9 19 54	4025.5	9.81	189.26
100.00	18 47 16	2364.46	-28.46	49.75	50.13	99.55	19 26 40	1764.5	-26.85	41.32
100.00	9 18 57	4379.85	14.51	177.53	43.86	63.58	10 31 56	3779.8	10.85	170.66
110.00	20 7 21	2113.89	-31.97	29.92	49.32	102.79	20 42 35	1513.9	-29.88	21.33
110.00	10 15 22	4203.18	17.67	162.37	42.11	60.25	11 25 25	3603.2	13.58	155.65

DIFFERENTIAL CORRECTIONS

TDE .6490 TRA-1.7591 TC3 .9571 BAU .3822
RDE -.4925 RRA -.2182 RC3 -.0391 FAU .06184
FDE -.2060 FRA 1.0217 FC3-1.7939 BSP 7471
BDE .8147 BRA 1.7726 BC3 .9579 FSP 528

MID-COURSE EXECUTION ACCURACY

SGT 2253.2 SGR 568.1 SG3 194.7
RRT .0316 RRF -.0456 RTF -.8355
SGB 2323.7 R23 -.0174 R13 -.8355
SG1 2253.3 SG2 567.8 THA .49

ORBIT DETERMINATION ACCURACY

ST 883.8 SR 521.2 SS 363.5
CRT -.6780 CRS -.4301 CST .9506
LSA 1018.1 MSA 383.6 SSA 33.5
EL1 964.0 EL2 351.2 ALF 154.60

LAUNCH DATE NOV 29 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 401.628 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 35.288 GAL -2.92 AZL 88.64 HCA 125.75 SMA 239.69 ECC .38727 INC 1.3631 V1 30.196
RP 244.11 LAP 1.11 LOP 192.57 VP 23.101 GAP 22.76 AZP 90.80 TAL 349.53 TAP 115.28 RCA 146.86 APO 332.51 V2 22.475
RC 133.550 GL 9.06 GP 1.41 ZAL 106.43 ZAP 173.57 ETS 166.03 ZAE 153.26 ETE .81 ZAC 90.44 ETC 256.00 CLP 173.73

PLANETOCENTRIC CONIC

C3 28.350 VHL 5.324 DLA 10.91 RAL 177.63 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 10.369 DPA -.06 RAP 186.87 ECC 1.4666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 25	2644.98	-27.16	70.61	48.88	98.34	17 58 30	2045.0	-25.73	62.23
90.00	8 3 33	4598.39	12.52	194.59	42.93	64.39	9 20 11	3998.4	8.98	187.71
100.00	18 41 13	2365.03	-28.47	49.78	48.65	99.53	19 20 38	1765.0	-26.86	41.35
100.00	9 19 25	4353.58	13.71	175.99	42.33	63.18	10 31 59	3753.6	10.00	169.16
110.00	20 1 50	2112.74	-31.96	29.83	47.85	102.84	20 37 3	1512.7	-29.86	21.25
110.00	10 15 18	4178.62	16.84	160.96	40.57	59.80	11 24 56	3578.6	12.70	154.29

DIFFERENTIAL CORRECTIONS

TDE .6282 TRA-1.7289 TC3 1.0397 BAU .3943
RDE -.4757 RRA -.2111 RC3 -.0383 FAU .06376
FDE -.1968 FRA 1.0293 FC3-1.9472 BSP 7645
BDE .7879 BRA 1.7417 BC3 1.0404 FSP 560

MID-COURSE EXECUTION ACCURACY

SGT 2296.2 SGR 563.1 SG3 204.8
RRT .0364 RRF -.0509 RTF -.8409
SGB 2364.3 R23 -.0183 R13 -.8409
SG1 2296.3 SG2 562.8 THA .54

ORBIT DETERMINATION ACCURACY

ST 883.8 SR 516.5 SS 361.9
CRT -.6716 CRS -.4072 CST .9454
LSA 1014.4 MSA 385.7 SSA 34.1
EL1 961.3 EL2 351.9 ALF 154.99

LAUNCH DATE NOV 29 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 403.837 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 35.176 GAL -2.75 AZL 88.65 HCA 126.66 SMA 236.34 ECC .37831 INC 1.3495 V1 30.196
RP 243.87 LAP 1.08 LOP 193.48 VP 22.954 GAP 22.16 AZP 90.81 TAL 349.97 TAP 116.63 RCA 146.93 APO 325.75 V2 22.498
RC 135.719 GL 9.17 GP 1.46 ZAL 105.60 ZAP 173.05 ETS 166.59 ZAE 153.17 ETE 1.05 ZAC 90.58 ETC 255.99 CLP 173.20

PLANETOCENTRIC CONIC

C3 26.959 VHL 5.192 DLA 11.34 RAL 176.91 RAD 6568.1 VEL 12.179 PTH 2.19 VHP 10.126 DPA -.18 RAP 187.24 ECC 1.4437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 56	2646.89	-27.18	70.74	47.40	98.27	17 52 3	2046.9	-25.75	62.37
90.00	8 4 14	4571.42	11.73	193.01	41.42	64.04	9 20 26	3971.4	8.14	186.17
100.00	18 34 59	2366.12	-28.48	49.86	47.17	99.49	19 14 26	1766.1	-26.87	41.43
100.00	9 19 52	4327.43	12.90	174.47	40.81	62.80	10 31 59	3727.4	9.16	167.69
110.00	19 56 11	2112.08	-31.94	29.78	46.38	102.87	20 31 23	1512.1	-29.84	21.20
110.00	10 15 10	4154.23	16.00	159.57	39.05	59.38	11 24 24	3554.2	11.81	152.96

DIFFERENTIAL CORRECTIONS

TDE .6073 TRA-1.6979 TC3 1.1270 BAU .4064
RDE -.4594 RRA -.2042 RC3 -.0371 FAU .06577
FDE -.1869 FRA 1.0362 FC3-2.1121 BSP 7807
BDE .7615 BRA 1.7102 BC3 1.1276 FSP 593

MID-COURSE EXECUTION ACCURACY

SGT 2338.9 SGR 558.0 SG3 215.4
RRT .0416 RRF -.0567 RTF -.8462
SGB 2404.5 R23 -.0194 R13 -.8463
SG1 2339.0 SG2 557.4 THA .60

ORBIT DETERMINATION ACCURACY

ST 882.6 SR 511.6 SS 359.9
CRT -.6649 CRS -.3824 CST .9393
LSA 1009.3 MSA 387.8 SSA 34.8
EL1 957.4 EL2 352.3 ALF 155.37

LAUNCH DATE NOV 29 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 406.161 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 35.070 GAL -2.58 AZL 88.66 HCA 127.57 SMA 233.23 ECC .36975 INC 1.3355 V1 30.196
RP 243.63 LAP 1.06 LOP 194.39 VP 22.814 GAP 21.56 AZP 90.81 TAL 350.42 TAP 117.99 RCA 147.00 APO 319.47 V2 22.522
RC 137.915 GL 9.28 GP 1.51 ZAL 104.75 ZAP 172.52 ETS 167.06 ZAE 153.12 ETE 1.29 ZAC 90.71 ETC 255.97 CLP 172.67

PLANETOCENTRIC CONIC

C3 25.665 VHL 5.066 DLA 11.78 RAL 176.16 RAD 6568.0 VEL 12.126 PTH 2.17 VHP 9.889 DPA -.29 RAP 187.61 ECC 1.4224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 18	2649.35	-27.20	70.92	45.93	98.19	17 45 27	2049.3	-25.79	62.54
90.00	8 4 54	4544.58	10.92	191.45	39.91	63.71	9 20 38	3944.6	7.30	184.64
100.00	18 28 37	2367.73	-28.50	49.98	45.70	99.43	19 8 5	1767.7	-26.90	41.54
100.00	9 20 16	4301.43	12.09	172.97	39.30	62.45	10 31 57	3701.4	8.31	166.22
110.00	19 50 23	2111.88	-31.94	29.77	44.91	102.88	20 25 35	1511.9	-29.84	21.19
110.00	10 14 59	4130.04	15.15	158.20	37.54	58.99	11 23 49	3530.0	10.93	151.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5862 TRA-1.6668 TC3 1.2192 BAU .4185 SGT 2382.0 SGR 552.5 SG3 226.5 ST 880.1 SR 506.6 SS 357.4
RDE -.4438 RRA -.1975 RC3 -.0355 FAU .06789 RRT .0473 RRF -.0632 RTF -.8515 CRT -.6577 CRS -.3548 CST .9322
FDE -.1759 FRA 1.0425 FC3-2.2900 BSP 7971 SGB 2445.2 R23 -.0207 R13 -.8515 LSA 1002.8 MSA 390.0 SSA 35.5
BDE .7352 BRA 1.6784 BC3 1.2198 FSP 629 SG1 2382.1 SG2 551.9 THA .66 EL1 952.3 EL2 352.7 ALF 155.73

LAUNCH DATE NOV 29 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 408.589 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 34.968 GAL -2.42 AZL 88.68 HCA 128.48 SMA 230.34 ECC .36159 INC 1.3212 V1 30.196
RP 243.38 LAP 1.03 LOP 195.30 VP 22.682 GAP 20.96 AZP 90.82 TAL 350.88 TAP 119.36 RCA 147.05 APO 313.63 V2 22.547
RC 140.134 GL 9.37 GP 1.56 ZAL 103.88 ZAP 171.98 ETS 167.47 ZAE 153.11 ETE 1.54 ZAC 90.84 ETC 255.96 CLP 172.13

PLANETOCENTRIC CONIC

C3 24.460 VHL 4.946 DLA 12.22 RAL 175.39 RAD 6568.0 VEL 12.076 PTH 2.16 VHP 9.658 DPA -.40 RAP 187.97 ECC 1.4025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 31	2652.32	-27.23	71.13	44.45	98.08	17 38 43	2052.3	-25.83	62.74
90.00	8 5 31	4517.92	10.11	189.91	38.41	63.41	9 20 49	3917.9	6.46	183.13
100.00	18 22 6	2369.83	-28.52	50.13	44.23	99.35	19 1 36	1769.8	-26.93	41.69
100.00	9 20 37	4275.65	11.27	171.49	37.80	62.13	10 31 52	3675.6	7.46	164.78
110.00	19 44 27	2112.14	-31.95	29.79	43.45	102.87	20 19 39	1512.1	-29.85	21.20
110.00	10 14 45	4106.10	14.31	156.86	36.03	58.62	11 23 11	3506.1	10.05	150.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5644 TRA-1.6358 TC3 1.3145 BAU .4300 SGT 2424.4 SGR 546.9 SG3 238.2 ST 876.0 SR 501.3 SS 354.4
RDE -.4288 RRA -.1911 RC3 -.0333 FAU .07009 RRT .0540 RRF -.0706 RTF -.8563 CRT -.6496 CRS -.3237 CST .9239
FDE -.1636 FRA 1.0483 FC3-2.4807 BSP 8138 SGB 2485.3 R23 -.0219 R13 -.8564 LSA 994.5 MSA 392.5 SSA 36.2
BDE .7088 BRA 1.6469 BC3 1.3149 FSP 667 SG1 2424.6 SG2 546.1 THA .74 EL1 945.6 EL2 353.2 ALF 156.06

LAUNCH DATE NOV 29 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 411.114 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 34.870 GAL -2.26 AZL 88.69 HCA 129.40 SMA 227.65 ECC .35379 INC 1.3065 V1 30.196
RP 243.12 LAP 1.01 LOP 196.22 VP 22.556 GAP 20.37 AZP 90.83 TAL 351.34 TAP 120.74 RCA 147.11 APO 308.20 V2 22.572
RC 142.373 GL 9.47 GP 1.62 ZAL 102.99 ZAP 171.43 ETS 167.82 ZAE 153.15 ETE 1.80 ZAC 90.98 ETC 255.94 CLP 171.59

PLANETOCENTRIC CONIC

C3 23.339 VHL 4.831 DLA 12.66 RAL 174.59 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 9.433 DPA -.50 RAP 188.33 ECC 1.3841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 35	2655.79	-27.26	71.38	42.98	97.96	17 31 51	2055.8	-25.88	62.99
90.00	8 6 5	4491.49	9.30	188.39	36.92	63.13	9 20 57	3891.5	5.63	181.64
100.00	18 15 27	2372.40	-28.55	50.32	42.76	99.26	18 55 0	1772.4	-26.97	41.87
100.00	9 20 54	4250.09	10.46	170.03	36.31	61.84	10 31 44	3650.1	6.61	163.36
110.00	19 38 25	2112.83	-31.96	29.84	41.99	102.84	20 13 37	1512.8	-29.86	21.25
110.00	10 14 26	4082.44	13.46	155.54	34.54	58.28	11 22 29	3482.4	9.17	149.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5429 TRA-1.6033 TC3 1.4167 BAU .4421 SGT 2467.0 SGR 541.1 SG3 250.5 ST 870.7 SR 495.9 SS 350.8
RDE -.4143 RRA -.1850 RC3 -.0306 FAU .07244 RRT .0610 RRF -.0785 RTF -.8613 CRT -.6414 CRS -.2905 CST .9143
FDE -.1507 FRA 1.0523 FC3-2.6870 BSP 8294 SGB 2525.7 R23 -.0233 R13 -.8614 LSA 984.8 MSA 394.9 SSA 37.0
BDE .6829 BRA 1.6139 BC3 1.4170 FSP 706 SG1 2467.2 SG2 540.1 THA .80 EL1 937.7 EL2 353.3 ALF 156.38

LAUNCH DATE NOV 29 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 413.726 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 34.777 GAL -2.11 AZL 88.71 HCA 130.32 SMA 225.14 ECC .34636 INC 1.2913 V1 30.196
RP 242.87 LAP .98 LOP 197.14 VP 22.437 GAP 19.78 AZP 90.84 TAL 351.81 TAP 122.13 RCA 147.16 APO 303.12 V2 22.598
RC 144.629 GL 9.55 GP 1.67 ZAL 102.08 ZAP 170.88 ETS 168.11 ZAE 153.23 ETE 2.06 ZAC 91.11 ETC 255.93 CLP 171.03

PLANETOCENTRIC CONIC

C3 22.297 VHL 4.722 DLA 13.10 RAL 173.77 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 9.213 DPA -.60 RAP 188.68 ECC 1.3670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 32	2659.72	-27.30	71.66	41.51	97.83	17 24 52	2059.7	-25.94	63.26
90.00	8 6 36	4465.33	8.49	186.89	35.45	62.89	9 21 2	3865.3	4.79	180.17
100.00	18 8 41	2375.42	-28.58	50.54	41.29	99.15	18 48 17	1775.4	-27.02	42.08
100.00	9 21 8	4224.86	9.64	168.60	34.84	61.57	10 31 33	3624.9	5.77	161.95
110.00	19 32 15	2113.93	-31.97	29.92	40.53	102.79	20 7 29	1513.9	-29.88	21.33
110.00	10 14 4	4059.11	12.63	154.26	33.06	57.97	11 21 43	3459.1	8.30	147.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5204 TRA-1.5710 TC3 1.5200 BAU .4532 SGT 2507.9 SGR 535.2 SG3 263.4 ST 863.3 SR 490.4 SS 346.7
RDE -.4004 RRA -.1790 RC3 -.0271 FAU .07486 RRT .0693 RRF -.0875 RTF -.8657 CRT -.6319 CRS -.2522 CST .9028
FDE -.1361 FRA 1.0555 FC3-2.9065 BSP 8464 SGB 2564.4 R23 -.0247 R13 -.8658 LSA 972.8 MSA 397.8 SSA 37.8
BDE .6566 BRA 1.5811 BC3 1.5202 FSP 748 SG1 2508.2 SG2 533.8 THA .89 EL1 927.7 EL2 353.7 ALF 156.67

LAUNCH DATE NOV 29 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 416.420 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.688	GAL	-1.95	AZL	88.72	HCA	131.24	SMA	222.80	ECC	.33926	INC	1.2757	V1	30.196
RP	242.60	LAP	.96	LOP	198.06	VP	22.325	GAP	19.19	AZP	90.84	TAL	352.28	TAP	123.52	RCA	147.21	APO	298.38	V2	22.624
RC	146.900	GL	9.62	GP	1.74	ZAL	101.15	ZAP	170.31	ETS	168.37	ZAE	153.35	ETE	2.33	ZAC	91.25	ETC	255.92	CLP	170.47

PLANETOCENTRIC CONIC

C3	21.327	VHL	4.618	DLA	13.54	RAL	172.93	RAD	6567.9	VEL	11.946	PTH	2.13	VHP	8.999	DPA	-.69	RAP	189.03	ECC	1.3510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 21	2664.10	-27.34	71.98	40.04	97.67	17 17 45	2064.1	-26.00	63.57
90.00	8 7 4	4439.45	7.69	185.42	33.98	62.66	9 21 3	3839.4	3.97	178.72
100.00	18 1 48	2378.87	-28.62	50.79	39.83	99.02	13 41 27	1778.9	-27.08	42.32
100.00	9 21 18	4199.91	8.83	167.20	33.37	61.33	10 31 18	3599.9	4.93	160.57
110.00	19 25 59	2115.43	-32.00	30.03	39.08	102.73	20 1 15	1515.4	-29.91	21.44
110.00	10 13 36	4036.11	11.79	153.00	31.59	57.68	11 20 52	3436.1	7.44	146.60

DIFFERENTIAL CORRECTIONS

TDE	.5086	TRA	-1.5281	TC3	1.6475	BAU	.4698
RDE	-.3871	RRA	-.1735	RC3	-.0233	FAU	.07733
FDE	-.1190	FRA	1.0593	FC3	-3.1393	BSP	8377
BDE	.6392	BRA	1.5379	BC3	1.6477	FSP	796

MID-COURSE EXECUTION ACCURACY

SGT	2552.8	SGR	529.3	SG3	276.7		
RRT	.0710	RRF	-.0979	RTF	-.8735		
SGB	2607.1	R23	-.0332	R13	-.8736		
SG1	2553.0	SG2	527.9	THA	.88		

ORBIT DETERMINATION ACCURACY

ST	861.7	SR	484.9	SS	342.3
CRT	-.6324	CRS	-.2063	CST	.8814
LSA	966.3	MSA	399.4	SSA	38.0
EL1	924.7	EL2	350.0	ALF	156.92

LAUNCH DATE NOV 29 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 419.188 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.602	GAL	-1.81	AZL	88.74	HCA	132.16	SMA	220.60	ECC	.33248	INC	1.2596	V1	30.196
RP	242.34	LAP	.93	LOP	198.98	VP	22.219	GAP	18.61	AZP	90.85	TAL	352.76	TAP	124.92	RCA	147.26	APO	293.95	V2	22.651
RC	149.184	GL	9.68	GP	1.80	ZAL	100.21	ZAP	169.74	ETS	168.59	ZAE	153.51	ETE	2.62	ZAC	91.39	ETC	255.91	CLP	169.90

PLANETOCENTRIC CONIC

C3	20.426	VHL	4.519	DLA	13.97	RAL	172.07	RAD	6567.8	VEL	11.908	PTH	2.12	VHP	8.790	DPA	-.78	RAP	189.38	ECC	1.3362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 6	2668.84	-27.38	72.32	38.58	97.51	17 10 34	2068.8	-26.06	63.90
90.00	8 7 27	4414.00	6.89	183.97	32.53	62.47	9 21 1	3814.0	3.15	177.29
100.00	17 54 50	2382.67	-28.66	51.06	38.37	98.88	18 34 33	1782.7	-27.13	42.59
100.00	9 21 24	4175.41	8.03	165.82	31.91	61.11	10 31 0	3575.4	4.11	159.22
110.00	19 19 39	2117.25	-32.02	30.16	37.63	102.65	19 54 57	1517.3	-29.95	21.57
110.00	10 13 4	4013.59	10.97	151.77	30.14	57.42	11 19 58	3413.6	6.60	145.41

DIFFERENTIAL CORRECTIONS

TDE	.4809	TRA	-1.5003	TC3	1.7497	BAU	.4778
RDE	-.3742	RRA	-.1679	RC3	-.0181	FAU	.08009
FDE	-.1036	FRA	1.0589	FC3	-3.3945	BSP	8661
BDE	.6094	BRA	1.5097	BC3	1.7498	FSP	840

MID-COURSE EXECUTION ACCURACY

SGT	2591.2	SGR	522.9	SG3	291.0		
RRT	.0847	RRF	-.1084	RTF	- 8758		
SGB	2643.5	R23	-.0312	R13	-.8759		
SG1	2591.6	SG2	520.9	THA	1.02		

ORBIT DETERMINATION ACCURACY

ST	848.4	SR	478.9	SS	337.9
CRT	-.6167	CRS	-.1645	CST	.8702
LSA	948.3	MSA	403.1	SSA	39.2
EL1	908.4	EL2	352.1	ALF	157.19

LAUNCH DATE NOV 29 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 422.024 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.520	GAL	-1.66	AZL	88.76	HCA	133.08	SMA	218.55	ECC	.32602	INC	1.2430	V1	30.196
RP	242.06	LAP	.91	LOP	199.90	VP	22.120	GAP	18.03	AZP	90.85	TAL	353.24	TAP	126.32	RCA	147.30	APO	289.80	V2	22.678
RC	151.478	GL	9.74	GP	1.87	ZAL	99.25	ZAP	169.15	ETS	168.78	ZAE	153.70	ETE	2.92	ZAC	91.53	ETC	255.90	CLP	169.31

PLANETOCENTRIC CONIC

C3	19.588	VHL	4.426	DLA	14.40	RAL	171.19	RAD	6567.8	VEL	11.873	PTH	2.11	VHP	8.586	DPA	-.86	RAP	189.72	ECC	1.3224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 45	2673.94	-27.43	72.68	37.13	97.33	17 3 19	2073.9	-26.13	64.26
90.00	8 7 46	4388.96	6.10	182.56	31.09	62.29	9 20 55	3789.0	2.34	175.89
100.00	17 47 47	2386.79	-28.70	51.36	36.92	98.73	18 27 34	1786.8	-27.20	42.88
100.00	9 21 25	4151.34	7.23	164.47	30.47	60.92	10 30 37	3551.3	3.30	157.89
110.00	19 13 15	2119.38	-32.05	30.32	36.19	102.57	19 48 34	1519.4	-29.99	21.72
110.00	10 12 27	3991.51	10.16	150.58	28.70	57.18	11 18 58	3391.5	5.76	144.24

DIFFERENTIAL CORRECTIONS

TDE	.4564	TRA	-1.4696	TC3	1.8618	BAU	.4876
RDE	-.3618	RRA	-.1626	RC3	-.0122	FAU	.08297
FDE	-.0868	FRA	1.0579	FC3	-3.6673	BSP	8891
BDE	.5824	BRA	1.4786	BC3	1.8618	FSP	888

MID-COURSE EXECUTION ACCURACY

SGT	2631.2	SGR	516.4	SG3	306.1		
RRT	.0974	RRF	-.1201	RTF	-.8790		
SGB	2681.4	R23	-.0312	R13	-.8792		
SG1	2631.7	SG2	513.9	THA	1.14		

ORBIT DETERMINATION ACCURACY

ST	835.9	SR	472.9	SS	333.4
CRT	-.6029	CRS	-.1176	CST	.8548
LSA	930.9	MSA	406.6	SSA	40.2
EL1	893.1	EL2	353.1	ALF	157.45

LAUNCH DATE NOV 29 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 424.925 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.442	GAL	-1.52	AZL	88.77	HCA	134.01	SMA	216.62	ECC	.31986	INC	1.2259	V1	30.196
RP	241.79	LAP	.88	LOP	200.83	VP	22.026	GAP	17.46	AZP	90.85	TAL	353.72	TAP	127.73	RCA	147.34	APO	285.91	V2	22.706
RC	153.781	GL	9.78	GP	1.94	ZAL	98.28	ZAP	168.56	ETS	168.94	ZAE	153.94	ETE	3.23	ZAC	91.68	ETC	255.89	CLP	168.72

PLANETOCENTRIC CONIC

C3	18.808	VHL	4.337	DLA	14.82	RAL	170.29	RAD	6567.8	VEL	11.840	PTH	2.10	VHP	8.387	DPA	-.93	RAP	190.05	ECC	1.3095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 20	2679.33	-27.47	73.07	35.68	97.14	16 55 59	2079.3	-26.20	64.64
90.00	8 8 1	4364.39	5.32	181.17	29.66	62.15	9 20 45	3764.4	1.55	174.52
100.00	17 40 41	2391.21	-28.75	51.68	35.48	98.57	18 20 32	1791.2	-27.26	43.19
100.00	9 21 21	4127.74	6.45	163.16	29.04	60.75	10 30 9	3527.7	2.50	156.60
110.00	19 6 47	2121.78	-32.09	30.50	34.76	102.47	19 42 9	1521.8	-30.04	21.89
110.00	10 11 44	3969.94	9.36	149.42	27.27	56.97	11 17 54	3369.9	4.94	143.11

DIFFERENTIAL CORRECTIONS

TDE	.4325	TRA	-1.4369	TC3	1.9775	BAU	.4972
RDE	-.3499	RRA	-.1575	RC3	-.0053	FAU	.08593
FDE	-.0681	FRA	1.0559	FC3	-3.9555	BSP	9060
BDE	.5563	BRA	1.4455	BC3	1.9775	FSP	938

MID-COURSE EXECUTION ACCURACY

SGT	2669.2	SGR	510.0	SG3	321.7		
RRT	.1107	RRF	-.1334	RTF	-.8825		
SGB	2717.5	R23	-.0323	R13	-.8826		
SG1	2669.9	SG2	506.7	THA	1.26		

ORBIT DETERMINATION ACCURACY

ST	822.3	SR	466.8	SS	329.0
CRT	-.5891	CRS	-.0646	CST	.8351
LSA	912.3	MSA	410.3	SSA	41.1
EL1	876.9	EL2	353.7	ALF	157.69

LAUNCH DATE NOV 29 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 427.884 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.367	GAL	-1.38	AZL	88.79	HCA	134.94	SMA	214.82	ECC	.31397	INC	1.2081	V1	30.196
RP	241.51	LAP	.86	LOP	201.76	VP	21.938	GAP	16.89	AZP	90.85	TAL	354.20	TAP	129.14	RCA	147.37	APO	282.26	V2	22.734
RC	156.092	GL	9.81	GP	2.02	ZAL	97.30	ZAP	167.95	ETS	169.08	ZAE	154.20	ETE	3.57	ZAC	91.82	ETC	255.88	CLP	168.12

PLANETOCENTRIC CONIC

C3	18.084	VHL	4.253	DLA	15.24	RAL	169.37	RAD	6567.7	VEL	11.810	PTH	2.09	VHP	8.192	DPA	-1.00	RAP	190.38	ECC	1.2976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 52	2684.97	-27.52	73.48	34.24	96.94	16 48 37	2085.0	-26.27	65.03
90.00	8 8 9	4340.35	4.55	179.82	28.24	62.02	9 20 30	3740.3	.78	173.18
100.00	17 33 31	2395.86	-28.79	52.02	34.04	98.40	18 13 27	1795.9	-27.33	43.52
100.00	9 21 11	4104.69	5.68	161.88	27.62	60.60	10 29 36	3504.7	1.72	155.33
110.00	19 0 17	2124.40	-32.13	30.70	33.33	102.36	19 35 41	1524.4	-30.09	22.07
110.00	10 10 55	3948.91	8.58	148.29	25.85	56.78	11 16 44	3348.9	4.15	142.00

DIFFERENTIAL CORRECTIONS

TDE	.4091	TRA	-1.4040	TC3	2.0980	BAU	.5072
RDE	-.3386	RRA	-.1526	RC3	.0027	FAU	.08908
FDE	-.0478	FRA	1.0527	FC3	-4.2646	BSP	9218
BDE	.5310	BRA	1.4122	BC3	2.0980	FSP	992

MID-COURSE EXECUTION ACCURACY

SGT	2707.7	SGR	503.5	SG3	338.2		
RRT	.1250	RRF	-.1483	RTF	-.8859		
SGB	2754.1	R23	-.0339	R13	-.8861		
SG1	2708.5	SG2	499.4	THA	1.38		

ORBIT DETERMINATION ACCURACY

ST	807.9	3R	460.6	SS	324.7		
CRT	-.5747	CRS	-.0055	CST	.8113		
LSA	892.5	MSA	414.6	SSA	42.1		
EL1	859.9	EL2	354.2	ALF	157.92		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 430.899 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.296	GAL	-1.25	AZL	88.81	HCA	135.87	SMA	213.12	ECC	.30836	INC	1.1898	V1	30.196
RP	241.22	LAP	.83	LOP	202.69	VP	21.855	GAP	16.33	AZP	90.85	TAL	354.69	TAP	130.56	RCA	147.40	APO	278.84	V2	22.762
RC	158.408	GL	9.82	GP	2.10	ZAL	96.32	ZAP	167.33	ETS	169.19	ZAE	154.51	ETE	3.92	ZAC	91.97	ETC	255.87	CLP	167.50

PLANETOCENTRIC CONIC

C3	17.411	VHL	4.173	DLA	15.65	RAL	168.44	RAD	6567.7	VEL	11.781	PTH	2.08	VHP	8.002	DPA	-1.06	RAP	190.70	ECC	1.2865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 23	2690.79	-27.57	73.90	32.80	96.74	16 41 14	2090.8	-26.35	65.44
90.00	8 8 12	4316.89	3.80	178.51	26.84	61.92	9 20 9	3716.9	.02	171.87
100.00	17 26 20	2400.68	-28.84	52.37	32.61	98.22	18 6 21	1800.7	-27.40	43.86
100.00	9 20 55	4082.24	4.93	160.64	26.22	60.48	10 28 58	3482.2	.96	154.10
110.00	18 53 45	2127.20	-32.17	30.90	31.92	102.24	19 29 12	1527.2	-30.15	22.27
110.00	10 10 0	3928.48	7.81	147.20	24.45	56.62	11 15 29	3328.5	3.37	140.93

DIFFERENTIAL CORRECTIONS

TDE	.3874	TRA	-1.3696	TC3	2.2219	BAU	.5172
RDE	-.3277	RRA	-.1478	RC3	.0119	FAU	.09235
FDE	-.0269	FRA	1.0475	FC3	-4.5921	BSP	9356
BDE	.5074	BRA	1.3776	BC3	2.2219	FSP	1049

MID-COURSE EXECUTION ACCURACY

SGT	2745.1	SGR	497.0	SG3	355.4		
RRT	.1398	RRF	-.1645	RTF	-.8894		
SGB	2789.7	R23	-.0364	R13	-.8896		
SG1	2746.0	SG2	491.9	THA	1.50		

ORBIT DETERMINATION ACCURACY

ST	793.3	SR	454.4	SS	320.9		
CRT	-.5612	CRS	.0557	CST	.7839		
LSA	872.8	MSA	418.6	SSA	43.1		
EL1	842.9	EL2	353.9	ALF	158.14		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 433.964 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.227	GAL	-1.12	AZL	88.83	HCA	136.80	SMA	211.52	ECC	.30301	INC	1.1707	V1	30.196
RP	240.93	LAP	.80	LOP	203.62	VP	21.777	GAP	15.78	AZP	90.85	TAL	355.18	TAP	131.98	RCA	147.43	APO	275.61	V2	22.791
RC	160.729	GL	9.83	GP	2.18	ZAL	95.32	ZAP	166.70	ETS	169.28	ZAE	154.85	ETE	4.30	ZAC	92.12	ETC	255.87	CLP	166.87

PLANETOCENTRIC CONIC

C3	16.786	VHL	4.097	DLA	16.04	RAL	167.49	RAD	6567.7	VEL	11.755	PTH	2.07	VHP	7.817	DPA	-1.10	RAP	191.01	ECC	1.2763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 53	2696.72	-27.62	74.33	31.38	96.53	16 33 50	2096.7	-26.42	65.86
90.00	8 8 8	4294.09	3.07	177.23	25.45	61.84	9 19 42	3694.1	-.72	170.60
100.00	17 19 9	2405.61	-28.89	52.73	31.19	98.03	17 59 15	1805.6	-27.48	44.21
100.00	9 20 32	4060.44	4.20	159.43	24.83	60.38	10 28 13	3460.4	.22	152.90
110.00	18 47 12	2130.11	-32.21	31.12	30.51	102.12	19 22 42	1530.1	-30.21	22.48
110.00	10 8 59	3908.70	7.07	146.15	23.06	56.47	11 14 7	3308.7	2.61	139.90

DIFFERENTIAL CORRECTIONS

TDE	.3659	TRA	-1.3356	TC3	2.3465	BAU	.5266
RDE	-.3172	RRA	-.1433	RC3	.0223	FAU	.09580
FDE	-.0051	FRA	1.0414	FC3	-4.9411	BSP	9513
BDE	.4842	BRA	1.3433	BC3	2.3467	FSP	1111

MID-COURSE EXECUTION ACCURACY

SGT	2781.4	SGR	490.5	SG3	373.5		
RRT	.1564	RRF	-.1824	RTF	-.8927		
SGB	2824.3	R23	-.0389	R13	-.8929		
SG1	2782.5	SG2	484.3	THA	1.63		

ORBIT DETERMINATION ACCURACY

ST	777.8	SR	448.0	SS	317.8		
CRT	-.5466	CRS	.1202	CST	.7532		
LSA	852.1	MSA	422.9	SSA	44.1		
EL1	825.0	EL2	353.7	ALF	158.35		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 437.078 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	34.161	GAL	-.99	AZL	88.85	HCA	137.74	SMA	210.02	ECC	.29790	INC	1.1510	V1	30.196
RP	240.64	LAP	.77	LOP	204.56	VP	21.705	GAP	15.22	AZP	90.85	TAL	355.67	TAP	133.40	RCA	147.45	APO	272.58	V2	22.821
RC	163.052	GL	9.81	GP	2.27	ZAL	94.32	ZAP	166.05	ETS	169.36	ZAE	155.23	ETE	4.70	ZAC	92.27	ETC	255.86	CLP	166.23

PLANETOCENTRIC CONIC

C3	16.205	VHL	4.026	DLA	16.42	RAL	166.52	RAD	6567.6	VEL	11.730	PTH	2.07	VHP	7.636	DPA	-1.14	RAP	191.31	ECC	1.2667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 24	2702.73	-27.66	74.76	29.96	96.31	16 26 26	2102.7	-26.50	66.28
90.00	8 7 56	4271.96	2.36	176.00	24.07	61.77	9 19 8	3672.0	-1.43	169.37
100.00	17 11 58	2410.61	-28.94	53.09	29.78	97.85	17 52 9	1810.6	-27.55	44.56
100.00	9 20 2	4039.30	3.48	158.27	23.45	60.29	10 27 21	3439.3	-.50	151.74
110.00	18 40 40	2133.11	-32.25	31.34	29.10	101.99	19 16 13	1533.1	-30.27	22.69
110.00	10 7 50	3889.57	6.35	145.14	21.67	56.34	11 12 39	3289.6	1.88	138.90

DIFFERENTIAL CORRECTIONS

TDE	.3551	TRA	-1.2891	TC3	2.5030	BAU	.5423
RDE	-.3074	RRA	-.1390	RC3	.0339	FAU	.09944
FDE	.0190	FRA	1.0327	FC3	-5.3127	BSP	9386
BDE	.4697	BRA	1.2966	BC3	2.5032	FSP	1175

MID-COURSE EXECUTION ACCURACY

SGT	2824.1	SGR	484.4	SG3	392.6		
RRT	.1670	RRF	-.2020	RTF	-.8991		
SGB	2865.3	R23	-.0481	R13	-.8994		
SG1	2825.3	SG2	477.4	THA	1.69		

ORBIT DETERMINATION ACCURACY

ST	767.1	SR	441.8	SS	315.4		
CRT	-.5475	CRS	.1911	CST	.7034		
LSA	836.4	MSA	426.0	SSA	44.4		
EL1	813.7	EL2	348.5	ALF	158.33		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 440.235 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 34.099 GAL -.87 AZL 88.87 HCA 138.68 SMA 208.60 ECC .29304 INC 1.1304 V1 30.196
RP 240.34 LAP .75 LOP 205.49 VP 21.638 GAP 14.68 AZP 90.85 TAL 356.15 TAP 134.83 RCA 147.47 APO 269.73 V2 22.851
RC 165.375 GL 9.79 GP 2.37 ZAL 93.32 ZAP 165.39 ETS 169.41 ZAE 155.63 ETE 5.14 ZAC 92.43 ETC 255.85 CLP 165.58

PLANETOCENTRIC CONIC

C3 15.666 VHL 3.958 DLA 16.79 RAL 165.55 RAD 6567.6 VEL 11.707 PTH 2.06 VHP 7.459 DPA -1.18 RAP 191.61 ECC 1.2578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 59	2708.63	-27.70	75.19	28.55	96.10	16 19 7	2108.6	-26.57	66.70
90.00	8 7 35	4250.68	1.67	174.81	22.71	61.73	9 18 26	3650.7	-2.12	168.18
100.00	17 4 52	2415.53	-28.98	53.45	28.37	97.66	17 45 8	1815.5	-27.62	44.91
100.00	9 19 23	4019.03	2.80	157.15	22.09	60.23	10 26 22	3419.0	-1.18	150.63
110.00	18 34 11	2136.07	-32.29	31.56	27.71	101.87	19 9 47	1536.1	-30.32	22.90
110.00	10 6 33	3871.26	5.66	144.17	20.31	56.23	11 11 5	3271.3	1.18	137.94

DIFFERENTIAL CORRECTIONS
TDE .3260 TRA-1.2654 TC3 2.6018 BAU .5450
RDE -.2976 RRA -.1347 RC3 .0475 FAU .10320
FDE .0405 FRA 1.0228 FC3-5.7032 BSP 9793
BDE .4414 BRA 1.2725 BC3 2.6022 FSP 1242

MID-COURSE EXECUTION ACCURACY
SGT 2850.5 SGR 478.0 SG3 412.3
RRT .1936 RRF -.2236 RTF -.8990
SGB 2890.3 R23 -.0456 R13 -.8992
SG1 2852.0 SG2 468.7 THA 1.91

ORBIT DETERMINATION ACCURACY
ST 745.6 SR 435.1 SS 313.8
CRT -.5183 CRS .2538 CST .6804
LSA 809.6 MSA 431.5 SSA 46.1
EL1 788.3 EL2 352.0 ALF 158.73

LAUNCH DATE NOV 29 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 443.435 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 34.038 GAL -.75 AZL 88.89 HCA 139.61 SMA 207.27 ECC .28840 INC 1.1091 V1 30.196
RP 240.04 LAP .72 LOP 206.43 VP 21.575 GAP 14.14 AZP 90.84 TAL 356.64 TAP 136.25 RCA 147.49 APO 267.04 V2 22.881
RC 167.697 GL 9.74 GP 2.47 ZAL 92.32 ZAP 164.72 ETS 169.46 ZAE 156.08 ETE 5.61 ZAC 92.59 ETC 255.85 CLP 164.92

PLANETOCENTRIC CONIC

C3 15.165 VHL 3.894 DLA 17.14 RAL 164.57 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 7.286 DPA -1.20 RAP 191.91 ECC 1.2496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 38	2714.45	-27.75	75.61	27.15	95.90	16 11 52	2114.4	-26.64	67.11
90.00	8 7 6	4230.24	1.02	173.67	21.36	61.70	9 17 36	3630.2	-2.78	167.04
100.00	16 57 49	2420.37	-29.02	53.80	26.98	97.48	17 38 9	1820.4	-27.69	45.26
100.00	9 18 36	3999.55	2.14	156.08	20.74	60.18	10 25 15	3399.6	-1.84	149.56
110.00	18 27 45	2138.98	-32.34	31.78	26.33	101.74	19 3 24	1539.0	-30.38	23.11
110.00	10 5 9	3853.71	4.99	143.25	18.96	56.14	11 9 22	3253.7	.51	137.03

DIFFERENTIAL CORRECTIONS
TDE .3037 TRA-1.2326 TC3 2.7277 BAU .5532
RDE -.2884 RRA -.1305 RC3 .0627 FAU .10722
FDE .0660 FRA 1.0110 FC3-6.1209 BSP 9919
BDE .4188 BRA 1.2395 BC3 2.7284 FSP 1310

MID-COURSE EXECUTION ACCURACY
SGT 2883.5 SGR 472.1 SG3 433.4
RRT .2171 RRF -.2478 RTF -.9015
SGB 2921.9 R23 -.0481 R13 -.9018
SG1 2885.3 SG2 460.5 THA 2.09

ORBIT DETERMINATION ACCURACY
ST 726.6 SR 428.6 SS 313.5
CRT -.4984 CRS .3261 CST .6401
LSA 785.2 MSA 437.2 SSA 47.2
EL1 766.5 EL2 352.2 ALF 158.98

LAUNCH DATE NOV 29 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 446.673 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.981 GAL -.64 AZL 88.91 HCA 140.56 SMA 206.01 ECC .28397 INC 1.0869 V1 30.196
RP 239.73 LAP .69 LOP 207.37 VP 21.517 GAP 13.61 AZP 90.84 TAL 357.12 TAP 137.68 RCA 147.51 APO 264.51 V2 22.912
RC 170.016 GL 9.68 GP 2.58 ZAL 91.32 ZAP 164.03 ETS 169.48 ZAE 156.55 ETE 6.12 ZAC 92.75 ETC 255.84 CLP 164.24

PLANETOCENTRIC CONIC

C3 14.700 VHL 3.834 DLA 17.47 RAL 163.58 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 7.118 DPA -1.21 RAP 192.19 ECC 1.2419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 22	2720.06	-27.78	76.01	25.76	95.70	16 4 42	2120.1	-26.70	67.51
90.00	8 6 26	4210.71	.38	172.58	20.03	61.69	9 16 37	3610.7	-3.40	165.95
100.00	16 50 52	2425.03	-29.07	54.14	25.60	97.31	17 31 17	1825.0	-27.75	45.59
100.00	9 17 38	3980.98	1.51	155.06	19.40	60.14	10 23 59	3381.0	-2.47	148.54
110.00	18 21 24	2141.77	-32.37	31.99	24.95	101.63	18 57 5	1541.8	-30.43	23.31
110.00	10 3 35	3837.00	4.36	142.37	17.63	56.06	11 7 32	3237.0	-.13	136.16

DIFFERENTIAL CORRECTIONS
TDE .2826 TRA-1.1971 TC3 2.8603 BAU .5623
RDE -.2796 RRA -.1266 RC3 .0796 FAU .11147
FDE .0933 FRA .9969 FC3-6.5648 BSP 10079
BDE .3975 BRA 1.2038 BC3 2.8614 FSP 1388

MID-COURSE EXECUTION ACCURACY
SGT 2916.5 SGR 466.6 SG3 455.5
RRT .2420 RRF -.2745 RTF -.9047
SGB 2953.6 R23 -.0517 R13 -.9050
SG1 2918.7 SG2 452.3 THA 2.27

ORBIT DETERMINATION ACCURACY
ST 706.5 SR 422.1 SS 314.6
CRT -.4790 CRS .4000 CST .5940
LSA 759.9 MSA 443.4 SSA 48.3
EL1 744.0 EL2 351.9 ALF 159.16

LAUNCH DATE NOV 29 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 449.949 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.926 GAL -.52 AZL 88.94 HCA 141.50 SMA 204.82 ECC .27976 INC 1.0636 V1 30.196
RP 239.42 LAP .66 LOP 208.32 VP 21.464 GAP 13.08 AZP 90.83 TAL 357.60 TAP 139.10 RCA 147.52 APO 262.12 V2 22.943
RC 172.331 GL 9.60 GP 2.69 ZAL 90.32 ZAP 163.33 ETS 169.50 ZAE 157.06 ETE 6.68 ZAC 92.92 ETC 255.83 CLP 163.54

PLANETOCENTRIC CONIC

C3 14.268 VHL 3.777 DLA 17.78 RAL 162.58 RAD 6567.6 VEL 11.647 PTH 2.04 VHP 6.953 DPA -1.21 RAP 192.46 ECC 1.2348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 14	2725.40	-27.82	76.40	24.38	95.51	15 57 40	2125.4	-26.77	67.89
90.00	8 5 36	4192.15	-.22	171.54	18.70	61.68	9 15 28	3592.1	-4.00	164.91
100.00	16 44 1	2429.44	-29.10	54.47	24.22	97.14	17 24 30	1829.4	-27.81	45.90
100.00	9 16 30	3963.34	.91	154.10	18.07	60.12	10 22 34	3363.3	-3.07	147.57
110.00	18 15 7	2144.37	-32.41	32.18	23.59	101.52	18 50 52	1544.4	-30.48	23.50
110.00	10 1 53	3821.17	3.76	141.54	16.30	56.00	11 5 34	3221.2	-.73	135.33

DIFFERENTIAL CORRECTIONS
TDE .2724 TRA-1.1555 TC3 3.0012 BAU .5728
RDE -.2712 RRA -.1228 RC3 .0982 FAU .11584
FDE .1168 FRA .9796 FC3-7.0288 BSP 10007
BDE .3844 BRA 1.1620 BC3 3.0028 FSP 1463

MID-COURSE EXECUTION ACCURACY
SGT 2949.4 SGR 461.5 SG3 478.4
RRT .2632 RRF -.3022 RTF -.9085
SGB 2985.3 R23 -.0595 R13 -.9089
SG1 2952.0 SG2 444.8 THA 2.41

ORBIT DETERMINATION ACCURACY
ST 693.0 SR 415.6 SS 315.6
CRT -.4772 CRS .4613 CST .5389
LSA 742.3 MSA 446.2 SSA 49.0
EL1 729.8 EL2 346.7 ALF 159.11

LAUNCH DATE NOV 29 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 453.258 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.873 GAL -.42 AZL 88.96 HCA 142.45 SMA 203.70 ECC .27575 INC 1.0394 V1 30.196
RP 239.11 LAP .63 LOP 209.27 VP 21.414 GAP 12.56 AZP 90.82 TAL 358.08 TAP 140.52 RCA 147.53 APO 259.87 V2 22.975
RC 174.639 GL 9.50 GP 2.81 ZAL 89.33 ZAP 162.61 ETS 169.50 ZAE 157.59 ETE 7.29 ZAC 93.09 ETC 255.83 CLP 162.83

PLANETOCENTRIC CONIC

C3 13.867 VHL 3.724 DLA 18.07 RAL 161.57 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 6.793 DPA -1.19 RAP 192.73 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 17	2730.29	-27.85	76.75	23.02	95.33	15 50 48	2130.3	-26.82	68.24
90.00	8 4 33	4174.72	-.78	170.57	17.39	61.69	9 14 7	3574.7	-4.56	163.93
100.00	16 37 21	2433.44	-29.14	54.76	22.86	96.99	17 17 54	1833.4	-27.86	46.19
100.00	9 15 11	3946.80	.35	153.19	16.77	60.11	10 20 57	3346.8	-3.63	146.66
110.00	18 9 0	2146.67	-32.44	32.36	22.23	101.42	18 44 47	1546.7	-30.53	23.66
110.00	10 0 0	3806.33	3.19	140.76	14.99	55.95	11 3 27	3206.3	-1.30	134.56

DIFFERENTIAL CORRECTIONS
TDE .2462 TRA-1.1292 TC3 3.1017 BAU .5755
RDE -.2630 RRA -.1190 RC3 .1193 FAU .12033
FDE .1442 FRA .9627 FC3-7.5122 BSP 10291
BDE .3603 BRA 1.1354 BC3 3.1040 FSP 1544

MID-COURSE EXECUTION ACCURACY
SGT 2969.8 SGR 456.9 SG3 502.2
RRT .2975 RRF -.3339 RTF -.9089
SGB 3004.7 R23 -.0603 R13 -.9093
SG1 2973.0 SG2 435.7 THA 2.68

ORBIT DETERMINATION ACCURACY
ST 670.0 SR 408.8 SS 319.2
CRT -.4434 CRS .5272 CST .5045
LSA 713.9 MSA 453.6 SSA 50.6
EL1 702.8 EL2 349.3 ALF 159.62

LAUNCH DATE NOV 29 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 456.601 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.823 GAL -.31 AZL 88.99 HCA 143.40 SMA 202.64 ECC .27192 INC 1.0138 V1 30.196
RP 238.79 LAP .60 LOP 210.21 VP 21.369 GAP 12.04 AZP 90.81 TAL 358.55 TAP 141.95 RCA 147.54 APO 257.75 V2 23.007
RC 176.939 GL 9.38 GP 2.94 ZAL 88.34 ZAP 161.87 ETS 169.48 ZAE 158.16 ETE 7.96 ZAC 93.26 ETC 255.82 CLP 162.10

PLANETOCENTRIC CONIC

C3 13.496 VHL 3.674 DLA 18.33 RAL 160.57 RAD 6567.5 VEL 11.614 PTH 2.03 VHP 6.636 DPA -1.17 RAP 192.99 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 32	2734.70	-27.88	77.07	21.66	95.17	15 44 6	2134.7	-26.87	68.55
90.00	8 3 16	4158.42	-1.30	169.66	16.10	61.71	9 12 35	3558.4	-5.08	163.01
100.00	16 30 50	2437.02	-29.17	55.02	21.50	96.86	17 11 27	1837.0	-27.91	46.44
100.00	9 13 38	3931.34	-.17	152.34	15.47	60.11	10 19 10	3331.3	-4.15	145.81
110.00	18 3 1	2148.65	-32.47	32.50	20.89	101.33	18 38 49	1548.6	-30.56	23.80
110.00	9 57 58	3792.48	2.66	140.04	13.70	55.91	11 1 10	3192.5	-1.83	133.84

DIFFERENTIAL CORRECTIONS
TDE .2249 TRA-1.0959 TC3 3.2250 BAU .5824
RDE -.2554 RRA -.1153 RC3 .1427 FAU .12522
FDE .1751 FRA .9424 FC3-8.0327 BSP 10365
BDE .3403 BRA 1.1020 BC3 3.2281 FSP 1627

MID-COURSE EXECUTION ACCURACY
SGT 2996.6 SGR 453.3 SG3 527.7
RRT .3311 RRF -.3687 RTF -.9112
SGB 3030.7 R23 -.0643 R13 -.9117
SG1 3000.5 SG2 427.2 THA 2.93

ORBIT DETERMINATION ACCURACY
ST 648.0 SR 402.3 SS 325.2
CRT -.4173 CRS .5949 CST .4562
LSA 686.9 MSA 461.6 SSA 51.7
EL1 678.0 EL2 349.5 ALF 159.93

LAUNCH DATE NOV 29 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 459.974 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.775 GAL -.21 AZL 89.01 HCA 144.35 SMA 201.64 ECC .26828 INC .9872 V1 30.196
RP 238.47 LAP .58 LOP 211.17 VP 21.328 GAP 11.53 AZP 90.80 TAL 359.02 TAP 143.37 RCA 147.55 APO 255.74 V2 23.040
RC 179.231 GL 9.24 GP 3.08 ZAL 87.37 ZAP 161.12 ETS 169.46 ZAE 158.75 ETE 8.71 ZAC 93.44 ETC 255.82 CLP 161.36

PLANETOCENTRIC CONIC

C3 13.150 VHL 3.626 DLA 18.57 RAL 159.56 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 6.482 DPA -1.12 RAP 193.23 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 0	2738.51	-27.90	77.35	20.31	95.04	15 37 38	2138.5	-26.91	68.82
90.00	8 1 45	4143.37	-1.79	168.82	14.81	61.73	9 10 48	3543.4	-5.55	162.17
100.00	16 24 33	2440.06	-29.19	55.24	20.16	96.74	17 5 13	1840.1	-27.95	46.66
100.00	9 11 53	3917.06	-.66	151.56	14.18	60.11	10 17 10	3317.1	-4.63	145.02
110.00	17 57 12	2150.20	-32.49	32.62	19.55	101.27	18 33 2	1550.2	-30.59	23.92
110.00	9 55 44	3779.68	2.17	139.37	12.41	55.88	10 58 43	3179.7	-2.32	133.17

DIFFERENTIAL CORRECTIONS
TDE .2030 TRA-1.0614 TC3 3.3429 BAU .5884
RDE -.2481 RRA -.1117 RC3 .1683 FAU .13021
FDE .2085 FRA .9186 FC3-8.5720 BSP 10574
BDE .3205 BRA 1.0673 BC3 3.3471 FSP 1729

MID-COURSE EXECUTION ACCURACY
SGT 3018.4 SGR 450.7 SG3 553.9
RRT .3673 RRF -.4059 RTF -.9134
SGB 3051.9 R23 -.0687 R13 -.9140
SG1 3023.0 SG2 418.6 THA 3.20

ORBIT DETERMINATION ACCURACY
ST 624.4 SR 395.9 SS 333.4
CRT -.3875 CRS .6596 CST .4082
LSA 658.2 MSA 470.9 SSA 52.8
EL1 651.3 EL2 349.9 ALF 160.29

LAUNCH DATE NOV 29 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 463.377 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.729 GAL -.11 AZL 89.04 HCA 145.30 SMA 200.70 ECC .26481 INC .9593 V1 30.196
RP 238.14 LAP .55 LOP 212.12 VP 21.291 GAP 11.03 AZP 90.79 TAL 359.48 TAP 144.78 RCA 147.55 APO 253.84 V2 23.073
RC 181.513 GL 9.07 GP 3.23 ZAL 86.40 ZAP 160.34 ETS 169.42 ZAE 159.37 ETE 9.54 ZAC 93.63 ETC 255.81 CLP 160.60

PLANETOCENTRIC CONIC

C3 12.830 VHL 3.582 DLA 18.78 RAL 158.55 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 6.333 DPA -1.07 RAP 193.47 ECC 1.2111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 44	2741.61	-27.92	77.57	18.98	94.93	15 31 25	2141.6	-26.94	69.04
90.00	7 59 58	4129.64	-2.23	168.06	13.54	61.76	9 8 47	3529.6	-5.99	161.39
100.00	16 18 30	2442.45	-29.21	55.42	18.83	96.65	16 59 12	1842.5	-27.98	46.83
100.00	9 9 52	3904.03	-1.10	150.84	12.91	60.13	10 14 57	3304.0	-5.07	144.30
110.00	17 51 34	2151.27	-32.50	32.70	18.23	101.22	18 27 25	1551.3	-30.61	23.99
110.00	9 53 18	3767.98	1.73	138.76	11.15	55.86	10 56 6	3168.0	-2.76	132.56

DIFFERENTIAL CORRECTIONS
TDE .1913 TRA-1.0307 TC3 3.4885 BAU .5993
RDE -.2408 RRA -.1083 RC3 .1975 FAU .13594
FDE .2316 FRA .8971 FC3-9.1727 BSP 10702
BDE .3075 BRA 1.0364 BC3 3.4941 FSP 1830

MID-COURSE EXECUTION ACCURACY
SGT 3061.4 SGR 449.3 SG3 583.5
RRT .4031 RRF -.4448 RTF -.9164
SGB 3094.1 R23 -.0750 R13 -.9171
SG1 3066.8 SG2 410.5 THA 3.45

ORBIT DETERMINATION ACCURACY
ST 610.1 SR 389.1 SS 338.5
CRT -.3744 CRS .6998 CST .3682
LSA 640.5 MSA 474.4 SSA 54.0
EL1 635.2 EL2 346.5 ALF 160.58

LAUNCH DATE NOV 29 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 466.804 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.685	GAL	-.01	AZL	89.07	HCA	146.26	SMA	199.80	ECC	.26151	INC	.9299	V1	30.196
RP	237.81	LAP	.52	LOP	213.08	VP	21.258	GAP	10.53	AZP	90.77	TAL	359.93	TAP	146.20	RCA	147.55	APO	252.05	V2	23.106
RC	183.786	GL	8.88	GP	3.39	ZAL	85.44	ZAP	159.55	ETS	169.37	ZAE	160.02	ETE	10.46	ZAC	93.83	ETC	255.81	CLP	159.82

PLANETOCENTRIC CONIC

C3	12.532	VHL	3.540	DLA	18.97	RAL	157.54	RAD	6567.5	VEL	11.572	PTH	2.02	VHP	6.187	DPA	-1.00	RAP	193.70	ECC	1.2062

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 45	2743.90	-27.93	77.74	17.66	94.84	15 25 29	2143.9	-26.97	69.21
90.00	7 57 33	4117.31	-2.63	167.37	12.28	61.80	9 6 30	3517.3	-6.38	160.70
100.00	16 12 43	2444.12	-29.22	55.54	17.51	96.59	16 53 27	1844.1	-28.00	46.95
100.00	9 7 36	3892.32	-1.50	150.20	11.65	60.14	10 12 29	3292.3	-5.46	143.65
110.00	17 46 9	2151.77	-32.51	32.74	16.91	101.20	18 22 1	1551.8	-30.62	24.03
110.00	9 50 39	3757.44	1.32	138.21	9.89	55.84	10 53 17	3157.4	-3.17	132.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1276	TRA	-1.0108	TC3	3.5467	BAU	.5954	SGT	3056.3	SGR	449.5	SG3	606.7	ST	563.6	SR	383.4	SS	366.1
RDE	-.2345	RRA	-.1053	RC3	.2257	FAU	.13986	RRT	.4619	RRF	-.4892	RTF	-.9180	CRT	-.2313	CRS	.7756	CST	.4003
FDE	.2900	FRA	.8856	FC3	-9.6618	BSP	12249	SGB	3089.2	R23	-.0653	R13	-.9186	LSA	591.4	MSA	495.9	SSA	54.7
BDE	.2670	BRA	1.0163	BC3	3.5539	FSP	2064	SG1	3063.5	SG2	397.7	THA	3.95	EL1	575.5	EL2	365.3	ALF	164.82

LAUNCH DATE NOV 29 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 470.264 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.643	GAL	.08	AZL	89.10	HCA	147.22	SMA	198.95	ECC	.25837	INC	.8989	V1	30.196
RP	237.48	LAP	.49	LOP	214.04	VP	21.228	GAP	10.04	AZP	90.76	TAL	.38	TAP	147.60	RCA	147.55	APO	250.36	V2	23.140
RC	186.049	GL	8.67	GP	3.56	ZAL	84.50	ZAP	158.74	ETS	169.30	ZAE	160.70	ETE	11.50	ZAC	94.03	ETC	255.80	CLP	159.02

PLANETOCENTRIC CONIC

C3	12.256	VHL	3.501	DLA	19.12	RAL	156.54	RAD	6567.5	VEL	11.560	PTH	2.02	VHP	6.044	DPA	-.91	RAP	193.92	ECC	1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 8	2745.17	-27.94	77.83	16.35	94.80	15 19 54	2145.2	-26.98	69.30
90.00	7 55 30	4106.56	-2.97	166.77	11.04	61.83	9 3 56	3506.6	-6.72	160.09
100.00	16 7 16	2444.87	-29.23	55.60	16.20	96.56	16 48 1	1844.9	-28.01	47.00
100.00	9 5 3	3882.09	-1.84	149.64	10.41	60.16	10 9 45	3282.1	-5.80	143.09
110.00	17 41 1	2151.55	-32.51	32.72	15.61	101.21	18 16 53	1551.6	-30.62	24.01
110.00	9 47 47	3748.18	.97	137.73	8.65	55.83	10 50 16	3148.2	-3.52	131.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1784	TRA	-.9495	TC3	3.7192	BAU	.6109	SGT	3093.8	SGR	450.1	SG3	643.4	ST	578.6	SR	374.9	SS	338.8
RDE	-.2268	RRA	-.1009	RC3	.2644	FAU	.14754	RRT	.4747	RRF	-.5255	RTF	-.9206	CRT	-.3783	CRS	.7647	CST	.2651
FDE	.2674	FRA	.8197	FC3	-10.4216	BSP	10416	SGB	3126.4	R23	-.0923	R13	-.9215	LSA	605.0	MSA	470.0	SSA	56.9
BDE	.2885	BRA	.9549	BC3	3.7286	FSP	1994	SG1	3101.3	SG2	395.2	THA	4.02	EL1	604.0	EL2	332.4	ALF	159.90

LAUNCH DATE NOV 29 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 473.745 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.603	GAL	.17	AZL	89.13	HCA	148.18	SMA	198.15	ECC	.25539	INC	.8661	V1	30.196
RP	237.15	LAP	.46	LOP	215.00	VP	21.202	GAP	9.56	AZP	90.74	TAL	.82	TAP	149.01	RCA	147.55	APO	248.76	V2	23.174
RC	188.300	GL	8.43	GP	3.74	ZAL	83.58	ZAP	157.90	ETS	169.23	ZAE	161.39	ETE	12.68	ZAC	94.24	ETC	255.80	CLP	158.20

PLANETOCENTRIC CONIC

C3	12.000	VHL	3.464	DLA	19.23	RAL	155.54	RAD	6567.5	VEL	11.549	PTH	2.02	VHP	5.905	DPA	-.80	RAP	194.12	ECC	1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 53	2745.41	-27.94	77.85	15.05	94.79	15 14 39	2145.4	-26.98	69.31
90.00	7 52 46	4097.39	-3.27	166.25	9.80	61.86	9 1 3	3497.4	-7.01	159.57
100.00	16 2 8	2444.71	-29.23	55.58	14.90	96.57	16 42 53	1844.7	-28.01	46.99
100.00	9 2 12	3873.33	-2.14	149.16	9.17	60.18	10 6 45	3273.3	-6.09	142.60
110.00	17 36 8	2150.62	-32.49	32.65	14.31	101.25	18 11 59	1550.6	-30.60	23.95
110.00	9 44 41	3740.18	.66	137.31	7.42	55.82	10 47 2	3140.2	-3.82	131.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1668	TRA	-.9211	TC3	3.8181	BAU	.6145	SGT	3110.8	SGR	453.9	SG3	675.8	ST	562.8	SR	368.0	SS	344.5
RDE	-.2203	RRA	-.0975	RC3	.3030	FAU	.15371	RRT	.5173	RRF	-.5702	RTF	-.9216	CRT	-.3633	CRS	.7958	CST	.2276
FDE	.2905	FRA	.7892	FC3	-11.0897	BSP	10597	SGB	3143.7	R23	-.1004	R13	-.9226	LSA	586.7	MSA	472.5	SSA	58.3
BDE	.2763	BRA	.9262	BC3	3.8301	FSP	2110	SG1	3119.7	SG2	387.3	THA	4.38	EL1	586.4	EL2	329.0	ALF	160.16

LAUNCH DATE NOV 29 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 477.250 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.565	GAL	.25	AZL	89.17	HCA	149.15	SMA	197.39	ECC	.25255	INC	.8313	V1	30.196
RP	236.81	LAP	.43	LOP	215.96	VP	21.179	GAP	9.08	AZP	90.71	TAL	1.25	TAP	150.40	RCA	147.54	APO	247.25	V2	23.209
RC	190.540	GL	8.16	GP	3.94	ZAL	82.67	ZAP	157.04	ETS	169.14	ZAE	162.11	ETE	14.02	ZAC	94.46	ETC	255.79	CLP	157.37

PLANETOCENTRIC CONIC

C3	11.762	VHL	3.430	DLA	19.31	RAL	154.54	RAD	6567.4	VEL	11.539	PTH	2.01	VHP	5.770	DPA	-.67	RAP	194.32	ECC	1.1936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 3	2744.46	-27.94	77.78	13.76	94.82	15 9 47	2144.5	-26.97	69.25
90.00	7 49 40	4089.92	-3.51	165.84	8.58	61.88	8 57 50	3489.9	-7.24	159.15
100.00	15 57 23	2443.47	-29.22	55.49	13.62	96.61	16 38 7	1843.5	-27.99	46.90
100.00	8 59 1	3866.14	-2.38	148.76	7.95	60.19	10 3 27	3266.1	-6.33	142.20
110.00	17 31 33	2148.85	-32.47	32.52	13.02	101.33	18 7 22	1548.9	-30.57	23.82
110.00	9 41 20	3733.52	.41	136.96	6.21	55.82	10 43 34	3133.5	-4.08	130.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1463	TRA	-.8795	TC3	3.9238	BAU	.6194	SGT	3118.8	SGR	460.5	SG3	709.8	ST	533.3	SR	361.7	SS	356.9
RDE	-.2144	RRA	-.0937	RC3	.3458	FAU	.16028	RRT	.5632	RRF	-.6165	RTF	-.9243	CRT	-.3305	CRS	.8387	CST	.1819
FDE	.3274	FRA	.7399	FC3	-11.7977	BSP	10729	SGB	3152.6	R23	-.1066	R13	-.9255	LSA	554.6	MSA	481.1	SSA	59.6
BDE	.2596	BRA	.8845	BC3	3.9390	FSP	2235	SG1	3129.8	SG2	379.2	THA	4.82	EL1	554.5	EL2	328.4	ALF	160.15

LAUNCH DATE NOV 29 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 480.778 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.528	GAL	.34	AZL	89.21	HCA	150.12	SMA	196.68	ECC	.24985	INC	.7943	V1	30.196
RP	236.46	LAP	.40	LOP	216.93	VP	21.159	GAP	8.61	AZP	90.69	TAL	1.68	TAP	151.80	RCA	147.54	APO	245.81	V2	23.244
RC	192.768	GL	7.87	GP	4.15	ZAL	81.78	ZAP	156.16	ETS	169.04	ZAE	162.85	ETE	15.55	ZAC	94.69	ETC	255.79	CLP	156.50

PLANETOCENTRIC CONIC

C3	11.541	VHL	3.397	DLA	19.35	RAL	153.55	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	5.638	DPA	-.52	RAP	194.50	ECC	1.1899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 38	2742.22	-27.92	77.62	12.49	94.90	15 5 20	2142.2	-26.95	69.09
90.00	7 46 11	4084.23	-3.69	165.52	7.36	61.90	8 54 15	3484.2	-7.42	158.82
100.00	15 53 1	2441.07	-29.20	55.32	12.34	96.70	16 33 43	1841.1	-27.96	46.73
100.00	8 55 29	3860.61	-2.57	148.46	6.74	60.21	9 59 50	3260.6	-6.52	141.89
110.00	17 27 17	2146.17	-32.43	32.32	11.74	101.44	18 3 3	1546.2	-30.52	23.63
110.00	9 37 43	3728.27	.21	136.69	5.00	55.82	10 39 51	3128.3	-4.28	130.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1444	TRA	-.8462	TC3	4.0213	BAU	.6234	SGT	3132.4	SGR	469.4	SG3	744.8	ST	521.5	SR	354.6	SS	358.9
RDE	-.2082	RRA	-.0901	RC3	.3924	FAU	.16697	RRT	.6030	RRF	-.6608	RTF	-.9257	CRT	-.3404	CRS	.8579	CST	.1286
FDE	.3444	FRA	.6986	FC-12.5253		BSP	10592	SGB	3167.4	R23	-.1186	R13	-.9271	LSA	545.5	MSA	474.6	SSA	60.9
BDE	.2534	BRA	.8509	BC3	4.0404	FSP	2344	SG1	3145.4	SG2	373.0	THA	5.24	EL1	543.4	EL2	319.9	ALF	159.64

LAUNCH DATE NOV 29 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 484.326 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.493	GAL	.41	AZL	89.24	HCA	151.09	SMA	196.00	ECC	.24728	INC	.7556	V1	30.196
RP	236.12	LAP	.37	LOP	217.90	VP	21.143	GAP	8.15	AZP	90.66	TAL	2.09	TAP	153.18	RCA	147.53	APO	244.46	V2	23.279
RC	194.983	GL	7.54	GP	4.38	ZAL	80.91	ZAP	155.25	ETS	168.92	ZAE	163.60	ETE	17.30	ZAC	94.93	ETC	255.78	CLP	155.62

PLANETOCENTRIC CONIC

C3	11.335	VHL	3.367	DLA	19.35	RAL	152.57	RAD	6567.4	VEL	11.521	PTH	2.01	VHP	5.509	DPA	-.35	RAP	194.68	ECC	1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 44	2738.48	-27.90	77.35	11.22	95.04	15 1 23	2138.5	-26.91	68.82
90.00	7 42 17	4080.50	-3.81	165.31	6.16	61.92	8 50 18	3480.5	-7.54	158.61
100.00	15 49 7	2437.34	-29.17	55.04	11.07	96.85	16 29 45	1837.3	-27.91	46.47
100.00	8 51 35	3856.88	-2.70	148.25	5.54	60.22	9 55 52	3256.9	-6.64	141.69
110.00	17 23 23	2142.44	-32.38	32.04	10.46	101.60	17 59 5	1542.4	-30.45	23.36
110.00	9 33 49	3724.54	.07	136.49	3.81	55.82	10 35 53	3124.5	-4.42	130.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1305	TRA	-.8258	TC3	4.0766	BAU	.6214	SGT	3131.0	SGR	481.9	SG3	780.9	ST	505.7	SR	347.6	SS	365.1
RDE	-.2023	RRA	-.0867	RC3	.4435	FAU	.17377	RRT	.6472	RRF	-.7050	RTF	-.9249	CRT	-.3114	CRS	.8766	CST	.1130
FDE	.3661	FRA	.6621	FC-13.2722		BSP	10811	SGB	3167.8	R23	-.1288	R13	-.9265	LSA	528.4	MSA	476.2	SSA	62.6
BDE	.2407	BRA	.8303	BC3	4.1007	FSP	2483	SG1	3146.7	SG2	365.5	THA	5.77	EL1	524.6	EL2	318.4	ALF	160.48

LAUNCH DATE NOV 29 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 487.896 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.460	GAL	.49	AZL	89.29	HCA	152.06	SMA	195.35	ECC	.24484	INC	.7135	V1	30.196
RP	235.77	LAP	.33	LOP	218.88	VP	21.129	GAP	7.69	AZP	90.63	TAL	2.50	TAP	154.56	RCA	147.52	APO	243.18	V2	23.315
RC	197.185	GL	7.17	GP	4.63	ZAL	80.06	ZAP	154.32	ETS	168.79	ZAE	164.36	ETE	19.33	ZAC	95.19	ETC	255.78	CLP	154.71

PLANETOCENTRIC CONIC

C3	11.144	VHL	3.338	DLA	19.31	RAL	151.60	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	5.383	DPA	-.15	RAP	194.84	ECC	1.1834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 20	2733.19	-27.87	76.96	9.96	95.23	14 57 53	2133.2	-26.85	68.44
90.00	7 37 56	4078.76	-3.87	165.21	4.96	61.93	8 45 55	3478.8	-7.59	158.51
100.00	15 45 41	2432.21	-29.13	54.67	9.81	97.04	16 26 13	1832.2	-27.85	46.10
100.00	8 47 17	3854.98	-2.76	148.15	4.35	60.22	9 51 32	3255.0	-6.70	141.58
110.00	17 19 51	2137.60	-32.32	31.68	9.19	101.80	17 55 28	1537.6	-30.35	23.01
110.00	9 29 36	3722.36	-.02	136.38	2.64	55.82	10 31 39	3122.4	-4.50	130.17

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1222	TRA	-.7927	TC3	4.1537	BAU	.6233	SGT	3132.6	SGR	498.1	SG3	819.4	ST	487.8	SR	340.4	SS	367.9
RDE	-.1965	RRA	-.0828	RC3	.5005	FAU	.18116	RRT	.6877	RRF	-.7471	RTF	-.9261	CRT	-.3032	CRS	.8934	CST	.0735
FDE	.3848	FRA	.6077	FC-14.0737		BSP	10894	SGB	3171.9	R23	-.1401	R13	-.9279	LSA	516.5	MSA	467.2	SSA	64.4
BDE	.2314	BRA	.7970	BC3	4.1837	FSP	2622	SG1	3151.5	SG2	359.4	THA	6.32	EL1	506.0	EL2	312.7	ALF	160.24

LAUNCH DATE NOV 29 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 491.486 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.428	GAL	.56	AZL	89.33	HCA	153.04	SMA	194.74	ECC	.24252	INC	.6689	V1	30.196
RP	235.42	LAP	.30	LOP	219.85	VP	21.119	GAP	7.24	AZP	90.60	TAL	2.89	TAP	155.93	RCA	147.51	APO	241.97	V2	23.351
RC	199.372	GL	6.77	GP	4.90	ZAL	79.23	ZAP	153.36	ETS	168.65	ZAE	165.13	ETE	21.69	ZAC	95.46	ETC	255.77	CLP	153.78

PLANETOCENTRIC CONIC

C3	10.967	VHL	3.312	DLA	19.22	RAL	150.64	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	5.261	DPA	.07	RAP	194.99	ECC	1.1805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 29	2726.21	-27.83	76.46	8.71	95.48	14 54 56	2126.2	-26.77	67.95
90.00	7 33 7	4079.15	-3.85	165.23	3.78	61.92	8 41 6	3479.1	-7.58	158.53
100.00	15 42 44	2425.54	-29.07	54.18	8.56	97.29	16 23 9	1825.5	-27.76	45.62
100.00	8 42 33	3855.04	-2.76	148.15	3.17	60.22	9 46 48	3255.0	-6.70	141.58
110.00	17 16 42	2131.54	-32.23	31.23	7.93	102.06	17 52 14	1531.5	-30.24	22.58
110.00	9 25 4	3721.81	-.04	136.35	1.47	55.82	10 27 6	3121.8	-4.52	130.14

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1168	TRA	-.7613	TC3	4.2233	BAU	.6247	SGT	3132.2	SGR	518.5	SG3	859.6	ST	472.3	SR	333.1	SS	368.4
RDE	-.1908	RRA	-.0787	RC3	.5632	FAU	.18884	RRT	.7252	RRF	-.7863	RTF	-.9270	CRT	-.3030	CRS	.9055	CST	.0315
FDE	.3992	FRA	.5512	FC-14.9075		BSP	10881	SGB	3174.8	R23	-.1530	R13	-.9291	LSA	509.9	MSA	453.0	SSA	66.3
BDE	.2237	BRA	.7654	BC3	4.2606	FSP	2760	SG1	3155.0	SG2	354.4	THA	6.93	EL1	490.5	EL2	305.6	ALF	159.82

LAUNCH DATE NOV. 29 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 495.095 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.398 GAL .63 AZL 89.38 HCA 154.02 SMA 194.17 ECC .24032 INC .6211 V1 30.196
RP 235.06 LAP .27 LOP 220.83 VP 21.111 GAP 6.80 AZP 90.56 TAL 3.27 TAP 157.29 RCA 147.50 APO 240.83 V2 23.387
RC 201.544 GL 6.32 GP 5.19 ZAL 78.43 ZAP 152.37 ETS 168.49 ZAE 165.89 ETE 24.45 ZAC 95.75 ETC 255.76 CLP 152.83

PLANETOCENTRIC CONIC

C3 10.801 VHL 3.287 DLA 19.08 RAL 149.69 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.143 DPA .33 RAP 195.13 ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 14	2717.37	-27.77	75.82	7.47	95.79	14 52 31	2117.4	-26.67	67.32
90.00	7 27 47	4081.77	-3.77	165.38	2.60	61.91	8 35 48	3481.8	-7.50	158.68
100.00	15 40 19	2417.20	-29.00	53.57	7.31	97.60	16 20 36	1817.2	-27.64	45.03
100.00	8 37 23	3857.17	-2.69	148.27	2.00	60.22	9 41 40	3257.2	-6.63	141.70
110.00	17 13 59	2124.13	-32.12	30.67	6.67	102.37	17 49 23	1524.1	-30.09	22.05
110.00	9 20 11	3723.02	.01	136.41	.31	55.82	10 22 14	3123.0	-4.48	130.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1157 TRA -.7334 TC3 4.2753 BAU .6241 SGT 3125.4 SGR 543.4 SG3 901.0 ST 461.0 SR 325.0 SS 362.4
RDE -.1848 RRA -.0746 RC3 .6321 FAU .19673 RRT .7589 RRF -.8220 RTF -.9271 CRT -.3146 CRS .9112 CST -.0121
FDE .4031 FRA .4940 FC-15.7680 BSP 10919 SGB 3172.3 R23 -.1680 R13 -.9297 LSA 505.0 MSA 435.6 SSA 68.7
BDE .2180 BRA .7372 BC3 4.3218 FSP 2910 SG1 3152.8 SG2 350.8 THA 7.61 EL1 479.9 EL2 296.3 ALF 159.30

LAUNCH DATE NOV 29 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 498.722 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.369 GAL .70 AZL 89.43 HCA 155.00 SMA 193.62 ECC .23823 INC .5689 V1 30.196
RP 234.71 LAP .24 LOP 221.81 VP 21.106 GAP 6.36 AZP 90.52 TAL 3.65 TAP 158.65 RCA 147.49 APO 239.75 V2 23.424
RC 203.699 GL 5.83 GP 5.51 ZAL 77.65 ZAP 151.35 ETS 168.32 ZAE 166.63 ETE 27.68 ZAC 96.06 ETC 255.75 CLP 151.84

PLANETOCENTRIC CONIC

C3 10.648 VHL 3.263 DLA 18.88 RAL 148.75 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.027 DPA .62 RAP 195.26 ECC 1.1752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 35	2706.55	-27.69	75.03	6.23	96.18	14 50 42	2106.5	-26.54	66.55
90.00	7 21 54	4086.77	-3.61	165.66	1.43	61.90	8 30 1	3486.8	-7.34	158.97
100.00	15 38 28	2407.06	-28.90	52.83	6.06	97.98	16 18 35	1807.1	-27.50	44.31
100.00	8 31 43	3861.49	-2.54	148.51	.83	60.21	9 36 5	3261.5	-6.49	141.94
110.00	17 11 44	2115.25	-31.99	30.02	5.40	102.74	17 46 59	1515.3	-29.91	21.42
110.00	9 14 56	3726.06	.12	136.57	359.17	55.82	10 17 2	3126.1	-4.36	130.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1133 TRA -.7016 TC3 4.3185 BAU .6230 SGT 3110.9 SGR 573.8 SG3 944.3 ST 446.4 SR 316.7 SS 355.5
RDE -.1788 RRA -.0699 RC3 .7085 FAU .20501 RRT .7897 RRF -.8540 RTF -.9276 CRT -.3260 CRS .9162 CST -.0609
FDE .4059 FRA .4227 FC-16.6684 BSP 10939 SGB 3163.4 R23 -.1829 R13 -.9307 LSA 498.4 MSA 415.2 SSA 71.6
BDE .2117 BRA .7051 BC3 4.3762 FSP 3064 SG1 3144.1 SG2 348.3 THA 8.39 EL1 466.3 EL2 286.6 ALF 158.52

LAUNCH DATE NOV 29 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 502.367 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.341 GAL .77 AZL 89.49 HCA 155.99 SMA 193.10 ECC .23625 INC .5131 V1 30.196
RP 234.35 LAP .21 LOP 222.80 VP 21.103 GAP 5.93 AZP 90.47 TAL 4.01 TAP 159.99 RCA 147.48 APO 238.72 V2 23.461
RC 205.837 GL 5.29 GP 5.86 ZAL 76.90 ZAP 150.30 ETS 168.13 ZAE 167.35 ETE 31.49 ZAC 96.39 ETC 255.74 CLP 150.83

PLANETOCENTRIC CONIC

C3 10.505 VHL 3.241 DLA 18.63 RAL 147.82 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 4.915 DPA .95 RAP 195.38 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 36	2693.59	-27.59	74.10	4.99	96.64	14 49 29	2093.6	-26.38	65.64
90.00	7 15 28	4094.26	-3.37	166.08	.26	61.87	8 23 42	3494.3	-7.11	159.39
100.00	15 37 12	2394.96	-28.79	51.95	4.81	98.43	16 17 7	1795.0	-27.32	43.46
100.00	8 25 32	3868.12	-2.32	148.87	359.68	60.19	9 30 1	3268.1	-6.27	142.31
110.00	17 9 57	2104.78	-31.83	29.24	4.14	103.17	17 45 2	1504.8	-29.69	20.68
110.00	9 9 17	3731.07	.32	136.83	358.03	55.82	10 11 28	3131.1	-4.17	130.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1165 TRA -.6755 TC3 4.3590 BAU .6223 SGT 3100.8 SGR 610.1 SG3 990.0 ST 438.7 SR 307.4 SS 341.1
RDE -.1725 RRA -.0652 RC3 .7934 FAU .21372 RRT .8160 RRF -.8820 RTF -.9275 CRT -.3535 CRS .9136 CST -.1130
FDE .3954 FRA .3548 FC-17.6128 BSP 10879 SGB 3160.2 R23 -.1998 R13 -.9312 LSA 492.9 MSA 393.4 SSA 75.3
BDE .2081 BRA .6786 BC3 4.4307 FSP 3217 SG1 3141.0 SG2 348.2 THA 9.24 EL1 460.3 EL2 274.1 ALF 157.89

LAUNCH DATE NOV 29 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 506.028 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.315 GAL .83 AZL 89.55 HCA 156.97 SMA 192.61 ECC .23437 INC .4534 V1 30.196
RP 233.98 LAP .18 LOP 223.79 VP 21.104 GAP 5.51 AZP 90.42 TAL 4.35 TAP 161.33 RCA 147.47 APO 237.75 V2 23.498
RC 207.958 GL 4.69 GP 6.24 ZAL 76.17 ZAP 149.22 ETS 167.92 ZAE 168.01 ETE 35.97 ZAC 96.75 ETC 255.73 CLP 149.79

PLANETOCENTRIC CONIC

C3 10.373 VHL 3.221 DLA 18.30 RAL 146.89 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 4.807 DPA 1.32 RAP 195.49 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 17	2678.32	-27.47	73.00	3.75	97.18	14 48 56	2078.3	-26.19	64.57
90.00	7 8 24	4104.40	-3.04	166.65	359.10	61.83	8 16 49	3504.4	-6.79	159.97
100.00	15 36 34	2380.74	-28.64	50.92	3.56	98.95	16 16 15	1780.7	-27.10	42.45
100.00	8 18 48	3877.22	-2.01	149.37	358.53	60.17	9 23 26	3277.2	-5.96	142.82
110.00	17 8 41	2092.55	-31.64	28.34	2.87	103.67	17 43 34	1492.5	-29.44	19.82
110.00	9 3 11	3738.17	.59	137.20	356.90	55.82	10 5 29	3138.2	-3.90	131.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1188 TRA -.6458 TC3 4.3799 BAU .6197 SGT 3077.1 SGR 652.6 SG3 1036.2 ST 428.5 SR 297.8 SS 325.9
RDE -.1660 RRA -.0597 RC3 .8866 FAU .22251 RRT .8387 RRF -.9059 RTF -.9275 CRT -.3823 CRS .9088 CST -.1705
FDE .3826 FRA .2750 FC-18.5708 BSP 10844 SGB 3145.6 R23 -.2163 R13 -.9321 LSA 485.9 MSA 368.9 SSA 79.5
BDE .2042 BRA .6486 BC3 4.4687 FSP 3384 SG1 3126.1 SG2 349.9 THA 10.22 EL1 451.9 EL2 260.9 ALF 157.11

LAUNCH DATE NOV 29 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 509.706 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.290 GAL .88 AZL 89.61 HCA 157.97 SMA 192.15 ECC .23259 INC .3867 V1 30.196
RP 233.62 LAP .15 LOP 224.78 VP 21.106 GAP 5.09 AZP 90.36 TAL 4.69 TAP 162.66 RCA 147.46 APO 236.84 V2 23.536
RC 210.060 GL 4.03 GP 6.65 ZAL 75.47 ZAP 148.09 ETS 167.69 ZAE 168.59 ETE 41.20 ZAC 97.14 ETC 255.72 CLP 148.72

PLANETOCENTRIC CONIC

C3 10.251 VHL 3.202 DLA 17.91 RAL 145.98 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.701 DPA 1.73 RAP 195.59 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 42	2660.57	-27.31	71.72	2.51	97.80	14 49 3	2060.6	-25.95	63.32
90.00	7 0 42	4117.37	-2.63	167.37	357.95	61.80	8 9 19	3517.4	-6.38	160.70
100.00	15 36 36	2364.22	-28.46	49.73	2.31	99.56	16 16 1	1764.2	-26.84	41.30
100.00	8 11 29	3888.96	-1.61	150.02	357.38	60.15	9 16 18	3289.0	-5.57	143.47
110.00	17 7 58	2078.40	-31.41	27.30	1.59	104.24	17 42 36	1478.4	-29.13	18.84
110.00	8 56 37	3747.54	.95	137.69	355.78	55.83	9 59 4	3147.5	-3.54	131.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1231 TRA -.6207 TC3 4.4002 BAU .6181 SGT 3057.8 SGR 703.1 SG3 1085.7 ST 422.2 SR 286.8 SS 304.2
RDE -.1590 RRA -.0539 RC3 .9916 FAU .23195 RRT .8580 RRF -.9262 RTF -.9272 CRT -.4162 CRS .8944 CST -.2236
FDE .3567 FRA .1926 FC-19.5902 BSP 10796 SGB 3137.6 R23 -.2332 R13 -.9328 LSA 478.0 MSA 342.6 SSA 85.2
BDE .2011 BRA .6230 BC3 4.5106 FSP 3552 SG1 3117.5 SG2 354.2 THA 11.31 EL1 447.1 EL2 246.3 ALF 156.81

LAUNCH DATE NOV 29 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 513.400 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.266 GAL .94 AZL 89.68 HCA 158.96 SMA 191.71 ECC .23090 INC .3150 V1 30.196
RP 233.25 LAP .11 LOP 225.77 VP 21.111 GAP 4.68 AZP 90.29 TAL 5.01 TAP 163.97 RCA 147.44 APO 235.97 V2 23.574
RC 212.144 GL 3.30 GP 7.12 ZAL 74.79 ZAP 146.93 ETS 167.43 ZAE 169.07 ETE 47.25 ZAC 97.57 ETC 255.71 CLP 147.62

PLANETOCENTRIC CONIC

C3 10.138 VHL 3.184 DLA 17.43 RAL 145.07 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.600 DPA 2.19 RAP 195.69 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 53	2640.13	-27.11	70.26	1.25	98.50	14 49 53	2040.1	-25.66	61.89
90.00	6 52 16	4133.37	-2.11	168.26	356.80	61.76	8 1 10	3533.4	-5.87	161.60
100.00	15 37 21	2345.19	-28.24	48.36	1.05	100.25	16 16 26	1745.2	-26.53	39.97
100.00	8 3 30	3903.54	-1.12	150.82	356.24	60.13	9 8 34	3303.5	-5.08	144.27
110.00	17 7 49	2062.13	-31.13	26.12	.30	104.89	17 42 11	1462.1	-28.77	17.71
110.00	8 49 31	3759.37	1.40	138.31	354.67	55.84	9 52 10	3159.4	-3.09	132.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1312 TRA -.5935 TC3 4.4018 BAU .6152 SGT 3027.5 SGR 761.1 SG3 1135.7 ST 419.1 SR 274.2 SS 276.2
RDE -.1512 RRA -.0472 RC3 1.1074 FAU .24146 RRT .8732 RRF -.9427 RTF -.9267 CRT -.4656 CRS .8651 CST -.2842
FDE .3167 FRA .0984 FC-20.6207 BSP 10750 SGB 3121.7 R23 -.2498 R13 -.9335 LSA 471.7 MSA 309.8 SSA 92.9
BDE .2002 BRA .5954 BC3 4.5389 FSP 3731 SG1 3100.6 SG2 362.1 THA 12.55 EL1 445.9 EL2 228.1 ALF 156.59

LAUNCH DATE NOV 29 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 517.110 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.244 GAL .99 AZL 89.76 HCA 159.96 SMA 191.29 ECC .22929 INC .2356 V1 30.196
RP 232.88 LAP .08 LOP 226.77 VP 21.118 GAP 4.28 AZP 90.22 TAL 5.32 TAP 165.28 RCA 147.43 APO 235.16 V2 23.612
RC 214.210 GL 2.49 GP 7.63 ZAL 74.15 ZAP 145.73 ETS 167.15 ZAE 169.40 ETE 54.10 ZAC 98.04 ETC 255.69 CLP 146.49

PLANETOCENTRIC CONIC

C3 10.034 VHL 3.168 DLA 16.87 RAL 144.17 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.502 DPA 2.71 RAP 195.78 ECC 1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 52	2616.75	-26.86	68.59	359.99	99.31	14 51 29	2016.7	-25.30	60.27
90.00	6 43 5	4152.65	-1.49	169.34	355.65	61.72	7 52 18	3552.7	-5.26	162.69
100.00	15 38 50	2323.42	-27.96	46.80	359.77	101.02	16 17 33	1723.4	-26.16	38.46
100.00	7 54 49	3921.21	-.52	151.78	355.11	60.11	9 0 10	3321.2	-4.49	145.25
110.00	17 8 18	2043.51	-30.80	24.77	359.00	105.63	17 42 21	1443.5	-28.34	16.43
110.00	8 41 50	3773.89	1.95	139.07	353.57	55.87	9 44 44	3173.9	-2.54	132.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1406 TRA -.5694 TC3 4.3887 BAU .6117 SGT 2992.3 SGR 828.2 SG3 1187.4 ST 419.4 SR 259.8 SS 244.8
RDE -.1425 RRA -.0399 RC3 1.2367 FAU .25128 RRT .8853 RRF -.9562 RTF -.9257 CRT -.5167 CRS .8091 CST -.3278
FDE .2630 FRA .0005 FC-21.6801 BSP 10707 SGB 3104.8 R23 -.2658 R13 -.9342 LSA 466.1 MSA 274.7 SSA 103.1
BDE .2002 BRA .5708 BC3 4.5597 FSP 3917 SG1 3082.2 SG2 374.0 THA 13.98 EL1 447.1 EL2 208.7 ALF 156.96

LAUNCH DATE NOV 29 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 520.834 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.222 GAL 1.04 AZL 89.85 HCA 160.96 SMA 190.90 ECC .22778 INC .1480 V1 30.196
RP 232.51 LAP .05 LOP 227.77 VP 21.128 GAP 3.89 AZP 90.14 TAL 5.62 TAP 166.58 RCA 147.42 APO 234.38 V2 23.650
RC 216.258 GL 1.58 GP 8.19 ZAL 73.54 ZAP 144.49 ETS 166.85 ZAE 169.53 ETE 61.61 ZAC 98.56 ETC 255.67 CLP 145.32

PLANETOCENTRIC CONIC

C3 9.940 VHL 3.153 DLA 16.20 RAL 143.27 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.408 DPA 3.30 RAP 195.86 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 43	2590.15	-26.56	66.71	358.70	100.20	14 53 53	1990.2	-24.88	58.44
90.00	6 33 4	4175.51	-.75	170.61	354.51	61.69	7 42 39	3575.5	-4.53	163.97
100.00	15 41 7	2298.62	-27.63	45.03	358.47	101.90	16 19 26	1698.6	-25.71	36.75
100.00	7 45 21	3942.27	.20	152.94	353.98	60.11	8 51 3	3342.3	-3.78	146.41
110.00	17 9 26	2022.27	-30.40	23.24	357.67	106.45	17 43 9	1422.3	-27.84	14.98
110.00	8 33 31	3791.39	2.62	139.98	352.47	55.91	9 36 42	3191.4	-1.87	133.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1537 TRA -.5450 TC3 4.3585 BAU .6076 SGT 2948.7 SGR 905.1 SG3 1239.8 ST 424.9 SR 242.5 SS 210.5
RDE -.1323 RRA -.0313 RC3 1.3806 FAU .26119 RRT .8942 RRF -.9669 RTF -.9244 CRT -.5775 CRS .6878 CST -.3362
FDE .1877 FRA -.1089 FC-22.7480 BSP 10615 SGB 3084.5 R23 -.2801 R13 -.9350 LSA 463.5 MSA 234.4 SSA 117.6
BDE .2028 BRA .5459 BC3 4.5720 FSP 4101 SG1 3059.7 SG2 390.4 THA 15.61 EL1 452.5 EL2 185.9 ALF 157.83

LAUNCH DATE NOV 29 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 524.572 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.202 GAL 1.09 AZL 89.95 HCA 161.96 SMA 190.53 ECC .22634 INC .0453 V1 30.196
RP 232.14 LAP .02 LOP 228.78 VP 21.139 GAP 3.50 AZP 90.05 TAL 5.90 TAP 167.87 RCA 147.41 APO 233.66 V2 23.689
RC 218.287 GL .56 GP 8.83 ZAL 72.96 ZAP 143.19 ETS 166.51 ZAE 169.44 ETE 69.54 ZAC 99.13 ETC 255.65 CLP 144.12

PLANETOCENTRIC CONIC

C3 9.857 VHL 3.140 DLA 15.42 RAL 142.37 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.318 DPA 3.95 RAP 195.94 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 28	2560.00	-26.18	64.58	357.39	101.20	14 57 8	1960.0	-24.37	56.38
90.00	6 22 7	4202.31	.11	172.11	353.37	61.68	7 32 9	3602.3	-3.67	165.48
100.00	15 44 16	2270.45	-27.21	43.04	357.15	102.87	16 22 6	1670.4	-25.17	34.83
100.00	7 35 1	3967.10	1.04	154.30	352.85	60.12	8 41 8	3367.1	-2.94	147.78
110.00	17 11 18	1998.09	-29.92	21.52	356.32	107.37	17 44 36	1398.1	-27.25	13.35
110.00	8 24 28	3812.21	3.42	141.07	351.37	55.97	9 28 0	3212.2	-1.07	134.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1701 TRA -.5220 TC3 4.3247 BAU .6051 SGT 2906.4 SGR 994.5 SG3 1294.8 ST 436.9 SR 221.4 SS 184.6
RDE -.1201 RRA -.0215 RC3 1.5435 FAU .27161 RRT .9009 RRF -.9753 RTF -.9230 CRT -.6415 CRS .4289 CST -.2401
FDE .0887 FRA -.2271 FC-23.8556 BSP 10539 SGB 3071.8 R23 -.2917 R13 -.9363 LSA 466.3 MSA 195.3 SSA 135.7
BDE .2083 BRA .5224 BC3 4.5919 FSP 4292 SG1 3044.1 SG2 412.0 THA 17.46 EL1 462.9 EL2 160.4 ALF 159.41

LAUNCH DATE NOV 29 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 528.325 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.182 GAL 1.13 AZL 90.06 HCA 162.97 SMA 190.18 ECC .22498 INC .0495 V1 30.196
RP 231.76 LAP -.02 LOP 229.78 VP 21.153 GAP 3.11 AZP 89.95 TAL 6.17 TAP 169.14 RCA 147.39 APO 232.97 V2 23.728
RC 220.299 GL -.58 GP 9.54 ZAL 72.41 ZAP 141.85 ETS 166.14 ZAE 169.09 ETE 77.49 ZAC 99.77 ETC 255.63 CLP 142.89

PLANETOCENTRIC CONIC

C3 9.785 VHL 3.128 DLA 14.51 RAL 141.46 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.232 DPA 4.69 RAP 196.03 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 14	2525.88	-25.70	62.20	356.06	102.31	15 1 19	1925.9	-23.75	54.07
90.00	6 10 8	4233.53	1.12	173.85	352.24	61.70	7 20 41	3633.5	-2.67	167.22
100.00	15 48 20	2238.50	-26.71	40.80	355.79	103.94	16 25 39	1638.5	-24.53	32.67
100.00	7 23 42	3996.15	2.03	155.90	351.73	60.17	8 30 18	3396.1	-1.96	149.38
110.00	17 13 58	1970.59	-29.34	19.59	354.93	108.38	17 46 48	1370.6	-26.55	11.51
110.00	8 14 34	3836.82	4.35	142.36	350.29	56.06	9 18 31	3236.8	-.13	136.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1869 TRA -.5011 TC3 4.2569 BAU .6008 SGT 2847.6 SGR 1095.9 SG3 1348.4 ST 452.2 SR 196.4 SS 187.4
RDE -.1057 RRA -.0102 RC3 1.7238 FAU .28170 RRT .9050 RRF -.9818 RTF -.9205 CRT -.6987 CRS .0267 CST .0007
FDE -.0318 FRA -.3541 FC-24.9232 BSP 10471 SGB 3051.2 R23 -.3013 R13 -.9374 LSA 474.5 MSA 187.5 SSA 133.7
BDE .2147 BRA .5012 BC3 4.5927 FSP 4487 SG1 3019.3 SG2 439.7 THA 19.64 EL1 474.5 EL2 133.9 ALF 161.60

LAUNCH DATE NOV 29 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 532.091 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.164 GAL 1.17 AZL -90.18 HCA 163.98 SMA 189.85 ECC .22369 INC .1727 V1 30.196
RP 231.38 LAP -.05 LOP 230.79 VP 21.168 GAP 2.74 AZP 89.83 TAL 6.43 TAP 170.41 RCA 147.38 APO 232.32 V2 23.768
RC 222.292 GL -1.88 GP 10.34 ZAL 71.91 ZAP 140.45 ETS 165.73 ZAE 168.46 ETE 85.08 ZAC 100.50 ETC 255.60 CLP 141.61

PLANETOCENTRIC CONIC

C3 9.727 VHL 3.119 DLA 13.43 RAL 140.54 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.151 DPA 5.53 RAP 196.13 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 4	2487.27	-25.12	59.52	354.68	103.53	15 6 31	1887.3	-23.01	51.48
90.00	5 56 58	4269.77	2.29	175.87	351.11	61.77	7 8 8	3669.8	-1.50	169.25
100.00	15 53 26	2202.27	-26.09	38.28	354.41	105.13	16 30 9	1602.3	-23.76	30.26
100.00	7 11 17	4030.01	3.17	157.76	350.62	60.26	8 18 27	3430.0	-.81	151.23
110.00	17 17 29	1939.29	-28.65	17.41	353.51	109.50	17 49 48	1339.3	-25.72	9.46
110.00	8 3 43	3865.75	5.45	143.88	349.21	56.20	9 8 9	3265.8	.97	137.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2083 TRA -.4814 TC3 4.1810 BAU .5987 SGT 2788.3 SGR 1213.6 SG3 1403.7 ST 476.4 SR 164.8 SS 237.0
RDE -.0875 RRA .0033 RC3 1.9285 FAU .29209 RRT .9072 RRF -.9868 RTF -.9178 CRT -.7542 CRS -.3490 CST .3023
FDE -.1899 FRA -.4939 FC-25.9977 BSP 10402 SGB 3040.9 R23 -.3069 R13 -.9394 LSA 500.0 MSA 223.0 SSA 102.5
BDE .2259 BRA .4814 BC3 4.6043 FSP 4678 SG1 3003.8 SG2 473.9 THA 22.13 EL1 493.1 EL2 104.6 ALF 164.67

LAUNCH DATE NOV 29 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 535.870 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.147 GAL 1.21 AZL 90.31 HCA 164.99 SMA 189.54 ECC .22248 INC .3131 V1 30.196
RP 231.01 LAP -.08 LOP 231.81 VP 21.185 GAP 2.37 AZP 89.70 TAL 6.67 TAP 171.66 RCA 147.37 APO 231.70 V2 23.807
RC 224.266 GL -3.35 GP 11.25 ZAL 71.44 ZAP 138.99 ETS 165.27 ZAE 167.55 ETE 91.98 ZAC 101.32 ETC 255.56 CLP 140.30

PLANETOCENTRIC CONIC

C3 9.685 VHL 3.112 DLA 12.18 RAL 139.61 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.075 DPA 6.48 RAP 196.24 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 7	2443.54	-24.39	56.52	353.27	104.86	15 12 50	1843.5	-22.11	48.59
90.00	5 42 27	4311.80	3.64	178.22	350.00	61.90	6 54 19	3711.8	-.15	171.59
100.00	15 59 41	2161.13	-25.33	35.46	352.98	106.43	16 35 42	1561.1	-22.84	27.55
100.00	6 57 34	4069.44	4.50	159.93	349.52	60.42	8 5 23	3469.4	.53	153.40
110.00	17 21 58	1903.61	-27.82	14.97	352.05	110.72	17 53 42	1303.6	-24.74	7.15
110.00	7 51 45	3899.73	6.73	145.67	348.14	56.41	8 56 45	3299.7	2.27	139.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2306 TRA -.4612 TC3 4.0817 BAU .5978 SGT 2718.2 SGR 1348.7 SG3 1457.5 ST 503.9 SR 127.1 SS 329.1
RDE -.0652 RRA .0197 RC3 2.1574 FAU .30214 RRT .9079 RRF -.9905 RTF -.9146 CRT -.7929 CRS -.4982 CST .5060
FDE -.3782 FRA -.6497 FC-27.0093 BSP 10342 SGB 3034.4 R23 -.3075 R13 -.9423 LSA 550.2 MSA 264.8 SSA 74.8
BDE .2396 BRA .4616 BC3 4.6168 FSP 4869 SG1 2990.5 SG2 514.0 THA 25.04 EL1 514.1 EL2 75.9 ALF 168.43

LAUNCH DATE NOV 29 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 539.664 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.130	GAL	1.25	AZL	90.47	HCA	166.01	SMA	189.24	ECC	.22133	INC	.4718	V1	30.196
RP	230.62	LAP	-.11	LOP	232.82	VP	21.204	GAP	2.01	AZP	89.54	TAL	6.89	TAP	172.91	RCA	147.36	APO	231.13	V2	23.847
RC	226.222	GL	-5.04	GP	12.29	ZAL	71.02	ZAP	137.45	ETS	164.76	ZAE	166.35	ETE	98.01	ZAC	102.25	ETC	255.51	CLP	138.94

PLANETOCENTRIC CONIC

C3	9.664	VHL	3.109	DLA	10.71	RAL	138.64	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	4.005	DPA	7.56	RAP	196.37	ECC	1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 30	2393.90	-23.48	53.17	351.81	106.30	15 20 24	1793.9	-21.02	45.36
90.00	5 26 20	4360.61	5.20	180.96	348.90	62.13	6 39 0	3760.6	1.43	174.31
100.00	16 7 11	2114.32	-24.39	32.30	351.51	107.84	16 42 25	1514.3	-21.72	24.52
100.00	6 42 20	4115.42	6.04	162.48	348.44	60.67	7 50 55	3515.4	2.08	155.92
110.00	17 27 33	1862.84	-26.80	12.23	350.53	112.06	17 58 36	1262.8	-23.57	4.56
110.00	7 38 27	3939.66	8.23	147.80	347.10	56.71	8 44 7	3339.7	3.79	141.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2722	TRA	-.4291	TC3	4.0224	BAU	.6070	SGT	2674.7	SGR	1512.5	SG3	1518.1	ST	561.8	SR	79.8	SS	481.7
RDE	-.0332	RRA	.0422	RC3	2.4273	FAU	.31344	RRT	.9096	RRF	-.9933	RTF	-.9144	CRT	-.7377	CRS	-.3450	CST	.6708
FDE	-.6499	FRA	-.8505	FC	-28.0779	BSP	9990	SGB	3072.7	R23	-.2969	R13	-.9483	LSA	680.2	MSA	297.9	SSA	50.9
BDE	.2742	BRA	.4312	BC3	4.5980	FSP	4987	SG1	3022.0	SG2	556.0	THA	28.26	EL1	564.9	EL2	53.6	ALF	173.96

LAUNCH DATE NOV 29 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 543.468 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.115	GAL	1.28	AZL	90.66	HCA	167.03	SMA	188.96	ECC	.22024	INC	.6543	V1	30.196
RP	230.24	LAP	-.15	LOP	233.85	VP	21.225	GAP	1.65	AZP	89.36	TAL	7.10	TAP	174.14	RCA	147.35	APO	230.58	V2	23.887
RC	228.159	GL	-7.00	GP	13.48	ZAL	70.67	ZAP	135.84	ETS	164.20	ZAE	164.86	ETE	103.06	ZAC	103.34	ETC	255.45	CLP	137.54

PLANETOCENTRIC CONIC

C3	9.672	VHL	3.110	DLA	8.97	RAL	137.63	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.942	DPA	8.81	RAP	196.54	ECC	1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 29	2337.19	-22.34	49.40	350.31	107.86	15 29 27	1737.2	-19.69	41.73
90.00	5 8 19	4417.63	7.00	184.18	347.84	62.49	6 21 57	3817.6	3.27	177.50
100.00	16 16 12	2060.73	-23.23	28.75	349.99	109.37	16 50 33	1460.7	-20.37	21.11
100.00	6 25 17	4169.32	7.83	165.48	347.40	61.06	7 34 46	3569.3	3.91	158.88
110.00	17 34 25	1815.99	-25.57	9.15	348.98	113.50	18 4 41	1216.0	-22.17	1.65
110.00	7 23 34	3986.82	9.98	150.32	346.09	57.14	8 30 1	3386.8	5.58	144.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2978	TRA	-.4183	TC3	3.8591	BAU	.6103	SGT	2582.9	SGR	1694.5	SG3	1567.3	ST	600.8	SR	63.3	SS	647.2
RDE	.0047	RRA	.0660	RC3	2.7171	FAU	.32250	RRT	.9060	RRF	-.9954	RTF	-.9081	CRT	-.0065	CRS	.5281	CST	.7468
FDE	-.9364	FRA	-1.0289	FC	-28.8671	BSP	10168	SGB	3089.1	R23	-.2898	R13	-.9524	LSA	825.9	MSA	316.7	SSA	37.4
BDE	.2978	BRA	.4235	BC3	4.7197	FSP	5184	SG1	3027.9	SG2	611.9	THA	32.20	EL1	600.8	EL2	63.3	ALF	179.96

LAUNCH DATE NOV 29 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 547.285 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.100	GAL	1.31	AZL	90.87	HCA	168.06	SMA	188.70	ECC	.21922	INC	.8696	V1	30.196
RP	229.86	LAP	-.18	LOP	234.87	VP	21.247	GAP	1.30	AZP	89.15	TAL	7.30	TAP	175.36	RCA	147.34	APO	230.07	V2	23.927
RC	230.076	GL	-9.28	GP	14.87	ZAL	70.38	ZAP	134.14	ETS	163.56	ZAE	163.09	ETE	107.18	ZAC	104.60	ETC	255.38	CLP	136.10

PLANETOCENTRIC CONIC

C3	9.719	VHL	3.118	DLA	6.91	RAL	136.57	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.887	DPA	10.24	RAP	196.75	ECC	1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 21	2272.11	-20.92	45.16	348.77	109.53	15 40 13	1672.1	-18.07	37.65
90.00	4 47 58	4484.65	9.09	188.00	346.84	63.07	6 2 43	3884.6	5.41	181.26
100.00	16 26 59	1999.11	-21.78	24.74	348.43	111.00	17 0 18	1399.1	-18.73	17.27
100.00	6 6 1	4232.88	9.90	169.06	346.41	61.65	7 16 34	3632.9	6.04	162.40
110.00	17 42 46	1761.93	-24.05	5.68	347.38	115.05	18 12 8	1161.9	-20.48	358.37
110.00	7 6 43	4042.82	12.04	153.36	345.14	57.76	8 14 6	3442.8	7.69	146.96

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3274	TRA	-.4061	TC3	3.6657	BAU	.6186	SGT	2480.2	SGR	1905.1	SG3	1609.8	ST	646.3	SR	127.3	SS	846.7
RDE	.0547	RRA	.0961	RC3	3.0377	FAU	.33024	RRT	.9007	RRF	-.9968	RTF	-.9010	CRT	.6369	CRS	.9520	CST	.8019
FDE	-1.2862	FRA	-1.2273	FC	-29.4156	BSP	10382	SGB	3127.4	R23	-.2748	R13	-.9582	LSA	1021.5	MSA	326.4	SSA	27.6
BDE	.3320	BRA	.4174	BC3	4.7608	FSP	5367	SG1	3054.4	SG2	672.0	THA	36.75	EL1	651.5	EL2	97.3	ALF	7.31

LAUNCH DATE NOV 29 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 551.113 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.086	GAL	1.34	AZL	91.13	HCA	169.08	SMA	188.46	ECC	.21825	INC	1.1253	V1	30.196
RP	229.47	LAP	-.21	LOP	235.90	VP	21.271	GAP	.96	AZP	88.90	TAL	7.48	TAP	176.56	RCA	147.33	APO	229.59	V2	23.968
RC	231.973	GL	-11.96	GP	16.50	ZAL	70.19	ZAP	132.32	ETS	162.83	ZAE	161.01	ETE	110.45	ZAC	106.09	ETC	255.28	CLP	134.60

PLANETOCENTRIC CONIC

C3	9.825	VHL	3.134	DLA	4.45	RAL	135.42	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.843	DPA	11.91	RAP	197.04	ECC	1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 28	2196.81	-19.13	40.36	347.20	111.28	15 53 5	1596.8	-16.07	33.02
90.00	4 24 42	4564.21	11.51	192.59	345.93	63.95	5 40 46	3964.2	7.92	185.76
100.00	16 39 54	1927.70	-19.97	20.21	346.84	112.72	17 12 2	1327.7	-16.72	12.93
100.00	5 43 57	4308.55	12.31	173.38	345.52	62.55	6 55 46	3708.6	8.54	166.62
110.00	17 52 56	1699.11	-22.19	1.76	345.74	116.70	18 21 15	1099.1	-18.42	354.65
110.00	6 47 24	4109.90	14.44	157.07	344.29	58.68	7 55 54	3509.9	10.19	150.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3632	TRA	-.3979	TC3	3.4478	BAU	.6354	SGT	2375.9	SGR	2152.9	SG3	1645.1	ST	702.1	SR	245.2	SS	1088.6
RDE	.1231	RRA	.1334	RC3	3.3931	FAU	.33664	RRT	.8932	RRF	-.9978	RTF	-.8920	CRT	.7988	CRS	.9935	CST	.8442
FDE	-1.7138	FRA	-1.4367	FC	-29.6636	BSP	10728	SGB	3206.2	R23	-.2529	R13	-.9652	LSA	1275.9	MSA	331.4	SSA	20.4
BDE	.3835	BRA	.4197	BC3	4.8374	FSP	5534	SG1	3120.3	SG2	737.3	THA	41.85	EL1	730.0	EL2	141.9	ALF	16.22

LAUNCH DATE NOV 29 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 554.953 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.073 GAL 1.36 AZL 91.43 HCA 170.11 SMA 188.23 ECC .21734 INC 1.4336 V1 30.196
RP 229.09 LAP -.25 LOP 236.93 VP 21.297 GAP .62 AZP 88.59 TAL 7.65 TAP 177.76 RCA 147.32 APO 229.14 V2 24.009
RC 233.848 GL -15.15 GP 18.44 ZAL 70.12 ZAP 130.37 ETS 162.02 ZAE 158.60 ETE 112.93 ZAC 107.85 ETC 255.15 CLP 133.06

PLANETOCENTRIC CONIC

C3 10.018 VHL 3.165 DLA 1.50 RAL 134.16 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.812 DPA 13.86 RAP 197.42 ECC 1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 29	2108.79	-16.87	34.89	345.63	113.09	16 8 38	1508.8	-13.60	27.74
90.00	3 57 39	4659.96	14.31	198.23	345.19	65.30	5 15 19	4060.0	10.86	191.25
100.00	16 55 31	1844.16	-17.69	15.05	345.25	114.50	17 26 15	1244.2	-14.23	7.96
100.00	5 18 18	4399.82	15.11	178.71	344.79	63.90	6 31 37	3799.8	11.48	171.80
110.00	18 5 22	1625.55	-19.87	357.31	344.10	118.41	18 32 27	1025.6	-15.92	350.42
110.00	6 24 56	4191.19	17.26	161.68	343.60	60.03	7 34 48	3591.2	13.15	154.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4048 TRA -.3893 TC3 3.1891 BAU .6622 SGT 2260.3 SGR 2447.3 SG3 1669.9 ST 765.1 SR 415.1 SS 1380.8
RDE .2190 RRA .1837 RC3 3.7787 FAU .34093 RRT .8830 RRF -.9986 RTF -.8807 CRT .8620 CRS .9989 CST .8764
FDE-2.2390 FRA-1.6800 FC-29.4635 BSP 11211 SGB 3331.5 R23 -.2231 R13 -.9733 LSA 1597.6 MSA 334.1 SSA 15.0
BDE .4602 BRA .4305 BC3 4.9446 FSP 5650 SG1 3233.2 SG2 802.9 THA 47.57 EL1 849.5 EL2 189.5 ALF 26.49

LAUNCH DATE NOV 29 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 558.804 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.061 GAL 1.39 AZL 91.81 HCA 171.14 SMA 188.01 ECC .21649 INC 1.8136 V1 30.196
RP 228.70 LAP -.28 LOP 237.96 VP 21.324 GAP .29 AZP 88.21 TAL 7.80 TAP 178.95 RCA 147.31 APO 228.71 V2 24.049
RC 235.703 GL -18.98 GP 20.76 ZAL 70.21 ZAP 128.24 ETS 161.09 ZAE 155.79 ETE 114.73 ZAC 109.99 ETC 254.96 CLP 131.45

PLANETOCENTRIC CONIC

C3 10.349 VHL 3.217 DLA -2.08 RAL 132.74 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.800 DPA 16.19 RAP 197.95 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 19	2004.53	-13.98	28.60	344.12	114.88	16 27 44	1404.5	-10.51	21.64
90.00	3 25 30	4777.24	17.51	205.35	344.74	67.39	4 45 7	4177.2	14.30	198.15
100.00	17 14 42	1745.26	-14.80	9.13	343.72	116.27	17 43 47	1145.3	-11.15	2.24
100.00	4 47 49	4511.75	18.35	185.45	344.36	65.98	6 3 0	3911.8	14.95	178.30
110.00	18 20 43	1538.56	-16.97	352.23	342.51	120.13	18 46 22	938.6	-12.84	345.56
110.00	5 58 16	4291.21	20.56	167.56	343.21	62.07	7 9 48	3691.2	16.67	160.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4564 TRA -.3794 TC3 2.8994 BAU .7050 SGT 2144.3 SGR 2807.2 SG3 1682.7 ST 839.6 SR 657.4 SS 1734.6
RDE .3583 RRA .2539 RC3 4.1903 FAU .34284 RRT .8708 RRF -.9991 RTF -.8677 CRT .8980 CRS .9998 CST .9021
FDE-2.8904 FRA-1.9675 FC-28.6805 BSP 11819 SGB 3532.4 R23 -.1867 R13 -.9815 LSA 2008.3 MSA 335.5 SSA 10.9
BDE .5802 BRA .4566 BC3 5.0956 FSP 5668 SG1 3425.2 SG2 863.9 THA 53.69 EL1 1040.5 EL2 233.4 ALF 37.31

LAUNCH DATE NOV 29 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 562.666 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.049 GAL 1.41 AZL 92.30 HCA 172.18 SMA 187.81 ECC .21568 INC 2.2956 V1 30.196
RP 228.31 LAP -.31 LOP 239.00 VP 21.352 GAP -.03 AZP 87.73 TAL 7.94 TAP 180.12 RCA 147.30 APO 228.31 V2 24.090
RC 237.537 GL -23.63 GP 23.58 ZAL 70.53 ZAP 125.89 ETS 160.04 ZAE 152.51 ETE 115.93 ZAC 112.59 ETC 254.70 CLP 129.76

PLANETOCENTRIC CONIC

C3 10.908 VHL 3.303 DLA -6.44 RAL 131.10 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 3.815 DPA 18.99 RAP 198.68 ECC 1.1795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 36	1878.72	-10.26	21.24	342.82	116.54	16 51 54	1278.7	-6.61	14.45
90.00	2 46 7	4924.42	21.11	214.65	344.78	70.68	4 8 12	4324.4	18.28	207.11
100.00	17 38 52	1626.20	-11.10	2.23	342.38	117.93	18 5 59	1026.2	-7.28	355.52
100.00	4 10 32	4652.18	22.00	194.28	344.43	69.23	5 28 4	4052.2	18.98	186.79
110.00	18 40 7	1434.46	-13.32	346.37	341.07	121.77	19 4 1	834.5	-9.03	339.91
110.00	5 25 47	4416.68	24.36	175.32	343.35	65.24	6 39 23	3816.7	20.82	167.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5160 TRA -.3716 TC3 2.5584 BAU .7658 SGT 2019.4 SGR 3239.4 SG3 1669.1 ST 917.5 SR 992.9 SS 2131.1
RDE .5600 RRA .3504 RC3 4.5859 FAU .33979 RRT .8548 RRF -.9994 RTF -.8509 CRT .9205 CRS 1.0000 CST .9210
FDE-3.6502 FRA-2.2756 FC-26.9688 BSP 12720 SGB 3817.3 R23 -.1481 R13 -.9884 LSA 2501.2 MSA 336.1 SSA 8.0
BDE .7615 BRA .5108 BC3 5.2513 FSP 5609 SG1 3705.7 SG2 916.2 THA 59.92 EL1 1324.9 EL2 268.6 ALF 47.45

LAUNCH DATE NOV 29 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 566.539 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.038 GAL 1.42 AZL 92.93 HCA 173.22 SMA 187.62 ECC .21492 INC 2.9266 V1 30.196
RP 227.92 LAP -.35 LOP 240.04 VP 21.382 GAP -.35 AZP 87.09 TAL 8.07 TAP 181.29 RCA 147.29 APO 227.94 V2 24.132
RC 239.350 GL -29.31 GP 27.06 ZAL 71.19 ZAP 123.23 ETS 158.87 ZAE 148.62 ETE 116.62 ZAC 115.80 ETC 254.32 CLP 127.98

PLANETOCENTRIC CONIC

C3 11.866 VHL 3.445 DLA -11.79 RAL 129.13 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 3.871 DPA 22.40 RAP 199.69 ECC 1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 25	1722.30	-5.38	12.33	341.99	117.84	17 24 7	1122.3	-1.61	5.68
90.00	1 55 34	5115.80	24.86	227.41	345.67	76.00	3 20 50	4515.8	22.69	219.41
100.00	18 10 46	1479.17	-6.30	353.95	341.49	119.28	18 35 26	879.2	-2.35	347.39
100.00	3 22 54	4834.15	25.87	206.40	345.37	74.48	4 43 28	4234.2	23.49	198.41
110.00	19 5 29	1307.82	-8.69	339.49	340.03	123.19	19 27 17	707.8	-4.26	333.20
110.00	4 44 41	4578.27	28.54	186.02	344.42	70.33	6 0 59	3978.3	25.59	178.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5862 TRA -.3687 TC3 2.1509 BAU .8486 SGT 1881.2 SGR 3757.7 SG3 1614.9 ST 993.9 SR 1456.9 SS 2552.5
RDE .8610 RRA .4863 RC3 4.8978 FAU .32918 RRT .8317 RRF -.9996 RTF -.8269 CRT .9352 CRS 1.0000 CST .9343
FDE-4.5095 FRA-2.5881 FC-24.0161 BSP 14032 SGB 4202.3 R23 -.1117 R13 -.9934 LSA 3084.2 MSA 337.2 SSA 5.8
BDE 1.0416 BRA .6102 BC3 5.3493 FSP 5435 SG1 4091.3 SG2 959.4 THA 65.99 EL1 1738.8 EL2 295.0 ALF 56.37

LAUNCH DATE NOV 29 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 570.420 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.028 GAL 1.44 AZL 93.79 HCA 174.26 SMA 187.44 ECC .21421 INC 3.7868 V1 30.196
RP 227.53 LAP -.38 LOP 241.09 VP 21.413 GAP -.66 AZP 86.23 TAL 8.18 TAP 182.44 RCA 147.29 APO 227.59 V2 24.173
RC 241.142 GL -36.29 GP 31.40 ZAL 72.32 ZAP 120.17 ETS 157.59 ZAE 143.94 ETE 116.91 ZAC 119.82 ETC 253.74 CLP 126.07

PLANETOCENTRIC CONIC

C3 13.581 VHL 3.685 DLA -18.36 RAL 126.66 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.996 DPA 26.61 RAP 201.13 ECC 1.2235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 18	1514.84	1.29	.73	342.28	118.29	18 11 33	914.8	5.06	354.08
90.00	0 45 0	5381.04	27.89	246.19	347.87	84.91	2 14 41	4781.0	26.89	237.67
100.00	18 56 39	1287.83	.16	343.42	341.65	119.89	19 18 7	687.8	4.13	336.88
100.00	2 17 20	5083.28	29.18	224.14	347.72	83.23	3 42 3	4483.3	27.94	215.56
110.00	19 40 55	1149.11	-2.69	331.12	339.87	124.09	20 0 4	549.1	1.80	324.92
110.00	3 49 33	4794.76	32.49	201.62	347.10	78.75	5 9 28	4194.8	30.60	192.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6754 TRA -.3675 TC3 1.6918 BAU .9665 SGT 1737.8 SGR 4411.6 SG3 1513.5 ST 1066.1 SR 2108.6 SS 2975.4
RDE 1.3362 RRA .6981 RC3 5.0472 FAU .30979 RRT .7998 RRF -.9997 RTF -.7940 CRT .9447 CRS 1.0000 CST .9433
FDE-5.4578 FRA-2.9285 FC-19.7476 BSP 15582 SGB 4741.5 R23 -.0801 R13 -.9966 LSA 3784.2 MSA 339.8 SSA 4.2
BDE 1.4972 BRA .7889 BC3 5.3232 FSP 4998 SG1 4636.5 SG2 992.5 THA 71.64 EL1 2341.7 EL2 314.8 ALF 63.96

LAUNCH DATE NOV 29 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 574.308 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.019 GAL 1.45 AZL 95.03 HCA 175.30 SMA 187.27 ECC .21355 INC 5.0333 V1 30.196
RP 227.14 LAP -.41 LOP 242.13 VP 21.445 GAP -.97 AZP 84.98 TAL 8.27 TAP 183.58 RCA 147.28 APO 227.26 V2 24.214
RC 242.914 GL -44.83 GP 36.86 ZAL 74.08 ZAP 116.53 ETS 156.31 ZAE 138.24 ETE 116.97 ZAC 124.86 ETC 252.82 CLP 123.93

PLANETOCENTRIC CONIC

C3 16.875 VHL 4.108 DLA -26.36 RAL 123.39 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 4.245 DPA 31.84 RAP 203.22 ECC 1.2777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 25	1155.17	12.52	340.28	345.93	115.60	19 47 40	555.2	15.87	333.20
90.00	22 32 52	5838.07	26.17	279.28	350.73	101.22	24 10 10	5238.1	27.46	270.85
100.00	20 20 31	986.93	10.19	326.72	344.72	118.25	20 36 58	386.9	13.89	319.88
100.00	0 27 24	5481.54	28.75	253.55	351.23	98.57	1 58 45	4881.5	29.63	244.86
110.00	20 38 8	931.64	5.61	319.75	341.94	123.78	20 53 39	331.6	10.01	313.42
110.00	2 26 16	5109.60	34.07	225.94	351.86	92.99	3 51 25	4509.6	34.11	216.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7774 TRA -.3839 TC3 1.1598 BAU 1.1141 SGT 1562.3 SGR 5141.5 SG3 1315.0 ST 1099.3 SR 2939.7 SS 3239.5
RDE 2.0786 RRA 1.0106 RC3 4.8004 FAU .27263 RRT .7422 RRF -.9998 RTF -.7345 CRT .9475 CRS 1.0000 CST .9458
FDE-6.2395 FRA-3.1393 FC-13.9865 BSP 18149 SGB 5373.6 R23 -.0565 R13 -.9982 LSA 4497.3 MSA 345.1 SSA 3.1
BDE 2.2192 BRA 1.0811 BC3 4.9385 FSP 4435 SG1 5275.8 SG2 1020.4 THA 76.79 EL1 3121.0 EL2 331.0 ALF 70.26

LAUNCH DATE NOV 29 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 578.203 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.010 GAL 1.47 AZL 97.00 HCA 176.35 SMA 187.12 ECC .21293 INC 6.9958 V1 30.196
RP 226.75 LAP -.44 LOP 243.19 VP 21.478 GAP -1.27 AZP 83.02 TAL 8.36 TAP 184.71 RCA 147.27 APO 226.96 V2 24.256
RC 244.666 GL -55.15 GP 43.69 ZAL 76.62 ZAP 112.10 ETS 155.32 ZAE 131.24 ETE 117.17 ZAC 131.10 ETC 251.30 CLP 121.35

PLANETOCENTRIC CONIC

C3 23.989 VHL 4.898 DLA -35.90 RAL 118.71 RAD 6568.0 VEL 12.057 PTH 2.16 VHP 4.743 DPA 38.31 RAP 206.27 ECC 1.3948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.95	17 54 46	1465.46	23.14	9.04	352.50	118.24	18 19 12	865.5	26.73	1.57
113.05	23 29 11	5695.24	23.16	267.55	352.51	118.23	25 4 6	5095.2	26.74	260.07
66.95	17 54 46	1465.46	23.14	9.04	352.50	118.24	18 19 12	865.5	26.73	1.57
113.05	23 29 11	5695.24	23.16	267.55	352.51	118.23	25 4 6	5095.2	26.74	260.07
66.95	17 54 46	1465.46	23.14	9.04	352.50	118.24	18 19 12	865.5	26.73	1.57
113.05	23 29 11	5695.24	23.16	267.55	352.51	118.23	25 4 6	5095.2	26.74	260.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9253 TRA -.4110 TC3 .6520 BAU 1.3263 SGT 1389.9 SGR 6031.0 SG3 1023.7 ST 1097.1 SR 3974.0 SS 3215.3
RDE 3.3463 RRA 1.5554 RC3 4.0839 FAU .21819 RRT .6513 RRF -.9998 RTF -.6402 CRT .9449 CRS 1.0000 CST .9425
FDE-6.5984 FRA-3.1963 FC3-7.8742 BSP 20936 SGB 6189.1 R23 -.0408 R13 -.9990 LSA 5216.1 MSA 355.4 SSA 2.4
BDE 3.4719 BRA 1.6088 BC3 4.1356 FSP 3436 SG1 6100.6 SG2 1042.7 THA 81.21 EL1 4107.9 EL2 347.6 ALF 75.27

LAUNCH DATE NOV 29 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 605.995 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.964 GAL 1.44 AZL 80.04 HCA 183.90 SMA 186.32 ECC .20953 INC 9.9603 V1 30.196
RP 224.02 LAP -.67 LOP 250.66 VP 21.739 GAP -3.19 AZP 99.94 TAL 8.30 TAP 192.20 RCA 147.28 APO 225.36 V2 24.548
RC 256.380 GL 66.13 GP -44.64 ZAL 79.70 ZAP 103.69 ETS 192.26 ZAE 126.71 ETE 223.09 ZAC 44.46 ETC 250.39 CLP 109.43

PLANETOCENTRIC CONIC

C3 38.858 VHL 6.234 DLA 74.00 RAL 197.27 RAD 6568.5 VEL 12.658 PTH 2.30 VHP 4.415 DPA -38.53 RAP 158.65 ECC 1.6395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
15.88	10 28 48	4476.77	-40.33	240.90	125.15	18.42	11 43 25	3876.8	-47.86	237.56
15.88	6 29 7	4709.83	-25.13	245.40	70.54	15.43	7 47 36	4109.8	-32.82	243.30
18.25	8 33 48	4588.68	-32.41	240.91	96.79	19.06	9 50 17	3988.7	-39.93	237.93
161.75	19 20 49	2813.44	-32.40	86.10	96.77	19.06	20 7 42	2213.4	-39.92	83.13
18.25	8 33 48	4588.68	-32.41	240.91	96.79	19.06	9 50 17	3988.7	-39.93	237.93
161.75	19 20 49	2813.44	-32.40	86.10	96.77	19.06	20 7 42	2213.4	-39.92	83.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6107 TRA .0906 TC3 -.3967 BAU 1.5376 SGT 1589.9 SGR 6669.3 SG3 1176.3 ST 1483.3 SR 3266.8 SS 2558.4
RDE 3.1975 RRA 1.4217 RC3-2.9331 FAU .27552 RRT .7160 RRF .9998 RTF .7224 CRT .9249 CRS -.9999 CST -.9295
FDE 6.6039 FRA 2.8442 FC3-6.1384 BSP 22589 SGB 6856.2 R23 .0189 R13 .9997 LSA 4374.6 MSA 529.5 SSA 2.8
BDE 3.5803 BRA 1.4246 BC3 2.9598 FSP 3937 SG1 6768.4 SG2 1093.6 THA 80.05 EL1 3550.0 EL2 519.1 ALF 66.69

LAUNCH DATE NOV 29 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 609.973 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.959 GAL 1.43 AZL 81.82 HCA 184.97 SMA 186.24 ECC .20918 INC 8.1774 V1 30.196
RP 223.63 LAP -.71 LOP 251.74 VP 21.779 GAP -3.44 AZP 98.15 TAL 8.27 TAP 193.24 RCA 147.29 APO 225.20 V2 24.590
RC 257.974 GL 60.40 GP -38.78 ZAL 78.11 ZAP 104.00 ETS 190.04 ZAE 129.77 ETE 218.16 ZAC 50.00 ETC 252.13 CLP 108.07

PLANETOCENTRIC CONIC

C3 29.055 VHL 5.390 DLA 70.63 RAL 181.73 RAD 6568.2 VEL 12.265 PTH 2.21 VHP 3.892 DPA -33.41 RAP 162.17 ECC 1.4782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.14	7 39 55	4506.36	-36.31	234.73	76.77	24.31	8 55 1	3906.4	-43.51	230.62
157.86	18 10 43	2749.28	-36.30	83.92	76.75	24.31	18 56 32	2149.3	-43.51	79.81
22.14	7 39 55	4506.36	-36.31	234.73	76.77	24.31	8 55 1	3906.4	-43.51	230.62
157.86	18 10 43	2749.28	-36.30	83.92	76.75	24.31	18 56 32	2149.3	-43.51	79.81
22.14	7 39 55	4506.36	-36.31	234.73	76.77	24.31	8 55 1	3906.4	-43.51	230.62
157.86	18 10 43	2749.28	-36.30	83.92	76.75	24.31	18 56 32	2149.3	-43.51	79.81

DIFFERENTIAL CORRECTIONS
TDE 1.5385 TRA -.0028 TC3 -.5667 BAU 1.3149
RDE 3.3292 RRA 1.0378 RC3-3.3374 FAU .34548
FDE 9.9871 FRA 3.0455 FC-10.2941 BSP 20959
BDE 3.6675 BRA 1.0378 BC3 3.3852 FSP 5369

MID-COURSE EXECUTION ACCURACY
SGT 1745.8 SGR 6043.6 SG3 1572.1
RRT .7540 RRF .9998 RTF .7572
SGB 6290.7 R23 .0356 R13 .9992
SG1 6190.3 SG2 1119.7 THA 77.29

ORBIT DETERMINATION ACCURACY
ST 1635.5 SR 3678.3 SS 3704.7
CRT .9619 CRS-1.0000 CST -.9634
LSA 5454.3 MSA 424.0 SSA 3.3
EL1 4004.5 EL2 410.8 ALF 66.58

LAUNCH DATE NOV 29 1964 FLIGHT TIME 276.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 613.964 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.955 GAL 1.42 AZL 82.98 HCA 186.06 SMA 186.17 ECC .20886 INC 7.0227 V1 30.196
RP 223.24 LAP -.74 LOP 252.82 VP 21.820 GAP -3.69 AZP 96.98 TAL 8.21 TAP 194.27 RCA 147.29 APO 225.06 V2 24.632
RC 259.547 GL 55.81 GP -34.06 ZAL 76.90 ZAP 103.54 ETS 187.96 ZAE 131.40 ETE 213.16 ZAC 54.41 ETC 253.24 CLP 106.41

PLANETOCENTRIC CONIC

C3 23.715 VHL 4.870 DLA 67.27 RAL 172.89 RAD 6568.0 VEL 12.045 PTH 2.15 VHP 3.583 DPA -29.07 RAP 164.39 ECC 1.3903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.03	7 13 9	4444.85	-38.37	228.47	63.54	29.53	8 27 13	3844.9	-45.21	223.30
153.97	17 27 0	2710.23	-38.36	81.82	63.52	29.52	18 12 10	2110.2	-45.20	76.65
26.03	7 13 9	4444.85	-38.37	228.47	63.54	29.53	8 27 13	3844.9	-45.21	223.30
153.97	17 27 0	2710.23	-38.36	81.82	63.52	29.52	18 12 10	2110.2	-45.20	76.65
26.03	7 13 9	4444.85	-38.37	228.47	63.54	29.53	8 27 13	3844.9	-45.21	223.30
153.97	17 27 0	2710.23	-38.36	81.82	63.52	29.52	18 12 10	2110.2	-45.20	76.65

DIFFERENTIAL CORRECTIONS
TDE 1.4702 TRA -.0595 TC3 -.8099 BAU 1.1660
RDE 2.9208 RRA .7764 RC3-3.5873 FAU .40336
FDE11.5889 FRA 3.0063 FC-14.7249 BSP 18979
BDE 3.2700 BRA .7787 BC3 3.6776 FSP 6405

MID-COURSE EXECUTION ACCURACY
SGT 1909.8 SGR 5441.2 SG3 1883.8
RRT .7960 RRF .9998 RTF .7983
SGB 5766.6 R23 .0532 R13 .9983
SG1 5658.5 SG2 1111.5 THA 73.75

ORBIT DETERMINATION ACCURACY
ST 1730.8 SR 3510.5 SS 4308.1
CRT .9724 CRS-1.0000 CST -.9735
LSA 5808.0 MSA 382.0 SSA 3.9
EL1 3897.0 EL2 363.7 ALF 64.14

LAUNCH DATE NOV 29 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 617.968 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.952 GAL 1.40 AZL 83.78 HCA 187.14 SMA 186.11 ECC .20858 INC 6.2155 V1 30.196
RP 222.85 LAP -.77 LOP 253.91 VP 21.862 GAP -3.94 AZP 96.17 TAL 8.14 TAP 195.28 RCA 147.29 APO 224.93 V2 24.674
RC 261.100 GL 52.07 GP -30.27 ZAL 75.98 ZAP 102.58 ETS 186.15 ZAE 131.96 ETE 208.50 ZAC 57.92 ETC 253.98 CLP 104.61

PLANETOCENTRIC CONIC

C3 20.443 VHL 4.521 DLA 64.26 RAL 167.42 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 3.384 DPA -25.43 RAP 165.80 ECC 1.3364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.56	6 59 20	4396.80	-39.35	222.74	54.14	34.17	8 12 36	3796.8	-45.80	216.72
150.44	16 57 9	2686.44	-39.35	80.01	54.13	34.16	17 41 55	2086.4	-45.80	73.99
29.56	6 59 20	4396.80	-39.35	222.74	54.14	34.17	8 12 36	3796.8	-45.80	216.72
150.44	16 57 9	2686.44	-39.35	80.01	54.13	34.16	17 41 55	2086.4	-45.80	73.99
29.56	6 59 20	4396.80	-39.35	222.74	54.14	34.17	8 12 36	3796.8	-45.80	216.72
150.44	16 57 9	2686.44	-39.35	80.01	54.13	34.16	17 41 55	2086.4	-45.80	73.99

DIFFERENTIAL CORRECTIONS
TDE 1.4485 TRA -.0869 TC3-1.0958 BAU 1.0460
RDE 2.5068 RRA .6209 RC3-3.6670 FAU .44476
FDE12.3653 FRA 2.9785 FC-18.8352 BSP 17913
BDE 2.8952 BRA .6270 BC3 3.8273 FSP 7419

MID-COURSE EXECUTION ACCURACY
SGT 2101.3 SGR 4936.6 SG3 2136.0
RRT .8346 RRF .9997 RTF .8361
SGB 5365.2 R23 .0737 R13 .9970
SG1 5253.8 SG2 1087.7 THA 69.53

ORBIT DETERMINATION ACCURACY
ST 1837.4 SR 3224.3 SS 4647.5
CRT .9778 CRS-1.0000 CST -.9787
LSA 5936.3 MSA 362.3 SSA 4.4
EL1 3695.8 EL2 336.3 ALF 60.61

LAUNCH DATE NOV 29 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 621.983 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.949 GAL 1.38 AZL 84.38 HCA 188.23 SMA 186.06 ECC .20831 INC 5.6181 V1 30.196
RP 222.47 LAP -.80 LOP 255.01 VP 21.905 GAP -4.17 AZP 95.56 TAL 8.05 TAP 196.28 RCA 147.30 APO 224.82 V2 24.716
RC 262.633 GL 48.98 GP -27.17 ZAL 75.28 ZAP 101.31 ETS 184.61 ZAE 131.75 ETE 204.35 ZAC 60.74 ETC 254.52 CLP 102.73

PLANETOCENTRIC CONIC

C3 18.266 VHL 4.274 DLA 61.63 RAL 163.79 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 3.249 DPA -22.36 RAP 166.66 ECC 1.3006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.67	6 52 16	4357.72	-39.71	217.69	47.15	38.15	8 4 53	3757.7	-45.79	211.02
147.33	16 35 13	2672.28	-39.70	78.57	47.14	38.14	17 19 45	2072.3	-45.79	71.91
32.67	6 52 16	4357.72	-39.71	217.69	47.15	38.15	8 4 53	3757.7	-45.79	211.02
147.33	16 35 13	2672.28	-39.70	78.57	47.14	38.14	17 19 45	2072.3	-45.79	71.91
32.67	6 52 16	4357.72	-39.71	217.69	47.15	38.15	8 4 53	3757.7	-45.79	211.02
147.33	16 35 13	2672.28	-39.70	78.57	47.14	38.14	17 19 45	2072.3	-45.79	71.91

DIFFERENTIAL CORRECTIONS
TDE 1.4486 TRA -.1067 TC3-1.4280 BAU .9655
RDE 2.1420 RRA .5018 RC3-3.6867 FAU .48002
FDE12.5957 FRA 2.8542 FC-22.7505 BSP 16752
BDE 2.5858 BRA .5130 BC3 3.9536 FSP 8089

MID-COURSE EXECUTION ACCURACY
SGT 2313.4 SGR 4492.2 SG3 2331.4
RRT .8657 RRF .9996 RTF .8667
SGB 5052.9 R23 .0972 R13 .9949
SG1 4942.0 SG2 1052.5 THA 64.75

ORBIT DETERMINATION ACCURACY
ST 1944.4 SR 2904.3 SS 4790.4
CRT .9813 CRS-1.0000 CST -.9822
LSA 5919.6 MSA 348.4 SSA 4.9
EL1 3481.1 EL2 312.3 ALF 56.39

LAUNCH DATE NOV 29 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 626.008 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.946	GAL	1.37	AZL	84.84	HCA	189.33	SMA	186.01	ECC	.20807	INC	5.1582
RP	222.08	LAP	-.83	LOP	256.10	VP	21.948	GAP	-4.41	AZP	95.09	TAL	7.94	TAP	197.27	RCA	147.31	APO	224.71
RC	264.145	GL	46.38	GP	-24.62	ZAL	74.77	ZAP	99.81	ETS	183.32	ZAE	131.00	ETE	200.73	ZAC	63.04	ETC	254.92

V1	30.196	V2	24.758	CLP	100.80														

PLANETOCENTRIC CONIC

C3	16.729	VHL	4.090	DLA	59.34	RAL	161.25	RAD	6567.7	VEL	11.752	PTH	2.07	VHP	3.152	DPA	-19.74	RAP	167.17
ECC	1.2753																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.40	6 48 59	4324.93	-39.70	213.28	41.79	41.51	8 1 4	3724.9	-45.45	206.14
144.60	16 18 16	2664.32	-39.68	77.49	41.77	41.50	17 2 40	2064.3	-45.44	70.35
35.40	6 48 59	4324.93	-39.70	213.28	41.79	41.51	8 1 4	3724.9	-45.45	206.14
144.60	16 18 16	2664.32	-39.68	77.49	41.77	41.50	17 2 40	2064.3	-45.44	70.35
35.40	6 48 59	4324.93	-39.70	213.28	41.79	41.51	8 1 4	3724.9	-45.45	206.14
144.60	16 18 16	2664.32	-39.68	77.49	41.77	41.50	17 2 40	2064.3	-45.44	70.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4658	TRA	-.1206	TC3	-1.7983	BAU	.9087	SGT	2547.6	SGR	4110.9	SG3	2486.1	ST	2056.3	SR	2611.9	SS	4835.6
RDE	1.8471	RRA	.4187	RC3	-3.6432	FAU	.50743	RRT	.8896	RRF	.9994	RTF	.8902	CRT	.9836	CRS	-1.0000	CST	-.9845
FDE	12.5658	FRA	2.7402	FC	-26.2599	BSP	15969	SGB	4836.3	R23	.1221	R13	.9920	LSA	5858.1	MSA	340.9	SSA	5.7
BDE	2.3580	BRA	.4357	BC3	4.0629	FSP	8638	SG1	4729.3	SG2	1011.6	THA	59.60	EL1	3311.3	EL2	292.5	ALF	51.90

LAUNCH DATE NOV 29 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 630.044 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.944	GAL	1.34	AZL	85.21	HCA	190.43	SMA	185.97	ECC	.20786	INC	4.7930
RP	221.70	LAP	-.87	LOP	257.20	VP	21.991	GAP	-4.64	AZP	94.71	TAL	7.82	TAP	198.24	RCA	147.31	APO	224.63
RC	265.639	GL	44.18	GP	-22.47	ZAL	74.40	ZAP	98.17	ETS	182.22	ZAE	129.86	ETE	197.62	ZAC	64.94	ETC	255.24

V1	30.196	V2	24.799	CLP	98.85														

PLANETOCENTRIC CONIC

C3	15.591	VHL	3.949	DLA	57.34	RAL	159.43	RAD	6567.6	VEL	11.704	PTH	2.06	VHP	3.081	DPA	-17.47	RAP	167.42
ECC	1.2566																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.81	6 48 0	4296.72	-39.48	209.43	37.58	44.36	7 59 37	3696.7	-44.94	201.95
142.19	16 4 42	2660.44	-39.46	76.69	37.56	44.35	16 49 3	2060.4	-44.93	69.21
37.81	6 48 0	4296.72	-39.48	209.43	37.58	44.36	7 59 37	3696.7	-44.94	201.95
142.19	16 4 42	2660.44	-39.46	76.69	37.56	44.35	16 49 3	2060.4	-44.93	69.21
37.81	6 48 0	4296.72	-39.48	209.43	37.58	44.36	7 59 37	3696.7	-44.94	201.95
142.19	16 4 42	2660.44	-39.46	76.69	37.56	44.35	16 49 3	2060.4	-44.93	69.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4938	TRA	-.1290	TC3	-2.1963	BAU	.8739	SGT	2797.6	SGR	3781.8	SG3	2609.3	ST	2170.7	SR	2351.4	SS	4814.0
RDE	1.6074	RRA	.3543	RC3	-3.5713	FAU	.53032	RRT	.9090	RRF	.9993	RTF	.9091	CRT	.9855	CRS	-1.0000	CST	-.9864
FDE	12.3704	FRA	2.6056	FC	-29.4475	BSP	15426	SGB	4704.1	R23	.1457	R13	.9886	LSA	5771.0	MSA	333.3	SSA	6.4
BDE	2.1943	BRA	.3770	BC3	4.1926	FSP	9027	SG1	4605.6	SG2	957.6	THA	54.30	EL1	3188.6	EL2	271.2	ALF	47.32

LAUNCH DATE NOV 29 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 634.089 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.942	GAL	1.32	AZL	85.50	HCA	191.53	SMA	185.94	ECC	.20767	INC	4.4960
RP	221.32	LAP	-.90	LOP	258.31	VP	22.035	GAP	-4.86	AZP	94.41	TAL	7.68	TAP	199.21	RCA	147.32	APO	224.55
RC	267.114	GL	42.29	GP	-20.65	ZAL	74.16	ZAP	96.44	ETS	181.29	ZAE	128.45	ETE	194.96	ZAC	66.52	ETC	255.51

V1	30.196	V2	24.841	CLP	96.88														

PLANETOCENTRIC CONIC

C3	14.717	VHL	3.836	DLA	55.58	RAL	158.10	RAD	6567.6	VEL	11.666	PTH	2.05	VHP	3.028	DPA	-15.49	RAP	167.48
ECC	1.2422																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.95	6 48 30	4271.95	-39.14	206.05	34.22	46.78	7 59 42	3672.0	-44.34	198.32
140.05	15 53 35	2659.33	-39.13	76.14	34.21	46.77	16 37 54	2059.3	-44.34	68.40
39.95	6 48 30	4271.95	-39.14	206.05	34.22	46.78	7 59 42	3672.0	-44.34	198.32
140.05	15 53 35	2659.33	-39.13	76.14	34.21	46.77	16 37 54	2059.3	-44.34	68.40
39.95	6 48 30	4271.95	-39.14	206.05	34.22	46.78	7 59 42	3672.0	-44.34	198.32
140.05	15 53 35	2659.33	-39.13	76.14	34.21	46.77	16 37 54	2059.3	-44.34	68.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5300	TRA	-.1324	TC3	-2.6189	BAU	.8545	SGT	3063.0	SGR	3492.9	SG3	2705.3	ST	2288.3	SR	2129.8	SS	4764.3
RDE	1.4155	RRA	.3089	RC3	-3.4643	FAU	.54690	RRT	.9241	RRF	.9990	RTF	.9239	CRT	.9870	CRS	-1.0000	CST	-.9879
FDE	12.1099	FRA	2.5098	FC	-32.1718	BSP	15236	SGB	4645.7	R23	.1662	R13	.9851	LSA	5688.9	MSA	328.2	SSA	7.2
BDE	2.0844	BRA	.3360	BC3	4.3428	FSP	9369	SG1	4558.3	SG2	897.0	THA	49.06	EL1	3116.0	EL2	251.5	ALF	42.92

LAUNCH DATE NOV 29 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 638.143 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.940	GAL	1.29	AZL	85.75	HCA	192.64	SMA	185.91	ECC	.20750	INC	4.2496
RP	220.94	LAP	-.93	LOP	259.42	VP	22.079	GAP	-5.08	AZP	94.15	TAL	7.53	TAP	200.16	RCA	147.33	APO	224.48
RC	268.570	GL	40.66	GP	-19.08	ZAL	74.01	ZAP	94.64	ETS	180.50	ZAE	126.84	ETE	192.69	ZAC	67.86	ETC	255.73

V1	30.196	V2	24.883	CLP	94.91														

PLANETOCENTRIC CONIC

C3	14.025	VHL	3.745	DLA	54.03	RAL	157.12	RAD	6567.6	VEL	11.637	PTH	2.04	VHP	2.989	DPA	-13.72	RAP	167.42
ECC	1.2308																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.86	6 50 0	4249.79	-38.74	203.06	31.52	48.86	8 0 50	3649.8	-43.72	195.14
138.14	15 44 15	2660.17	-38.73	75.77	31.50	48.85	16 28 35	2060.2	-43.71	67.85
41.86	6 50 0	4249.79	-38.74	203.06	31.52	48.86	8 0 50	3649.8	-43.72	195.14
138.14	15 44 15	2660.17	-38.73	75.77	31.50	48.85	16 28 35	2060.2	-43.71	67.85
41.86	6 50 0	4249.79	-38.74	203.06	31.52	48.86	8 0 50	3649.8	-43.72	195.14
138.14	15 44 15	2660.17	-38.73	75.77	31.50	48.85	16 28 35	2060.2	-43.71	67.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5716	TRA	-.1325	TC3	-3.0591	BAU	.8496	SGT	3339.2	SGR	3239.9	SG3	2780.9	ST	2407.6	SR	1939.9	SS	4695.6
RDE	1.2592	RRA	.2761	RC3	-3.3428	FAU	.55947	RRT	.9355	RRF	.9987	RTF	.9351	CRT	.9880	CRS	-1.0000	CST	-.9889
FDE	11.8077	FRA	2.4457	FC	-34.5347	BSP	15304	SGB	4652.6	R23	.1825	R13	.9819	LSA	5612.7	MSA	325.5	SSA	8.1
BDE	2.0138	BRA	.3062	BC3	4.5312	FSP	9647	SG1	4577.0	SG2	835.3	THA	44.08	EL1	3083.1	EL2	233.5	ALF	38.79

LAUNCH DATE NOV 29 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 642.207 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.939	GAL	1.26	AZL	85.96	HCA	193.75	SMA	185.89	ECC	.20736	INC	4.0414	V1	30.196
RP	220.56	LAP	-.96	LOP	260.53	VP	22.124	GAP	-5.29	AZP	93.93	TAL	7.36	TAP	201.11	RCA	147.34	APO	224.43	V2	24.924
RC	270.009	GL	39.24	GP	-17.72	ZAL	73.94	ZAP	92.81	ETS	179.82	ZAE	125.09	ETE	190.75	ZAC	69.01	ETC	255.93	CLP	92.95

PLANETOCENTRIC CONIC

C3	13.463	VHL	3.669	DLA	52.64	RAL	156.40	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	2.961	DPA	-12.14	RAP	167.26	ECC	1.2216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.58	6 52 14	4229.68	-38.31	200.39	29.32	50.66	8 2 44	3629.7	-43.09	192.33
136.42	15 36 20	2662.41	-38.30	75.55	29.31	50.65	16 20 42	2062.4	-43.08	67.49
43.58	6 52 14	4229.68	-38.31	200.39	29.32	50.66	8 2 44	3629.7	-43.09	192.33
136.42	15 36 20	2662.41	-38.30	75.55	29.31	50.65	16 20 42	2062.4	-43.08	67.49
43.58	6 52 14	4229.68	-38.31	200.39	29.32	50.66	8 2 44	3629.7	-43.09	192.33
136.42	15 36 20	2662.41	-38.30	75.55	29.31	50.65	16 20 42	2062.4	-43.08	67.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6132	TRA	-.1318	TC3	-3.5215	BAU	.8586	SGT	3624.8	SGR	3015.1	SG3	2839.1	ST	2522.3	SR	1773.8	SS	4607.2
RDE	1.1283	RRA	.2494	RC3	-3.2173	FAU	.56939	RRT	.9445	RRF	.9983	RTF	.9441	CRT	.9889	CRS	-1.0000	CST	-.9898
FDE	11.4625	FRA	2.3797	FC	-36.6134	BSP	15503	SGB	4714.9	R23	.1938	R13	.9793	LSA	5534.5	MSA	323.0	SSA	9.0
BDE	1.9687	BRA	.2820	BC3	4.7700	FSP	9813	SG1	4651.2	SG2	771.9	THA	39.45	EL1	3076.0	EL2	216.5	ALF	35.01

LAUNCH DATE NOV 29 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 646.280 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.938	GAL	1.23	AZL	86.14	HCA	194.86	SMA	185.87	ECC	.20724	INC	3.8633	V1	30.196
RP	220.18	LAP	-.99	LOP	261.64	VP	22.169	GAP	-5.50	AZP	93.73	TAL	7.17	TAP	202.04	RCA	147.35	APO	224.39	V2	24.965
RC	271.430	GL	37.98	GP	-16.52	ZAL	73.96	ZAP	90.95	ETS	179.23	ZAE	123.25	ETE	189.09	ZAC	70.00	ETC	256.10	CLP	90.99

PLANETOCENTRIC CONIC

C3	12.998	VHL	3.605	DLA	51.38	RAL	155.90	RAD	6567.5	VEL	11.592	PTH	2.03	VHP	2.941	DPA	-10.72	RAP	167.03	ECC	1.2139

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.15	6 55 0	4211.21	-37.87	197.98	27.52	52.24	8 5 12	3611.2	-42.46	189.82
134.85	15 29 32	2665.63	-37.85	75.44	27.51	52.23	16 13 57	2065.6	-42.45	67.28
45.15	6 55 0	4211.21	-37.87	197.98	27.52	52.24	8 5 12	3611.2	-42.46	189.82
134.85	15 29 32	2665.63	-37.85	75.44	27.51	52.23	16 13 57	2065.6	-42.45	67.28
45.15	6 55 0	4211.21	-37.87	197.98	27.52	52.24	8 5 12	3611.2	-42.46	189.82
134.85	15 29 32	2665.63	-37.85	75.44	27.51	52.23	16 13 57	2065.6	-42.45	67.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6574	TRA	-.1272	TC3	-3.9956	BAU	.8772	SGT	3917.0	SGR	2812.8	SG3	2881.1	ST	2637.2	SR	1630.1	SS	4511.0
RDE	1.0190	RRA	.2289	RC3	-3.0855	FAU	.57603	RRT	.9518	RRF	.9977	RTF	.9513	CRT	.9896	CRS	-1.0000	CST	-.9905
FDE	11.1027	FRA	2.3319	FC	-38.3676	BSP	15918	SGB	4822.3	R23	.1999	R13	.9775	LSA	5464.3	MSA	320.5	SSA	9.9
BDE	1.9455	BRA	.2619	BC3	5.0483	FSP	9955	SG1	4769.9	SG2	708.7	THA	35.25	EL1	3093.8	EL2	200.2	ALF	31.60

LAUNCH DATE NOV 29 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 650.359 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.937	GAL	1.20	AZL	86.29	HCA	195.98	SMA	185.86	ECC	.20714	INC	3.7092	V1	30.196
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.215	GAP	-5.70	AZP	93.57	TAL	6.98	TAP	202.96	RCA	147.36	APO	224.36	V2	25.006
RC	272.833	GL	36.87	GP	-15.46	ZAL	74.03	ZAP	89.08	ETS	178.72	ZAE	121.35	ETE	187.67	ZAC	70.86	ETC	256.26	CLP	89.05

PLANETOCENTRIC CONIC

C3	12.604	VHL	3.550	DLA	50.25	RAL	155.56	RAD	6567.5	VEL	11.575	PTH	2.02	VHP	2.928	DPA	-9.42	RAP	166.75	ECC	1.2074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.59	6 58 12	4194.07	-37.42	195.78	26.05	53.63	8 8 6	3594.1	-41.86	187.54
133.41	15 23 39	2669.58	-37.41	75.42	26.04	53.62	16 8 9	2069.6	-41.85	67.19
46.59	6 58 12	4194.07	-37.42	195.78	26.05	53.63	8 8 6	3594.1	-41.86	187.54
133.41	15 23 39	2669.58	-37.41	75.42	26.04	53.62	16 8 9	2069.6	-41.85	67.19
46.59	6 58 12	4194.07	-37.42	195.78	26.05	53.63	8 8 6	3594.1	-41.86	187.54
133.41	15 23 39	2669.58	-37.41	75.42	26.04	53.62	16 8 9	2069.6	-41.85	67.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7059	TRA	-.1166	TC3	-4.4737	BAU	.9013	SGT	4213.8	SGR	2629.0	SG3	2906.2	ST	2756.2	SR	1516.7	SS	4446.3
RDE	.9333	RRA	.2206	RC3	-2.9316	FAU	.57631	RRT	.9564	RRF	.9971	RTF	.9565	CRT	.9899	CRS	-1.0000	CST	-.9908
FDE	10.8195	FRA	2.3948	FC	-39.5848	BSP	16637	SGB	4966.7	R23	.2029	R13	.9763	LSA	5437.0	MSA	324.7	SSA	10.6
BDE	1.9445	BRA	.2495	BC3	5.3487	FSP	10231	SG1	4923.0	SG2	657.2	THA	31.45	EL1	3140.2	EL2	189.1	ALF	28.69

LAUNCH DATE NOV 29 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 654.453 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.937	GAL	1.16	AZL	86.43	HCA	197.11	SMA	185.86	ECC	.20706	INC	3.5743	V1	30.196
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.260	GAP	-5.90	AZP	93.42	TAL	6.76	TAP	203.87	RCA	147.37	APO	224.34	V2	25.047
RC	274.220	GL	35.89	GP	-14.51	ZAL	74.17	ZAP	87.21	ETS	178.28	ZAE	119.39	ETE	186.43	ZAC	71.62	ETC	256.41	CLP	87.11

PLANETOCENTRIC CONIC

C3	12.267	VHL	3.502	DLA	49.20	RAL	155.36	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	2.921	DPA	-8.23	RAP	166.42	ECC	1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.92	7 1 41	4178.03	-36.98	193.76	24.84	54.87	8 11 19	3578.0	-41.27	185.46
132.08	15 18 31	2674.08	-36.97	75.48	24.83	54.86	16 3 5	2074.1	-41.26	67.19
47.92	7 1 41	4178.03	-36.98	193.76	24.84	54.87	8 11 19	3578.0	-41.27	185.46
132.08	15 18 31	2674.08	-36.97	75.48	24.83	54.86	16 3 5	2074.1	-41.26	67.19
47.92	7 1 41	4178.03	-36.98	193.76	24.84	54.87	8 11 19	3578.0	-41.27	185.46
132.08	15 18 31	2674.08	-36.97	75.48	24.83	54.86	16 3 5	2074.1	-41.26	67.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7458	TRA	-.1098	TC3	-4.9730	BAU	.9378	SGT	4513.0	SGR	2465.2	SG3	2927.4	ST	2859.1	SR	1393.6	SS	4298.0
RDE	.8461	RRA	.2011	RC3	-2.8221	FAU	.58242	RRT	.9618	RRF	.9963	RTF	.9617	CRT	.9905	CRS	-.9999	CST	-.9915
FDE	10.3425	FRA	2.2857	FC	-41.1032	BSP	17135	SGB	5142.4	R23	.2004	R13	.9760	LSA	5337.5	MSA	316.9	SSA	11.8
BDE	1.9400	BRA	.2291	BC3	5.7180	FSP	10087	SG1	5107.8	SG2	595.9	THA	28.13	EL1	3175.9	EL2	172.1	ALF	25.85

LAUNCH DATE NOV 29 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 658.553 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.937	GAL	1.12	AZL	86.54	HCA	198.23	SMA	185.86	ECC	.20700	INC	3.4552	V1	30.196
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.306	GAP	-6.10	AZP	93.28	TAL	6.54	TAP	204.77	RCA	147.39	APO	224.33	V2	25.088
RC	275.589	GL	35.00	GP	-13.65	ZAL	74.36	ZAP	85.34	ETS	177.89	ZAE	117.42	ETE	185.37	ZAC	72.29	ETC	256.54	CLP	85.21

PLANETOCENTRIC CONIC

C3	11.974	VHL	3.460	DLA	48.24	RAL	155.27	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	2.920	DPA	-7.14	RAP	166.09	ECC	1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.16	7 5 30	4162.81	-36.55	191.88	23.85	55.99	8 14 53	3562.8	-40.71	183.54
130.84	15 14 1	2679.08	-36.54	75.60	23.84	55.98	15 58 40	2079.1	-40.70	67.27
49.16	7 5 30	4162.81	-36.55	191.88	23.85	55.99	8 14 53	3562.8	-40.71	183.54
130.84	15 14 1	2679.08	-36.54	75.60	23.84	55.98	15 58 40	2079.1	-40.70	67.27
49.16	7 5 30	4162.81	-36.55	191.88	23.85	55.99	8 14 53	3562.8	-40.71	183.54
130.84	15 14 1	2679.08	-36.54	75.60	23.84	55.98	15 58 40	2079.1	-40.70	67.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7878	TRA	-.0979	TC3	-5.4764	BAU	.9768	SGT	4815.2	SGR	2313.6	SG3	2933.5	ST	2963.3	SR	1296.5	SS	4187.9
RDE	.7775	RRA	.1918	RC3	-2.6908	FAU	.58221	RRT	.9652	RRF	.9953	RTF	.9654	CRT	.9909	CRS	-.9999	CST	-.9918
FDE	9.9580	FRA	2.2840	FC	-42.0946	BSP	17857	SGB	5342.2	R23	.1958	R13	.9761	LSA	5282.1	MSA	316.2	SSA	12.8
BDE	1.9495	BRA	.2154	BC3	6.1018	FSP	10067	SG1	5314.0	SG2	548.3	THA	25.17	EL1	3230.5	EL2	160.5	ALF	23.50

LAUNCH DATE NOV 29 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 662.661 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.937	GAL	1.08	AZL	86.65	HCA	199.37	SMA	185.86	ECC	.20696	INC	3.3491	V1	30.196
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.352	GAP	-6.29	AZP	93.16	TAL	6.29	TAP	205.66	RCA	147.40	APO	224.33	V2	25.128
RC	276.940	GL	34.20	GP	-12.87	ZAL	74.60	ZAP	83.49	ETS	177.56	ZAE	115.43	ETE	184.44	ZAC	72.89	ETC	256.67	CLP	83.32

PLANETOCENTRIC CONIC

C3	11.716	VHL	3.423	DLA	47.35	RAL	155.28	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	2.924	DPA	-6.13	RAP	165.73	ECC	1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.32	7 9 33	4148.35	-36.12	190.12	23.05	57.01	8 18 42	3548.3	-40.16	181.75
129.68	15 10 5	2684.40	-36.11	75.77	23.04	57.00	15 54 49	2084.4	-40.16	67.41
50.32	7 9 33	4148.35	-36.12	190.12	23.05	57.01	8 18 42	3548.3	-40.16	181.75
129.68	15 10 5	2684.40	-36.11	75.77	23.04	57.00	15 54 49	2084.4	-40.16	67.41
50.32	7 9 33	4148.35	-36.12	190.12	23.05	57.01	8 18 42	3548.3	-40.16	181.75
129.68	15 10 5	2684.40	-36.11	75.77	23.04	57.00	15 54 49	2084.4	-40.16	67.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8289	TRA	-.0826	TC3	-5.9839	BAU	1.0195	SGT	5118.1	SGR	2174.0	SG3	2929.5	ST	3064.5	SR	1210.0	SS	4073.8
RDE	.7175	RRA	.1851	RC3	-2.5614	FAU	.58005	RRT	.9676	RRF	.9941	RTF	.9685	CRT	.9911	CRS	-.9999	CST	-.9920
FDE	9.5664	FRA	2.2988	FC	-42.8613	BSP	18677	SGB	5560.7	R23	.1890	R13	.9763	LSA	5229.8	MSA	316.0	SSA	13.8
BDE	1.9646	BRA	.2026	BC3	6.5091	FSP	10049	SG1	5537.5	SG2	507.0	THA	22.54	EL1	3291.3	EL2	150.1	ALF	21.42

LAUNCH DATE NOV 29 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 666.777 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.938	GAL	1.03	AZL	86.75	HCA	200.50	SMA	185.88	ECC	.20694	INC	3.2542	V1	30.196
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.398	GAP	-6.47	AZP	93.05	TAL	6.04	TAP	206.54	RCA	147.41	APO	224.34	V2	25.168
RC	278.273	GL	33.48	GP	-12.17	ZAL	74.89	ZAP	81.66	ETS	177.26	ZAE	113.43	ETE	183.64	ZAC	73.43	ETC	256.79	CLP	81.47

PLANETOCENTRIC CONIC

C3	11.487	VHL	3.389	DLA	46.51	RAL	155.38	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	2.931	DPA	-5.20	RAP	165.38	ECC	1.1890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.42	7 13 52	4134.39	-35.71	188.46	22.41	57.94	8 22 47	3534.4	-39.64	180.07
128.58	15 6 34	2690.12	-35.70	75.99	22.41	57.93	15 51 24	2090.1	-39.63	67.60
51.42	7 13 52	4134.39	-35.71	188.46	22.41	57.94	8 22 47	3534.4	-39.64	180.07
128.58	15 6 34	2690.12	-35.70	75.99	22.41	57.93	15 51 24	2090.1	-39.63	67.60
51.42	7 13 52	4134.39	-35.71	188.46	22.41	57.94	8 22 47	3534.4	-39.64	180.07
128.58	15 6 34	2690.12	-35.70	75.99	22.41	57.93	15 51 24	2090.1	-39.63	67.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8690	TRA	-.0637	TC3	-6.4918	BAU	1.0646	SGT	5419.6	SGR	2044.2	SG3	2914.9	ST	3162.8	SR	1133.9	SS	3961.4
RDE	.6655	RRA	.1800	RC3	-2.4319	FAU	.57557	RRT	.9694	RRF	.9927	RTF	.9710	CRT	.9913	CRS	-.9999	CST	-.9921
FDE	9.1819	FRA	2.3249	FC	-43.3791	BSP	19554	SGB	5792.3	R23	.1800	R13	.9769	LSA	5184.7	MSA	315.8	SSA	14.7
BDE	1.9840	BRA	.1909	BC3	6.9324	FSP	9987	SG1	5773.1	SG2	471.1	THA	20.22	EL1	3356.9	EL2	140.7	ALF	19.60

LAUNCH DATE NOV 29 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 670.902 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.939	GAL	.99	AZL	86.83	HCA	201.64	SMA	185.89	ECC	.20694	INC	3.1683	V1	30.196
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.445	GAP	-6.66	AZP	92.95	TAL	5.76	TAP	207.40	RCA	147.42	APO	224.36	V2	25.208
RC	279.589	GL	32.82	GP	-11.52	ZAL	75.22	ZAP	79.86	ETS	177.01	ZAE	111.45	ETE	182.94	ZAC	73.92	ETC	256.91	CLP	79.64

PLANETOCENTRIC CONIC

C3	11.281	VHL	3.359	DLA	45.72	RAL	155.56	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	2.943	DPA	-4.34	RAP	165.03	ECC	1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.47	7 18 25	4120.88	-35.30	186.88	21.92	58.80	8 27 5	3520.9	-39.13	178.47
127.53	15 3 27	2696.14	-35.29	76.25	21.91	58.79	15 48 24	2096.1	-39.12	67.84
52.47	7 18 25	4120.88	-35.30	186.88	21.92	58.80	8 27 5	3520.9	-39.13	178.47
127.53	15 3 27	2696.14	-35.29	76.25	21.91	58.79	15 48 24	2096.1	-39.12	67.84
52.47	7 18 25	4120.88	-35.30	186.88	21.92	58.80	8 27 5	3520.9	-39.13	178.47
127.53	15 3 27	2696.14	-35.29	76.25	21.91	58.79	15 48 24	2096.1	-39.12	67.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9045	TRA	-.0439	TC3	-7.0089	BAU	1.1130	SGT	5721.4	SGR	1925.5	SG3	2894.9	ST	3252.0	SR	1065.2	SS	3844.7
RDE	.6193	RRA	.1755	RC3	-2.3098	FAU	.57049	RRT	.9705	RRF	.9910	RTF	.9732	CRT	.9914	CRS	-.9999	CST	-.9922
FDE	8.7914	FRA	2.3466	FC	-43.7794	BSP	20418	SGB	6036.7	R23	.1692	R13	.9776	LSA	5137.3	MSA	315.5	SSA	15.7
BDE	2.0026	BRA	.1809	BC3	7.3797	FSP	9889	SG1	6020.5	SG2	441.1	THA	18.19	EL1	3419.4	EL2	132.3	ALF	18.02

LAUNCH DATE NOV 29 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 675.033 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.940	GAL	.94	AZL	86.91	HCA	202.78	SMA	185.91	ECC	.20696	INC	3.0906
RP	217.62	LAP	-1.20	LOP	269.57	VP	22.491	GAP	-6.83	AZP	92.85	TAL	5.48	TAP	208.26	RCA	147.43	APO	224.39
RC	280.887	GL	32.21	GP	-10.93	ZAL	75.59	ZAP	78.08	ETS	176.78	ZAE	109.47	ETE	182.32	ZAC	74.37	ETC	257.01

V1	30.196	V2	25.248	CLP	77.85														

PLANETOCENTRIC CONIC

C3	11.096	VHL	3.331	DLA	44.97	RAL	155.81	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	2.958	DPA	-3.54	RAP	164.69
ECC	1.1826	PO CST TIM	3507.7	INJ 2 LAT	-38.63	INJ 2 LONG	176.95												
ECC	1.1826	PO CST TIM	2102.5	INJ 2 LAT	-38.62	INJ 2 LONG	68.12												
ECC	1.1826	PO CST TIM	3507.7	INJ 2 LAT	-38.63	INJ 2 LONG	176.95												
ECC	1.1826	PO CST TIM	2102.5	INJ 2 LAT	-38.62	INJ 2 LONG	68.12												
ECC	1.1826	PO CST TIM	3507.7	INJ 2 LAT	-38.63	INJ 2 LONG	176.95												
ECC	1.1826	PO CST TIM	2102.5	INJ 2 LAT	-38.62	INJ 2 LONG	68.12												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME
53.48	7 23 11	4107.70	-34.90	185.37	21.54	59.61	8 31 38
126.52	15 0 41	2702.46	-34.89	76.54	21.54	59.59	15 45 44
53.48	7 23 11	4107.70	-34.90	185.37	21.54	59.61	8 31 38
126.52	15 0 41	2702.46	-34.89	76.54	21.54	59.59	15 45 44
53.48	7 23 11	4107.70	-34.90	185.37	21.54	59.61	8 31 38
126.52	15 0 41	2702.46	-34.89	76.54	21.54	59.59	15 45 44

DIFFERENTIAL CORRECTIONS

TDE	1.9477	TRA	-.0112	TC3	-7.4978	BAU	1.1580
RDE	.5829	RRA	.1775	RC3	-2.1725	FAU	.55974
FDE	8.4845	FRA	2.4730	FC	-43.6737	BSP	21556
BDE	2.0330	BRA	.1779	BC3	7.8062	FSP	9940

MID-COURSE EXECUTION ACCURACY

SGT	6014.5	SGR	1812.8	SG3	2859.9		
RRT	.9701	RRF	.9889	RTF	.9748		
SGB	6281.8	R23	.1589	R13	.9781		
SG1	6267.5	SG2	422.5	THA	16.37		

ORBIT DETERMINATION ACCURACY

ST	3553.5	SR	1011.9	SS	3764.9
CRT	.9915	CRS	-.9999	CST	-.9921
LSA	5132.3	MSA	321.0	SSA	16.5
EL1	3500.5	EL2	126.4	ALF	16.68

LAUNCH DATE NOV 29 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 679.176 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.942	GAL	.89	AZL	86.98	HCA	203.93	SMA	185.94	ECC	.20700	INC	3.0197
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.537	GAP	-7.01	AZP	92.76	TAL	5.18	TAP	209.10	RCA	147.45	APO	224.43
RC	282.167	GL	31.66	GP	-10.38	ZAL	76.01	ZAP	76.33	ETS	176.58	ZAE	107.52	ETE	181.78	ZAC	74.78	ETC	257.11

V1	30.196	V2	25.287	CLP	76.09														

PLANETOCENTRIC CONIC

C3	10.927	VHL	3.306	DLA	44.25	RAL	156.12	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	2.977	DPA	-2.79	RAP	164.35
ECC	1.1798	PO CST TIM	3494.8	INJ 2 LAT	-38.14	INJ 2 LONG	175.48												
ECC	1.1798	PO CST TIM	2109.1	INJ 2 LAT	-38.14	INJ 2 LONG	68.44												
ECC	1.1798	PO CST TIM	3494.8	INJ 2 LAT	-38.14	INJ 2 LONG	175.48												
ECC	1.1798	PO CST TIM	2109.1	INJ 2 LAT	-38.14	INJ 2 LONG	68.44												
ECC	1.1798	PO CST TIM	3494.8	INJ 2 LAT	-38.14	INJ 2 LONG	175.48												
ECC	1.1798	PO CST TIM	2109.1	INJ 2 LAT	-38.14	INJ 2 LONG	68.44												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME
54.45	7 28 9	4094.77	-34.50	183.91	21.27	60.36	8 36 24
125.55	14 58 12	2709.10	-34.49	76.87	21.27	60.34	15 43 21
54.45	7 28 9	4094.77	-34.50	183.91	21.27	60.36	8 36 24
125.55	14 58 12	2709.10	-34.49	76.87	21.27	60.34	15 43 21
54.45	7 28 9	4094.77	-34.50	183.91	21.27	60.36	8 36 24
125.55	14 58 12	2709.10	-34.49	76.87	21.27	60.34	15 43 21

DIFFERENTIAL CORRECTIONS

TDE	1.9764	TRA	.0134	TC3	-8.0185	BAU	1.2096
RDE	.5447	RRA	.1732	RC3	-2.0644	FAU	.55369
FDE	8.0670	FRA	2.4790	FC	-43.8676	BSP	22413
BDE	2.0501	BRA	.1738	BC3	8.2799	FSP	9725

MID-COURSE EXECUTION ACCURACY

SGT	6311.8	SGR	1711.7	SG3	2829.7		
RRT	.9703	RRF	.9864	RTF	.9764		
SGB	6539.8	R23	.1455	R13	.9769		
SG1	6527.5	SG2	400.3	THA	14.80		

ORBIT DETERMINATION ACCURACY

ST	3429.4	SR	953.3	SS	3632.6
CRT	.9916	CRS	-.9998	CST	-.9921
LSA	5075.7	MSA	319.0	SSA	17.6
EL1	3557.4	EL2	118.7	ALF	15.43

LAUNCH DATE NOV 29 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 683.326 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.943	GAL	.83	AZL	87.05	HCA	205.08	SMA	185.97	ECC	.20706	INC	2.9546
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.384	GAP	-7.18	AZP	92.68	TAL	4.86	TAP	209.94	RCA	147.46	APO	224.47
RC	283.431	GL	31.15	GP	-9.87	ZAL	76.46	ZAP	74.61	ETS	176.41	ZAE	105.58	ETE	181.30	ZAC	75.16	ETC	257.21

V1	30.196	V2	25.327	CLP	74.37														

PLANETOCENTRIC CONIC

C3	10.773	VHL	3.282	DLA	43.56	RAL	156.49	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	2.998	DPA	-2.10	RAP	164.04
ECC	1.1773	PO CST TIM	3482.0	INJ 2 LAT	-37.67	INJ 2 LONG	174.05												
ECC	1.1773	PO CST TIM	2116.1	INJ 2 LAT	-37.66	INJ 2 LONG	68.80												
ECC	1.1773	PO CST TIM	3482.0	INJ 2 LAT	-37.67	INJ 2 LONG	174.05												
ECC	1.1773	PO CST TIM	2116.1	INJ 2 LAT	-37.66	INJ 2 LONG	68.80												
ECC	1.1773	PO CST TIM	3482.0	INJ 2 LAT	-37.67	INJ 2 LONG	174.05												
ECC	1.1773	PO CST TIM	2116.1	INJ 2 LAT	-37.66	INJ 2 LONG	68.80												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME
55.40	7 33 21	4081.99	-34.11	182.49	21.10	61.06	8 41 23
124.60	14 55 57	2716.08	-34.10	77.23	21.10	61.05	15 41 13
55.40	7 33 21	4081.99	-34.11	182.49	21.10	61.06	8 41 23
124.60	14 55 57	2716.08	-34.10	77.23	21.10	61.05	15 41 13
55.40	7 33 21	4081.99	-34.11	182.49	21.10	61.06	8 41 23
124.60	14 55 57	2716.08	-34.10	77.23	21.10	61.05	15 41 13

DIFFERENTIAL CORRECTIONS

TDE	2.0026	TRA	.0419	TC3	-8.5360	BAU	1.2612
RDE	.5113	RRA	.1706	RC3	-1.9546	FAU	.54539
FDE	7.6682	FRA	2.5038	FC	-43.8277	BSP	23300
BDE	2.0669	BRA	.1757	BC3	8.7569	FSP	9538

MID-COURSE EXECUTION ACCURACY

SGT	6605.3	SGR	1616.1	SG3	2790.8		
RRT	.9697	RRF	.9835	RTF	.9778		
SGB	6800.1	R23	.1315	R13	.9797		
SG1	6789.2	SG2	384.1	THA	13.39		

ORBIT DETERMINATION ACCURACY

ST	3500.0	SR	901.8	SS	3506.4
CRT	.9917	CRS	-.9998	CST	-.9920
LSA	5025.6	MSA	318.2	SSA	18.6
EL1	3612.6	EL2	112.0	ALF	14.35

LAUNCH DATE NOV 29 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 687.483 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.945	GAL	.78	AZL	87.11	HCA	206.23	SMA	186.00	ECC	.20714	INC	2.8947
RP	216.57	LAP	-1.28	LOP	273.02	VP	22.630	GAP	-7.34	AZP	92.60	TAL	4.53	TAP	210.76	RCA	147.47	APO	224.53
RC	284.679	GL	30.68	GP	-9.40	ZAL	76.95	ZAP	72.93	ETS	176.26	ZAE	103.68	ETE	180.88	ZAC	75.51	ETC	257.29

V1	30.196	V2	25.365	CLP	72.69														

PLANETOCENTRIC CONIC

C3	10.632	VHL	3.261	DLA	42.90	RAL	156.92	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	3.023	DPA	-1.46	RAP	163.75
ECC	1.1750	PO CST TIM	3469.2	INJ 2 LAT	-37.20	INJ 2 LONG	172.66												
ECC	1.1750	PO CST TIM	2123.5	INJ 2 LAT	-37.19	INJ 2 LONG	69.20												
ECC	1.1750	PO CST TIM	3469.2	INJ 2 LAT	-37.20	INJ 2 LONG	172.66												
ECC	1.1750	PO CST TIM	2123.5	INJ 2 LAT	-37.19	INJ 2 LONG	69.20												
ECC	1.1750	PO CST TIM	3469.2	INJ 2 LAT	-37.20	INJ 2 LONG	172.66												
ECC	1.1750	PO CST TIM	2123.5	INJ 2 LAT	-37.19	INJ 2 LONG	69.20												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME
56.32	7 38 47	4069.24	-33.72	181.09	21.02	61.74	8 46 37
123.68	14 53 53	2723.46	-33.71	77.64	21.01	61.72	15 39 17
56.32	7 38 47	4069.24	-33.72	181.09	21.02	61.74	8 46 37
123.68	14 53 53	2723.46	-33.71	77.64	21.01	61.72	15 39 17
56.32	7 38 47	4069.24	-33.72	181.09	21.02	61.74	8 46 37
123.68	14 53 53	2723.46	-33.71	77.64	21.01	61.72	15 39 17

DIFFERENTIAL CORRECTIONS

TDE	2.0266	TRA	.0742	TC3	-9.0496	BAU	1.3128
RDE	.4821	RRA	.1688	RC3	-1.8485	FAU	.53620
FDE	7.2877	FRA	2.5377	FC	-43.6626	BSP	24210
BDE	2.0831	BRA	.1844	BC3	9.2365	FSP	9351

MID-COURSE EXECUTION ACCURACY

SGT	6895.0	SGR	1527.9	SG3	2748.3		
RRT	.9684	RRF	.9801	RTF	.9790		
SGB	7062.2	R23	.1172	R13	.9804		
SG1	7052.4	SG2	372.4	THA	12.15		

ORBIT DETERMINATION ACCURACY

ST	3565.9	SR	856.5	SS	3385.8
CRT	.9919	CRS	-.9997	CST	-.9919
LSA	4981.2	MSA	317.5	SSA	19.6
EL1	3665.8	EL2	106.0	ALF	13.41

LAUNCH DATE NOV 29 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 691.649 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.947 GAL .72 AZL 87.16 HCA 207.39 SMA 186.04 ECC .20724 INC 2.8393 V1 30.196
RP 216.22 LAP -1.31 LOP 274.17 VP 22.676 GAP -7.51 AZP 92.52 TAL 4.19 TAP 211.58 RCA 147.48 APO 224.59 V2 25.404
RC 285.910 GL 30.24 GP -8.96 ZAL 77.48 ZAP 71.28 ETS 176.12 ZAE 101.80 ETE 180.52 ZAC 75.84 ETC 257.37 CLP 71.04

PLANETOCENTRIC CONIC

C3 10.502 VHL 3.241 DLA 42.24 RAL 157.39 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.050 DPA -.87 RAP 163.48 ECC 1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.24	7 44 27	4056.54	-33.33	179.72	21.02	62.37	8 52 3	3456.5	-36.73	171.29
122.76	14 52 1	2731.16	-33.32	78.07	21.01	62.36	15 37 33	2131.2	-36.72	69.64
57.24	7 44 27	4056.54	-33.33	179.72	21.02	62.37	8 52 3	3456.5	-36.73	171.29
122.76	14 52 1	2731.16	-33.32	78.07	21.01	62.36	15 37 33	2131.2	-36.72	69.64
57.24	7 44 27	4056.54	-33.33	179.72	21.02	62.37	8 52 3	3456.5	-36.73	171.29
122.76	14 52 1	2731.16	-33.32	78.07	21.01	62.36	15 37 33	2131.2	-36.72	69.64

DIFFERENTIAL CORRECTIONS
TDE 2.0483 TRA .1113 TC3-9.5537 BAU 1.3634
RDE .4560 RRA .1681 RC3-1.7423 FAU .52527
FDE 6.9155 FRA 2.5867 FC-43.3019 BSP 25132
BDE 2.0984 BRA .2016 BC3 9.7113 FSP 9158

MID-COURSE EXECUTION ACCURACY
SGT 7178.2 SGR 1444.4 SG3 2698.3
RRT .9663 RRF .9761 RTF .9800
SGB 7322.0 R23 .1035 R13 .9811
SG1 7312.9 SG2 365.2 THA 11.03

ORBIT DETERMINATION ACCURACY
ST 3627.0 SR 815.8 SS 3266.6
CRT .9920 CRS -.9996 CST -.9917
LSA 4938.7 MSA 318.1 SSA 20.6
EL1 3716.3 EL2 100.5 ALF 12.59

LAUNCH DATE NOV 29 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 695.822 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.950 GAL .66 AZL 87.21 HCA 208.55 SMA 186.08 ECC .20735 INC 2.7879 V1 30.196
RP 215.88 LAP -1.33 LOP 275.34 VP 22.722 GAP -7.67 AZP 92.45 TAL 3.83 TAP 212.38 RCA 147.49 APO 224.66 V2 25.442
RC 287.127 GL 29.83 GP -8.55 ZAL 78.05 ZAP 69.67 ETS 176.00 ZAE 99.95 ETE 180.19 ZAC 76.15 ETC 257.45 CLP 69.43

PLANETOCENTRIC CONIC

C3 10.382 VHL 3.222 DLA 41.61 RAL 157.92 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.080 DPA -.32 RAP 163.24 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.14	7 50 22	4043.69	-32.94	178.36	21.09	62.99	8 57 46	3443.7	-36.26	169.93
121.86	14 50 16	2739.38	-32.93	78.54	21.08	62.97	15 35 55	2139.4	-36.25	70.12
58.14	7 50 22	4043.69	-32.94	178.36	21.09	62.99	8 57 46	3443.7	-36.26	169.93
121.86	14 50 16	2739.38	-32.93	78.54	21.08	62.97	15 35 55	2139.4	-36.25	70.12
58.14	7 50 22	4043.69	-32.94	178.36	21.09	62.99	8 57 46	3443.7	-36.26	169.93
121.86	14 50 16	2739.38	-32.93	78.54	21.08	62.97	15 35 55	2139.4	-36.25	70.12

DIFFERENTIAL CORRECTIONS
TDE 2.0663 TRA .1523 TC-10.0555 BAU 1.4141
RDE .4325 RRA .1684 RC3-1.6418 FAU .51418
FDE 6.5507 FRA 2.6490 FC-42.8780 BSP 26045
BDE 2.1110 BRA .2270 BC310.1886 FSP 8951

MID-COURSE EXECUTION ACCURACY
SGT 7457.9 SGR 1367.9 SG3 2647.4
RRT .9632 RRF .9714 RTF .9808
SGB 7582.3 R23 .0909 R13 .9816
SG1 7573.7 SG2 362.0 THA 10.04

ORBIT DETERMINATION ACCURACY
ST 3681.0 SR 779.1 SS 3148.3
CRT .9921 CRS -.9996 CST -.9913
LSA 4895.5 MSA 320.2 SSA 21.6
EL1 3761.4 EL2 95.7 ALF 11.87

LAUNCH DATE NOV 29 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 700.002 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.952 GAL .59 AZL 87.26 HCA 209.72 SMA 186.12 ECC .20749 INC 2.7401 V1 30.196
RP 215.54 LAP -1.36 LOP 276.50 VP 22.768 GAP -7.82 AZP 92.38 TAL 3.46 TAP 213.17 RCA 147.50 APO 224.74 V2 25.480
RC 288.329 GL 29.44 GP -8.17 ZAL 78.65 ZAP 68.10 ETS 175.90 ZAE 98.14 ETE 179.90 ZAC 76.44 ETC 257.52 CLP 67.86

PLANETOCENTRIC CONIC

C3 10.271 VHL 3.205 DLA 40.98 RAL 158.48 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.113 DPA .19 RAP 163.02 ECC 1.1690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.04	7 56 32	4030.73	-32.55	177.01	21.22	63.58	9 3 43	3430.7	-35.80	168.58
120.96	14 48 38	2748.01	-32.54	79.06	21.22	63.57	15 34 26	2148.0	-35.79	70.64
59.04	7 56 32	4030.73	-32.55	177.01	21.22	63.58	9 3 43	3430.7	-35.80	168.58
120.96	14 48 38	2748.01	-32.54	79.06	21.22	63.57	15 34 26	2148.0	-35.79	70.64
59.04	7 56 32	4030.73	-32.55	177.01	21.22	63.58	9 3 43	3430.7	-35.80	168.58
120.96	14 48 38	2748.01	-32.54	79.06	21.22	63.57	15 34 26	2148.0	-35.79	70.64

DIFFERENTIAL CORRECTIONS
TDE 2.0810 TRA .1967 TC-10.5503 BAU 1.4641
RDE .4114 RRA .1683 RC3-1.5445 FAU .50246
FDE 6.1913 FRA 2.7002 FC-42.3523 BSP 26950
BDE 2.1213 BRA .2589 BC310.6628 FSP 8740

MID-COURSE EXECUTION ACCURACY
SGT 7732.3 SGR 1296.1 SG3 2592.5
RRT .9596 RRF .9659 RTF .9816
SGB 7840.2 R23 .0781 R13 .9822
SG1 7831.9 SG2 360.2 THA 9.16

ORBIT DETERMINATION ACCURACY
ST 3728.6 SR 745.7 SS 3028.9
CRT .9923 CRS -.9994 CST -.9909
LSA 4850.7 MSA 320.9 SSA 22.5
EL1 3801.3 EL2 90.7 ALF 11.23

LAUNCH DATE NOV 29 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 704.190 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.955 GAL .53 AZL 87.30 HCA 210.88 SMA 186.17 ECC .20764 INC 2.6954 V1 30.196
RP 215.21 LAP -1.38 LOP 277.67 VP 22.814 GAP -7.98 AZP 92.31 TAL 3.07 TAP 213.95 RCA 147.51 APO 224.83 V2 25.517
RC 289.516 GL 29.08 GP -7.81 ZAL 79.29 ZAP 66.56 ETS 175.81 ZAE 96.36 ETE 179.65 ZAC 76.72 ETC 257.58 CLP 66.33

PLANETOCENTRIC CONIC

C3 10.169 VHL 3.189 DLA 40.36 RAL 159.09 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.147 DPA .66 RAP 162.83 ECC 1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.94	8 3 0	4017.49	-32.15	175.64	21.42	64.15	9 9 57	3417.5	-35.33	167.23
120.06	14 47 2	2757.24	-32.14	79.62	21.42	64.14	15 33 0	2157.2	-35.33	71.20
59.94	8 3 0	4017.49	-32.15	175.64	21.42	64.15	9 9 57	3417.5	-35.33	167.23
120.06	14 47 2	2757.24	-32.14	79.62	21.42	64.14	15 33 0	2157.2	-35.33	71.20
59.94	8 3 0	4017.49	-32.15	175.64	21.42	64.15	9 9 57	3417.5	-35.33	167.23
120.06	14 47 2	2757.24	-32.14	79.62	21.42	64.14	15 33 0	2157.2	-35.33	71.20

DIFFERENTIAL CORRECTIONS
TDE 2.0922 TRA .2452 TC-11.0377 BAU 1.5134
RDE .3926 RRA .1688 RC3-1.4511 FAU .49036
FDE 5.8448 FRA 2.7600 FC-41.7475 BSP 27869
BDE 2.1288 BRA .2977 BC311.1327 FSP 8545

MID-COURSE EXECUTION ACCURACY
SGT 8001.3 SGR 1229.8 SG3 2536.0
RRT .9549 RRF .9596 RTF .9822
SGB 8095.3 R23 .0666 R13 .9826
SG1 8087.2 SG2 361.3 THA 8.37

ORBIT DETERMINATION ACCURACY
ST 3769.2 SR 715.9 SS 2912.7
CRT .9925 CRS -.9992 CST -.9904
LSA 4806.1 MSA 322.7 SSA 23.4
EL1 3835.6 EL2 86.1 ALF 10.68

LAUNCH DATE NOV 29 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 708.385 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.958 GAL .46 AZL 87.35 HCA 212.06 SMA 186.22 ECC .20782 INC 2.6536 V1 30.196
RP 214.88 LAP -1.41 LOP 278.84 VP 22.860 GAP -8.12 AZP 92.25 TAL 2.67 TAP 214.72 RCA 147.52 APO 224.92 V2 25.554
RC 290.691 GL 28.73 GP -7.48 ZAL 79.96 ZAP 65.07 ETS 175.73 ZAE 94.61 ETE 179.42 ZAC 76.98 ETC 257.63 CLP 64.84

PLANETOCENTRIC CONIC

C3 10.074 VHL 3.174 DLA 39.75 RAL 159.74 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 3.184 DPA 1.09 RAP 162.68 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.85	8 9 45	4003.92	-31.75	174.27	21.68	64.71	9 16 29	3403.9	-34.86	165.86
119.15	14 45 29	2767.08	-31.74	80.22	21.68	64.70	15 31 36	2167.1	-34.86	71.82
60.85	8 9 45	4003.92	-31.75	174.27	21.68	64.71	9 16 29	3403.9	-34.86	165.86
119.15	14 45 29	2767.08	-31.74	80.22	21.68	64.70	15 31 36	2167.1	-34.86	71.82
60.85	8 9 45	4003.92	-31.75	174.27	21.68	64.71	9 16 29	3403.9	-34.86	165.86
119.15	14 45 29	2767.08	-31.74	80.22	21.68	64.70	15 31 36	2167.1	-34.86	71.82

DIFFERENTIAL CORRECTIONS
TDE 2.1009 TRA .2985 TC-11.5135 BAU 1.5615
RDE .3759 RRA .1698 RC3-1.3585 FAU .47714
FDE 5.5137 FRA 2.8266 FC-41.0020 BSP 28738
BDE 2.1342 BRA .3434 BC311.5933 FSP 8298

MID-COURSE EXECUTION ACCURACY
SGT 8263.9 SGR 1167.5 SG3 2475.0
RRT .9490 RRF .9522 RTF .9827
SGB 8346.0 R23 .0566 R13 .9831
SG1 8338.0 SG2 365.0 THA 7.65

ORBIT DETERMINATION ACCURACY
ST 3804.5 SR 689.5 SS 2800.6
CRT .9927 CRS -.9990 CST -.9898
LSA 4763.1 MSA 325.2 SSA 24.3
EL1 3865.6 EL2 81.7 ALF 10.20

LAUNCH DATE NOV 29 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 712.588 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.962 GAL .39 AZL 87.39 HCA 213.23 SMA 186.28 ECC .20801 INC 2.6143 V1 30.196
RP 214.56 LAP -1.43 LOP 280.02 VP 22.905 GAP -8.27 AZP 92.19 TAL 2.25 TAP 215.48 RCA 147.53 APO 225.03 V2 25.590
RC 291.851 GL 28.41 GP -7.17 ZAL 80.67 ZAP 63.61 ETS 175.66 ZAE 92.90 ETE 179.22 ZAC 77.24 ETC 257.68 CLP 63.39

PLANETOCENTRIC CONIC

C3 9.988 VHL 3.160 DLA 39.14 RAL 160.43 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.223 DPA 1.49 RAP 162.55 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.77	8 16 49	3989.92	-31.34	172.87	22.00	65.25	9 23 19	3389.9	-34.39	164.48
118.23	14 43 55	2777.63	-31.33	80.89	21.99	65.24	15 30 13	2177.6	-34.38	72.50
61.77	8 16 49	3989.92	-31.34	172.87	22.00	65.25	9 23 19	3389.9	-34.39	164.48
118.23	14 43 55	2777.63	-31.33	80.89	21.99	65.24	15 30 13	2177.6	-34.38	72.50
61.77	8 16 49	3989.92	-31.34	172.87	22.00	65.25	9 23 19	3389.9	-34.39	164.48
118.23	14 43 55	2777.63	-31.33	80.89	21.99	65.24	15 30 13	2177.6	-34.38	72.50

DIFFERENTIAL CORRECTIONS
TDE 2.1044 TRA .3559 TC-11.9818 BAU 1.6089
RDE .3601 RRA .1708 RC3-1.2715 FAU .46428
FDE 5.1719 FRA 2.8885 FC-40.2438 BSP 29618
BDE 2.1349 BRA .3948 BC312.0491 FSP 8074

MID-COURSE EXECUTION ACCURACY
SGT 8520.7 SGR 1109.7 SG3 2413.8
RRT .9422 RRF .9438 RTF .9831
SGB 8592.7 R23 .0469 R13 .9834
SG1 8584.8 SG2 368.9 THA 7.01

ORBIT DETERMINATION ACCURACY
ST 3830.0 SR 664.1 SS 2679.8
CRT .9930 CRS -.9986 CST -.9890
LSA 4709.9 MSA 328.1 SSA 25.2
EL1 3886.4 EL2 77.2 ALF 9.77

LAUNCH DATE NOV 29 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 716.797 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.965 GAL .31 AZL 87.42 HCA 214.41 SMA 186.34 ECC .20822 INC 2.5773 V1 30.196
RP 214.24 LAP -1.46 LOP 281.20 VP 22.950 GAP -8.41 AZP 92.13 TAL 1.82 TAP 216.23 RCA 147.54 APO 225.14 V2 25.626
RC 292.998 GL 28.09 GP -6.87 ZAL 81.41 ZAP 62.20 ETS 175.60 ZAE 91.23 ETE 179.04 ZAC 77.48 ETC 257.73 CLP 61.98

PLANETOCENTRIC CONIC

C3 9.908 VHL 3.148 DLA 38.52 RAL 161.16 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.264 DPA 1.85 RAP 162.45 ECC 1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.71	8 24 14	3975.37	-30.93	171.44	22.36	65.79	9 30 29	3375.4	-33.91	163.06
117.29	14 42 18	2789.01	-30.92	81.61	22.36	65.77	15 28 47	2189.0	-33.90	73.24
62.71	8 24 14	3975.37	-30.93	171.44	22.36	65.79	9 30 29	3375.4	-33.91	163.06
117.29	14 42 18	2789.01	-30.92	81.61	22.36	65.77	15 28 47	2189.0	-33.90	73.24
62.71	8 24 14	3975.37	-30.93	171.44	22.36	65.79	9 30 29	3375.4	-33.91	163.06
117.29	14 42 18	2789.01	-30.92	81.61	22.36	65.77	15 28 47	2189.0	-33.90	73.24

DIFFERENTIAL CORRECTIONS
TDE 2.1057 TRA .4172 TC-12.4383 BAU 1.6551
RDE .3468 RRA .1718 RC3-1.1859 FAU .45066
FDE 4.8642 FRA 2.9495 FC-39.3759 BSP 30533
BDE 2.1341 BRA .4512 BC312.4947 FSP 7893

MID-COURSE EXECUTION ACCURACY
SGT 8772.1 SGR 1056.2 SG3 2350.3
RRT .9340 RRF .9341 RTF .9836
SGB 8835.5 R23 .0386 R13 .9838
SG1 8827.5 SG2 375.1 THA 6.43

ORBIT DETERMINATION ACCURACY
ST 3851.0 SR 642.9 SS 2572.1
CRT .9934 CRS -.9981 CST -.9882
LSA 4663.6 MSA 330.4 SSA 26.0
EL1 3903.7 EL2 72.7 ALF 9.42

LAUNCH DATE NOV 29 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 721.014 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.968 GAL .24 AZL 87.46 HCA 215.60 SMA 186.40 ECC .20846 INC 2.5424 V1 30.196
RP 213.93 LAP -1.48 LOP 282.38 VP 22.995 GAP -8.55 AZP 92.07 TAL 1.38 TAP 216.97 RCA 147.54 APO 225.26 V2 25.662
RC 294.131 GL 27.79 GP -6.59 ZAL 82.19 ZAP 60.82 ETS 175.55 ZAE 89.59 ETE 178.88 ZAC 77.71 ETC 257.76 CLP 60.60

PLANETOCENTRIC CONIC

C3 9.836 VHL 3.136 DLA 37.91 RAL 161.92 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.307 DPA 2.18 RAP 162.39 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.67	8 32 0	3960.21	-30.50	169.97	22.78	66.31	9 38 0	3360.2	-33.43	161.60
116.33	14 40 36	2801.26	-30.49	82.40	22.77	66.29	15 27 17	2201.3	-33.42	74.04
63.67	8 32 0	3960.21	-30.50	169.97	22.78	66.31	9 38 0	3360.2	-33.43	161.60
116.33	14 40 36	2801.26	-30.49	82.40	22.77	66.29	15 27 17	2201.3	-33.42	74.04
63.67	8 32 0	3960.21	-30.50	169.97	22.78	66.31	9 38 0	3360.2	-33.43	161.60
116.33	14 40 36	2801.26	-30.49	82.40	22.77	66.29	15 27 17	2201.3	-33.42	74.04

DIFFERENTIAL CORRECTIONS
TDE 2.0997 TRA .4800 TC-12.8927 BAU 1.7016
RDE .3337 RRA .1719 RC3-1.1072 FAU .43803
FDE 4.5358 FRA 2.9813 FC-38.5542 BSP 31344
BDE 2.1260 BRA .5099 BC312.9402 FSP 7651

MID-COURSE EXECUTION ACCURACY
SGT 9019.3 SGR 1006.2 SG3 2287.8
RRT .9253 RRF .9231 RTF .9841
SGB 9075.3 R23 .0288 R13 .9842
SG1 9067.3 SG2 379.6 THA 5.90

ORBIT DETERMINATION ACCURACY
ST 3858.0 SR 621.5 SS 2449.1
CRT .9939 CRS -.9974 CST -.9873
LSA 4599.8 MSA 330.6 SSA 26.9
EL1 3907.1 EL2 67.8 ALF 9.10

LAUNCH DATE NOV 29 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 725.237 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.972 GAL .16 AZL 87.49 HCA 216.78 SMA 186.46 ECC .20871 INC 2.5093 V1 30.196
RP 213.62 LAP -1.50 LOP 283.57 VP 23.039 GAP -8.69 AZP 92.01 TAL .92 TAP 217.70 RCA 147.55 APO 225.38 V2 25.697
RC 295.251 GL 27.50 GP -6.33 ZAL 83.00 ZAP 59.48 ETS 175.51 ZAE 87.98 ETE 178.75 ZAC 77.94 ETC 257.79 CLP 59.27

PLANETOCENTRIC CONIC

C3 9.771 VHL 3.126 DLA 37.29 RAL 162.72 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.352 DPA 2.48 RAP 162.35 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.65	8 40 11	3944.27	-30.07	168.45	23.24	66.83	9 45 56	3344.3	-32.93	160.10
115.35	14 38 46	2814.56	-30.06	83.27	23.24	66.81	15 25 40	2214.6	-32.92	74.93
64.65	8 40 11	3944.27	-30.07	168.45	23.24	66.83	9 45 56	3344.3	-32.93	160.10
115.35	14 38 46	2814.56	-30.06	83.27	23.24	66.81	15 25 40	2214.6	-32.92	74.93
64.65	8 40 11	3944.27	-30.07	168.45	23.24	66.83	9 45 56	3344.3	-32.93	160.10
115.35	14 38 46	2814.56	-30.06	83.27	23.24	66.81	15 25 40	2214.6	-32.92	74.93

DIFFERENTIAL CORRECTIONS
TDE 2.0925 TRA .5468 TC-13.3269 BAU 1.7460
RDE .3225 RRA .1723 RC3-1.0288 FAU .42453
FDE 4.2362 FRA 3.0154 FC-37.6152 BSP 32191
BDE 2.1172 BRA .5733 BC313.3666 FSP 7439

MID-COURSE EXECUTION ACCURACY
SGT 9258.1 SGR 959.6 SG3 2222.3
RRT .9147 RRF .9106 RTF .9846
SGB 9307.7 R23 .0207 R13 .9847
SG1 9299.7 SG2 386.0 THA 5.43

ORBIT DETERMINATION ACCURACY
ST 3862.2 SR 603.4 SS 2337.1
CRT .9944 CRS -.9965 CST -.9864
LSA 4542.3 MSA 330.9 SSA 27.7
EL1 3908.6 EL2 62.9 ALF 8.83

LAUNCH DATE NOV 29 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 729.467 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.976 GAL .08 AZL 87.52 HCA 217.97 SMA 186.53 ECC .20898 INC 2.4778 V1 30.196
RP 213.31 LAP -1.52 LOP 284.76 VP 23.083 GAP -8.83 AZP 91.95 TAL .45 TAP 218.42 RCA 147.55 APO 225.51 V2 25.731
RC 296.356 GL 27.22 GP -6.09 ZAL 83.85 ZAP 58.17 ETS 175.47 ZAE 86.41 ETE 178.62 ZAC 78.16 ETC 257.82 CLP 57.97

PLANETOCENTRIC CONIC

C3 9.712 VHL 3.116 DLA 36.67 RAL 163.55 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.398 DPA 2.75 RAP 162.35 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.67	8 48 47	3927.52	-29.63	166.87	23.75	67.33	9 54 14	3327.5	-32.42	158.54
114.33	14 36 47	2828.94	-29.62	84.22	23.75	67.32	15 23 56	2228.9	-32.41	75.89
65.67	8 48 47	3927.52	-29.63	166.87	23.75	67.33	9 54 14	3327.5	-32.42	158.54
114.33	14 36 47	2828.94	-29.62	84.22	23.75	67.32	15 23 56	2228.9	-32.41	75.89
65.67	8 48 47	3927.52	-29.63	166.87	23.75	67.33	9 54 14	3327.5	-32.42	158.54
114.33	14 36 47	2828.94	-29.62	84.22	23.75	67.32	15 23 56	2228.9	-32.41	75.89

DIFFERENTIAL CORRECTIONS
TDE 2.0775 TRA .6208 TC-13.7587 BAU 1.7908
RDE .3117 RRA .1738 RC3 -.9556 FAU .41173
FDE 3.9219 FRA 3.0779 FC-36.7005 BSP 32838
BDE 2.1007 BRA .6447 BC313.7918 FSP 7099

MID-COURSE EXECUTION ACCURACY
SGT 9495.0 SGR 917.5 SG3 2160.0
RRT .9026 RRF .8966 RTF .9847
SGB 9539.2 R23 .0147 R13 .9848
SG1 9531.1 SG2 393.5 THA 4.99

ORBIT DETERMINATION ACCURACY
ST 3851.8 SR 585.6 SS 2215.3
CRT .9949 CRS -.9950 CST -.9847
LSA 4469.1 MSA 337.0 SSA 28.5
EL1 3895.6 EL2 58.4 ALF 8.60

LAUNCH DATE NOV 29 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 733.696 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.980 GAL -.01 AZL 87.55 HCA 219.16 SMA 186.60 ECC .20928 INC 2.4480 V1 30.196
RP 213.01 LAP -1.55 LOP 285.95 VP 23.127 GAP -8.96 AZP 91.90 TAL 359.96 TAP 219.12 RCA 147.55 APO 225.65 V2 25.765
RC 297.448 GL 26.95 GP -5.86 ZAL 84.73 ZAP 56.91 ETS 175.43 ZAE 84.87 ETE 178.51 ZAC 78.37 ETC 257.83 CLP 56.71

PLANETOCENTRIC CONIC

C3 9.661 VHL 3.108 DLA 36.03 RAL 164.40 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.446 DPA 2.98 RAP 162.38 ECC 1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.72	8 57 54	3909.60	-29.17	165.22	24.31	67.84	10 3 3	3309.6	-31.90	156.90
113.28	14 34 31	2844.77	-29.16	85.28	24.30	67.82	15 21 55	2244.8	-31.90	76.96
66.72	8 57 54	3909.60	-29.17	165.22	24.31	67.84	10 3 3	3309.6	-31.90	156.90
113.28	14 34 31	2844.77	-29.16	85.28	24.30	67.82	15 21 55	2244.8	-31.90	76.96
66.72	8 57 54	3909.60	-29.17	165.22	24.31	67.84	10 3 3	3309.6	-31.90	156.90
113.28	14 34 31	2844.77	-29.16	85.28	24.30	67.82	15 21 55	2244.8	-31.90	76.96

DIFFERENTIAL CORRECTIONS
TDE 1.9237 TRA .7184 TC-14.0318 BAU 1.8156
RDE .2648 RRA .1796 RC3 -.8446 FAU .38549
FDE 2.5437 FRA 3.2618 FC-34.5451 BSP 35122
BDE 1.9418 BRA .7405 BC314.0572 FSP 7984

MID-COURSE EXECUTION ACCURACY
SGT 9557.3 SGR 825.5 SG3 2004.8
RRT .8848 RRF .8670 RTF .9745
SGB 9592.9 R23 .0071 R13 .9746
SG1 9585.2 SG2 383.5 THA 4.38

ORBIT DETERMINATION ACCURACY
ST 3589.5 SR 503.5 SS 1557.9
CRT .9932 CRS -.9765 CST -.9526
LSA 3920.7 MSA 438.1 SSA 29.8
EL1 3624.1 EL2 57.9 ALF 7.93

LAUNCH DATE NOV 29 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 737.942 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 32.984 GAL -.09 AZL 87.58 HCA 220.36 SMA 186.68 ECC .20960 INC 2.4196 V1 30.196
RP 212.72 LAP -1.57 LOP 287.15 VP 23.170 GAP -9.09 AZP 91.84 TAL 359.46 TAP 219.82 RCA 147.55 APO 225.80 V2 25.798
RC 298.526 GL 26.68 GP -5.64 ZAL 85.65 ZAP 55.68 ETS 175.40 ZAE 83.37 ETE 178.41 ZAC 78.58 ETC 257.85 CLP 55.49

PLANETOCENTRIC CONIC

C3 9.616 VHL 3.101 DLA 35.39 RAL 165.29 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.496 DPA 3.20 RAP 162.44 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.82	9 7 34	3890.41	-28.70	163.47	24.91	68.34	10 12 24	3290.4	-31.37	155.18
112.18	14 31 57	2862.13	-28.69	86.45	24.90	68.32	15 19 39	2262.1	-31.37	78.15
67.82	9 7 34	3890.41	-28.70	163.47	24.91	68.34	10 12 24	3290.4	-31.37	155.18
112.18	14 31 57	2862.13	-28.69	86.45	24.90	68.32	15 19 39	2262.1	-31.37	78.15
67.82	9 7 34	3890.41	-28.70	163.47	24.91	68.34	10 12 24	3290.4	-31.37	155.18
112.18	14 31 57	2862.13	-28.69	86.45	24.90	68.32	15 19 39	2262.1	-31.37	78.15

DIFFERENTIAL CORRECTIONS
TDE 2.0685 TRA .8028 TC-14.4789 BAU 1.8642
RDE .2993 RRA .1796 RC3 -.7976 FAU .37950
FDE 3.5109 FRA 3.2786 FC-34.1654 BSP 35027
BDE 2.0900 BRA .8227 BC314.5008 FSP 6956

MID-COURSE EXECUTION ACCURACY
SGT 9927.5 SGR 846.4 SG3 2019.4
RRT .8684 RRF .8642 RTF .9852
SGB 9963.5 R23 .0143 R13 .9852
SG1 9954.7 SG2 418.5 THA 4.24

ORBIT DETERMINATION ACCURACY
ST 3870.0 SR 566.6 SS 2080.6
CRT .9962 CRS -.9914 CST -.9820
LSA 4416.5 MSA 347.3 SSA 29.5
EL1 3910.9 EL2 48.7 ALF 8.30

LAUNCH DATE NOV 29 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 742.191 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.989	GAL	-.18	AZL	87.61	HCA	221.56	SMA	186.75	ECC	.20994	INC	2.3924
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.213	GAP	-9.22	AZP	91.79	TAL	358.94	TAP	220.50	RCA	147.55	APO	225.96
RC	299.592	GL	26.42	GP	-5.43	ZAL	86.60	ZAP	54.48	ETS	175.37	ZAE	81.90	ETE	178.33	ZAC	78.78	ETC	257.85

V1	30.196	V2	25.831	CLP	54.29														

PLANETOCENTRIC CONIC

C3	9.579	VHL	3.095	DLA	34.74	RAL	166.21	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	3.547	DPA	3.38	RAP	162.53

ECC	1.1576	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		68.97	9 17 49	3869.73	-28.22	161.62	25.54	68.83	10 22 19	3269.7	-30.83	153.35							
		111.03	14 29 0	2881.30	-28.21	87.74	25.54	68.82	15 17 1	2281.3	-30.82	79.47							
		68.97	9 17 49	3869.73	-28.22	161.62	25.54	68.83	10 22 19	3269.7	-30.83	153.35							
		111.03	14 29 0	2881.30	-28.21	87.74	25.54	68.82	15 17 1	2281.3	-30.82	79.47							
		68.97	9 17 49	3869.73	-28.22	161.62	25.54	68.83	10 22 19	3269.7	-30.83	153.35							
		111.03	14 29 0	2881.30	-28.21	87.74	25.54	68.82	15 17 1	2281.3	-30.82	79.47							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0308	TRA	.8862	TC-14.8907	BAU	1.9093	SGT10152.9	SGR	812.9	SG3	1960.3	ST	3816.9	SR	550.1	SS	1937.4
RDE	.2896	RRA	.1806	RC3 -.7365	FAU	.36822	RRT	.8518	RRF	.8450	RTF	.9850	CRT	.9967	CRS	-.9875	CST	-.9786
FDE	3.1754	FRA	3.3181	FC-33.2788	BSP	35585	SGB10185.4	R23	.0085	R13	.9850	LSA	4300.8	MSA	356.9	SSA	30.4
BDE	2.0513	BRA	.9044	BC314.9090	FSP	6654	SG110176.5	SG2	424.9	THA	3.91	EL1	3856.1	EL2	44.2	ALF	8.17

LAUNCH DATE NOV 29 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 746.446 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.993	GAL	-.28	AZL	87.63	HCA	222.76	SMA	186.83	ECC	.21030	INC	2.3665
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.255	GAP	-9.34	AZP	91.74	TAL	358.41	TAP	221.18	RCA	147.54	APO	226.12
RC	300.645	GL	26.16	GP	-5.24	ZAL	87.58	ZAP	53.32	ETS	175.35	ZAE	80.46	ETE	178.25	ZAC	78.98	ETC	257.86

V1	30.196	V2	25.863	CLP	53.14														

PLANETOCENTRIC CONIC

C3	9.549	VHL	3.090	DLA	34.08	RAL	167.15	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	3.600	DPA	3.55	RAP	162.65

ECC	1.1572	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		70.19	9 28 48	3847.19	-27.72	159.64	26.22	69.33	10 32 55	3247.2	-30.27	151.39							
		109.81	14 25 32	2902.62	-27.71	89.20	26.22	69.31	15 13 55	2302.6	-30.26	80.95							
		70.19	9 28 48	3847.19	-27.72	159.64	26.22	69.33	10 32 55	3247.2	-30.27	151.39							
		109.81	14 25 32	2902.62	-27.71	89.20	26.22	69.31	15 13 55	2302.6	-30.26	80.95							
		110.00	14 46 44	2838.00	-29.19	84.76	26.82	71.37	15 34 2	2238.0	-31.45	76.28							
		110.00	14 6 47	2959.80	-26.26	93.01	25.57	67.28	14 56 7	2359.8	-29.10	84.98							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0015	TRA	.9719	TC-15.2641	BAU	1.9506	SGT10368.3	SGR	783.0	SG3	1897.4	ST	3778.5	SR	539.4	SS	1835.5
RDE	.2834	RRA	.1806	RC3 -.6740	FAU	.35574	RRT	.8326	RRF	.8239	RTF	.9855	CRT	.9973	CRS	-.9837	CST	-.9765
FDE	2.9285	FRA	3.3268	FC-32.2509	BSP	36176	SGB10397.9	R23	.0036	R13	.9855	LSA	4220.0	MSA	356.8	SSA	31.1
BDE	2.0214	BRA	.9886	BC315.2790	FSP	6365	SG110388.9	SG2	432.9	THA	3.60	EL1	3816.6	EL2	39.4	ALF	8.10

LAUNCH DATE NOV 29 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 750.706 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	32.998	GAL	-.37	AZL	87.66	HCA	223.97	SMA	186.91	ECC	.21068	INC	2.3416
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.297	GAP	-9.46	AZP	91.69	TAL	357.87	TAP	221.84	RCA	147.53	APO	226.29
RC	301.687	GL	25.90	GP	-5.05	ZAL	88.59	ZAP	52.19	ETS	175.33	ZAE	79.05	ETE	178.19	ZAC	79.18	ETC	257.85

V1	30.196	V2	25.895	CLP	52.01														

PLANETOCENTRIC CONIC

C3	9.527	VHL	3.087	DLA	33.41	RAL	168.12	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.654	DPA	3.68	RAP	162.79

ECC	1.1568	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		71.49	9 40 37	3822.39	-27.21	157.50	26.94	69.82	10 44 19	3222.4	-29.70	149.27							
		108.51	14 21 27	2926.50	-27.20	90.84	26.93	69.81	15 10 14	2326.5	-29.69	82.61							
		71.49	9 40 37	3822.39	-27.21	157.50	26.94	69.82	10 44 19	3222.4	-29.70	149.27							
		108.51	14 21 27	2926.50	-27.20	90.84	26.93	69.81	15 10 14	2326.5	-29.69	82.61							
		110.00	15 25 40	2729.73	-31.30	77.03	28.40	75.49	16 11 10	2129.7	-32.97	68.21							
		110.00	13 35 34	3067.17	-23.25	99.90	25.08	64.21	14 26 41	2467.2	-26.52	92.27							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9641	TRA	1.0666	TC-15.6203	BAU	1.9911	SGT10578.4	SGR	755.6	SG3	1836.0	ST	3725.9	SR	528.2	SS	1721.7
RDE	.2769	RRA	.1815	RC3 -.6142	FAU	.34355	RRT	.8117	RRF	.8009	RTF	.9856	CRT	.9977	CRS	-.9777	CST	-.9728
FDE	2.6606	FRA	3.3582	FC-31.2180	BSP	36851	SGB10605.3	R23	-.0007	R13	.9856	LSA	4122.2	MSA	363.7	SSA	31.8
BDE	1.9835	BRA	1.0819	BC315.6324	FSP	6142	SG110596.2	SG2	440.6	THA	3.32	EL1	3763.0	EL2	35.6	ALF	8.05

LAUNCH DATE NOV 29 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 754.972 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.003	GAL	-.47	AZL	87.68	HCA	225.18	SMA	187.00	ECC	.21109	INC	2.3177
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.338	GAP	-9.59	AZP	91.63	TAL	357.31	TAP	222.49	RCA	147.52	APO	226.47
RC	302.717	GL	25.64	GP	-4.88	ZAL	89.64	ZAP	51.09	ETS	175.31	ZAE	77.67	ETE	178.13	ZAC	79.38	ETC	257.84

V1	30.196	V2	25.926	CLP	50.92														

PLANETOCENTRIC CONIC

C3	9.513	VHL	3.084	DLA	32.72	RAL	169.12	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.709	DPA	3.80	RAP	162.97

ECC	1.1566	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		72.88	9 53 26	3794.75	-26.68	155.16	27.69	70.31	10 56 41	3194.7	-29.11	146.95							
		107.12	14 16 33	2953.56	-26.66	92.71	27.68	70.30	15 5 47	2353.6	-29.10	84.50							
		72.88	9 53 26	3794.75	-26.68	155.16	27.69	70.31	10 56 41	3194.7	-29.11	146.95							
		107.12	14 16 33	2953.56	-26.66	92.71	27.68	70.30	15 5 47	2353.6	-29.10	84.50							
		110.00	15 50 3	2065.65	-32.29	72.30	29.51	78.13	16 34 28	2065.6	-33.59	63.31							
		110.00	13 19 7	3130.66	-21.31	103.81	25.13	62.62	14 11 18	2530.7	-24.81	96.41							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9260	TRA	1.1664	TC-15.9585	BAU	2.0309	SGT10786.2	SGR	731.9	SG3	1778.1	ST	3672.2	SR	519.4	SS	1622.7
RDE	.2718	RRA	.1825	RC3 -.5578	FAU	.33195	RRT	.7893	RRF	.7768	RTF	.9858	CRT	.9979	CRS	-.9703	CST	-.9688
FDE	2.4246	FRA	3.3882	FC-30.2091	BSP	37495	SGB10811.0	R23	-.0044	R13	.9858	LSA	4031.2	MSA	369.4	SSA	32.4
BDE	1.9451	BRA	1.1806	BC315.9682	FSP	5916	SG110801.7	SG2	448.7	THA	3.07	EL1	3708.6	EL2	33.2	ALF	8.03

LAUNCH DATE NOV 29 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 759.242 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.008	GAL	-.57	AZL	87.71	HCA	226.39	SMA	187.08	ECC	.21153	INC	2.2947
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.379	GAP	-9.70	AZP	91.58	TAL	356.74	TAP	223.13	RCA	147.51	APO	226.65
RC	303.736	GL	25.38	GP	-4.71	ZAL	90.71	ZAP	50.02	ETS	175.29	ZAE	76.33	ETE	178.07	ZAC	79.57	ETC	257.83

V1 30.196 V2 25.956 CLP 49.86

PLANETOCENTRIC CONIC

C3	9.507	VHL	3.083	DLA	32.02	RAL	170.13	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.766	DPA	3.89	RAP	163.18

ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.39	10 7 28	3763.62	-26.13	152.56	28.48	70.80	11 10 11	3163.6	-28.50	144.38
105.61	14 10 38	2984.44	-26.12	94.85	28.48	70.79	15 0 23	2384.4	-28.50	86.67
74.39	10 7 28	3763.62	-26.13	152.56	28.48	70.80	11 10 11	3163.6	-28.50	144.38
105.61	14 10 38	2984.44	-26.12	94.85	28.48	70.79	15 0 23	2384.4	-28.50	86.67
110.00	16 10 15	2614.25	-32.95	68.43	30.50	80.33	16 53 49	2014.3	-33.93	59.33
110.00	13 7 1	3181.81	-19.68	106.88	25.39	61.47	14 0 3	2581.8	-23.33	99.65

DIFFERENTIAL CORRECTIONS

TDE	1.8833	TRA	1.2721	TC-16.2684	BAU	2.0687	
RDE	.2673	RRA	.1833	RC3 -.5014	FAU	.31976	
FDE	2.1926	FRA	3.4152	FC-29.1177	BSP	38156	
BDE	1.9021	BRA	1.2852	BC316.2761	FSP	5699	

MID-COURSE EXECUTION ACCURACY

SGT10984.8	SGR	709.8	SG3	1717.3			
RRT	.7645	RRF	.7502	RTF	.9860		
SGB11007.7	R23	-.0075	R13	.9859			
SG110998.2	SG2	457.0	THA	2.83			

ORBIT DETERMINATION ACCURACY

ST	3610.6	SR	511.2	SS	1524.0		
CRT	.9979	CRS	-.9605	CST	-.9639		
LSA	3934.2	MSA	376.4	SSA	33.0		
EL1	3646.5	EL2	33.1	ALF	8.04		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 763.518 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.013	GAL	-.67	AZL	87.73	HCA	227.61	SMA	187.17	ECC	.21199	INC	2.2727
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.419	GAP	-9.82	AZP	91.53	TAL	356.15	TAP	223.76	RCA	147.49	APO	226.85
RC	304.746	GL	25.12	GP	-4.55	ZAL	91.82	ZAP	48.99	ETS	175.28	ZAE	75.01	ETE	178.03	ZAC	79.76	ETC	257.81

V1 30.196 V2 25.986 CLP 48.83

PLANETOCENTRIC CONIC

C3	9.510	VHL	3.084	DLA	31.30	RAL	171.17	RAD	6567.3	VEL	11.441	PTH	1.98	VHP	3.825	DPA	3.96	RAP	163.41

ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.06	10 23 6	3727.63	-25.57	149.62	29.31	71.29	11 25 13	3127.6	-27.88	141.46
103.94	14 3 17	3020.53	-25.56	97.37	29.30	71.28	14 53 37	2420.5	-27.87	89.22
76.06	10 23 6	3727.63	-25.57	149.62	29.31	71.29	11 25 13	3127.6	-27.88	141.46
103.94	14 3 17	3020.53	-25.56	97.37	29.30	71.28	14 53 37	2420.5	-27.87	89.22
110.00	16 28 16	2569.55	-33.41	65.03	31.42	82.30	17 11 6	1969.5	-34.11	55.85
110.00	12 57 17	3226.62	-18.20	109.52	25.76	60.55	13 51 3	2626.6	-21.98	102.43

DIFFERENTIAL CORRECTIONS

TDE	1.8383	TRA	1.3847	TC-16.5516	BAU	2.1051	
RDE	.2637	RRA	.1844	RC3 -.4471	FAU	.30773	
FDE	1.9790	FRA	3.4480	FC-28.0151	BSP	38852	
BDE	1.8571	BRA	1.3969	BC316.5576	FSP	5507	

MID-COURSE EXECUTION ACCURACY

SGT11177.7	SGR	690.6	SG3	1658.1			
RRT	.7379	RRF	.7223	RTF	.9861		
SGB11199.0	R23	-.0097	R13	.9860			
SG111189.3	SG2	465.6	THA	2.61			

ORBIT DETERMINATION ACCURACY

ST	3546.1	SR	504.5	SS	1434.6		
CRT	.9974	CRS	-.9479	CST	-.9580		
LSA	3839.1	MSA	384.6	SSA	33.5		
EL1	3581.6	EL2	36.1	ALF	8.08		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 767.798 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.018	GAL	-.78	AZL	87.75	HCA	228.82	SMA	187.26	ECC	.21247	INC	2.2513
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.459	GAP	-9.94	AZP	91.48	TAL	355.55	TAP	224.38	RCA	147.47	APO	227.05
RC	305.746	GL	24.85	GP	-4.41	ZAL	92.96	ZAP	47.98	ETS	175.26	ZAE	73.72	ETE	177.99	ZAC	79.95	ETC	257.79

V1 30.196 V2 26.015 CLP 47.83

PLANETOCENTRIC CONIC

C3	9.521	VHL	3.086	DLA	30.57	RAL	172.23	RAD	6567.3	VEL	11.442	PTH	1.98	VHP	3.884	DPA	4.01	RAP	163.67

ECC 1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.96	10 40 56	3684.83	-24.99	146.19	30.17	71.78	11 42 21	3084.8	-27.24	138.05
102.04	13 53 52	3063.81	-24.98	100.41	30.16	71.77	14 44 56	2463.8	-27.23	92.28
77.96	10 40 56	3684.83	-24.99	146.19	30.17	71.78	11 42 21	3084.8	-27.24	138.05
102.04	13 53 52	3063.81	-24.98	100.41	30.16	71.77	14 44 56	2463.8	-27.23	92.28
110.00	16 44 55	2529.11	-33.73	61.91	32.31	84.11	17 27 4	1929.1	-34.18	52.70
110.00	12 49 4	3267.53	-16.82	111.88	26.24	59.79	13 43 32	2667.5	-20.70	104.91

DIFFERENTIAL CORRECTIONS

TDE	1.7883	TRA	1.5018	TC-16.8167	BAU	2.1412	
RDE	.2606	RRA	.1855	RC3 -.3952	FAU	.29601	
FDE	1.7738	FRA	3.4779	FC-26.9152	BSP	39495	
BDE	1.8072	BRA	1.5132	BC316.8214	FSP	5312	

MID-COURSE EXECUTION ACCURACY

SGT11367.6	SGR	673.6	SG3	1600.2			
RRT	.7096	RRF	.6930	RTF	.9861		
SGB11387.5	R23	-.0113	R13	.9861			
SG111377.6	SG2	474.2	THA	2.41			

ORBIT DETERMINATION ACCURACY

ST	3473.9	SR	498.7	SS	1349.0		
CRT	.9963	CRS	-.9317	CST	-.9509		
LSA	3739.0	MSA	394.0	SSA	33.9		
EL1	3509.2	EL2	42.3	ALF	8.14		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 772.083 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.023	GAL	-.89	AZL	87.77	HCA	230.05	SMA	187.35	ECC	.21299	INC	2.2307
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.497	GAP	-10.05	AZP	91.43	TAL	354.94	TAP	224.98	RCA	147.45	APO	227.26
RC	306.737	GL	24.59	GP	-4.26	ZAL	94.13	ZAP	47.01	ETS	175.25	ZAE	72.46	ETE	177.95	ZAC	80.14	ETC	257.77

V1 30.196 V2 26.043 CLP 46.86

PLANETOCENTRIC CONIC

C3	9.542	VHL	3.089	DLA	29.83	RAL	173.30	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	3.945	DPA	4.04	RAP	163.95

ECC 1.1570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.21	11 2 3	3631.72	-24.39	142.01	31.06	72.27	12 2 35	3031.7	-26.58	133.90
99.79	13 41 20	3117.80	-24.38	104.22	31.06	72.26	14 33 18	2517.8	-26.58	96.12
100.00	13 59 36	3059.48	-25.49	100.26	31.43	73.83	14 50 36	2459.5	-27.46	92.02
100.00	13 26 29	3165.27	-23.29	107.35	30.66	70.71	14 19 14	2565.3	-25.71	99.39
110.00	17 0 36	2491.68	-33.96	59.01	33.18	85.81	17 42 7	1891.7	-34.16	49.77
110.00	12 41 58	3305.83	-15.49	114.06	26.80	59.14	13 37 4	2705.8	-19.47	107.20

DIFFERENTIAL CORRECTIONS

TDE	1.7341	TRA	1.6231	TC-17.0591	BAU	2.1767	
RDE	.2582	RRA	.1862	RC3 -.3461	FAU	.28482	
FDE	1.5774	FRA	3.4945	FC-25.8408	BSP	40116	
BDE	1.7532	BRA	1.6338	BC317.0626	FSP	5111	

MID-COURSE EXECUTION ACCURACY

SGT11552.7	SGR	658.4	SG3	1543.8			
RRT	.6804	RRF	.6621	RTF	.9863		
SGB11571.5	R23	-.0138	R13	.9863			
SG111561.4	SG2	482.1	THA	2.22			

ORBIT DETERMINATION ACCURACY

ST	3395.4	SR	493.5	SS	1266.7		
CRT	.9944	CRS	-.9114	CST	-.9426		
LSA	3635.1	MSA	402.8	SSA	34.3		
EL1	3430.7	EL2	51.4	ALF	8.23		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 776.372 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.029	GAL	-1.00	AZL	87.79	HCA	231.27	SMA	187.45	ECC	.21353	INC	2.2109	V1	30.196
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.536	GAP	-10.17	AZP	91.38	TAL	354.31	TAP	225.58	RCA	147.42	APO	227.47	V2	26.071
RC	307.719	GL	24.31	GP	-4.13	ZAL	95.33	ZAP	46.06	ETS	175.24	ZAE	71.22	ETE	177.92	ZAC	80.32	ETC	257.74	CLP	45.91

PLANETOCENTRIC CONIC

C3	9.573	VHL	3.094	DLA	29.07	RAL	174.39	RAD	6567.3	VEL	11.444	PTH	1.99	VHP	4.007	DPA	4.06	RAP	164.26	ECC	1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.15	11 29 29	3558.33	-23.77	136.37	32.00	72.77	12 28 48	2958.3	-25.91	128.29
96.85	13 22 37	3192.46	-23.76	109.53	31.99	72.75	14 15 50	2592.5	-25.90	101.46
100.00	14 46 23	2923.69	-27.72	90.79	33.12	78.33	15 35 6	2323.7	-29.04	82.24
100.00	12 48 25	3302.32	-19.94	116.15	30.49	67.25	13 43 28	2702.3	-22.84	108.56
110.00	17 15 34	2456.48	-34.10	56.27	34.05	87.43	17 56 31	1856.5	-34.08	47.03
110.00	12 35 43	3342.30	-14.21	116.11	27.43	58.58	13 31 25	2742.3	-18.26	109.34

DIFFERENTIAL CORRECTIONS

TDE	1.6760	TRA	1.7504	TC-17.2730	BAU	2.2110	
RDE	.2562	RRA	.1870	RC3 -.2980	FAU	.27347	
FDE	1.3900	FRA	3.5145	FC-24.7302	BSP	40743	
BDE	1.6955	BRA	1.7604	BC317.2756	FSP	4925	

MID-COURSE EXECUTION ACCURACY

SGT11731.8	SGR	645.1	SG3	1487.1			
RRT	.6492	RRF	.6299	RTF	.9864		
SGB11749.5	R23	-.0153	R13	.9863			
SG111739.3	SG2	490.4	THA	2.05			

ORBIT DETERMINATION ACCURACY

ST	3312.6	SR	489.2	SS	1190.5		
CRT	.9915	CRS	-.8854	CST	-.9324		
LSA	3529.5	MSA	414.0	SSA	34.7		
EL1	3347.9	EL2	63.0	ALF	8.33		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 780.665 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.034	GAL	-1.12	AZL	87.81	HCA	232.50	SMA	187.54	ECC	.21410	INC	2.1916	V1	30.196
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.573	GAP	-10.28	AZP	91.33	TAL	353.67	TAP	226.16	RCA	147.39	APO	227.70	V2	26.098
RC	308.691	GL	24.04	GP	-4.00	ZAL	96.55	ZAP	45.13	ETS	175.22	ZAE	70.01	ETE	177.89	ZAC	80.51	ETC	257.70	CLP	44.99

PLANETOCENTRIC CONIC

C3	9.615	VHL	3.101	DLA	28.29	RAL	175.50	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	4.070	DPA	4.05	RAP	164.59	ECC	1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 30	3340.51	-23.84	120.41	33.18	74.25	13 37 10	2740.5	-25.77	112.28
90.00	12 19 28	3411.97	-22.44	125.18	32.72	72.26	13 16 20	2812.0	-24.65	117.21
100.00	15 13 53	2849.13	-28.63	85.44	34.35	81.01	16 1 22	2249.1	-29.57	76.76
100.00	12 29 46	3378.58	-17.86	120.86	30.84	65.62	13 26 5	2778.6	-21.00	113.47
110.00	17 30 0	2423.04	-34.17	53.67	34.92	88.97	18 10 23	1823.0	-33.93	44.43
110.00	12 30 8	3377.43	-12.95	118.05	28.12	58.09	13 26 25	2777.4	-17.08	111.37

DIFFERENTIAL CORRECTIONS

TDE	1.6131	TRA	1.8832	TC-17.4636	BAU	2.2450	
RDE	.2548	RRA	.1877	RC3 -.2526	FAU	.26259	
FDE	1.2097	FRA	3.5288	FC-23.6441	BSP	41364	
BDE	1.6331	BRA	1.8926	BC317.4655	FSP	4747	

MID-COURSE EXECUTION ACCURACY

SGT11907.6	SGR	633.5	SG3	1432.3			
RRT	.6172	RRF	.5966	RTF	.9864		
SGB11924.5	R23	-.0170	R13	.9864			
SG111914.1	SG2	498.2	THA	1.88			

ORBIT DETERMINATION ACCURACY

ST	3224.2	SR	485.5	SS	1118.9		
CRT	.9871	CRS	-.8526	CST	-.9201		
LSA	3420.5	MSA	426.4	SSA	34.9		
EL1	3259.6	EL2	76.9	ALF	8.46		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 784.962 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.040	GAL	-1.23	AZL	87.83	HCA	233.73	SMA	187.64	ECC	.21470	INC	2.1729	V1	30.196
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.610	GAP	-10.39	AZP	91.29	TAL	353.01	TAP	226.73	RCA	147.36	APO	227.93	V2	26.124
RC	309.654	GL	23.75	GP	-3.88	ZAL	97.80	ZAP	44.24	ETS	175.21	ZAE	68.82	ETE	177.87	ZAC	80.69	ETC	257.66	CLP	44.10

PLANETOCENTRIC CONIC

C3	9.667	VHL	3.109	DLA	27.50	RAL	176.63	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	4.135	DPA	4.03	RAP	164.95	ECC	1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 45	3182.49	-26.32	109.51	34.97	79.16	14 27 48	2582.5	-27.55	101.06
90.00	11 35 10	3572.13	-18.75	135.48	32.58	68.39	12 34 42	2972.1	-21.52	127.90
100.00	15 36 30	2790.03	-29.18	81.13	35.47	83.21	16 23 0	2190.0	-29.81	72.39
100.00	12 16 6	3439.82	-16.10	124.56	31.37	64.47	13 13 26	2839.8	-19.40	117.32
110.00	17 44 0	2391.03	-34.18	51.16	35.79	90.45	18 23 51	1791.0	-33.74	41.95
110.00	12 25 6	3411.59	-11.72	119.93	28.88	57.66	13 21 57	2811.6	-15.90	113.32

DIFFERENTIAL CORRECTIONS

TDE	1.5468	TRA	2.0214	TC-17.6288	BAU	2.2785	
RDE	.2541	RRA	.1883	RC3 -.2091	FAU	.25197	
FDE	1.0419	FRA	3.5405	FC-22.5648	BSP	41952	
BDE	1.5675	BRA	2.0301	BC317.6301	FSP	4569	

MID-COURSE EXECUTION ACCURACY

SGT12080.2	SGR	623.7	SG3	1378.8			
RRT	.5843	RRF	.5626	RTF	.9865		
SGB12096.3	R23	-.0182	R13	.9865			
SG112085.7	SG2	506.0	THA	1.73			

ORBIT DETERMINATION ACCURACY

ST	3133.7	SR	482.7	SS	1055.6		
CRT	.9809	CRS	-.8129	CST	-.9061		
LSA	3312.6	MSA	439.5	SSA	35.1		
EL1	3169.3	EL2	92.9	ALF	8.60		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 789.262 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.046	GAL	-1.36	AZL	87.85	HCA	234.96	SMA	187.74	ECC	.21533	INC	2.1547	V1	30.196
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.646	GAP	-10.50	AZP	91.24	TAL	352.34	TAP	227.29	RCA	147.32	APO	228.17	V2	26.149
RC	310.607	GL	23.46	GP	-3.77	ZAL	99.08	ZAP	43.37	ETS	175.20	ZAE	67.66	ETE	177.85	ZAC	80.88	ETC	257.62	CLP	43.23

PLANETOCENTRIC CONIC

C3	9.731	VHL	3.119	DLA	26.69	RAL	177.76	RAD	6567.4	VEL	11.451	PTH	1.99	VHP	4.200	DPA	3.99	RAP	165.33	ECC	1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 39	3103.03	-27.21	103.87	36.24	81.86	14 55 22	2503.0	-28.06	95.30
90.00	11 15 19	3654.20	-16.62	140.56	33.03	66.74	12 16 14	3054.2	-19.62	133.17
100.00	15 56 34	2739.01	-29.53	77.38	36.54	85.15	16 42 13	2139.0	-29.89	68.60
100.00	12 5 5	3493.45	-14.50	127.74	32.01	63.57	13 3 19	2893.5	-17.93	120.63
110.00	17 57 38	2360.22	-34.14	48.76	36.68	91.87	18 36 58	1760.2	-33.50	39.57
110.00	12 20 31	3445.01	-10.49	121.74	29.68	57.28	13 17 56	2845.0	-14.73	115.20

DIFFERENTIAL CORRECTIONS

TDE	1.4756	TRA	2.1647	TC-17.7678	BAU	2.3116	
RDE	.2537	RRA	.1887	RC3 -.1681	FAU	.24179	
FDE	.8794	FRA	3.5481	FC-21.5114	BSP	42537	
BDE	1.4972	BRA	2.1730	BC317.7686	FSP	4398	

MID-COURSE EXECUTION ACCURACY

SGT12248.7	SGR	615.4	SG3	1327.1			
RRT	.5509	RRF	.5279	RTF	.9865		
SGB12264.2	R23	-.0197	R13	.9865			
SG112253.4	SG2	513.4	THA	1.59			

ORBIT DETERMINATION ACCURACY

ST	3039.5	SR	480.3	SS	997.7		
CRT	.9722	CRS	-.7638	CST	-.8894		
LSA	3202.6	MSA	454.7	SSA	35.2		
EL1	3075.2	EL2	111.1	ALF	8.75		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 793.565 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.052	GAL	-1.48	AZL	87.86	HCA	236.19	SMA	187.85	ECC	.21599	INC	2.1371	V1	30.196
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.681	GAP	-10.61	AZP	91.19	TAL	351.65	TAP	227.84	RCA	147.27	APO	228.42	V2	26.174
RC	311.551	GL	23.17	GP	-3.66	ZAL	100.38	ZAP	42.52	ETS	175.19	ZAE	66.52	ETE	177.83	ZAC	81.06	ETC	257.58	CLP	42.39

PLANETOCENTRIC CONIC

C3	9.807	VHL	3.132	DLA	25.87	RAL	178.91	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	4.267	DPA	3.94	RAP	165.73	ECC	1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 15	3040.62	-27.74	99.38	37.40	84.05	15 17 56	2440.6	-28.27	90.75
90.00	11 0 53	3719.69	-14.81	144.52	33.65	65.59	12 2 52	3119.7	-17.99	137.28
100.00	16 15 2	2693.12	-29.75	73.99	37.58	86.93	16 59 55	2093.1	-29.86	65.19
100.00	11 55 46	3542.43	-13.00	130.59	32.74	62.84	12 54 49	2942.4	-16.53	123.59
110.00	18 10 58	2330.42	-34.05	46.44	37.57	93.25	18 49 48	1730.4	-33.22	37.29
110.00	12 16 20	3477.89	-9.28	123.51	30.54	56.95	13 14 18	2877.9	-13.56	117.04

DIFFERENTIAL CORRECTIONS

TDE	1.4018	TRA	2.3154	TC-17.8738	BAU	2.3436	
RDE	.2540	RRA	.1892	RC3 -.1286	FAU	.23165	
FDE	.7288	FRA	3.5553	FC-20.4488	BSP	43124	
BDE	1.4246	BRA	2.3231	BC317.8742	FSP	4234	

MID-COURSE EXECUTION ACCURACY

SGT12412.4	SGR	608.5	SG3	1275.9			
RRT	.5168	RRF	.4931	RTF	.9866		
SGB12427.3	R23	-.0207	R13	.9865			
SG112416.4	SG2	520.8	THA	1.45			

ORBIT DETERMINATION ACCURACY

ST	2947.1	SR	478.8	SS	949.2
CRT	.9607	CRS	-.7064	CST	-.8714
LSA	3097.1	MSA	471.0	SSA	35.2
EL1	2982.8	EL2	131.4	ALF	8.89

LAUNCH DATE NOV 29 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 797.871 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.057	GAL	-1.61	AZL	87.88	HCA	237.43	SMA	187.95	ECC	.21669	INC	2.1199	V1	30.196
RP	209.24	LAP	-1.79	LOP	304.22	VP	23.716	GAP	-10.71	AZP	91.14	TAL	350.95	TAP	228.38	RCA	147.22	APO	228.68	V2	26.198
RC	312.486	GL	22.86	GP	-3.55	ZAL	101.71	ZAP	41.69	ETS	175.18	ZAE	65.40	ETE	177.81	ZAC	81.25	ETC	257.54	CLP	41.57

PLANETOCENTRIC CONIC

C3	9.897	VHL	3.146	DLA	25.03	RAL	180.07	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	4.335	DPA	3.86	RAP	166.16	ECC	1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 7	2987.01	-28.05	95.49	38.52	85.98	15 37 54	2387.0	-28.32	86.83
90.00	10 49 14	3776.90	-13.18	147.92	34.37	64.71	11 52 11	3176.9	-16.48	140.80
100.00	16 32 22	2650.88	-29.86	70.85	38.61	88.57	17 16 33	2050.9	-29.74	62.05
100.00	11 47 40	3588.26	-11.56	133.24	33.54	62.24	12 47 29	2988.3	-15.18	126.32
110.00	18 24 2	2301.53	-33.91	44.19	38.48	94.57	19 2 23	1701.5	-32.91	35.10
110.00	12 12 30	3510.38	-8.07	125.25	31.45	56.67	13 11 0	2910.4	-12.40	118.83

DIFFERENTIAL CORRECTIONS

TDE	1.3224	TRA	2.4704	TC-17.9538	BAU	2.3755	
RDE	.2546	RRA	.1894	RC3 -.0912	FAU	.22186	
FDE	.5815	FRA	3.5554	FC-19.4077	BSP	43686	
BDE	1.3467	BRA	2.4776	BC317.9540	FSP	4071	

MID-COURSE EXECUTION ACCURACY

SGT12572.2	SGR	602.7	SG3	1225.8			
RRT	.4824	RRF	.4575	RTF	.9865		
SGB12586.6	R23	-.0220	R13	.9865			
SG112575.5	SG2	527.8	THA	1.33			

ORBIT DETERMINATION ACCURACY

ST	2852.1	SR	477.6	SS	906.1
CRT	.9452	CRS	-.6375	CST	-.8506
LSA	2990.4	MSA	489.7	SSA	35.2
EL1	2887.7	EL2	154.0	ALF	9.02

LAUNCH DATE NOV 29 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 802.179 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.063	GAL	-1.74	AZL	87.90	HCA	238.67	SMA	188.05	ECC	.21742	INC	2.1032	V1	30.196
RP	209.04	LAP	-1.80	LOP	305.46	VP	23.749	GAP	-10.82	AZP	91.09	TAL	350.23	TAP	228.90	RCA	147.17	APO	228.94	V2	26.221
RC	313.411	GL	22.55	GP	-3.46	ZAL	103.05	ZAP	40.89	ETS	175.16	ZAE	64.31	ETE	177.80	ZAC	81.44	ETC	257.49	CLP	40.77

PLANETOCENTRIC CONIC

C3	10.000	VHL	3.162	DLA	24.18	RAL	181.23	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	4.404	DPA	3.78	RAP	166.60	ECC	1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 15	2938.97	-28.23	91.98	39.61	87.72	15 56 14	2339.0	-28.25	83.32
90.00	10 39 24	3829.05	-11.64	150.98	35.18	64.00	11 43 13	3229.1	-15.04	143.96
100.00	16 48 51	2611.40	-29.89	67.92	39.65	90.12	17 32 22	2011.4	-29.56	59.13
100.00	11 40 29	3631.85	-10.16	135.72	34.41	61.74	12 41 1	3031.9	-13.86	128.89
110.00	18 36 52	2273.44	-33.74	42.02	39.41	95.85	19 14 46	1673.4	-32.56	32.98
110.00	12 8 57	3542.58	-6.86	126.96	32.41	56.43	13 8 0	2942.6	-11.22	120.59

DIFFERENTIAL CORRECTIONS

TDE	1.2404	TRA	2.6322	TC-18.0016	BAU	2.4066	
RDE	.2559	RRA	.1895	RC3 -.0556	FAU	.21226	
FDE	.4467	FRA	3.5544	FC-18.3771	BSP	44238	
BDE	1.2665	BRA	2.6390	BC318.0017	FSP	3914	

MID-COURSE EXECUTION ACCURACY

SGT12727.9	SGR	598.2	SG3	1177.0			
RRT	.4479	RRF	.4222	RTF	.9865		
SGB12741.9	R23	-.0228	R13	.9865			
SG112730.7	SG2	534.8	THA	1.21			

ORBIT DETERMINATION ACCURACY

ST	2761.8	SR	477.2	SS	872.8
CRT	.9253	CRS	-.5616	CST	-.8302
LSA	2890.8	MSA	508.8	SSA	35.0
EL1	2797.0	EL2	178.7	ALF	9.12

LAUNCH DATE NOV 29 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 806.490 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.070	GAL	-1.87	AZL	87.91	HCA	239.91	SMA	188.16	ECC	.21818	INC	2.0868	V1	30.196
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.782	GAP	-10.93	AZP	91.05	TAL	349.51	TAP	229.42	RCA	147.11	APO	229.22	V2	26.243
RC	314.329	GL	22.23	GP	-3.36	ZAL	104.42	ZAP	40.11	ETS	175.15	ZAE	63.23	ETE	177.79	ZAC	81.62	ETC	257.44	CLP	39.99

PLANETOCENTRIC CONIC

C3	10.117	VHL	3.181	DLA	23.31	RAL	182.40	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	4.474	DPA	3.68	RAP	167.07	ECC	1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 10	2894.89	-28.31	88.76	40.70	89.34	16 13 25	2294.9	-28.10	80.10
90.00	10 30 50	3877.79	-10.17	153.81	36.06	63.43	11 35 28	3277.8	-13.66	146.87
100.00	17 4 39	2574.13	-29.85	65.15	40.68	91.58	17 47 33	1974.1	-29.32	56.39
100.00	11 34 2	3673.79	-8.80	138.09	35.34	61.32	12 35 16	3073.8	-12.56	131.32
110.00	18 49 30	2246.10	-33.53	39.91	40.35	97.08	19 26 56	1646.1	-32.19	30.93
110.00	12 5 40	3574.58	-5.65	128.65	33.41	56.23	13 5 15	2974.6	-10.05	122.32

DIFFERENTIAL CORRECTIONS

TDE	1.1542	TRA	2.7999	TC-18.0196	BAU	2.4372	
RDE	.2576	RRA	.1894	RC3 -.0223	FAU	.20301	
FDE	.3167	FRA	3.5487	FC-17.3718	BSP	44798	
BDE	1.1826	BRA	2.8063	BC318.0197	FSP	3762	

MID-COURSE EXECUTION ACCURACY

SGT12879.7	SGR	594.7	SG3	1129.5			
RRT	.4136	RRF	.3869	RTF	.9864		
SGB12893.4	R23	-.0240	R13	.9864			
SG112882.1	SG2	541.3	THA	1.10			

ORBIT DETERMINATION ACCURACY

ST	2675.0	SR	477.3	SS	846.6
CRT	.8997	CRS	-.4762	CST	-.8092
LSA	2796.1	MSA	530.1	SSA	34.8
EL1	2709.5	EL2	205.7	ALF	9.17

LAUNCH DATE NOV 29 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 810.802 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.076 GAL -2.01 AZL 87.93 HCA 241.15 SMA 188.27 ECC .21899 INC 2.0709 V1 30.196
RP 208.67 LAP -1.81 LOP 307.95 VP 23.814 GAP -11.04 AZP 91.00 TAL 348.76 TAP 229.92 RCA 147.04 APO 229.50 V2 26.264
RC 315.238 GL 21.91 GP -3.27 ZAL 105.80 ZAP 39.35 ETS 175.14 ZAE 62.18 ETE 177.78 ZAC 81.81 ETC 257.38 CLP 39.24

PLANETOCENTRIC CONIC

C3 10.250 VHL 3.201 DLA 22.44 RAL 183.58 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.546 DPA 3.57 RAP 167.55 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 10	2853.82	-28.31	85.76	41.78	90.84	16 29 44	2253.8	-27.89	77.12
90.00	10 23 13	3924.09	-8.75	156.47	37.01	62.96	11 28 38	3324.1	-12.31	149.60
100.00	17 19 55	2538.67	-29.76	62.52	41.73	92.96	18 2 13	1938.7	-29.03	53.79
100.00	11 28 10	3714.46	-7.46	140.37	36.32	60.97	12 30 5	3114.5	-11.28	133.66
110.00	19 1 57	2219.45	-33.29	37.87	41.32	98.26	19 38 56	1619.4	-31.79	28.96
110.00	12 2 38	3606.45	-4.44	130.32	34.46	56.07	13 2 44	3006.5	-8.87	124.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0650 TRA 2.9744 TC-18.0091 BAU 2.4677 SGT13029.6 SGR 592.1 SG3 1083.6 ST 2595.7 SR 477.9 SS 828.8
RDE .2599 RRA .1893 RC3 .0090 FAU .19408 RRT .3798 RRF .3522 RTF .9864 CRT .8677 CRS -.3865 CST -.7911
FDE .1966 FRA 3.5407 FC-16.3928 BSP 45337 SGB13043.0 R23 -.0250 R13 .9864 LSA 2710.6 MSA 551.7 SSA 34.4
BDE 1.0963 BRA 2.9804 BC318.0091 FSP 3612 SG113031.5 SG2 547.7 THA .99 EL1 2628.9 EL2 234.6 ALF 9.15

LAUNCH DATE NOV 29 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 815.116 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.082 GAL -2.15 AZL 87.94 HCA 242.40 SMA 188.38 ECC .21983 INC 2.0553 V1 30.196
RP 208.49 LAP -1.82 LOP 309.20 VP 23.846 GAP -11.14 AZP 90.95 TAL 348.00 TAP 230.41 RCA 146.97 APO 229.79 V2 26.285
RC 316.140 GL 21.57 GP -3.18 ZAL 107.20 ZAP 38.62 ETS 175.13 ZAE 61.14 ETE 177.77 ZAC 82.00 ETC 257.33 CLP 38.50

PLANETOCENTRIC CONIC

C3 10.398 VHL 3.225 DLA 21.55 RAL 184.76 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.619 DPA 3.44 RAP 168.05 ECC 1.1711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 27	2815.14	-28.23	82.93	42.87	92.26	16 45 22	2215.1	-27.62	74.32
90.00	10 16 23	3968.56	-7.36	159.00	38.01	62.58	11 22 31	3368.6	-10.98	152.19
100.00	17 34 42	2504.77	-29.61	60.01	42.78	94.27	18 16 27	1904.8	-28.71	51.32
100.00	11 22 48	3754.17	-6.15	142.58	37.35	60.69	12 25 23	3154.2	-10.01	135.92
110.00	19 14 12	2193.46	-33.02	35.89	42.31	99.40	19 50 46	1593.5	-31.37	27.05
110.00	11 59 47	3638.24	-3.23	131.99	35.54	55.95	13 0 26	3038.2	-7.68	125.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9723 TRA 3.1554 TC-17.9649 BAU 2.4974 SGT13174.1 SGR 590.5 SG3 1038.7 ST 2525.0 SR 479.0 SS 818.3
RDE .2626 RRA .1889 RC3 .0385 FAU .18533 RRT .3464 RRF .3179 RTF .9863 CRT .8282 CRS -.2932 CST -.7762
FDE .0834 FRA 3.5306 FC-15.4301 BSP 45871 SGB13187.3 R23 -.0259 R13 .9862 LSA 2635.1 MSA 574.1 SSA 34.0
BDE 1.0071 BRA 3.1610 BC317.9650 FSP 3471 SG113175.7 SG2 553.8 THA .89 EL1 2556.3 EL2 265.2 ALF 9.03

LAUNCH DATE NOV 29 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 819.430 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.088 GAL -2.30 AZL 87.96 HCA 243.65 SMA 188.49 ECC .22071 INC 2.0400 V1 30.196
RP 208.32 LAP -1.83 LOP 310.45 VP 23.876 GAP -11.25 AZP 90.91 TAL 347.23 TAP 230.88 RCA 146.89 APO 230.10 V2 26.304
RC 317.035 GL 21.23 GP -3.10 ZAL 108.62 ZAP 37.90 ETS 175.11 ZAE 60.13 ETE 177.76 ZAC 82.19 ETC 257.27 CLP 37.79

PLANETOCENTRIC CONIC

C3 10.564 VHL 3.250 DLA 20.65 RAL 185.95 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.693 DPA 3.30 RAP 168.57 ECC 1.1739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 8	2778.46	-28.11	80.25	43.97	93.59	17 0 26	2178.5	-27.31	71.68
90.00	10 10 9	4011.64	-6.01	161.44	39.07	62.28	11 17 1	3411.6	-9.67	154.68
100.00	17 49 6	2472.23	-29.42	57.61	43.85	95.52	18 30 18	1872.2	-28.35	48.97
100.00	11 17 52	3793.10	-4.84	144.74	38.43	60.47	12 21 5	3193.1	-8.74	138.12
110.00	19 26 18	2168.11	-32.72	33.97	43.31	100.50	20 2 26	1568.1	-30.92	25.21
110.00	11 57 9	3669.99	-2.02	133.65	36.67	55.87	12 58 19	3070.0	-6.48	127.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8763 TRA 3.3425 TC-17.8899 BAU 2.5267 SGT13314.5 SGR 589.6 SG3 994.6 ST 2465.0 SR 480.7 SS 814.0
RDE .2659 RRA .1884 RC3 .0662 FAU .17673 RRT .3133 RRF .2843 RTF .9861 CRT .7805 CRS -.2007 CST -.7668
FDE -.0213 FRA 3.5166 FC-14.4830 BSP 46411 SGB13327.6 R23 -.0266 R13 .9861 LSA 2571.8 MSA 595.7 SSA 33.6
BDE .9157 BRA 3.3478 BC317.8900 FSP 3334 SG113315.8 SG2 559.8 THA .80 EL1 2493.8 EL2 297.0 ALF 8.78

LAUNCH DATE NOV 29 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 823.745 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.095 GAL -2.45 AZL 87.97 HCA 244.90 SMA 188.61 ECC .22164 INC 2.0250 V1 30.196
RP 208.16 LAP -1.83 LOP 311.70 VP 23.905 GAP -11.36 AZP 90.86 TAL 346.45 TAP 231.34 RCA 146.80 APO 230.41 V2 26.323
RC 317.924 GL 20.88 GP -3.02 ZAL 110.04 ZAP 37.20 ETS 175.10 ZAE 59.13 ETE 177.76 ZAC 82.38 ETC 257.22 CLP 37.09

PLANETOCENTRIC CONIC

C3 10.748 VHL 3.278 DLA 19.74 RAL 187.13 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 4.768 DPA 3.15 RAP 169.11 ECC 1.1769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 18	2743.50	-27.93	77.71	45.09	94.86	17 15 1	2143.5	-26.96	69.18
90.00	10 4 26	4053.63	-4.67	163.80	40.17	62.04	11 12 0	3453.6	-8.38	157.08
100.00	18 3 8	2440.92	-29.20	55.31	44.94	96.71	18 43 49	1840.9	-27.96	46.72
100.00	11 13 17	3831.43	-3.56	146.85	39.56	60.30	12 17 9	3231.4	-7.48	140.27
110.00	19 38 14	2143.39	-32.40	32.11	44.34	101.56	20 13 57	1543.4	-30.46	23.43
110.00	11 54 41	3701.73	-.81	135.30	37.84	55.83	12 56 22	3101.7	-5.28	129.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7764 TRA 3.5355 TC-17.7891 BAU 2.5562 SGT13453.1 SGR 589.2 SG3 952.1 ST 2417.0 SR 482.7 SS 814.5
RDE .2696 RRA .1877 RC3 .0916 FAU .16853 RRT .2809 RRF .2508 RTF .9859 CRT .7240 CRS -.1086 CST -.7623
FDE -.1208 FRA 3.4968 FC-13.5748 BSP 46917 SGB13466.0 R23 -.0277 R13 .9859 LSA 2521.3 MSA 616.6 SSA 33.0
BDE .8219 BRA 3.5404 BC317.7894 FSP 3199 SG113454.1 SG2 565.4 THA .71 EL1 2442.6 EL2 329.5 ALF 8.38

LAUNCH DATE NOV 29 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 828.060 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.101	GAL	-2.60	AZL	87.99	HCA	246.15	SMA	188.72	ECC	.22261	INC	2.0103	V1	30.196
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.934	GAP	-11.47	AZP	90.81	TAL	345.64	TAP	231.80	RCA	146.71	APO	230.73	V2	26.341
RC	318.808	GL	20.52	GP	-2.95	ZAL	111.48	ZAP	36.52	ETS	175.08	ZAE	58.15	ETE	177.75	ZAC	82.57	ETC	257.16	CLP	36.41

PLANETOCENTRIC CONIC

C3	10.951	VHL	3.309	DLA	18.83	RAL	188.32	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	4.844	DPA	2.98	RAP	169.67	ECC	1.1802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 2	2710.03	-27.71	75.29	46.22	96.05	17 29 12	2110.0	-26.59	66.80
90.00	9 59 10	4094.74	-3.35	166.11	41.33	61.87	11 7 24	3494.7	-7.09	159.42
100.00	18 16 51	2410.73	-28.94	53.10	46.05	97.84	18 57 2	1810.7	-27.55	44.57
100.00	11 9 2	3869.27	-2.28	148.93	40.73	60.19	12 13 31	3269.3	-6.23	142.38
110.00	19 50 0	2119.28	-32.05	30.31	45.40	102.57	20 25 20	1519.3	-29.99	21.71
110.00	11 52 22	3733.49	.41	136.96	39.05	55.82	12 54 35	3133.5	-4.08	130.75

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6743	TRA	3.7370	TC-17.6557	BAU 2.5849	SGT13588.2	SGR	589.6	SG3	910.5		ST	2385.7	SR	485.3	SS	819.7
RDE	.2740	RRA	.1868	RC3 .1154	FAU .16044	RRT	.2493	RRF	.2188	RTF	.9857	CRT	.6592	CRS	-.0236	CST	-.7653
FDE	-.2102	FRA	3.4768	FC-12.6838	BSP 47466	SGB13601.0	R23	-.0283	R13	.9857		LSA	2489.1	MSA	634.4	SSA	32.4
BDE	.7279	BRA	3.7417	BC317.6560	FSP 3073	SG113589.0	SG2	570.9	THA	.62		EL1	2407.6	EL2	361.6	ALF	7.81

LAUNCH DATE NOV 29 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 832.375 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.108	GAL	-2.76	AZL	88.00	HCA	247.41	SMA	188.84	ECC	.22362	INC	1.9959	V1	30.196
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.961	GAP	-11.58	AZP	90.77	TAL	344.83	TAP	232.23	RCA	146.61	APO	231.07	V2	26.357
RC	319.685	GL	20.15	GP	-2.88	ZAL	112.93	ZAP	35.85	ETS	175.07	ZAE	57.19	ETE	177.74	ZAC	82.76	ETC	257.10	CLP	35.75

PLANETOCENTRIC CONIC

C3	11.174	VHL	3.343	DLA	17.90	RAL	189.50	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	4.921	DPA	2.81	RAP	170.24	ECC	1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 23	2677.92	-27.46	72.97	47.37	97.19	17 43 1	2077.9	-26.18	64.54
90.00	9 54 16	4135.15	-2.05	168.36	42.53	61.75	11 3 11	3535.1	-5.82	161.70
100.00	18 30 17	2381.59	-28.65	50.98	47.18	98.92	19 9 59	1781.6	-27.12	42.51
100.00	11 5 3	3906.72	-1.01	150.99	41.94	60.12	12 10 10	3306.7	-4.98	144.45
110.00	20 1 38	2095.80	-31.69	28.58	46.48	103.54	20 36 33	1495.8	-29.51	20.05
110.00	11 50 12	3765.27	1.62	138.62	40.30	55.85	12 52 57	3165.3	-2.87	132.41

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.5690	TRA	3.9443	TC-17.4939	BAU 2.6135	SGT13719.2	SGR	590.3	SG3	870.1		ST	2370.0	SR	488.2	SS	827.9
RDE	.2787	RRA	.1857	RC3 .1372	FAU .15263	RRT	.2185	RRF	.1872	RTF	.9854	CRT	.5867	CRS	.0576	CST	-.7729
FDE	-.2946	FRA	3.4520	FC-11.8250	BSP 47967	SGB13731.9	R23	-.0291	R13	.9854		LSA	2473.3	MSA	650.0	SSA	31.8
BDE	.6336	BRA	3.9487	BC317.4945	FSP 2946	SG113719.8	SG2	576.1	THA	.54		EL1	2387.8	EL2	392.4	ALF	7.08

LAUNCH DATE NOV 29 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 836.689 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.114	GAL	-2.92	AZL	88.02	HCA	248.66	SMA	188.96	ECC	.22468	INC	1.9817	V1	30.196
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.988	GAP	-11.69	AZP	90.72	TAL	344.00	TAP	232.66	RCA	146.50	APO	231.41	V2	26.373
RC	320.558	GL	19.78	GP	-2.81	ZAL	114.38	ZAP	35.21	ETS	175.05	ZAE	56.24	ETE	177.74	ZAC	82.96	ETC	257.04	CLP	35.11

PLANETOCENTRIC CONIC

C3	11.419	VHL	3.379	DLA	16.98	RAL	190.69	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	5.000	DPA	2.62	RAP	170.82	ECC	1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 23	2647.06	-27.18	70.76	48.53	98.27	17 56 30	2047.1	-25.76	62.38
90.00	9 49 42	4174.97	-.77	170.59	43.77	61.69	10 59 17	3575.0	-4.55	163.94
100.00	18 43 27	2353.43	-28.33	48.95	48.32	99.95	19 22 40	1753.4	-26.67	40.54
100.00	11 1 20	3943.83	.25	153.03	43.20	60.11	12 7 4	3343.8	-3.73	146.50
110.00	20 13 6	2072.94	-31.32	26.90	47.58	104.46	20 47 39	1472.9	-29.01	18.46
110.00	11 48 10	3797.09	2.84	140.28	41.58	55.92	12 51 27	3197.1	-1.65	134.08

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.4605	TRA	4.1583	TC-17.3063	BAU 2.6421	SGT13847.5	SGR	591.6	SG3	830.9		ST	2371.4	SR	491.5	SS	838.0
RDE	.2840	RRA	.1843	RC3 .1570	FAU .14508	RRT	.1884	RRF	.1565	RTF	.9851	CRT	.5076	CRS	.1322	CST	-.7853
FDE	-.3720	FRA	3.4233	FC-10.9995	BSP 48471	SGB13860.2	R23	-.0300	R13	.9851		LSA	2475.6	MSA	661.6	SSA	31.1
BDE	.5410	BRA	4.1623	BC317.3070	FSP 2824	SG113848.0	SG2	581.0	THA	.46		EL1	2384.9	EL2	421.0	ALF	6.20

LAUNCH DATE NOV 29 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 841.002 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.121	GAL	-3.08	AZL	88.03	HCA	249.92	SMA	189.08	ECC	.22579	INC	1.9677	V1	30.196
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.014	GAP	-11.80	AZP	90.68	TAL	343.15	TAP	233.07	RCA	146.38	APO	231.77	V2	26.388
RC	321.425	GL	19.40	GP	-2.74	ZAL	115.84	ZAP	34.58	ETS	175.03	ZAE	55.31	ETE	177.74	ZAC	83.15	ETC	256.98	CLP	34.48

PLANETOCENTRIC CONIC

C3	11.686	VHL	3.418	DLA	16.05	RAL	191.87	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	5.080	DPA	2.42	RAP	171.43	ECC	1.1923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 4	2617.36	-26.87	68.64	49.72	99.28	18 9 42	2017.4	-25.31	60.32
90.00	9 45 25	4214.32	.50	172.78	45.06	61.69	10 55 40	3614.3	-3.29	166.15
100.00	18 56 21	2326.23	-28.00	47.00	49.49	100.92	19 35 7	1726.2	-26.21	38.65
100.00	10 57 50	3980.68	1.50	155.05	44.50	60.14	12 4 10	3380.7	-2.48	148.53
110.00	20 24 25	2050.71	-30.93	25.29	48.71	105.35	20 58 35	1450.7	-28.51	16.92
110.00	11 46 16	3828.96	4.05	141.95	42.91	56.03	12 50 5	3229.0	-.43	135.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3496	TRA	4.3802	TC-17.0911	BAU 2.6703	SGT13972.8	SGR	593.1	SG3	792.8		ST	2391.3	SR	495.1	SS	849.8
RDE	.2898	RRA	.1827	RC3 .1751	FAU .13770	RRT	.1593	RRF	.1264	RTF	.9847	CRT	.4244	CRS	.2014	CST	-.8000
FDE	-.4446	FRA	3.3918	FC-10.2014	BSP 48979	SGB13985.4	R23	-.0311	R13	.9847		LSA	2497.1	MSA	670.0	SSA	30.4
BDE	.4541	BRA	4.3840	BC317.0920	FSP 2707	SG113973.1	SG2	585.5	THA	.39		EL1	2400.8	EL2	446.5	ALF	5.20

LAUNCH DATE NOV 29 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 845.312 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.128	GAL	-3.25	AZL	88.05	HCA	251.18	SMA	189.20	ECC	.22695	INC	1.9539
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.039	GAP	-11.91	AZP	90.63	TAL	342.30	TAP	233.47	RCA	146.26	APO	232.13
RC	322.286	GL	19.02	GP	-2.68	ZAL	117.30	ZAP	33.96	ETS	175.02	ZAE	54.40	ETE	177.73	ZAC	83.35	ETC	256.92

V1	30.196	V2	26.402	CLP	33.87														

PLANETOCENTRIC CONIC

C3	11.977	VHL	3.461	DLA	15.11	RAL	193.04	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	5.162	DPA	2.21	RAP	172.04
ECC	1.1971																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 28	2588.75	-26.54	66.61	50.93	100.25	18 22 36	1988.7	-24.86	58.34
90.00	9 41 24	4253.38	1.76	174.95	46.38	61.73	10 52 18	3653.4	-2.04	168.32
100.00	19 9 1	2299.94	-27.64	45.12	50.69	101.85	19 47 21	1699.9	-25.73	36.84
100.00	10 54 32	4017.29	2.74	157.06	45.84	60.22	12 1 29	3417.3	-1.24	150.54
110.00	20 35 34	2029.12	-30.53	23.73	49.86	106.19	21 9 23	1429.1	-28.01	15.44
110.00	11 44 28	3860.88	5.27	143.62	44.27	56.18	12 48 49	3260.9	.79	137.40

DIFFERENTIAL CORRECTIONS

TDE	.2362	TRA	4.6088	TC-16.8524	BAU	2.6986	
RDE	.2961	RRA	.1809	RC3 .1914	FAU	.13056	
FDE	-.5090	FRA	3.3570	FC3-9.4371	BSP	49474	
BDE	.3788	BRA	4.6124	BC316.8534	FSP	2591	

MID-COURSE EXECUTION ACCURACY

SGT14095.4	SGR	595.1	SG3	755.8			
RRT	.1309	RRF	.0974	RTF	.9843		
SGB14107.9	R23	-.0319	R13	.9843			
SG114095.6	SG2	589.9	THA	.32			

ORBIT DETERMINATION ACCURACY

ST	2428.5	SR	499.0	SS	861.4		
CRT	.3391	CRS	.2627	CST	-.8173		
LSA	2536.5	MSA	673.5	SSA	29.7		
EL1	2434.6	EL2	468.3	ALF	4.14		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 849.621 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.135	GAL	-3.42	AZL	88.06	HCA	252.44	SMA	189.32	ECC	.22816	INC	1.9404
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.062	GAP	-12.02	AZP	90.59	TAL	341.42	TAP	233.86	RCA	146.12	APO	232.51
RC	323.141	GL	18.63	GP	-2.62	ZAL	118.76	ZAP	33.37	ETS	175.00	ZAE	53.50	ETE	177.73	ZAC	83.54	ETC	256.86

V1	30.196	V2	26.416	CLP	33.28														

PLANETOCENTRIC CONIC

C3	12.293	VHL	3.506	DLA	14.18	RAL	194.21	RAD	6567.5	VEL	11.562	PTH	2.02	VHP	5.244	DPA	2.00	RAP	172.67
ECC	1.2023																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 34	2561.19	-26.19	64.67	52.16	101.16	18 35 16	1961.2	-24.39	56.46
90.00	9 37 37	4291.83	3.00	177.11	47.75	61.83	10 49 9	3691.8	-.79	170.48
100.00	19 21 27	2274.55	-27.28	43.32	51.90	102.73	19 59 22	1674.5	-25.25	35.11
100.00	10 51 26	4053.70	3.97	159.06	47.21	60.35	11 58 59	3453.7	-.01	152.53
110.00	20 46 35	2008.17	-30.12	22.24	51.04	106.99	21 20 3	1408.2	-27.50	14.02
110.00	11 42 47	3892.84	6.47	145.31	45.67	56.36	12 47 40	3292.8	2.01	139.07

DIFFERENTIAL CORRECTIONS

TDE	.1205	TRA	4.8451	TC-16.5898	BAU	2.7268	
RDE	.3030	RRA	.1787	RC3 .2058	FAU	.12363	
FDE	-.5676	FRA	3.3180	FC3-8.7066	BSP	49963	
BDE	.3260	BRA	4.8484	BC316.5910	FSP	2480	

MID-COURSE EXECUTION ACCURACY

SGT14214.9	SGR	597.3	SG3	719.8			
RRT	.1035	RRF	.0692	RTF	.9838		
SGB14227.4	R23	-.0330	R13	.9838			
SG114215.0	SG2	594.1	THA	.25			

ORBIT DETERMINATION ACCURACY

ST	2482.4	SR	503.3	SS	872.6		
CRT	.2540	CRS	.3182	CST	-.8349		
LSA	2592.8	MSA	673.4	SSA	28.9		
EL1	2485.9	EL2	486.1	ALF	3.07		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 853.927 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.141	GAL	-3.60	AZL	88.07	HCA	253.70	SMA	189.44	ECC	.22943	INC	1.9270
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.085	GAP	-12.13	AZP	90.54	TAL	340.54	TAP	234.24	RCA	145.98	APO	232.90
RC	323.990	GL	18.23	GP	-2.56	ZAL	120.22	ZAP	32.79	ETS	174.98	ZAE	52.61	ETE	177.72	ZAC	83.74	ETC	256.80

V1	30.196	V2	26.428	CLP	32.70														

PLANETOCENTRIC CONIC

C3	12.637	VHL	3.555	DLA	13.25	RAL	195.37	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	5.328	DPA	1.77	RAP	173.32
ECC	1.2080																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 25	2534.65	-25.83	62.81	53.41	102.03	18 47 40	1934.6	-23.91	54.66
90.00	9 34 3	4330.10	4.23	179.25	49.16	61.97	10 46 13	3730.1	.45	172.61
100.00	19 33 40	2250.04	-26.90	41.60	53.14	103.56	20 11 10	1650.0	-24.76	33.45
100.00	10 48 29	4089.94	5.19	161.06	48.63	60.52	11 56 39	3489.9	1.22	154.52
110.00	20 57 27	1987.90	-29.71	20.80	52.24	107.74	21 30 35	1387.9	-26.99	12.66
110.00	11 41 12	3924.85	7.68	147.01	47.10	56.59	12 46 37	3324.8	3.23	140.74

DIFFERENTIAL CORRECTIONS

TDE	.0021	TRA	5.0888	TC-16.3055	BAU	2.7549	
RDE	.3103	RRA	.1764	RC3 .2186	FAU	.11692	
FDE	-.6211	FRA	3.2762	FC3-8.0104	BSP	50458	
BDE	.3103	BRA	5.0919	BC316.3070	FSP	2371	

MID-COURSE EXECUTION ACCURACY

SGT14331.4	SGR	599.7	SG3	685.0			
RRT	.0769	RRF	.0417	RTF	.9833		
SGB14344.0	R23	-.0341	R13	.9833			
SG114331.5	SG2	597.9	THA	.18			

ORBIT DETERMINATION ACCURACY

ST	2551.7	SR	507.8	SS	883.1		
CRT	.1710	CRS	.3685	CST	-.8519		
LSA	2664.3	MSA	670.4	SSA	28.2		
EL1	2553.2	EL2	500.0	ALF	2.03		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 858.229 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.148	GAL	-3.78	AZL	88.09	HCA	254.96	SMA	189.56	ECC	.23075	INC	1.9137
RP	207.16	LAP	-1.85	LOP	321.77	VP	24.107	GAP	-12.25	AZP	90.50	TAL	339.64	TAP	234.60	RCA	145.82	APO	233.31
RC	324.833	GL	17.83	GP	-2.51	ZAL	121.68	ZAP	32.22	ETS	174.96	ZAE	51.74	ETE	177.72	ZAC	83.94	ETC	256.74

V1	30.196	V2	26.439	CLP	32.13														

PLANETOCENTRIC CONIC

C3	13.008	VHL	3.607	DLA	12.32	RAL	196.53	RAD	6567.5	VEL	11.593	PTH	2.03	VHP	5.414	DPA	1.53	RAP	173.98
ECC	1.2141																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 1	2509.08	-25.45	61.03	54.68	102.84	18 59 50	1909.1	-23.43	52.94
90.00	9 30 41	4368.11	5.44	181.38	50.61	62.17	10 43 29	3768.1	1.67	174.73
100.00	19 45 41	2226.40	-26.51	39.95	54.40	104.35	20 22 47	1626.4	-24.28	31.86
100.00	10 45 43	4126.02	6.39	163.06	50.09	60.74	11 54 29	3526.0	2.44	156.50
110.00	21 8 10	1968.30	-29.29	19.43	53.47	108.46	21 40 58	1368.3	-26.49	11.36
110.00	11 39 43	3956.89	8.87	148.72	48.57	56.85	12 45 40	3356.9	4.45	142.42

DIFFERENTIAL CORRECTIONS

TDE	-.1179	TRA	5.3399	TC-16.0012	BAU	2.7830	
RDE	.3181	RRA	.1737	RC3 .2297	FAU	.11038	
FDE	-.6690	FRA	3.2303	FC3-7.3464	BSP	50935	
BDE	.3393	BRA	5.3427	BC316.0028	FSP	2266	

MID-COURSE EXECUTION ACCURACY

SGT14444.7	SGR	602.2	SG3	651.2			
RRT	.0511	RRF	.0150	RTF	.9826		
SGB14457.2	R23	-.0354	R13	.9826			
SG114444.7	SG2	601.4	THA	.12			

ORBIT DETERMINATION ACCURACY

ST	2634.4	SR	512.5	SS	892.1		
CRT	.0921	CRS	.4137	CST	-.8675		
LSA	2748.8	MSA	665.0	SSA	27.5		
EL1	2634.9	EL2	510.2	ALF	1.07		

LAUNCH DATE NOV 29 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 862.527 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.155	GAL	-3.96	AZL	88.10	HCA	256.22	SMA	189.69	ECC	.23214	INC	1.9006
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.128	GAP	-12.37	AZP	90.45	TAL	338.72	TAP	234.95	RCA	145.65	APO	233.72
RC	325.671	GL	17.43	GP	-2.46	ZAL	123.13	ZAP	31.67	ETS	174.94	ZAE	50.88	ETE	177.72	ZAC	84.15	ETC	256.68

PLANETOCENTRIC CONIC

C3	13.410	VHL	3.662	DLA	11.39	RAL	197.68	RAD	6567.5	VEL	11.610	PTH	2.03	VHP	5.500	DPA	1.28	RAP	174.65

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 23	2484.49	-25.07	59.33	55.98	103.61	19 11 48	1884.5	-22.95	51.30
90.00	9 27 28	4405.86	6.63	183.51	52.09	62.41	10 40 54	3805.9	2.89	176.84
100.00	19 57 28	2203.62	-26.12	38.37	55.68	105.09	20 34 12	1603.6	-23.79	30.35
100.00	10 43 4	4161.96	7.58	165.07	51.58	61.00	11 52 26	3562.0	3.66	158.48
110.00	21 18 43	1949.39	-28.88	18.11	54.72	109.14	21 51 12	1349.4	-25.99	10.12
110.00	11 38 19	3988.96	10.06	150.44	50.07	57.16	12 44 48	3389.0	5.67	144.11

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.2415	TRA	5.5986	TC-15.6802	BAU	2.8114	SGT14555.7	SGR	604.9	SG3	618.4	ST	2729.0	SR	517.4	SS	899.7
RDE	.3265	RRA	.1707	RC3 .2393	FAU	.10405	RRT .0260	RRF	-.0111	RTF	.9819	CRT	.0172	CRS	.4549	CST	-.8817
FDE	-.7122	FRA	3.1811	FC3-6.7178	BSP	51381	SGB14568.3	R23	-.0367	R13	.9819	LSA	2844.5	MSA	657.7	SSA	26.8
BDE	.4061	BRA	5.6012	BC315.6820	FSP	2161	SG114555.7	SG2	604.7	THA	.06	EL1	2729.0	EL2	517.3	ALF	.19

LAUNCH DATE NOV 29 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 866.820 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.162	GAL	-4.15	AZL	88.11	HCA	257.49	SMA	189.82	ECC	.23358	INC	1.8876
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.148	GAP	-12.49	AZP	90.41	TAL	337.79	TAP	235.28	RCA	145.48	APO	234.15
RC	326.503	GL	17.03	GP	-2.41	ZAL	124.58	ZAP	31.13	ETS	174.92	ZAE	50.04	ETE	177.71	ZAC	84.35	ETC	256.62

PLANETOCENTRIC CONIC

C3	13.843	VHL	3.721	DLA	10.47	RAL	198.82	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	5.589	DPA	1.03	RAP	175.33

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 31	2460.83	-24.68	57.71	57.30	104.34	19 23 32	1860.8	-22.47	49.73
90.00	9 24 26	4443.39	7.81	185.64	53.62	62.70	10 38 29	3843.4	4.09	178.94
100.00	20 9 4	2181.70	-25.72	36.87	56.99	105.79	20 45 26	1581.7	-23.30	28.90
100.00	10 40 34	4197.76	8.76	167.07	53.11	61.31	11 50 32	3597.8	4.86	160.45
110.00	21 29 7	1931.18	-28.46	16.85	56.00	109.78	22 1 19	1331.2	-25.50	8.93
110.00	11 37 0	4021.05	11.24	152.18	51.62	57.50	12 44 1	3421.0	6.88	145.80

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.3662	TRA	5.8651	TC-15.3436	BAU	2.8399	SGT14664.2	SGR	607.8	SG3	586.5	ST	2833.3	SR	522.4	SS	904.7
RDE	.3354	RRA	.1674	RC3 .2474	FAU	.09787	RRT .0017	RRF	-.0363	RTF	.9810	CRT	-.0516	CRS	.4915	CST	-.8943
FDE	-.7493	FRA	3.1284	FC3-6.1209	BSP	51847	SGB14676.8	R23	-.0380	R13	.9810	LSA	2949.1	MSA	649.1	SSA	26.1
BDE	.4965	BRA	5.8675	BC315.3456	FSP	2061	SG114664.2	SG2	607.8	THA	.00	EL1	2833.5	EL2	521.7	ALF	179.44

LAUNCH DATE NOV 29 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 871.108 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.169	GAL	-4.35	AZL	88.13	HCA	258.76	SMA	189.94	ECC	.23509	INC	1.8748
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.166	GAP	-12.61	AZP	90.37	TAL	336.85	TAP	235.60	RCA	145.29	APO	234.60
RC	327.330	GL	16.62	GP	-2.36	ZAL	126.02	ZAP	30.61	ETS	174.90	ZAE	49.21	ETE	177.71	ZAC	84.56	ETC	256.56

PLANETOCENTRIC CONIC

C3	14.310	VHL	3.783	DLA	9.55	RAL	199.95	RAD	6567.6	VEL	11.649	PTH	2.04	VHP	5.679	DPA	.77	RAP	176.03

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 25	2438.12	-24.29	56.16	58.64	105.02	19 35 4	1838.1	-21.99	48.24
90.00	9 21 32	4480.71	8.97	187.77	55.18	63.03	10 36 13	3880.7	5.28	181.03
100.00	20 20 27	2160.64	-25.32	35.43	58.32	106.44	20 56 28	1560.6	-22.82	27.52
100.00	10 38 11	4233.42	9.92	169.09	54.67	61.66	11 48 45	3633.4	6.06	162.43
110.00	21 39 22	1913.68	-28.06	15.66	57.30	110.38	22 11 16	1313.7	-25.02	7.80
110.00	11 35 46	4053.15	12.41	153.93	53.19	57.89	12 43 19	3453.1	8.08	147.51

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.4933	TRA	6.1387	TC-14.9966	BAU	2.8694	SGT14771.1	SGR	610.7	SG3	555.7	ST	2945.3	SR	527.6	SS	907.7
RDE	.3447	RRA	.1638	RC3 .2540	FAU	.09195	RRT -.0219	RRF	-.0611	RTF	.9801	CRT	-.1149	CRS	.5250	CST	-.9051
FDE	-.7821	FRA	3.0717	FC3-5.5627	BSP	52274	SGB14783.7	R23	.0396	R13	-.9801	LSA	3060.6	MSA	639.9	SSA	25.5
BDE	.6019	BRA	6.1409	BC314.9988	FSP	1963	SG114771.1	SG2	610.5	THA	179.95	EL1	2946.0	EL2	524.0	ALF	178.78

LAUNCH DATE NOV 29 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 875.390 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.176	GAL	-4.55	AZL	88.14	HCA	260.02	SMA	190.07	ECC	.23667	INC	1.8621
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.184	GAP	-12.73	AZP	90.32	TAL	335.89	TAP	235.91	RCA	145.09	APO	235.06
RC	328.152	GL	16.21	GP	-2.31	ZAL	127.44	ZAP	30.09	ETS	174.88	ZAE	48.39	ETE	177.70	ZAC	84.76	ETC	256.51

PLANETOCENTRIC CONIC

C3	14.812	VHL	3.849	DLA	8.64	RAL	201.07	RAD	6567.6	VEL	11.670	PTH	2.05	VHP	5.770	DPA	.49	RAP	176.74

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 7	2416.32	-23.90	54.68	60.00	105.66	19 46 23	1816.3	-21.52	46.82
90.00	9 18 47	4517.83	10.11	189.91	56.77	63.41	10 34 5	3917.8	6.46	183.13
100.00	20 31 39	2140.42	-24.92	34.06	59.67	107.06	21 7 20	1540.4	-22.35	26.20
100.00	10 35 56	4268.96	11.06	171.11	56.27	62.05	11 47 5	3669.0	7.24	164.41
110.00	21 49 28	1896.91	-27.65	14.52	58.62	110.95	22 21 5	1296.9	-24.55	6.72
110.00	11 34 36	4085.24	13.56	155.70	54.80	58.32	12 42 41	3485.2	9.28	149.22

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-.6222	TRA	6.4215	TC-14.6355	BAU	2.8986	SGT14875.1	SGR	613.6	SG3	525.9	ST	3063.9	SR	532.9	SS	908.2
RDE	.3546	RRA	.1599	RC3 .2592	FAU	.08616	RRT -.0448	RRF	-.0852	RTF	.9790	CRT	-.1724	CRS	.5553	CST	-.9143
FDE	-.8100	FRA	3.0117	FC3-5.0360	BSP	52704	SGB14887.8	R23	.0413	R13	-.9790	LSA	3177.8	MSA	630.4	SSA	24.8
BDE	.7162	BRA	6.4235	BC314.6378	FSP	1867	SG114875.1	SG2	613.0	THA	179.89	EL1	3065.3	EL2	524.7	ALF	178.23

LAUNCH DATE NOV 29 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 879.665 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.184 GAL -4.75 AZL 88.15 HCA 261.29 SMA 190.20 ECC .23832 INC 1.8494 V1 30.196
RP 206.81 LAP -1.83 LOP 328.10 VP 24.201 GAP -12.86 AZP 90.28 TAL 334.92 TAP 236.21 RCA 144.87 APO 235.53 V2 26.480
RC 328.970 GL 15.81 GP -2.27 ZAL 128.86 ZAP 29.60 ETS 174.86 ZAE 47.59 ETE 177.70 ZAC 84.97 ETC 256.45 CLP 29.52

PLANETOCENTRIC CONIC

C3 15.352 VHL 3.918 DLA 7.74 RAL 202.18 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 5.863 DPA .21 RAP 177.45 ECC 1.2527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 36	2395.44	-23.51	53.27	61.39	106.26	19 57 31	1795.4	-21.05	45.46
90.00	9 16 9	4554.76	11.23	192.04	58.41	63.83	10 32 4	3954.8	7.62	185.22
100.00	20 42 40	2121.06	-24.53	32.75	61.04	107.64	21 18 1	1521.1	-21.89	24.95
100.00	10 33 46	4304.37	12.18	173.14	57.91	62.49	11 45 31	3704.4	8.40	166.39
110.00	21 59 25	1880.87	-27.26	13.44	59.97	111.47	22 30 46	1280.9	-24.09	5.70
110.00	11 33 30	4117.33	14.70	157.49	56.45	58.79	12 42 8	3517.3	10.46	150.95

DIFFERENTIAL CORRECTIONS
TDE -.7533 TRA 6.7113 TC-14.2671 BAU 2.9287
RDE .3650 RRA .1556 RC3 .2632 FAU .08056
FDE -.8337 FRA 2.9475 FC3-4.5430 BSP 53112
BDE .8371 BRA 6.7131 BC314.2696 FSP 1773

MID-COURSE EXECUTION ACCURACY
SGT14976.8 SGR 616.6 SG3 496.9
RRT -.0671 RRF -.1089 RTF .9778
SGB14989.5 R23 .0433 R13 -.9778
SG114976.8 SG2 615.2 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 3186.6 SR 538.2 SS 906.2
CRT -.2247 CRS .5831 CST -.9220
LSA 3298.4 MSA 620.9 SSA 24.2
EL1 3189.0 EL2 524.1 ALF 177.77

LAUNCH DATE NOV 29 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 883.932 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.191 GAL -4.96 AZL 88.16 HCA 262.56 SMA 190.33 ECC .24004 INC 1.8368 V1 30.196
RP 206.77 LAP -1.82 LOP 329.37 VP 24.216 GAP -12.99 AZP 90.24 TAL 333.93 TAP 236.49 RCA 144.64 APO 236.02 V2 26.486
RC 329.784 GL 15.40 GP -2.22 ZAL 130.27 ZAP 29.11 ETS 174.83 ZAE 46.80 ETE 177.69 ZAC 85.18 ETC 256.40 CLP 29.03

PLANETOCENTRIC CONIC

C3 15.932 VHL 3.991 DLA 6.85 RAL 203.27 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 5.957 DPA -.07 RAP 178.19 ECC 1.2622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 52	2375.45	-23.12	51.94	62.79	106.82	20 8 28	1775.5	-20.60	44.17
90.00	9 13 39	4591.50	12.32	194.19	60.07	64.30	10 30 10	3991.5	8.76	187.31
100.00	20 53 29	2102.54	-24.14	31.51	62.44	108.18	21 28 32	1502.5	-21.43	23.77
100.00	10 31 43	4339.64	13.28	175.18	59.59	62.97	11 44 3	3739.6	9.55	168.37
110.00	22 9 13	1865.56	-26.87	12.42	61.34	111.97	22 40 18	1265.6	-23.65	4.73
110.00	11 32 29	4149.39	15.83	159.29	58.14	59.30	12 41 38	3549.4	11.64	152.69

DIFFERENTIAL CORRECTIONS
TDE -.8869 TRA 7.0088 TC-13.8920 BAU 2.9594
RDE .3759 RRA .1509 RC3 .2660 FAU .07514
FDE -.8528 FRA 2.8794 FC3-4.0829 BSP 53480
BDE .9633 BRA 7.0105 BC313.8945 FSP 1680

MID-COURSE EXECUTION ACCURACY
SGT15076.1 SGR 619.6 SG3 468.9
RRT -.0889 RRF -.1321 RTF .9764
SGB15088.8 R23 .0453 R13 -.9764
SG115076.2 SG2 617.1 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 3312.6 SR 543.6 SS 901.5
CRT -.2722 CRS .6085 CST -.9286
LSA 3421.5 MSA 611.3 SSA 23.6
EL1 3315.9 EL2 522.6 ALF 177.38

LAUNCH DATE NOV 29 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 888.191 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.198 GAL -5.17 AZL 88.18 HCA 263.83 SMA 190.46 ECC .24183 INC 1.8243 V1 30.196
RP 206.73 LAP -1.81 LOP 330.63 VP 24.231 GAP -13.12 AZP 90.20 TAL 332.93 TAP 236.76 RCA 144.40 APO 236.52 V2 26.490
RC 330.595 GL 14.99 GP -2.18 ZAL 131.66 ZAP 28.64 ETS 174.81 ZAE 46.02 ETE 177.69 ZAC 85.40 ETC 256.34 CLP 28.56

PLANETOCENTRIC CONIC

C3 16.554 VHL 4.069 DLA 5.97 RAL 204.36 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 6.053 DPA -.37 RAP 178.93 ECC 1.2724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 57	2356.37	-22.74	50.67	64.22	107.35	20 19 13	1756.4	-20.15	42.95
90.00	9 11 15	4628.05	13.39	196.34	61.78	64.81	10 28 23	4028.1	9.89	189.41
100.00	21 4 7	2084.87	-23.76	30.34	63.86	108.69	21 38 52	1484.9	-20.99	22.64
100.00	10 29 46	4374.78	14.36	177.23	61.29	63.50	11 42 40	3774.8	10.69	170.37
110.00	22 18 51	1851.00	-26.50	11.45	62.72	112.43	22 49 42	1251.0	-23.22	3.82
110.00	11 31 31	4181.42	16.93	161.12	59.86	59.85	12 41 13	3581.4	12.80	154.45

DIFFERENTIAL CORRECTIONS
TDE-1.0216 TRA 7.3148 TC-13.5118 BAU 2.9909
RDE .3873 RRA .1459 RC3 .2677 FAU .06985
FDE -.8680 FRA 2.8081 FC3-3.6533 BSP 53843
BDE 1.0925 BRA 7.3163 BC313.5145 FSP 1590

MID-COURSE EXECUTION ACCURACY
SGT15173.4 SGR 622.6 SG3 441.7
RRT -.1100 RRF -.1548 RTF .9748
SGB15186.1 R23 .0476 R13 -.9748
SG115173.5 SG2 618.8 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 3439.9 SR 549.0 SS 894.5
CRT -.3146 CRS .6319 CST -.9339
LSA 3545.6 MSA 602.3 SSA 23.0
EL1 3444.3 EL2 520.4 ALF 177.06

LAUNCH DATE NOV 29 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 892.441 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.205 GAL -5.39 AZL 88.19 HCA 265.09 SMA 190.60 ECC .24370 INC 1.8118 V1 30.196
RP 206.70 LAP -1.81 LOP 331.90 VP 24.245 GAP -13.26 AZP 90.16 TAL 331.92 TAP 237.01 RCA 144.15 APO 237.04 V2 26.493
RC 331.403 GL 14.59 GP -2.14 ZAL 133.03 ZAP 28.18 ETS 174.79 ZAE 45.25 ETE 177.68 ZAC 85.61 ETC 256.29 CLP 28.11

PLANETOCENTRIC CONIC

C3 17.220 VHL 4.150 DLA 5.11 RAL 205.44 RAD 6567.7 VEL 11.773 PTH 2.08 VHP 6.151 DPA -.67 RAP 179.68 ECC 1.2834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 49	2338.16	-22.36	49.47	65.67	107.84	20 29 48	1738.2	-19.72	41.79
90.00	9 8 58	4664.42	14.43	198.50	63.52	65.37	10 26 42	4064.4	10.99	191.51
100.00	21 14 34	2068.03	-23.39	29.23	65.30	109.16	21 49 2	1468.0	-20.56	21.57
100.00	10 27 54	4409.79	15.41	179.30	63.04	64.07	11 41 23	3809.8	11.80	172.37
110.00	22 28 20	1837.19	-26.14	10.54	64.13	112.86	22 58 57	1237.2	-22.81	2.96
110.00	11 30 37	4213.39	18.02	162.96	61.61	60.45	12 40 51	3613.4	13.94	156.22

DIFFERENTIAL CORRECTIONS
TDE-1.1572 TRA 7.6301 TC-13.1260 BAU 3.0225
RDE .3992 RRA .1405 RC3 .2684 FAU .06470
FDE -.8785 FRA 2.7330 FC3-3.2529 BSP 54209
BDE 1.2242 BRA 7.6314 BC313.1288 FSP 1502

MID-COURSE EXECUTION ACCURACY
SGT15267.7 SGR 625.6 SG3 415.4
RRT -.1305 RRF -.1768 RTF .9730
SGB15280.5 R23 .0500 R13 -.9730
SG115267.9 SG2 620.2 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 3567.6 SR 554.3 SS 884.5
CRT -.3527 CRS .6533 CST -.9383
LSA 3669.4 MSA 593.7 SSA 22.5
EL1 3573.1 EL2 517.9 ALF 176.80

LAUNCH DATE NOV 29 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 896.680 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.213	GAL	-5.62	AZL	88.20	HCA	266.36	SMA	190.73	ECC	.24566	INC	1.7994	V1	30.196
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.257	GAP	-13.40	AZP	90.11	TAL	330.89	TAP	237.25	RCA	143.87	APO	237.58	V2	26.495
RC	332.208	GL	14.19	GP	-2.11	ZAL	134.39	ZAP	27.73	ETS	174.76	ZAE	44.49	ETE	177.67	ZAC	85.82	ETC	256.24	CLP	27.66

PLANETOCENTRIC CONIC

C3	17.935	VHL	4.235	DLA	4.25	RAL	206.50	RAD	6567.7	VEL	11.803	PTH	2.09	VHP	6.251	DPA	-.98	RAP	180.44	ECC	1.2952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 31	2320.83	-22.00	48.33	67.14	108.29	20 40 11	1720.8	-19.29	40.70
90.00	9 6 46	4700.61	15.45	200.67	65.29	65.97	10 25 7	4100.6	12.07	193.62
100.00	21 24 51	2052.03	-23.03	28.17	66.75	109.60	21 59 3	1452.0	-20.15	20.57
100.00	10 26 7	4444.64	16.44	181.38	64.82	64.68	11 40 11	3844.6	12.89	174.38
110.00	22 37 40	1824.13	-25.79	9.68	65.56	113.26	23 8 4	1224.1	-22.42	2.15
110.00	11 29 47	4245.31	19.08	164.83	63.40	61.08	12 40 32	3645.3	15.07	158.00

DIFFERENTIAL CORRECTIONS

TDE	-1.2963	TRA	7.9532	TC	-12.7413	BAU	3.0556
RDE	.4116	RRA	.1347	RC3	.2681	FAU	.05975
FDE	-.8859	FRA	2.6537	FC3	-2.8840	BSP	54505
BDE	1.3601	BRA	7.9543	BC3	12.7442	FSP	1415

MID-COURSE EXECUTION ACCURACY

SGT	15360.9	SGR	628.5	SG3	389.9		
RRT	-.1507	RRF	-.1988	RTF	.9710		
SGB	15373.8	R23	.0529	R13	-.9710		
SG1	15361.2	SG2	621.3	THA	179.65		

ORBIT DETERMINATION ACCURACY

ST	3695.8	SR	559.6	SS	872.3
CRT	-.3875	CRS	.6735	CST	-.9419
LSA	3793.3	MSA	585.4	SSA	22.0
EL1	3702.2	EL2	514.9	ALF	176.58

LAUNCH DATE NOV 29 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 900.909 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.220	GAL	-5.85	AZL	88.21	HCA	267.63	SMA	190.86	ECC	.24770	INC	1.7871	V1	30.196
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.269	GAP	-13.55	AZP	90.07	TAL	329.85	TAP	237.48	RCA	143.59	APO	238.14	V2	26.497
RC	333.009	GL	13.79	GP	-2.07	ZAL	135.74	ZAP	27.30	ETS	174.74	ZAE	43.75	ETE	177.66	ZAC	86.04	ETC	256.20	CLP	27.22

PLANETOCENTRIC CONIC

C3	18.699	VHL	4.324	DLA	3.41	RAL	207.56	RAD	6567.8	VEL	11.836	PTH	2.10	VHP	6.353	DPA	-1.29	RAP	181.22	ECC	1.3077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 1	2304.37	-21.64	47.25	68.62	108.72	20 50 25	1704.4	-18.89	39.66
90.00	9 4 40	4736.61	16.43	202.86	67.10	66.61	10 23 37	4136.6	13.13	195.74
100.00	21 34 57	2036.85	-22.68	27.18	68.23	110.01	22 8 54	1436.9	-19.75	19.61
100.00	10 24 25	4479.35	17.44	183.47	66.63	65.33	11 39 4	3879.4	13.96	176.40
110.00	22 46 51	1811.81	-25.45	8.88	67.01	113.63	23 17 3	1211.8	-22.04	1.39
110.00	11 29 0	4277.17	20.11	166.72	65.22	61.76	12 40 17	3677.2	16.18	159.80

DIFFERENTIAL CORRECTIONS

TDE	-1.4357	TRA	8.2854	TC	-12.3534	BAU	3.0889
RDE	.4244	RRA	.1285	RC3	.2670	FAU	.05490
FDE	-.8894	FRA	2.5710	FC3	-2.5418	BSP	54826
BDE	1.4972	BRA	8.2864	BC3	12.3563	FSP	1331

MID-COURSE EXECUTION ACCURACY

SGT	15450.3	SGR	631.4	SG3	365.2		
RRT	-.1702	RRF	-.2203	RTF	.9686		
SGB	15463.2	R23	.0560	R13	-.9686		
SG1	15450.7	SG2	622.2	THA	179.60		

ORBIT DETERMINATION ACCURACY

ST	3821.9	SR	564.7	SS	857.6
CRT	-.4184	CRS	.6922	CST	-.9446
LSA	3915.0	MSA	577.7	SSA	21.5
EL1	3829.4	EL2	511.9	ALF	176.40

LAUNCH DATE NOV 29 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 905.125 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.228	GAL	-6.09	AZL	88.23	HCA	268.90	SMA	191.00	ECC	.24982	INC	1.7747	V1	30.196
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.279	GAP	-13.70	AZP	90.03	TAL	328.79	TAP	237.70	RCA	143.28	APO	238.71	V2	26.497
RC	333.807	GL	13.39	GP	-2.04	ZAL	137.06	ZAP	26.87	ETS	174.71	ZAE	43.02	ETE	177.65	ZAC	86.26	ETC	256.15	CLP	26.80

PLANETOCENTRIC CONIC

C3	19.516	VHL	4.418	DLA	2.59	RAL	208.60	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	6.456	DPA	-1.62	RAP	182.00	ECC	1.3212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 19	2288.75	-21.30	46.23	70.13	109.12	21 0 28	1688.8	-18.49	38.68
90.00	9 2 39	4772.42	17.39	205.05	68.94	67.29	10 22 12	4172.4	14.16	197.86
100.00	21 44 52	2022.49	-22.34	26.25	69.72	110.39	22 18 35	1422.5	-19.36	18.72
100.00	10 22 47	4513.91	18.41	185.58	68.48	66.02	11 38 1	3913.9	15.01	178.43
110.00	22 55 53	1800.24	-25.14	8.13	68.48	113.97	23 25 53	1200.2	-21.68	.68
110.00	11 28 16	4308.93	21.13	168.63	67.08	62.48	12 40 5	3708.9	17.27	161.62

DIFFERENTIAL CORRECTIONS

TDE	-1.5767	TRA	8.6270	TC	-11.9701	BAU	3.1240
RDE	.4378	RRA	.1219	RC3	.2652	FAU	.05020
FDE	-.8893	FRA	2.4845	FC3	-2.2267	BSP	55107
BDE	1.6364	BRA	8.6279	BC3	11.9731	FSP	1248

MID-COURSE EXECUTION ACCURACY

SGT	15539.7	SGR	634.3	SG3	341.3		
RRT	-.1893	RRF	-.2415	RTF	.9659		
SGB	15552.6	R23	.0595	R13	-.9659		
SG1	15540.2	SG2	622.8	THA	179.56		

ORBIT DETERMINATION ACCURACY

ST	3946.2	SR	569.8	SS	840.5
CRT	-.4464	CRS	.7097	CST	-.9467
LSA	4034.6	MSA	570.4	SSA	21.0
EL1	3954.5	EL2	508.8	ALF	176.25

LAUNCH DATE NOV 29 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 909.328 EARTH TO MARS

RL	147.55	LAL	-.00	LOL	66.81	VL	33.235	GAL	-6.33	AZL	88.24	HCA	270.17	SMA	191.14	ECC	.25204	INC	1.7623	V1	30.196
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.288	GAP	-13.85	AZP	89.99	TAL	327.73	TAP	237.90	RCA	142.96	APO	239.31	V2	26.496
RC	334.601	GL	13.00	GP	-2.00	ZAL	138.37	ZAP	26.46	ETS	174.69	ZAE	42.29	ETE	177.64	ZAC	86.48	ETC	256.11	CLP	26.39

PLANETOCENTRIC CONIC

C3	20.390	VHL	4.516	DLA	1.77	RAL	209.62	RAD	6567.8	VEL	11.907	PTH	2.12	VHP	6.562	DPA	-1.94	RAP	182.79	ECC	1.3356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 28	2273.98	-20.96	45.28	71.65	109.48	21 10 22	1674.0	-18.12	37.76
90.00	9 0 43	4808.04	18.31	207.26	70.81	68.02	10 20 51	4208.0	15.17	199.99
100.00	21 54 38	2008.94	-22.02	25.37	71.24	110.75	22 28 7	1408.9	-19.00	17.88
100.00	10 21 14	4548.31	19.34	187.70	70.36	66.76	11 37 3	3948.3	16.03	180.48
110.00	23 4 46	1789.40	-24.83	7.44	69.96	114.28	23 34 35	1189.4	-21.34	.03
110.00	11 27 35	4340.61	22.11	170.56	68.98	63.24	12 39 56	3740.6	18.34	163.46

DIFFERENTIAL CORRECTIONS

TDE	-1.7208	TRA	8.9755	TC	-11.5900	BAU	3.1602
RDE	.4516	RRA	.1149	RC3	.2626	FAU	.04564
FDE	-.8861	FRA	2.3938	FC3	-1.9376	BSP	55335
BDE	1.7790	BRA	8.9762	BC3	11.5929	FSP	1167

MID-COURSE EXECUTION ACCURACY

SGT	15625.3	SGR	637.1	SG3	318.2		
RRT	-.2081	RRF	-.2626	RTF	.9627		
SGB	15638.3	R23	.0633	R13	-.9628		
SG1	15625.8	SG2	623.1	THA	179.51		

ORBIT DETERMINATION ACCURACY

ST	4068.2	SR	574.7	SS	821.2
CRT	-.4721	CRS	.7264	CST	-.9482
LSA	4151.7	MSA	563.4	SSA	20.6
EL1	4077.3	EL2	505.5	ALF	176.12

LAUNCH DATE NOV 29 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 913.517 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.242 GAL -6.58 AZL 88.25 HCA 271.44 SMA 191.27 ECC .25436 INC 1.7500 V1 30.196
RP 206.69 LAP -1.75 LOP 338.25 VP 24.297 GAP -14.01 AZP 89.96 TAL 326.64 TAP 238.08 RCA 142.62 APO 239.92 V2 26.494
RC 335.390 GL 12.62 GP -1.97 ZAL 139.66 ZAP 26.06 ETS 174.66 ZAE 41.58 ETE 177.63 ZAC 86.70 ETC 256.07 CLP 25.99

PLANETOCENTRIC CONIC

C3 21.324 VHL 4.618 DLA .98 RAL 210.64 RAD 6567.9 VEL 11.946 PTH 2.13 VHP 6.669 DPA -2.28 RAP 183.60 ECC 1.3509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 25	2260.02	-20.64	44.38	73.19	109.82	21 20 5	1660.0	-17.76	36.90
90.00	8 58 52	4843.47	19.20	209.48	72.71	68.78	10 19 36	4243.5	16.14	202.13
100.00	22 4 13	1996.18	-21.71	24.55	72.77	111.07	22 37 29	1396.2	-18.65	17.09
100.00	10 19 46	4582.54	20.25	189.84	72.27	67.53	11 36 8	3982.5	17.03	182.53
110.00	23 13 30	1779.31	-24.55	6.79	71.47	114.57	23 43 10	1179.3	-21.03	359.41
110.00	11 26 58	4372.18	23.06	172.51	70.91	64.04	12 39 50	3772.2	19.38	165.31

DIFFERENTIAL CORRECTIONS
TDE-1.8642 TRA 9.3355 TC-11.2119 BAU 3.1972
RDE .4659 RRA .1074 RC3 .2595 FAU .04118
FDE -.8789 FRA 2.2994 FC3-1.6719 BSP 55579
BDE 1.9216 BRA 9.3361 BC311.2149 FSP 1089

MID-COURSE EXECUTION ACCURACY
SGT15709.3 SGR 639.8 SG3 295.7
RRT -.2262 RRF -.2831 RTF .9591
SGB15722.3 R23 .0675 R13 -.9591
SG115710.0 SG2 623.2 THA 179.47

ORBIT DETERMINATION ACCURACY
ST 4186.4 SR 579.5 SS 799.3
CRT -.4948 CRS .7420 CST -.9492
LSA 4264.9 MSA 557.0 SSA 20.1
EL1 4196.3 EL2 502.4 ALF 176.02

LAUNCH DATE NOV 29 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 917.691 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.250 GAL -6.84 AZL 88.26 HCA 272.71 SMA 191.41 ECC .25677 INC 1.7376 V1 30.196
RP 206.72 LAP -1.74 LOP 339.52 VP 24.304 GAP -14.17 AZP 89.92 TAL 325.55 TAP 238.26 RCA 142.26 APO 240.56 V2 26.491
RC 336.176 GL 12.23 GP -1.94 ZAL 140.93 ZAP 25.67 ETS 174.64 ZAE 40.88 ETE 177.62 ZAC 86.92 ETC 256.03 CLP 25.60

PLANETOCENTRIC CONIC

C3 22.321 VHL 4.725 DLA .20 RAL 211.65 RAD 6567.9 VEL 11.988 PTH 2.14 VHP 6.779 DPA -2.62 RAP 184.41 ECC 1.3674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 13	2246.88	-20.34	43.54	74.75	110.14	21 29 40	1646.9	-17.41	36.08
90.00	8 57 6	4878.70	20.05	211.71	74.65	69.58	10 18 25	4278.7	17.09	204.29
100.00	22 13 39	1984.20	-21.41	23.79	74.31	111.37	22 46 43	1384.2	-18.32	16.36
100.00	10 18 21	4616.61	21.12	192.00	74.21	68.34	11 35 18	4016.6	17.99	184.60
110.00	23 22 6	1769.93	-24.28	6.19	72.98	114.83	23 51 36	1169.9	-20.73	358.85
110.00	11 26 23	4403.64	23.99	174.49	72.87	64.88	12 39 47	3803.6	20.40	167.18

DIFFERENTIAL CORRECTIONS
TDE-2.0108 TRA 9.7033 TC-10.8402 BAU 3.2358
RDE .4807 RRA .0995 RC3 .2558 FAU .03683
FDE -.8692 FRA 2.2013 FC3-1.4284 BSP 55756
BDE 2.0675 BRA 9.7038 BC310.8432 FSP 1011

MID-COURSE EXECUTION ACCURACY
SGT15790.5 SGR 642.5 SG3 274.0
RRT -.2441 RRF -.3035 RTF .9546
SGB15803.6 R23 .0723 R13 -.9547
SG115791.3 SG2 623.0 THA 179.43

ORBIT DETERMINATION ACCURACY
ST 4301.6 SR 584.1 SS 775.8
CRT -.5158 CRS .7572 CST -.9496
LSA 4375.3 MSA 550.8 SSA 19.7
EL1 4312.3 EL2 499.1 ALF 175.94

LAUNCH DATE NOV 29 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 921.848 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.258 GAL -7.10 AZL 88.27 HCA 273.98 SMA 191.55 ECC .25929 INC 1.7253 V1 30.196
RP 206.75 LAP -1.72 LOP 340.79 VP 24.310 GAP -14.34 AZP 89.88 TAL 324.44 TAP 238.42 RCA 141.88 APO 241.22 V2 26.488
RC 336.957 GL 11.86 GP -1.91 ZAL 142.19 ZAP 25.29 ETS 174.61 ZAE 40.19 ETE 177.61 ZAC 87.15 ETC 256.00 CLP 25.22

PLANETOCENTRIC CONIC

C3 23.386 VHL 4.836 DLA -.57 RAL 212.64 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 6.891 DPA -2.96 RAP 185.23 ECC 1.3849

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 50	2234.53	-20.05	42.75	76.32	110.43	21 39 5	1634.5	-17.09	35.32
90.00	8 55 24	4913.72	20.87	213.96	76.61	70.41	10 17 17	4313.7	18.01	206.45
100.00	22 22 55	1972.99	-21.13	23.07	75.88	111.65	22 55 48	1373.0	-18.01	15.67
100.00	10 17 0	4650.49	21.96	194.17	76.18	69.19	11 34 30	4050.5	18.93	186.68
110.00	23 30 33	1761.27	-24.03	5.64	74.52	115.07	23 59 55	1161.3	-20.45	358.33
110.00	11 25 51	4434.98	24.88	176.49	74.86	65.76	12 39 46	3835.0	21.39	169.07

DIFFERENTIAL CORRECTIONS
TDE-2.1575 TRA10.0817 TC-10.4742 BAU 3.2757
RDE .4959 RRA .0912 RC3 .2516 FAU .03260
FDE -.8562 FRA 2.0992 FC3-1.2068 BSP 55919
BDE 2.2138 BRA10.0822 BC310.4772 FSP 934

MID-COURSE EXECUTION ACCURACY
SGT15869.9 SGR 645.0 SG3 253.0
RRT -.2615 RRF -.3236 RTF .9494
SGB15883.0 R23 .0777 R13 -.9495
SG115870.8 SG2 622.5 THA 179.39

ORBIT DETERMINATION ACCURACY
ST 4412.4 SR 588.4 SS 750.1
CRT -.5345 CRS .7717 CST -.9495
LSA 4481.1 MSA 545.0 SSA 19.3
EL1 4423.7 EL2 496.0 ALF 175.87

LAUNCH DATE NOV 29 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 925.986 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.265 GAL -7.37 AZL 88.29 HCA 275.25 SMA 191.69 ECC .26191 INC 1.7129 V1 30.196
RP 206.79 LAP -1.71 LOP 342.06 VP 24.315 GAP -14.51 AZP 89.84 TAL 323.32 TAP 238.56 RCA 141.48 APO 241.90 V2 26.483
RC 337.733 GL 11.49 GP -1.88 ZAL 143.42 ZAP 24.92 ETS 174.58 ZAE 39.51 ETE 177.59 ZAC 87.37 ETC 255.97 CLP 24.86

PLANETOCENTRIC CONIC

C3 24.522 VHL 4.952 DLA -1.32 RAL 213.62 RAD 6568.0 VEL 12.079 PTH 2.16 VHP 7.005 DPA -3.31 RAP 186.06 ECC 1.4036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 11 18	2222.95	-19.77	42.01	77.91	110.69	21 48 21	1622.9	-16.78	34.61
90.00	8 53 46	4948.54	21.64	216.21	78.61	71.28	10 16 14	4348.5	18.89	208.62
100.00	22 32 2	1962.53	-20.87	22.41	77.45	111.90	23 4 44	1362.5	-17.71	15.03
100.00	10 15 43	4684.19	22.76	196.35	78.19	70.07	11 33 47	4084.2	19.83	188.78
110.00	23 38 52	1753.30	-23.80	5.14	76.06	115.29	24 8 5	1153.3	-20.20	357.85
110.00	11 25 22	4466.19	25.73	178.51	76.89	66.68	12 39 48	3866.2	22.36	170.98

DIFFERENTIAL CORRECTIONS
TDE-2.3067 TRA10.4696 TC-10.1158 BAU 3.3173
RDE .5115 RRA .0823 RC3 .2471 FAU .02847
FDE -.8404 FRA 1.9928 FC3-1.0052 BSP 56053
BDE 2.3627 BRA10.4699 BC310.1188 FSP 860

MID-COURSE EXECUTION ACCURACY
SGT15947.2 SGR 647.5 SG3 232.7
RRT -.2786 RRF -.3436 RTF .9432
SGB15960.3 R23 .0838 R13 -.9432
SG115948.2 SG2 621.8 THA 179.35

ORBIT DETERMINATION ACCURACY
ST 4519.6 SR 592.6 SS 722.5
CRT -.5518 CRS .7859 CST -.9488
LSA 4583.5 MSA 539.5 SSA 18.9
EL1 4531.6 EL2 492.9 ALF 175.81

LAUNCH DATE NOV 29 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 930.106 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.273 GAL -7.64 AZL 88.30 HCA 276.51 SMA 191.83 ECC .26465 INC 1.7004 V1 30.196
RP 206.84 LAP -1.69 LOP 343.33 VP 24.319 GAP -14.69 AZP 89.81 TAL 322.18 TAP 238.69 RCA 141.06 APO 242.60 V2 26.477
RC 338.506 GL 11.12 GP -1.85 ZAL 144.63 ZAP 24.56 ETS 174.56 ZAE 38.84 ETE 177.58 ZAC 87.60 ETC 255.94 CLP 24.50

PLANETOCENTRIC CONIC

C3 25.734 VHL 5.073 DLA -2.05 RAL 214.59 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 7.122 DPA -3.66 RAP 186.90 ECC 1.4235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 36	2212.12	-19.51	41.33	79.51	110.94	21 57 28	1612.1	-16.49	33.95
90.00	8 52 11	4983.15	22.38	218.48	80.63	72.19	10 15 14	4383.2	19.74	210.81
100.00	22 41 0	1952.80	-20.62	21.79	79.04	112.14	23 13 32	1352.8	-17.44	14.44
100.00	10 14 29	4717.70	23.52	198.55	80.22	70.99	11 33 7	4117.7	20.71	190.88
110.00	23 47 3	1746.02	-23.59	4.68	77.63	115.49	24 16 9	1146.0	-19.96	357.42
110.00	11 24 55	4497.25	26.56	180.55	78.95	67.64	12 39 52	3897.2	23.29	172.91

DIFFERENTIAL CORRECTIONS
TDE-2.4567 TRA10.8673 TC3-9.7648 BAU 3.3605
RDE .5276 RRA .0730 RC3 .2423 FAU .02442
FDE -.8218 FRA 1.8827 FC3 -.8216 BSP 56158
BDE 2.5127 BRA10.8676 BC3 9.7678 FSP 788

MID-COURSE EXECUTION ACCURACY
SGT16021.8 SGR 649.9 SG3 213.1
RRT -.2953 RRF -.3633 RTF .9354
SGB16034.9 R23 .0907 R13 -.9355
SG116022.9 SG2 620.9 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4622.1 SR 596.5 SS 693.4
CRT -.5675 CRS .7997 CST -.9475
LSA 4681.2 MSA 534.3 SSA 18.6
EL1 4634.6 EL2 489.8 ALF 175.76

LAUNCH DATE NOV 29 1964 FLIGHT TIME 428.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 934.204 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.281 GAL -7.93 AZL 88.31 HCA 277.78 SMA 191.97 ECC .26750 INC 1.6879 V1 30.196
RP 206.90 LAP -1.67 LOP 344.60 VP 24.322 GAP -14.88 AZP 89.77 TAL 321.03 TAP 238.81 RCA 140.62 APO 243.33 V2 26.470
RC 339.274 GL 10.76 GP -1.82 ZAL 145.83 ZAP 24.22 ETS 174.53 ZAE 38.19 ETE 177.56 ZAC 87.83 ETC 255.91 CLP 24.15

PLANETOCENTRIC CONIC

C3 27.027 VHL 5.199 DLA -2.77 RAL 215.55 RAD 6568.1 VEL 12.182 PTH 2.19 VHP 7.241 DPA -4.02 RAP 187.75 ECC 1.4448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 45	2202.02	-19.26	40.69	81.12	111.17	22 6 27	1602.0	-16.21	33.34
90.00	8 50 41	5017.55	23.08	220.76	82.67	73.13	10 14 19	4417.5	20.55	213.00
100.00	22 49 48	1943.78	-20.39	21.22	80.64	112.35	23 22 12	1343.8	-17.18	13.90
100.00	10 13 19	4751.02	24.24	200.76	82.28	71.95	11 32 30	4151.0	21.54	193.00
110.00	23 55 5	1739.41	-23.40	4.26	79.20	115.66	24 24 5	1139.4	-19.75	357.02
110.00	11 24 31	4528.16	27.34	182.61	81.04	68.63	12 39 59	3928.2	24.19	174.86

DIFFERENTIAL CORRECTIONS
TDE-2.6082 TRA11.2755 TC3-9.4216 BAU 3.4054
RDE .5442 RRA .0632 RC3 .2371 FAU .02047
FDE -.8003 FRA 1.7684 FC3 -.6557 BSP 56225
BDE 2.6644 BRA11.2757 BC3 9.4246 FSP 717

MID-COURSE EXECUTION ACCURACY
SGT16093.9 SGR 652.2 SG3 194.2
RRT -.3116 RRF -.3827 RTF .9260
SGB16107.1 R23 .0986 R13 -.9260
SG116095.2 SG2 619.6 THA 179.28

ORBIT DETERMINATION ACCURACY
ST 4720.2 SR 600.1 SS 662.5
CRT -.5818 CRS .8134 CST -.9457
LSA 4774.8 MSA 529.3 SSA 18.2
EL1 4733.2 EL2 486.8 ALF 175.72

LAUNCH DATE NOV 29 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 938.280 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.288 GAL -8.22 AZL 88.32 HCA 279.05 SMA 192.12 ECC .27047 INC 1.6753 V1 30.196
RP 206.97 LAP -1.65 LOP 345.86 VP 24.324 GAP -15.07 AZP 89.74 TAL 319.87 TAP 238.91 RCA 140.15 APO 244.08 V2 26.462
RC 340.039 GL 10.41 GP -1.80 ZAL 147.00 ZAP 23.88 ETS 174.51 ZAE 37.54 ETE 177.54 ZAC 88.06 ETC 255.89 CLP 23.82

PLANETOCENTRIC CONIC

C3 28.406 VHL 5.330 DLA -3.47 RAL 216.49 RAD 6568.1 VEL 12.238 PTH 2.20 VHP 7.363 DPA -4.39 RAP 188.61 ECC 1.4675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 45	2192.63	-19.03	40.10	82.75	111.37	22 15 18	1592.6	-15.96	32.77
90.00	8 49 14	5051.72	23.74	223.05	84.74	74.09	10 13 26	4451.7	21.33	215.21
100.00	22 58 29	1935.45	-20.17	20.70	82.26	112.54	23 30 44	1335.5	-16.94	13.39
100.00	10 12 12	4784.13	24.92	202.99	84.36	72.93	11 31 56	4184.1	22.34	195.14
110.00	0 6 56	1733.44	-23.22	3.89	80.78	115.82	0 35 50	1133.4	-19.56	356.67
110.00	11 24 10	4558.90	28.08	184.69	83.16	69.66	12 40 8	3958.9	25.06	176.83

DIFFERENTIAL CORRECTIONS
TDE-2.7598 TRA11.6947 TC3-9.0862 BAU 3.4517
RDE .5611 RRA .0530 RC3 .2317 FAU .01658
FDE -.7760 FRA 1.6501 FC3 -.5054 BSP 56266
BDE 2.8163 BRA11.6949 BC3 9.0892 FSP 649

MID-COURSE EXECUTION ACCURACY
SGT16163.2 SGR 654.3 SG3 175.9
RRT -.3275 RRF -.4016 RTF .9140
SGB16176.4 R23 .1077 R13 -.9141
SG116164.6 SG2 618.2 THA 179.24

ORBIT DETERMINATION ACCURACY
ST 4812.9 SR 603.5 SS 629.9
CRT -.5946 CRS .8271 CST -.9431
LSA 4863.1 MSA 524.6 SSA 17.8
EL1 4826.4 EL2 483.8 ALF 175.69

LAUNCH DATE NOV 29 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 942.332 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.296 GAL -8.52 AZL 88.34 HCA 280.31 SMA 192.26 ECC .27357 INC 1.6627 V1 30.196
RP 207.04 LAP -1.64 LOP 347.13 VP 24.325 GAP -15.27 AZP 89.70 TAL 318.69 TAP 239.00 RCA 139.66 APO 244.86 V2 26.453
RC 340.800 GL 10.07 GP -1.77 ZAL 148.16 ZAP 23.56 ETS 174.48 ZAE 36.90 ETE 177.52 ZAC 88.29 ETC 255.87 CLP 23.49

PLANETOCENTRIC CONIC

C3 29.876 VHL 5.466 DLA -4.15 RAL 217.43 RAD 6568.2 VEL 12.298 PTH 2.22 VHP 7.488 DPA -4.76 RAP 189.48 ECC 1.4917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 36	2183.92	-18.81	39.55	84.38	111.56	22 24 0	1583.9	-15.72	32.24
90.00	8 47 51	5085.67	24.35	225.35	86.83	75.09	10 12 37	4485.7	22.07	217.42
100.00	23 7 0	1927.79	-19.97	20.22	83.88	112.72	23 39 8	1327.8	-16.72	12.93
100.00	10 11 8	4817.03	25.56	205.23	86.47	73.94	11 31 25	4217.0	23.11	197.28
110.00	0 14 43	1728.11	-23.06	3.56	82.38	115.96	0 43 31	1128.1	-19.38	356.35
110.00	11 23 50	4589.48	28.79	186.79	85.31	70.72	12 40 20	3989.5	25.89	178.81

DIFFERENTIAL CORRECTIONS
TDE-2.9131 TRA12.1257 TC3-8.7606 BAU 3.5002
RDE .5785 RRA .0421 RC3 .2262 FAU .01278
FDE -.7494 FRA 1.5277 FC3 -.3702 BSP 56286
BDE 2.9700 BRA12.1258 BC3 8.7635 FSP 582

MID-COURSE EXECUTION ACCURACY
SGT16231.3 SGR 656.3 SG3 158.3
RRT -.3431 RRF -.4201 RTF .8988
SGB16244.5 R23 .1185 R13 -.8989
SG116232.8 SG2 616.4 THA 179.20

ORBIT DETERMINATION ACCURACY
ST 4901.5 SR 606.6 SS 596.2
CRT -.6064 CRS .8409 CST -.9395
LSA 4947.5 MSA 520.1 SSA 17.5
EL1 4915.4 EL2 480.9 ALF 175.67

LAUNCH DATE NOV 29 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 946.358 EARTH TO MARS

RL 147.55 LAL -.00 LOL 66.81 VL 33.304 GAL -8.83 AZL 88.35 HCA 281.58 SMA 192.40 ECC .27680 INC 1.6499 V1 30.196
RP 207.13 LAP -1.62 LOP 348.39 VP 24.325 GAP -15.47 AZP 89.67 TAL 317.50 TAP 239.08 RCA 139.15 APO 245.66 V2 26.444
RC 341.558 GL 9.73 GP -1.75 ZAL 149.30 ZAP 23.24 ETS 174.46 ZAE 36.27 ETE 177.50 ZAC 88.52 ETC 255.85 CLP 23.18

PLANETOCENTRIC CONIC

C3 31.442 VHL 5.607 DLA -4.82 RAL 218.36 RAD 6568.3 VEL 12.362 PTH 2.23 VHP 7.615 DPA -5.13 RAP 190.36 ECC 1.5175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 19	2175.87	-18.61	39.04	86.03	111.73	22 32 35	1575.9	-15.50	31.75
90.00	8 46 31	5119.38	24.92	227.65	88.95	76.11	10 11 50	4519.4	22.77	219.65
100.00	23 15 24	1920.78	-19.78	19.78	85.52	112.88	23 47 25	1320.8	-16.52	12.51
100.00	10 10 8	4849.71	26.15	207.47	88.60	74.98	11 30 57	4249.7	23.83	199.44
110.00	0 22 23	1723.38	-22.92	3.26	83.99	116.08	0 51 6	1123.4	-19.23	356.07
110.00	11 23 34	4619.87	29.45	188.91	87.48	71.81	12 40 34	4019.9	26.69	180.82

DIFFERENTIAL CORRECTIONS
TDE-3.0677 TRA12.5668 TC3-8.4446 BAU 3.5510
RDE .5962 RRA .0308 RC3 .2205 FAU .00903
FDE -.7203 FRA 1.4011 FC3 -.2487 BSP 56254
BDE 3.1251 BRA12.5669 BC3 8.4475 FSP 517

MID-COURSE EXECUTION ACCURACY
SGT16296.3 SGR 658.2 SG3 141.5
RRT -.3583 RRF -.4376 RTF .8788
SGB16309.6 R23 .1310 R13 -.8789
SG116298.0 SG2 614.5 THA 179.17

ORBIT DETERMINATION ACCURACY
ST 4985.1 SR 609.3 SS 561.2
CRT -.6173 CRS .8550 CST -.9350
LSA 5027.0 MSA 515.7 SSA 17.2
EL1 4999.4 EL2 478.0 ALF 175.65

LAUNCH DATE NOV 30 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 21 1965

HELIOCENTRIC CONIC DISTANCE 389.563 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 36.026 GAL -3.70 AZL 88.58 HCA 119.76 SMA 264.71 ECC .44644 INC 1.4177 V1 30.200
RP 245.33 LAP 1.23 LOP 187.59 VP 24.095 GAP 26.21 AZP 90.70 TAL 347.99 TAP 107.75 RCA 146.53 APO 382.88 V2 22.354
RC 122.260 GL 8.31 GP 1.23 ZAL 109.37 ZAP 176.38 ETS 158.79 ZAE 154.54 ETE 359.60 ZAC 89.81 ETC 256.09 CLP 176.60

PLANETOCENTRIC CONIC

C3 37.912 VHL 6.157 DLA 8.65 RAL 180.95 RAD 6568.5 VEL 12.621 PTH 2.29 VHP 11.868 DPA .66 RAP 184.88 ECC 1.6239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 54	2644.26	-27.15	70.56	56.70	98.36	18 25 58	2044.3	-25.72	62.18
90.00	7 54 39	4745.42	16.67	203.39	51.11	66.77	9 13 45	4145.4	13.39	196.26
100.00	19 7 27	2368.35	-28.50	50.02	56.47	99.41	19 46 55	1768.4	-26.91	41.59
100.00	9 11 48	4496.56	17.92	184.52	50.53	65.67	10 26 44	3896.6	14.49	177.41
110.00	20 25 16	2124.82	-32.13	30.73	55.66	102.34	21 0 41	1524.8	-30.10	22.10
110.00	10 10 28	4312.86	21.25	168.87	48.82	62.57	11 22 21	3712.9	17.41	161.85

DIFFERENTIAL CORRECTIONS
TDE .7284 TRA-1.8357 TC3 .6540 BAU .3320
RDE -.5800 RRA -.2569 RC3 -.0376 FAU .05372
FDE -.2170 FRA .9426 FC3-1.2268 BSP 6339
BDE .9311 BRA 1.8536 BC3 .6551 FSP 406

MID-COURSE EXECUTION ACCURACY
SGT 2023.3 SGR 593.2 SG3 152.4
RRT .0121 RRF -.0339 RTF -.8090
SGB 2108.4 R23 -.0232 R13 -.8090
SG1 2023.3 SG2 593.2 THA .22

ORBIT DETERMINATION ACCURACY
ST 853.7 SR 544.6 SS 345.7
CRT -.7062 CRS -.4887 CST .9587
LSA 1001.5 MSA 375.3 SSA 30.5
EL1 951.7 EL2 345.9 ALF 151.68

LAUNCH DATE NOV 30 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 390.857 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 35.882 GAL -3.51 AZL 88.59 HCA 120.66 SMA 259.36 ECC .43472 INC 1.4053 V1 30.200
RP 245.12 LAP 1.21 LOP 188.49 VP 23.899 GAP 25.59 AZP 90.72 TAL 348.39 TAP 109.05 RCA 146.61 APO 372.11 V2 22.374
RC 124.216 GL 8.44 GP 1.27 ZAL 108.65 ZAP 175.90 ETS 160.63 ZAE 154.18 ETE 359.84 ZAC 89.94 ETC 256.07 CLP 176.10

PLANETOCENTRIC CONIC

C3 35.851 VHL 5.988 DLA 9.05 RAL 180.35 RAD 6568.4 VEL 12.539 PTH 2.27 VHP 11.585 DPA .52 RAP 185.26 ECC 1.5900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 18	2643.18	-27.14	70.48	55.22	98.40	18 20 21	2043.2	-25.70	62.11
90.00	7 55 27	4718.24	15.93	201.74	49.54	66.28	9 14 5	4118.2	12.59	194.66
100.00	19 2 4	2366.57	-28.48	49.90	54.98	99.47	19 41 30	1766.6	-26.88	41.46
100.00	9 12 22	4470.08	17.17	182.91	48.95	65.15	10 26 52	3870.1	13.68	175.86
110.00	20 20 22	2121.52	-32.09	30.48	54.17	102.48	20 55 44	1521.5	-30.04	21.87
110.00	10 10 33	4287.90	20.46	167.36	47.23	62.00	11 22 1	3687.9	16.55	160.41

DIFFERENTIAL CORRECTIONS
TDE .7044 TRA-1.8133 TC3 .7124 BAU .3419
RDE -.5603 RRA -.2484 RC3 -.0380 FAU .05537
FDE -.2137 FRA .9504 FC3-1.3371 BSP 6632
BDE .9000 BRA 1.8302 BC3 .7134 FSP 427

MID-COURSE EXECUTION ACCURACY
SGT 2066.2 SGR 589.5 SG3 160.6
RRT .0186 RRF -.0358 RTF -.8130
SGB 2148.6 R23 -.0193 R13 -.8130
SG1 2066.2 SG2 589.4 THA .33

ORBIT DETERMINATION ACCURACY
ST 856.0 SR 541.0 SS 347.4
CRT -.6982 CRS -.4780 CST .9582
LSA 1001.1 MSA 378.1 SSA 31.3
EL1 950.7 EL2 348.7 ALF 152.12

LAUNCH DATE NOV 30 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 392.356 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	35.744	GAL	-3.33	AZL	88.61	HCA	121.56	SMA	254.47	ECC	.42354	INC	1.3927	V1	30.200
RP	244.91	LAP	1.19	LOP	189.39	VP	23.712	GAP	24.97	AZP	90.73	TAL	348.80	TAP	110.36	RCA	146.69	APO	362.24	V2	22.396
RC	126.220	GL	8.56	GP	1.31	ZAL	107.91	ZAP	175.42	ETS	162.08	ZAE	153.87	ETE	.08	ZAC	90.07	ETC	256.05	CLP	175.61

PLANETOCENTRIC CONIC

C3	33.933	VHL	5.825	DLA	9.46	RAL	179.72	RAD	6568.3	VEL	12.462	PTH	2.25	VHP	11.311	DPA	.39	RAP	185.65	ECC	1.5585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 30	2642.67	-27.14	70.44	53.73	98.42	18 14 33	2042.7	-25.69	62.07
90.00	7 56 13	4690.99	15.18	200.09	47.97	65.81	9 14 24	4091.0	11.79	193.06
100.00	18 56 30	2365.35	-28.47	49.81	53.49	99.52	19 35 55	1765.3	-26.86	41.37
100.00	9 12 55	4443.55	16.41	181.31	47.38	64.66	10 26 58	3843.5	12.86	174.32
110.00	20 15 18	2118.73	-32.04	30.27	52.68	102.59	20 50 37	1518.7	-29.98	21.67
110.00	10 10 36	4262.93	19.65	165.87	45.65	61.45	11 21 39	3662.9	15.69	158.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6824	TRA	-1.7878	TC3	.7775	BAU	.3532	SGT	2109.3	SGR	585.5	SG3	169.1	ST	858.7	SR	537.3	SS	348.0
RDE	-.5413	RRA	-.2402	RC3	-.0381	FAU	.05704	RRT	.0238	RRF	-.0388	RTF	-.8181	CRT	-.6915	CRS	-.4635	CST	.9561
FDE	-.2085	FRA	.9583	FC3	-1.4552	BSP	6862	SGB	2189.1	R23	-.0177	R13	-.8182	LSA	1000.6	MSA	380.6	SSA	32.1
BDE	.8711	BRA	1.8039	BC3	.7785	FSP	450	SG1	2109.4	SG2	585.3	THA	.41	EL1	950.3	EL2	350.7	ALF	152.56

LAUNCH DATE NOV 30 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 394.039 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	35.613	GAL	-3.15	AZL	88.62	HCA	122.46	SMA	249.97	ECC	.41287	INC	1.3798	V1	30.200
RP	244.68	LAP	1.16	LOP	190.30	VP	23.534	GAP	24.36	AZP	90.74	TAL	349.22	TAP	111.68	RCA	146.77	APO	353.18	V2	22.418
RC	128.267	GL	8.69	GP	1.35	ZAL	107.15	ZAP	174.92	ETS	163.25	ZAE	153.61	ETE	.31	ZAC	90.19	ETC	256.04	CLP	175.10

PLANETOCENTRIC CONIC

C3	32.149	VHL	5.670	DLA	9.88	RAL	179.06	RAD	6568.3	VEL	12.390	PTH	2.24	VHP	11.043	DPA	.26	RAP	186.03	ECC	1.5291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 31	2642.74	-27.14	70.45	52.23	98.41	18 8 34	2042.7	-25.69	62.08
90.00	7 56 58	4663.69	14.41	198.46	46.41	65.36	9 14 41	4063.7	10.97	191.47
100.00	18 50 44	2364.67	-28.46	49.76	52.00	99.54	19 30 9	1764.7	-26.85	41.33
100.00	9 13 26	4417.00	15.63	179.73	45.82	64.19	10 27 3	3817.0	12.03	172.78
110.00	20 10 4	2116.44	-32.01	30.10	51.19	102.69	20 45 20	1516.4	-29.93	21.51
110.00	10 10 35	4238.00	18.84	164.40	44.07	60.93	11 21 13	3638.0	14.82	157.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6609	TRA	-1.7608	TC3	.8476	BAU	.3647	SGT	2152.1	SGR	581.3	SG3	178.0	ST	860.5	SR	533.3	SS	347.9
RDE	-.5230	RRA	-.2323	RC3	-.0380	FAU	.05875	RRT	.0288	RRF	-.0427	RTF	-.8235	CRT	-.6848	CRS	-.4455	CST	.9528
FDE	-.2019	FRA	.9663	FC3	-1.5821	BSP	7071	SGB	2229.3	R23	-.0171	R13	-.8236	LSA	999.0	MSA	383.1	SSA	32.8
BDE	.8428	BRA	1.7760	BC3	.8484	FSP	477	SG1	2152.2	SG2	581.1	THA	.48	EL1	949.1	EL2	352.4	ALF	152.98

LAUNCH DATE NOV 30 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 395.886 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	35.487	GAL	-2.97	AZL	88.63	HCA	123.37	SMA	245.83	ECC	.40269	INC	1.3666	V1	30.200
RP	244.46	LAP	1.14	LOP	191.20	VP	23.365	GAP	23.74	AZP	90.75	TAL	349.65	TAP	113.02	RCA	146.84	APO	344.83	V2	22.440
RC	130.354	GL	8.80	GP	1.40	ZAL	106.36	ZAP	174.42	ETS	164.21	ZAE	153.40	ETE	.55	ZAC	90.32	ETC	256.02	CLP	174.59

PLANETOCENTRIC CONIC

C3	30.490	VHL	5.522	DLA	10.31	RAL	178.38	RAD	6568.2	VEL	12.323	PTH	2.22	VHP	10.782	DPA	.13	RAP	186.41	ECC	1.5018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 21	2643.39	-27.14	70.49	50.73	98.39	18 2 24	2043.4	-25.70	62.12
90.00	7 57 41	4636.40	13.63	196.83	44.85	64.94	9 14 57	4036.4	10.14	189.89
100.00	18 44 48	2364.55	-28.46	49.75	50.50	99.55	19 24 13	1764.5	-26.85	41.32
100.00	9 13 54	4390.48	14.83	178.16	44.25	63.75	10 27 5	3790.5	11.19	171.26
110.00	20 4 40	2114.65	-31.98	29.97	49.70	102.76	20 39 54	1514.7	-29.90	21.38
110.00	10 10 32	4213.14	18.01	162.95	42.50	60.44	11 20 45	3613.1	13.94	156.20

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6402	TRA	-1.7322	TC3	.9240	BAU	.3769	SGT	2195.4	SGR	576.9	SG3	187.3	ST	861.7	SR	529.2	SS	347.0
RDE	-.5053	RRA	-.2247	RC3	-.0376	FAU	.06055	RRT	.0334	RRF	-.0472	RTF	-.8293	CRT	-.6785	CRS	-.4251	CST	.9484
FDE	-.1942	FRA	.9738	FC3	-1.7193	BSP	7247	SGB	2269.9	R23	-.0174	R13	-.8294	LSA	996.7	MSA	385.4	SSA	33.5
BDE	.8156	BRA	1.7467	BC3	.9247	FSP	505	SG1	2195.5	SG2	576.6	THA	.54	EL1	947.4	EL2	353.6	ALF	153.39

LAUNCH DATE NOV 30 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 397.883 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	35.367	GAL	-2.79	AZL	88.65	HCA	124.28	SMA	242.01	ECC	.39299	INC	1.3530	V1	30.200
RP	244.23	LAP	1.12	LOP	192.11	VP	23.204	GAP	23.13	AZP	90.76	TAL	350.08	TAP	114.36	RCA	146.90	APO	337.12	V2	22.463
RC	132.477	GL	8.92	GP	1.44	ZAL	105.54	ZAP	173.91	ETS	165.00	ZAE	153.23	ETE	.79	ZAC	90.45	ETC	256.00	CLP	174.08

PLANETOCENTRIC CONIC

C3	28.947	VHL	5.380	DLA	10.74	RAL	177.67	RAD	6568.2	VEL	12.261	PTH	2.21	VHP	10.528	DPA	.01	RAP	186.79	ECC	1.4764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 0	2644.61	-27.16	70.58	49.23	98.35	17 56 4	2044.6	-25.72	62.21
90.00	7 58 22	4609.16	12.84	195.22	43.30	64.54	9 15 11	4009.2	9.31	188.33
100.00	18 38 42	2364.98	-28.47	49.78	49.00	99.53	19 18 7	1765.0	-26.86	41.35
100.00	9 14 21	4364.03	14.03	176.60	42.70	63.33	10 27 5	3764.0	10.34	169.76
110.00	19 59 6	2113.37	-31.96	29.88	48.20	102.81	20 34 20	1513.4	-29.87	21.29
110.00	10 10 26	4188.40	17.17	161.52	40.94	59.98	11 20 14	3588.4	13.05	154.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6195	TRA	-1.7017	TC3	1.0047	BAU	.3891	SGT	2237.4	SGR	572.3	SG3	197.1	ST	861.7	SR	524.8	SS	345.2
RDE	-.4883	RRA	-.2174	RC3	-.0368	FAU	.06242	RRT	.0381	RRF	-.0523	RTF	-.8349	CRT	-.6722	CRS	-.4018	CST	.9428
FDE	-.1851	FRA	.9801	FC3	-1.8670	BSP	7415	SGB	2309.5	R23	-.0183	R13	-.8350	LSA	992.8	MSA	387.7	SSA	34.1
BDE	.7888	BRA	1.7155	BC3	1.0053	FSP	536	SG1	2237.6	SG2	571.9	THA	.60	EL1	944.6	EL2	354.4	ALF	153.77

LAUNCH DATE NOV 30 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 400.014 EARTH TO MARS

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RL  147.53 LAL   -.00 LOL  67.83 VL  35.252 GAL  -2.62 AZL  88.66 HCA 125.19 SMA 238.48 ECC .38372 INC 1.3392 V1  30.200
RP  243.99 LAP   1.09 LOP 193.02 VP  23.051 GAP  22.53 AZP  90.77 TAL 350.53 TAP 115.72 RCA 146.97 APO 329.99 V2  22.486
RC 134.631 GL    9.03 GP    1.49 ZAL 104.70 ZAP 173.39 ETS 165.67 ZAE 153.12 ETE   1.03 ZAC  90.59 ETC 255.99 CLP 173.56
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PLANETOCENTRIC CONIC

```
C3  27.512 VHL  5.245 DLA  11.17 RAL 176.93 RAD 6568.1 VEL 12.202 PTH   2.19 VHP 10.280 DPA   -.11 RAP 187.16 ECC 1.4528
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 28	2646.40	-27.17	70.71	47.74	98.29	17 49 35	2046.4	-25.75	62.33
90.00	7 59 2	4582.00	12.04	193.63	41.76	64.18	9 15 24	3982.0	8.47	186.77
100.00	18 32 26	2365.94	-28.48	49.85	47.50	99.50	19 11 52	1765.9	-26.87	41.42
100.00	9 14 45	4337.69	13.22	175.07	41.16	62.94	10 27 3	3737.7	9.49	168.26
110.00	19 53 24	2112.58	-31.95	29.82	46.71	102.85	20 28 37	1512.6	-29.86	21.23
110.00	10 10 16	4163.82	16.33	160.11	39.39	59.54	11 19 40	3563.8	12.16	153.48

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .5985 TRA-1.6713 TC3 1.0909 BAU  .4014   SGT 2280.4 SGR  567.4 SG3  207.4     ST   860.4 SR   520.3 SS   343.0
 RDE -.4719 RRA -.2104 RC3 -.0357 FAU .06439   RRT  .0433 RRF -.0580 RTF -.8406     CRT -.6653 CRS -.3761 CST  .9364
 FDE -.1752 FRA  .9860 FC3-2.0263 BSP   7589   SGB 2349.9 R23 -.0192 R13 -.8407     LSA  987.6 MSA  390.0 SSA   34.8
 BDE  .7622 BRA 1.6845 BC3 1.0915 FSP    568   SG1 2280.5 SG2  566.9 THA   .66     EL1  940.6 EL2  355.3 ALF 154.13
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 402.268 EARTH TO MARS

```
RL  147.53 LAL   -.00 LOL  67.83 VL  35.142 GAL  -2.46 AZL  88.67 HCA 126.10 SMA 235.20 ECC .37489 INC 1.3250 V1  30.200
RP  243.75 LAP   1.07 LOP 193.93 VP  22.906 GAP  21.92 AZP  90.78 TAL 350.98 TAP 117.08 RCA 147.03 APO 323.38 V2  22.510
RC 136.814 GL    9.13 GP    1.54 ZAL 103.84 ZAP 172.86 ETS 166.23 ZAE 153.05 ETE   1.27 ZAC  90.72 ETC 255.97 CLP 173.03
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PLANETOCENTRIC CONIC

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C3  26.177 VHL  5.116 DLA  11.61 RAL 176.17 RAD 6568.1 VEL 12.147 PTH   2.18 VHP 10.039 DPA   -.22 RAP 187.53 ECC 1.4308
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 47	2648.74	-27.20	70.88	46.24	98.21	17 42 56	2048.7	-25.78	62.49
90.00	7 59 39	4554.97	11.23	192.05	40.22	63.84	9 15 34	3955.0	7.63	185.23
100.00	18 26 1	2367.44	-28.49	49.96	46.01	99.44	19 5 28	1767.4	-26.90	41.52
100.00	9 15 7	4311.51	12.41	173.55	39.62	62.58	10 26 58	3711.5	8.64	166.79
110.00	19 47 33	2112.27	-31.95	29.80	45.22	102.86	20 22 46	1512.3	-29.85	21.21
110.00	10 10 3	4139.44	15.48	158.73	37.85	59.14	11 19 3	3539.4	11.27	152.15

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .5771 TRA-1.6408 TC3 1.1791 BAU  .4128   SGT 2322.1 SGR  562.4 SG3  218.1     ST   857.7 SR   515.5 SS   340.2
 RDE -.4561 RRA -.2035 RC3 -.0341 FAU .06642   RRT  .0493 RRF -.0644 RTF -.8457     CRT -.6578 CRS -.3472 CST  .9288
 FDE -.1641 FRA  .9911 FC3-2.1966 BSP   7756   SGB 2389.2 R23 -.0202 R13 -.8457     LSA  980.7 MSA  392.6 SSA   35.6
 BDE  .7356 BRA 1.6533 BC3 1.1796 FSP    602   SG1 2322.3 SG2  561.6 THA   .73     EL1  935.2 EL2  356.1 ALF 154.47
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 404.633 EARTH TO MARS

```
RL  147.53 LAL   -.00 LOL  67.83 VL  35.037 GAL  -2.29 AZL  88.69 HCA 127.01 SMA 232.16 ECC .36646 INC 1.3105 V1  30.200
RP  243.50 LAP   1.05 LOP 194.85 VP  22.769 GAP  21.32 AZP  90.79 TAL 351.44 TAP 118.45 RCA 147.09 APO 317.24 V2  22.535
RC 139.022 GL    9.23 GP    1.59 ZAL 102.95 ZAP 172.32 ETS 166.71 ZAE 153.02 ETE   1.52 ZAC  90.85 ETC 255.96 CLP 172.49
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PLANETOCENTRIC CONIC

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C3  24.936 VHL  4.994 DLA  12.06 RAL 175.39 RAD 6568.0 VEL 12.096 PTH   2.17 VHP  9.804 DPA   -.33 RAP 187.89 ECC 1.4104
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 57	2651.61	-27.22	71.08	44.74	98.11	17 36 9	2051.6	-25.82	62.69
90.00	8 0 13	4528.12	10.42	190.50	38.70	63.52	9 15 42	3928.1	6.78	183.71
100.00	18 19 26	2369.44	-28.52	50.10	44.51	99.37	18 58 56	1769.4	-26.93	41.66
100.00	9 15 25	4285.53	11.59	172.06	38.09	62.25	10 26 51	3685.5	7.78	165.33
110.00	19 41 34	2112.43	-31.95	29.81	43.73	102.85	20 16 47	1512.4	-29.85	21.22
110.00	10 9 46	4115.29	14.63	157.37	36.33	58.76	11 18 22	3515.3	10.39	150.84

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .5564 TRA-1.6094 TC3 1.2742 BAU  .4249   SGT 2364.9 SGR  557.1 SG3  229.4     ST   854.4 SR   510.6 SS   337.1
 RDE -.4409 RRA -.1970 RC3 -.0319 FAU .06859   RRT  .0553 RRF -.0713 RTF -.8509     CRT -.6504 CRS -.3162 CST  .9200
 FDE -.1524 FRA  .9952 FC3-2.3815 BSP   7912   SGB 2429.6 R23 -.0216 R13 -.8510     LSA  973.1 MSA  395.0 SSA   36.4
 BDE  .7099 BRA 1.6214 BC3 1.2746 FSP    639   SG1 2365.1 SG2  556.2 THA   .79     EL1  929.3 EL2  356.6 ALF 154.79
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 407.100 EARTH TO MARS

```
RL  147.53 LAL   -.00 LOL  67.83 VL  34.936 GAL  -2.13 AZL  88.70 HCA 127.93 SMA 229.34 ECC .35841 INC 1.2956 V1  30.200
RP  243.25 LAP   1.02 LOP 195.76 VP  22.638 GAP  20.73 AZP  90.80 TAL 351.91 TAP 119.84 RCA 147.14 APO 311.53 V2  22.560
RC 141.251 GL    9.32 GP    1.65 ZAL 102.05 ZAP 171.78 ETS 167.12 ZAE 153.04 ETE   1.77 ZAC  90.99 ETC 255.95 CLP 171.95
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PLANETOCENTRIC CONIC

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C3  23.783 VHL  4.877 DLA  12.50 RAL 174.58 RAD 6568.0 VEL 12.048 PTH   2.15 VHP  9.574 DPA   -.43 RAP 188.25 ECC 1.3914
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 58	2654.99	-27.26	71.32	43.24	97.99	17 29 13	2055.0	-25.87	62.93
90.00	8 0 45	4501.49	9.61	188.96	37.19	63.24	9 15 47	3901.5	5.94	182.21
100.00	18 12 44	2371.93	-28.54	50.28	43.02	99.28	18 52 16	1771.9	-26.97	41.84
100.00	9 15 40	4259.79	10.77	170.58	36.58	61.95	10 26 40	3659.8	6.93	163.90
110.00	19 35 28	2113.04	-31.96	29.85	42.25	102.83	20 10 41	1513.0	-29.86	21.27
110.00	10 9 25	4091.44	13.79	156.04	34.81	58.41	11 17 37	3491.4	9.51	149.56

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .5348 TRA-1.5770 TC3 1.3740 BAU  .4370   SGT 2406.7 SGR  551.6 SG3  241.3     ST   848.9 SR   505.5 SS   333.2
 RDE -.4263 RRA -.1906 RC3 -.0292 FAU .07087   RRT  .0621 RRF -.0792 RTF -.8560     CRT -.6421 CRS -.2804 CST  .9092
 FDE -.1391 FRA  .9980 FC3-2.5798 BSP   8065   SGB 2469.1 R23 -.0231 R13 -.8561     LSA  963.1 MSA  397.7 SSA   37.1
 BDE  .6839 BRA 1.5885 BC3 1.3743 FSP    676   SG1 2407.0 SG2  550.5 THA   .86     EL1  921.2 EL2  357.1 ALF 155.08
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 409.060 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.839 GAL -1.98 AZL 88.72 HCA 128.85 SMA 226.70 ECC .35074 INC 1.2803 V1 30.200
RP 243.00 LAP 1.00 LOP 196.68 VP 22.515 GAP 20.13 AZP 90.80 TAL 352.38 TAP 121.23 RCA 147.19 APO 306.21 V2 22.585
RC 143.499 GL 9.40 GP 1.71 ZAL 101.12 ZAP 171.23 ETS 167.47 ZAE 153.10 ETE 2.04 ZAC 91.12 ETC 255.94 CLP 171.39

PLANETOCENTRIC CONIC

C3 22.711 VHL 4.766 DLA 12.94 RAL 173.75 RAD 6567.9 VEL 12.004 PTH 2.14 VHP 9.350 DPA -.53 RAP 188.61 ECC 1.3738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 51	2658.84	-27.29	71.60	41.75	97.86	17 22 10	2058.8	-25.92	63.20
90.00	8 1 14	4475.14	8.80	187.45	35.69	62.98	9 15 49	3875.1	5.11	180.72
100.00	18 5 54	2374.88	-28.58	50.50	41.54	99.17	18 45 29	1774.9	-27.01	42.04
100.00	9 15 52	4234.34	9.95	169.14	35.08	61.67	10 26 26	3634.3	6.09	162.48
110.00	19 29 15	2114.07	-31.98	29.93	40.77	102.79	20 4 29	1514.1	-29.89	21.34
110.00	10 9 0	4067.91	12.94	154.74	33.30	58.08	11 16 48	3467.9	8.63	148.30

DIFFERENTIAL CORRECTIONS
TDE .5126 TRA-1.5450 TC3 1.4773 BAU .4486
RDE -.4122 RRA -.1845 RC3 -.0259 FAU .07326
FDE -.1248 FRA 1.0000 FC3-2.7927 BSP 8247
BDE .6578 BRA 1.5560 BC3 1.4776 FSP 717

MID-COURSE EXECUTION ACCURACY
SGT 2448.5 SGR 545.9 SG3 253.8
RRT .0701 RRF -.0878 RTF -.8608
SGB 2508.6 R23 -.0244 R13 -.8609
SG1 2448.8 SG2 544.5 THA .94

ORBIT DETERMINATION ACCURACY
ST 841.8 SR 500.3 SS 329.0
CRT -.6327 CRS -.2413 CST .8969
LSA 951.4 MSA 400.7 SSA 38.0
EL1 911.5 EL2 357.8 ALF 155.35

LAUNCH DATE NOV 30 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 412.305 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.747 GAL -1.82 AZL 88.74 HCA 129.77 SMA 224.24 ECC .34342 INC 1.2645 V1 30.200
RP 242.74 LAP .97 LOP 197.60 VP 22.398 GAP 19.54 AZP 90.81 TAL 352.86 TAP 122.62 RCA 147.23 APO 301.25 V2 22.611
RC 145.763 GL 9.47 GP 1.77 ZAL 100.18 ZAP 170.66 ETS 167.77 ZAE 153.20 ETE 2.31 ZAC 91.26 ETC 255.92 CLP 170.83

PLANETOCENTRIC CONIC

C3 21.715 VHL 4.660 DLA 13.38 RAL 172.89 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 9.132 DPA -.62 RAP 188.96 ECC 1.3574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 37	2663.15	-27.33	71.91	40.27	97.71	17 15 0	2063.2	-25.98	63.50
90.00	8 1 39	4449.09	7.99	185.97	34.20	62.74	9 15 48	3849.1	4.27	179.26
100.00	17 58 57	2378.25	-28.61	50.74	40.05	99.05	18 38 35	1778.3	-27.07	42.28
100.00	9 16 0	4209.22	9.13	167.72	33.58	61.41	10 26 9	3609.2	5.25	161.09
110.00	19 22 56	2115.50	-32.00	30.03	39.30	102.73	19 58 11	1515.5	-29.91	21.44
110.00	10 8 30	4044.74	12.11	153.47	31.81	57.79	11 15 55	3444.7	7.77	147.06

DIFFERENTIAL CORRECTIONS
TDE .4908 TRA-1.5119 TC3 1.5838 BAU .4598
RDE -.3987 RRA -.1787 RC3 -.0218 FAU .07576
FDE -.1095 FRA 1.0002 FC3-3.0204 BSP 8397
BDE .6324 BRA 1.5224 BC3 1.5840 FSP 760

MID-COURSE EXECUTION ACCURACY
SGT 2488.9 SGR 540.1 SG3 266.9
RRT .0786 RRF -.0972 RTF -.8653
SGB 2546.8 R23 -.0260 R13 -.8654
SG1 2489.3 SG2 538.3 THA 1.02

ORBIT DETERMINATION ACCURACY
ST 833.6 SR 494.9 SS 324.4
CRT -.6231 CRS -.1985 CST .8823
LSA 938.4 MSA 403.7 SSA 38.8
EL1 900.8 EL2 358.1 ALF 155.60

LAUNCH DATE NOV 30 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 415.030 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.659 GAL -1.68 AZL 88.75 HCA 130.69 SMA 221.94 ECC .33643 INC 1.2484 V1 30.200
RP 242.47 LAP .95 LOP 198.52 VP 22.287 GAP 18.96 AZP 90.81 TAL 353.34 TAP 124.03 RCA 147.28 APO 296.61 V2 22.638
RC 148.041 GL 9.53 GP 1.83 ZAL 99.22 ZAP 170.09 ETS 168.03 ZAE 153.34 ETE 2.59 ZAC 91.40 ETC 255.91 CLP 170.26

PLANETOCENTRIC CONIC

C3 20.788 VHL 4.559 DLA 13.82 RAL 172.01 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 8.919 DPA -.71 RAP 189.30 ECC 1.3421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 16	2667.89	-27.37	72.25	38.78	97.54	17 7 44	2067.9	-26.05	63.83
90.00	8 2 0	4423.38	7.19	184.51	32.72	62.54	9 15 43	3823.4	3.45	177.82
100.00	17 51 54	2382.04	-28.65	51.01	38.57	98.91	18 31 36	1782.0	-27.12	42.55
100.00	9 16 3	4184.47	8.32	166.33	32.10	61.19	10 25 47	3584.5	4.42	159.72
110.00	19 16 30	2117.30	-32.02	30.17	37.83	102.65	19 51 48	1517.3	-29.95	21.57
110.00	10 7 56	4021.97	11.28	152.23	30.33	57.51	11 14 58	3422.0	6.91	145.85

DIFFERENTIAL CORRECTIONS
TDE .4771 TRA-1.4715 TC3 1.7111 BAU .4756
RDE -.3859 RRA -.1731 RC3 -.0172 FAU .07832
FDE -.0916 FRA 1.0017 FC3-3.2616 BSP 8359
BDE .6136 BRA 1.4816 BC3 1.7112 FSP 809

MID-COURSE EXECUTION ACCURACY
SGT 2533.8 SGR 534.4 SG3 280.5
RRT .0823 RRF -.1083 RTF -.8726
SGB 2589.5 R23 -.0333 R13 -.8728
SG1 2534.2 SG2 532.5 THA 1.04

ORBIT DETERMINATION ACCURACY
ST 829.4 SR 489.5 SS 320.0
CRT -.6214 CRS -.1461 CST .8575
LSA 929.4 MSA 405.9 SSA 39.2
EL1 895.1 EL2 355.4 ALF 155.81

LAUNCH DATE NOV 30 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 417.826 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.574 GAL -1.53 AZL 88.77 HCA 131.61 SMA 219.80 ECC .32977 INC 1.2316 V1 30.200
RP 242.20 LAP .92 LOP 199.44 VP 22.183 GAP 18.38 AZP 90.82 TAL 353.83 TAP 125.44 RCA 147.31 APO 292.28 V2 22.664
RC 150.330 GL 9.58 GP 1.90 ZAL 98.25 ZAP 169.51 ETS 168.26 ZAE 153.52 ETE 2.89 ZAC 91.54 ETC 255.90 CLP 169.68

PLANETOCENTRIC CONIC

C3 19.929 VHL 4.464 DLA 14.26 RAL 171.12 RAD 6567.8 VEL 11.887 PTH 2.11 VHP 8.711 DPA -.79 RAP 189.64 ECC 1.3280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 50	2672.96	-27.42	72.61	37.31	97.36	17 0 23	2073.0	-26.12	64.19
90.00	8 2 17	4398.15	6.39	183.08	31.25	62.36	9 15 35	3798.1	2.64	176.41
100.00	17 44 47	2386.14	-28.70	51.31	37.10	98.76	18 24 33	1786.1	-27.19	42.83
100.00	9 16 2	4160.19	7.52	164.97	30.64	60.99	10 25 22	3560.2	3.60	158.38
110.00	19 10 1	2119.41	-32.05	30.32	36.37	102.56	19 45 21	1519.4	-29.99	21.72
110.00	10 7 16	3999.70	10.46	151.02	28.86	57.27	11 13 56	3399.7	6.07	144.67

DIFFERENTIAL CORRECTIONS
TDE .4502 TRA-1.4421 TC3 1.8163 BAU .4839
RDE -.3733 RRA -.1676 RC3 -.0113 FAU .08112
FDE -.0748 FRA .9983 FC3-3.5241 BSP 8613
BDE .5848 BRA 1.4518 BC3 1.8164 FSP 853

MID-COURSE EXECUTION ACCURACY
SGT 2571.1 SGR 528.1 SG3 295.0
RRT .0961 RRF -.1195 RTF -.8752
SGB 2624.8 R23 -.0319 R13 -.8753
SG1 2571.6 SG2 525.6 THA 1.18

ORBIT DETERMINATION ACCURACY
ST 815.1 SR 483.8 SS 315.2
CRT -.6054 CRS -.0969 CST .8415
LSA 910.0 MSA 410.0 SSA 40.4
EL1 877.9 EL2 357.5 ALF 156.02

LAUNCH DATE NOV 30 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 420.689 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.494 GAL -1.39 AZL 88.79 HCA 132.53 SMA 217.78 ECC .32341 INC 1.2143 V1 30.200
RP 241.93 LAP .89 LOP 200.37 VP 22.085 GAP 17.80 AZP 90.82 TAL 354.32 TAP 126.85 RCA 147.35 APO 288.22 V2 22.692
RC 152.629 GL 9.62 GP 1.97 ZAL 97.27 ZAP 168.91 ETS 168.45 ZAE 153.74 ETE 3.20 ZAC 91.69 ETC 255.89 CLP 169.09

PLANETOCENTRIC CONIC

C3 19.130 VHL 4.374 DLA 14.68 RAL 170.20 RAD 6567.8 VEL 11.854 PTH 2.10 VHP 8.508 DPA -.86 RAP 189.98 ECC 1.3148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 21	2678.35	-27.47	73.00	35.84	97.17	16 52 59	2078.4	-26.19	64.57
90.00	8 2 28	4373.37	5.61	181.68	29.80	62.20	9 15 22	3773.4	1.84	175.02
100.00	17 37 35	2390.55	-28.74	51.63	35.64	98.59	18 17 26	1790.6	-27.25	43.15
100.00	9 15 55	4136.40	6.74	163.64	29.18	60.81	10 24 52	3536.4	2.79	157.07
110.00	19 3 29	2121.80	-32.09	30.50	34.92	102.46	19 38 50	1521.8	-30.04	21.89
110.00	10 6 31	3977.92	9.65	149.84	27.41	57.05	11 12 49	3377.9	5.25	143.53

DIFFERENTIAL CORRECTIONS
TDE .4265 TRA-1.4109 TC3 1.9286 BAU .4932
RDE -.3614 RRA -.1622 RC3 -.0045 FAU .08406
FDE -.0571 FRA .9944 FC3-3.8039 BSP 8815
BDE .5590 BRA 1.4202 BC3 1.9286 FSP 901

MID-COURSE EXECUTION ACCURACY
SGT 2609.4 SGR 521.9 SG3 310.2
RRT .1091 RRF -.1320 RTF -.8783
SGB 2661.1 R23 -.0324 R13 -.8784
SG1 2610.1 SG2 518.6 THA 1.30

ORBIT DETERMINATION ACCURACY
ST 802.1 SR 477.9 SS 310.8
CRT -.5914 CRS -.0435 CST .8209
LSA 891.9 MSA 413.7 SSA 41.5
EL1 862.1 EL2 358.6 ALF 156.23

LAUNCH DATE NOV 30 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 423.614 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.416 GAL -1.25 AZL 88.80 HCA 133.46 SMA 215.89 ECC .31735 INC 1.1965 V1 30.200
RP 241.65 LAP .87 LOP 201.29 VP 21.993 GAP 17.23 AZP 90.82 TAL 354.81 TAP 128.27 RCA 147.38 APO 284.41 V2 22.720
RC 154.936 GL 9.65 GP 2.05 ZAL 96.28 ZAP 168.31 ETS 168.62 ZAE 153.99 ETE 3.52 ZAC 91.83 ETC 255.88 CLP 168.49

PLANETOCENTRIC CONIC

C3 18.389 VHL 4.288 DLA 15.10 RAL 169.27 RAD 6567.7 VEL 11.822 PTH 2.09 VHP 8.311 DPA -.93 RAP 190.30 ECC 1.3026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 0 48	2684.01	-27.51	73.41	34.38	96.98	16 45 32	2084.0	-26.26	64.97
90.00	8 2 35	4349.12	4.83	180.32	28.36	62.06	9 15 4	3749.1	1.06	173.67
100.00	17 30 21	2395.22	-28.79	51.97	34.18	98.42	18 10 16	1795.2	-27.32	43.47
100.00	9 15 43	4113.14	5.96	162.35	27.74	60.65	10 24 16	3513.1	2.01	155.79
110.00	18 56 53	2124.43	-32.13	30.70	33.47	102.35	19 32 18	1524.4	-30.09	22.07
110.00	10 5 40	3956.69	8.87	148.71	25.97	56.85	11 11 36	3356.7	4.44	142.41

DIFFERENTIAL CORRECTIONS
TDE .4035 TRA-1.3769 TC3 2.0468 BAU .5032
RDE -.3499 RRA -.1571 RC3 .0032 FAU .08710
FDE -.0375 FRA .9883 FC3-4.1008 BSP 8980
BDE .5341 BRA 1.3859 BC3 2.0468 FSP 953

MID-COURSE EXECUTION ACCURACY
SGT 2646.4 SGR 515.6 SG3 326.1
RRT .1225 RRF -.1458 RTF -.8818
SGB 2696.2 R23 -.0338 R13 -.8820
SG1 2647.2 SG2 511.6 THA 1.42

ORBIT DETERMINATION ACCURACY
ST 787.6 SR 472.0 SS 306.3
CRT -.5777 CRS .0166 CST .7951
LSA 872.2 MSA 417.7 SSA 42.6
EL1 845.1 EL2 359.1 ALF 156.39

LAUNCH DATE NOV 30 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 426.597 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.342 GAL -1.12 AZL 88.82 HCA 134.39 SMA 214.12 ECC .31157 INC 1.1781 V1 30.200
RP 241.36 LAP .84 LOP 202.22 VP 21.907 GAP 16.66 AZP 90.82 TAL 355.30 TAP 129.69 RCA 147.41 APO 280.84 V2 22.748
RC 157.250 GL 9.66 GP 2.13 ZAL 95.27 ZAP 167.69 ETS 168.76 ZAE 154.28 ETE 3.87 ZAC 91.98 ETC 255.88 CLP 167.88

PLANETOCENTRIC CONIC

C3 17.700 VHL 4.207 DLA 15.51 RAL 168.32 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 8.117 DPA -.99 RAP 190.63 ECC 1.2913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 13	2689.86	-27.56	73.83	32.92	96.77	16 38 3	2089.9	-26.34	65.38
90.00	8 2 35	4325.46	4.08	178.99	26.94	61.95	9 14 41	3725.5	.30	172.35
100.00	17 23 4	2400.08	-28.84	52.32	32.73	98.24	18 3 4	1800.1	-27.40	43.82
100.00	9 15 25	4090.47	5.20	161.09	26.32	60.52	10 23 35	3490.5	1.24	154.55
110.00	18 50 16	2127.26	-32.17	30.91	32.03	102.24	19 25 43	1527.3	-30.15	22.28
110.00	10 4 42	3936.06	8.10	147.60	24.54	56.68	11 10 19	3336.1	3.66	141.33

DIFFERENTIAL CORRECTIONS
TDE .3814 TRA-1.3441 TC3 2.1679 BAU .5130
RDE -.3389 RRA -.1522 RC3 .0122 FAU .09031
FDE -.0167 FRA .9824 FC3-4.4170 BSP 9160
BDE .5102 BRA 1.3527 BC3 2.1679 FSP 1009

MID-COURSE EXECUTION ACCURACY
SGT 2684.4 SGR 509.3 SG3 342.8
RRT .1372 RRF -.1615 RTF -.8853
SGB 2732.3 R23 -.0359 R13 -.8855
SG1 2685.3 SG2 504.4 THA 1.55

ORBIT DETERMINATION ACCURACY
ST 773.0 SR 466.1 SS 302.8
CRT -.5633 CRS .0817 CST .7648
LSA 852.3 MSA 422.1 SSA 43.7
EL1 827.9 EL2 359.6 ALF 156.57

LAUNCH DATE NOV 30 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 429.634 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.272 GAL -.98 AZL 88.84 HCA 135.32 SMA 212.46 ECC .30606 INC 1.1591 V1 30.200
RP 241.08 LAP .82 LOP 203.15 VP 21.826 GAP 16.10 AZP 90.82 TAL 355.80 TAP 131.12 RCA 147.43 APO 277.48 V2 22.777
RC 159.568 GL 9.66 GP 2.21 ZAL 94.26 ZAP 167.07 ETS 168.87 ZAE 154.61 ETE 4.24 ZAC 92.13 ETC 255.87 CLP 167.25

PLANETOCENTRIC CONIC

C3 17.061 VHL 4.131 DLA 15.91 RAL 167.36 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 7.929 DPA -1.04 RAP 190.94 ECC 1.2808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 37	2695.86	-27.61	74.26	31.48	96.56	16 30 33	2095.9	-26.41	65.80
90.00	8 2 29	4302.44	3.34	177.70	25.52	61.86	9 14 11	3702.4	-.45	171.07
100.00	17 15 48	2405.07	-28.88	52.69	31.29	98.05	17 55 53	1805.1	-27.47	44.17
100.00	9 15 0	4068.46	4.47	159.88	24.90	60.41	10 22 48	3468.5	.49	153.34
110.00	18 43 38	2130.22	-32.21	31.13	30.61	102.11	19 19 8	1530.2	-30.21	22.49
110.00	10 3 39	3916.07	7.35	146.54	23.12	56.52	11 8 55	3316.1	2.89	140.28

DIFFERENTIAL CORRECTIONS
TDE .3593 TRA-1.3092 TC3 2.2923 BAU .5229
RDE -.3284 RRA -.1474 RC3 .0223 FAU .09367
FDE .0054 FRA .9734 FC3-4.7533 BSP 9313
BDE .4868 BRA 1.3175 BC3 2.2925 FSP 1068

MID-COURSE EXECUTION ACCURACY
SGT 2720.5 SGR 503.1 SG3 360.3
RRT .1531 RRF -.1785 RTF -.8889
SGB 2766.6 R23 -.0382 R13 -.8891
SG1 2721.6 SG2 497.0 THA 1.68

ORBIT DETERMINATION ACCURACY
ST 756.7 SR 460.0 SS 299.7
CRT -.5484 CRS .1508 CST .7299
LSA 830.7 MSA 426.6 SSA 44.8
EL1 809.2 EL2 359.7 ALF 156.70

LAUNCH DATE NOV 30 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 432.720 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.204 GAL -.86 AZL 88.86 HCA 136.26 SMA 210.89 ECC .30080 INC 1.1393 V1 30.200
RP 240.79 LAP .79 LOP 204.09 VP 21.750 GAP 15.55 AZP 90.82 TAL 356.29 TAP 132.55 RCA 147.45 APO 274.33 V2 22.806
RC 161.890 GL 9.65 GP 2.30 ZAL 93.25 ZAP 166.42 ETS 168.97 ZAE 154.97 ETE 4.64 ZAC 92.28 ETC 255.86 CLP 166.62

PLANETOCENTRIC CONIC

C3 16.468 VHL 4.058 DLA 16.30 RAL 166.38 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 7.744 DPA -1.08 RAP 191.25 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 3	2701.91	-27.65	74.70	30.04	96.34	16 23 6	2101.9	-26.49	66.23
90.00	8 2 15	4280.13	2.62	176.45	24.13	61.79	9 13 35	3680.1	-1.17	169.82
100.00	17 8 32	2410.12	-28.93	53.06	29.86	97.87	17 48 42	1810.1	-27.54	44.53
100.00	9 14 27	4047.15	3.75	158.70	23.50	60.32	10 21 54	3447.2	-.23	152.17
110.00	18 37 1	2133.27	-32.26	31.36	29.19	101.98	19 12 34	1533.3	-30.27	22.70
110.00	10 2 28	3896.77	6.62	145.52	21.73	56.39	11 7 24	3296.8	2.16	139.28

DIFFERENTIAL CORRECTIONS
TDE .3375 TRA-1.2758 TC3 2.4170 BAU .5322
RDE -.3184 RRA -.1428 RC3 .0339 FAU .09720
FDE .0289 FRA .9639 FC3-5.1098 BSP 9411
BDE .4639 BRA 1.2837 BC3 2.4173 FSP 1126

MID-COURSE EXECUTION ACCURACY
SGT 2756.3 SGR 497.0 SG3 378.7
RRT .1709 RRF -.1975 RTF -.8921
SGB 2800.8 R23 -.0407 R13 -.8923
SG1 2757.7 SG2 489.4 THA 1.82

ORBIT DETERMINATION ACCURACY
ST 739.9 SR 453.9 SS 297.8
CRT -.5319 CRS .2239 CST .6905
LSA 808.5 MSA 431.8 SSA 45.9
EL1 789.8 EL2 360.1 ALF 156.85

LAUNCH DATE NOV 30 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 435.853 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.139 GAL -.73 AZL 88.88 HCA 137.19 SMA 209.42 ECC .29579 INC 1.1189 V1 30.200
RP 240.49 LAP .76 LOP 205.02 VP 21.679 GAP 15.00 AZP 90.82 TAL 356.79 TAP 133.98 RCA 147.47 APO 271.36 V2 22.836
RC 164.213 GL 9.62 GP 2.40 ZAL 92.22 ZAP 165.77 ETS 169.05 ZAE 155.36 ETE 5.06 ZAC 92.44 ETC 255.85 CLP 165.97

PLANETOCENTRIC CONIC

C3 15.917 VHL 3.990 DLA 16.67 RAL 165.39 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 7.565 DPA -1.12 RAP 191.55 ECC 1.2620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 30	2707.99	-27.70	75.14	28.61	96.13	16 15 38	2108.0	-26.56	66.66
90.00	8 1 53	4258.56	1.93	175.25	22.74	61.74	9 12 52	3658.6	-1.86	168.62
100.00	17 1 17	2415.20	-28.98	53.43	28.44	97.68	17 41 33	1815.2	-27.61	44.89
100.00	9 13 47	4026.58	3.05	157.57	22.12	60.25	10 20 54	3426.6	-.93	151.05
110.00	18 30 25	2136.35	-32.30	31.59	27.77	101.85	19 6 1	1536.4	-30.33	22.92
110.00	10 1 9	3878.19	5.92	144.54	20.34	56.27	11 5 47	3278.2	1.45	138.31

DIFFERENTIAL CORRECTIONS
TDE .3241 TRA-1.2343 TC3 2.5640 BAU .5457
RDE -.3088 RRA -.1385 RC3 .0467 FAU .10092
FDE .0532 FRA .9525 FC3-5.4889 BSP 9407
BDE .4477 BRA 1.2420 BC3 2.5644 FSP 1194

MID-COURSE EXECUTION ACCURACY
SGT 2797.5 SGR 491.1 SG3 398.1
RRT .1848 RRF -.2181 RTF -.8974
SGB 2840.3 R23 -.0480 R13 -.8977
SG1 2799.0 SG2 482.4 THA 1.91

ORBIT DETERMINATION ACCURACY
ST 727.0 SR 447.9 SS 297.1
CRT -.5276 CRS .2982 CST .6364
LSA 791.0 MSA 435.4 SSA 46.5
EL1 776.0 EL2 356.5 ALF 156.83

LAUNCH DATE NOV 30 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 439.028 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.077 GAL -.61 AZL 88.90 HCA 138.13 SMA 208.03 ECC .29102 INC 1.0977 V1 30.200
RP 240.19 LAP .73 LOP 205.96 VP 21.613 GAP 14.45 AZP 90.82 TAL 357.28 TAP 135.41 RCA 147.49 APO 268.57 V2 22.866
RC 166.536 GL 9.57 GP 2.50 ZAL 91.21 ZAP 165.10 ETS 169.11 ZAE 155.79 ETE 5.52 ZAC 92.60 ETC 255.85 CLP 165.31

PLANETOCENTRIC CONIC

C3 15.407 VHL 3.925 DLA 17.03 RAL 164.39 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 7.389 DPA -1.14 RAP 191.84 ECC 1.2536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 3	2713.92	-27.74	75.57	27.20	95.92	16 8 17	2113.9	-26.63	67.08
90.00	8 1 23	4237.90	1.26	174.09	21.37	61.71	9 12 0	3637.9	-2.53	167.47
100.00	16 54 8	2420.15	-29.02	53.79	27.03	97.49	17 34 29	1820.1	-27.68	45.24
100.00	9 12 58	4006.90	2.39	156.49	20.75	60.19	10 19 45	3406.9	-1.60	149.97
110.00	18 23 53	2139.36	-32.34	31.81	26.37	101.73	18 59 32	1539.4	-30.39	23.14
110.00	9 59 43	3860.45	5.25	143.60	18.97	56.17	11 4 3	3260.5	.77	137.38

DIFFERENTIAL CORRECTIONS
TDE .2946 TRA-1.2067 TC3 2.6748 BAU .5511
RDE -.2996 RRA -.1341 RC3 .0616 FAU .10487
FDE .0796 FRA .9382 FC3-5.8929 BSP 9691
BDE .4201 BRA 1.2141 BC3 2.6755 FSP 1260

MID-COURSE EXECUTION ACCURACY
SGT 2826.3 SGR 485.2 SG3 418.5
RRT .2119 RRF -.2415 RTF -.8986
SGB 2867.7 R23 -.0467 R13 -.8989
SG1 2828.2 SG2 473.9 THA 2.14

ORBIT DETERMINATION ACCURACY
ST 703.1 SR 441.6 SS 297.7
CRT -.4961 CRS .3759 CST .5986
LSA 761.0 MSA 443.3 SSA 48.2
EL1 747.9 EL2 360.4 ALF 157.09

LAUNCH DATE NOV 30 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 442.245 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 34.018 GAL -.50 AZL 88.92 HCA 139.07 SMA 206.72 ECC .28647 INC 1.0755 V1 30.200
RP 239.88 LAP .70 LOP 206.90 VP 21.552 GAP 13.91 AZP 90.81 TAL 357.77 TAP 136.84 RCA 147.50 APO 265.94 V2 22.897
RC 168.857 GL 9.51 GP 2.60 ZAL 90.19 ZAP 164.42 ETS 169.15 ZAE 156.25 ETE 6.02 ZAC 92.76 ETC 255.84 CLP 164.63

PLANETOCENTRIC CONIC

C3 14.934 VHL 3.864 DLA 17.37 RAL 163.38 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 7.218 DPA -1.15 RAP 192.13 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 40	2719.69	-27.78	75.99	25.79	95.71	16 1 0	2119.7	-26.70	67.49
90.00	8 0 42	4218.12	.62	172.99	20.02	61.69	9 11 0	3618.1	-3.17	166.36
100.00	16 47 4	2424.96	-29.06	54.14	25.63	97.31	17 27 29	1825.0	-27.75	45.58
100.00	9 11 59	3988.09	1.75	155.45	19.39	60.15	10 18 27	3388.1	-2.23	148.93
110.00	18 17 25	2142.28	-32.38	32.03	24.98	101.60	18 53 7	1542.3	-30.44	23.35
110.00	9 58 8	3843.53	4.61	142.71	17.61	56.09	11 2 11	3243.5	.12	136.50

DIFFERENTIAL CORRECTIONS
TDE .2781 TRA-1.1741 TC3 2.7994 BAU .5591
RDE -.2907 RRA -.1299 RC3 .0780 FAU .10897
FDE .1011 FRA .9231 FC3-6.3173 BSP 9794
BDE .4023 BRA 1.1812 BC3 2.8005 FSP 1329

MID-COURSE EXECUTION ACCURACY
SGT 2859.7 SGR 479.6 SG3 439.9
RRT .2338 RRF -.2655 RTF -.9010
SGB 2899.6 R23 -.0505 R13 -.9014
SG1 2861.9 SG2 466.0 THA 2.31

ORBIT DETERMINATION ACCURACY
ST 688.2 SR 435.2 SS 298.4
CRT -.4824 CRS .4364 CST .5560
LSA 741.6 MSA 446.7 SSA 49.5
EL1 730.9 EL2 358.9 ALF 157.27

LAUNCH DATE NOV 30 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 445.500 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.961 GAL -.38 AZL 88.95 HCA 140.02 SMA 205.49 ECC .28213 INC 1.0526 V1 30.200
RP 239.58 LAP .68 LOP 207.85 VP 21.495 GAP 13.38 AZP 90.81 TAL 358.26 TAP 138.27 RCA 147.51 APO 263.46 V2 22.928
RC 171.174 GL 9.43 GP 2.72 ZAL 89.17 ZAP 163.72 ETS 169.18 ZAE 156.74 ETE 6.56 ZAC 92.92 ETC 255.84 CLP 163.94

PLANETOCENTRIC CONIC

C3 14.495 VHL 3.807 DLA 17.68 RAL 162.36 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 7.050 DPA -1.15 RAP 192.41 ECC 1.2385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 26	2725.20	-27.82	76.38	24.40	95.51	15 53 51	2125.2	-26.76	67.88
90.00	7 59 51	4199.33	.02	171.94	18.68	61.68	9 9 50	3599.3	-3.77	165.31
100.00	16 40 7	2429.53	-29.10	54.47	24.24	97.14	17 20 36	1829.5	-27.81	45.91
100.00	9 10 50	3970.23	1.15	154.47	18.05	60.13	10 17 1	3370.2	-2.84	147.95
110.00	18 11 3	2145.03	-32.42	32.23	23.60	101.49	18 46 48	1545.0	-30.50	23.54
110.00	9 56 24	3827.50	4.00	141.87	16.27	56.02	11 0 11	3227.5	-.49	135.66

DIFFERENTIAL CORRECTIONS
TDE .2572 TRA-1.1406 TC3 2.9130 BAU .5648
RDE -.2822 RRA -.1258 RC3 .0960 FAU .11304
FDE .1293 FRA .9058 FC3-6.7513 BSP 10009
BDE .3818 BRA 1.1475 BC3 2.9146 FSP 1412

MID-COURSE EXECUTION ACCURACY
SGT 2883.7 SGR 474.6 SG3 461.4
RRT .2599 RRF -.2930 RTF -.9031
SGB 2922.5 R23 -.0542 R13 -.9035
SG1 2886.4 SG2 457.8 THA 2.51

ORBIT DETERMINATION ACCURACY
ST 668.1 SR 428.9 SS 302.1
CRT -.4608 CRS .5104 CST .5040
LSA 716.3 MSA 453.7 SSA 50.6
EL1 708.0 EL2 359.2 ALF 157.41

LAUNCH DATE NOV 30 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 448.792 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.907 GAL -.27 AZL 88.97 HCA 140.96 SMA 204.32 ECC .27800 INC 1.0286 V1 30.200
RP 239.26 LAP .65 LOP 208.79 VP 21.443 GAP 12.85 AZP 90.80 TAL 358.75 TAP 139.71 RCA 147.52 APO 261.12 V2 22.959
RC 173.485 GL 9.33 GP 2.84 ZAL 88.16 ZAP 163.00 ETS 169.20 ZAE 157.26 ETE 7.15 ZAC 93.09 ETC 255.83 CLP 163.23

PLANETOCENTRIC CONIC

C3 14.088 VHL 3.753 DLA 17.98 RAL 161.34 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 6.887 DPA -1.14 RAP 192.67 ECC 1.2318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 19	2730.39	-27.85	76.76	23.01	95.33	15 46 50	2130.4	-26.82	68.24
90.00	7 58 48	4181.55	-.56	170.95	17.35	61.69	9 8 29	3581.5	-4.34	164.31
100.00	16 33 17	2433.81	-29.14	54.79	22.86	96.98	17 13 51	1833.8	-27.87	46.21
100.00	9 9 31	3953.36	.57	153.55	16.72	60.11	10 15 24	3353.4	-3.41	147.02
110.00	18 4 47	2147.56	-32.45	32.42	22.23	101.38	18 40 34	1547.6	-30.54	23.73
110.00	9 54 30	3812.38	3.42	141.08	14.94	55.97	10 58 3	3212.4	-1.07	134.87

DIFFERENTIAL CORRECTIONS
TDE .2484 TRA-1.0956 TC3 3.0739 BAU .5793
RDE -.2743 RRA -.1218 RC3 .1163 FAU .11776
FDE .1564 FRA .8843 FC3-7.2365 BSP 9765
BDE .3700 BRA 1.1024 BC3 3.0761 FSP 1481

MID-COURSE EXECUTION ACCURACY
SGT 2925.8 SGR 470.2 SG3 485.5
RRT .2810 RRF -.3224 RTF -.9086
SGB 2963.3 R23 -.0634 R13 -.9091
SG1 2928.8 SG2 450.8 THA 2.65

ORBIT DETERMINATION ACCURACY
ST 653.4 SR 422.7 SS 306.2
CRT -.4621 CRS .5763 CST .4322
LSA 698.5 MSA 457.1 SSA 51.2
EL1 693.4 EL2 353.3 ALF 157.10

LAUNCH DATE NOV 30 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 452.115 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.855 GAL -.17 AZL 89.00 HCA 141.91 SMA 203.22 ECC .27408 INC 1.0035 V1 30.200
RP 238.95 LAP .62 LOP 209.74 VP 21.396 GAP 12.33 AZP 90.79 TAL 359.22 TAP 141.13 RCA 147.52 APO 258.92 V2 22.991
RC 175.790 GL 9.21 GP 2.96 ZAL 87.16 ZAP 162.27 ETS 169.20 ZAE 157.81 ETE 7.80 ZAC 93.27 ETC 255.82 CLP 162.51

PLANETOCENTRIC CONIC

C3 13.711 VHL 3.703 DLA 18.25 RAL 160.32 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 6.727 DPA -1.12 RAP 192.93 ECC 1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 27	2735.03	-27.88	77.10	21.65	95.16	15 40 2	2135.0	-26.87	68.58
90.00	7 57 32	4165.00	-1.09	170.03	16.04	61.70	9 6 57	3565.0	-4.87	163.38
100.00	16 26 40	2437.60	-29.17	55.06	21.49	96.84	17 7 18	1837.6	-27.92	46.48
100.00	9 7 59	3937.66	.04	152.69	15.41	60.11	10 13 36	3337.7	-3.94	146.16
110.00	17 58 41	2149.72	-32.48	32.58	20.88	101.29	18 34 31	1549.7	-30.58	23.88
110.00	9 52 27	3798.31	2.89	140.34	13.63	55.92	10 55 45	3198.3	-1.61	134.14

DIFFERENTIAL CORRECTIONS
TDE .2161 TRA-1.0740 TC3 3.1541 BAU .5787
RDE -.2665 RRA -.1179 RC3 .1387 FAU .12221
FDE .1878 FRA .8639 FC3-7.7167 BSP 10239
BDE .3431 BRA 1.0804 BC3 3.1571 FSP 1577

MID-COURSE EXECUTION ACCURACY
SGT 2937.6 SGR 466.3 SG3 509.1
RRT .3198 RRF -.3556 RTF -.9078
SGB 2974.4 R23 -.0618 R13 -.9083
SG1 2941.5 SG2 441.2 THA 2.97

ORBIT DETERMINATION ACCURACY
ST 626.3 SR 416.3 SS 314.2
CRT -.4118 CRS .6430 CST .4032
LSA 664.7 MSA 468.7 SSA 53.1
EL1 660.4 EL2 359.8 ALF 157.77

LAUNCH DATE NOV 30 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 455.472 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.805 GAL -.06 AZL 89.02 HCA 142.86 SMA 202.18 ECC .27033 INC .9774 V1 30.200
RP 238.63 LAP .59 LOP 210.69 VP 21.352 GAP 11.82 AZP 90.78 TAL 359.70 TAP 142.56 RCA 147.53 APO 256.84 V2 23.024
RC 178.086 GL 9.08 GP 3.10 ZAL 86.16 ZAP 161.52 ETS 169.19 ZAE 158.39 ETE 8.52 ZAC 93.45 ETC 255.82 CLP 161.78

PLANETOCENTRIC CONIC

C3 13.361 VHL 3.655 DLA 18.50 RAL 159.30 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 6.571 DPA -1.08 RAP 193.18 ECC 1.2199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 46	2739.15	-27.91	77.40	20.29	95.01	15 33 25	2139.2	-26.92	68.87
90.00	7 56 2	4149.62	-1.59	169.17	14.74	61.72	9 5 11	3549.6	-5.36	162.52
100.00	16 20 15	2440.93	-29.20	55.31	20.14	96.71	17 0 56	1840.9	-27.96	46.72
100.00	9 6 14	3923.08	-.45	151.89	14.11	60.11	10 11 37	3323.1	-4.43	145.35
110.00	17 52 45	2151.52	-32.51	32.72	19.53	101.21	18 28 36	1551.5	-30.62	24.01
110.00	9 50 13	3785.25	2.39	139.66	12.33	55.89	10 53 18	3185.3	-2.11	133.46

DIFFERENTIAL CORRECTIONS
TDE .1846 TRA-1.0524 TC3 3.2320 BAU .5780
RDE -.2594 RRA -.1143 RC3 .1625 FAU .12652
FDE .2305 FRA .8506 FC3-8.1979 BSP 10526
BDE .3184 BRA 1.0585 BC3 3.2361 FSP 1677

MID-COURSE EXECUTION ACCURACY
SGT 2948.3 SGR 463.8 SG3 532.8
RRT .3596 RRF -.3933 RTF -.9077
SGB 2984.5 R23 -.0640 R13 -.9082
SG1 2953.1 SG2 432.1 THA 3.31

ORBIT DETERMINATION ACCURACY
ST 600.9 SR 410.5 SS 331.5
CRT -.3561 CRS .7155 CST .3656
LSA 632.2 MSA 486.8 SSA 54.0
EL1 628.6 EL2 366.7 ALF 158.81

LAUNCH DATE NOV 30 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 458.860 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.758	GAL	.04	AZL	89.05	HCA	143.81	SMA	201.20	ECC	.26677	INC	.9499	V1	30.200
RP	238.31	LAP	.56	LOP	211.64	VP	21.312	GAP	11.31	AZP	90.77	TAL	.17	TAP	143.99	RCA	147.53	APO	254.88	V2	23.056
RC	180.373	GL	8.92	GP	3.24	ZAL	85.18	ZAP	160.76	ETS	169.17	ZAE	159.00	ETE	9.32	ZAC	93.63	ETC	255.81	CLP	161.02

PLANETOCENTRIC CONIC

C3	13.037	VHL	3.611	DLA	18.72	RAL	158.27	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	6.419	DPA	-1.03	RAP	193.43	ECC	1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 21	2742.60	-27.93	77.65	18.94	94.89	15 27 3	2142.6	-26.96	69.11
90.00	7 54 16	4135.54	-2.04	168.39	13.46	61.75	9 3 12	3535.5	-5.80	161.72
100.00	16 14 3	2443.65	-29.22	55.51	18.80	96.61	16 54 47	1843.6	-28.00	46.92
100.00	9 4 15	3909.73	-.91	151.15	12.82	60.12	10 9 25	3309.7	-4.87	144.62
110.00	17 47 0	2152.85	-32.52	32.82	18.19	101.16	18 22 53	1552.9	-30.64	24.11
110.00	9 47 48	3773.29	1.93	139.04	11.05	55.86	10 50 41	3173.3	-2.56	132.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2110	TRA	-1.0205	TC3	3.5111	BAU	.6129	SGT	3076.4	SGR	461.5	SG3	569.6	ST	617.3	SR	402.7	SS	317.6
RDE	-.2513	RRA	-.1105	RC3	.1942	FAU	.13425	RRT	.3793	RRF	-.4259	RTF	-.9152	CRT	-.4213	CRS	.7024	CST	.3126
FDE	.2184	FRA	.8216	FC3	-8.9150	BSP	9590	SGB	3110.9	R23	-.0778	R13	-.9158	LSA	651.9	MSA	464.7	SSA	56.2
BDE	.3281	BRA	1.0265	BC3	3.5165	PSP	1679	SG1	3081.5	SG2	426.3	THA	3.32	EL1	650.4	EL2	346.6	ALF	158.13

LAUNCH DATE NOV 30 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 462.275 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.713	GAL	.13	AZL	89.08	HCA	144.77	SMA	200.27	ECC	.26338	INC	.9209	V1	30.200
RP	237.98	LAP	.53	LOP	212.60	VP	21.276	GAP	10.81	AZP	90.75	TAL	.64	TAP	145.41	RCA	147.52	APO	253.02	V2	23.089
RC	182.651	GL	8.73	GP	3.40	ZAL	84.20	ZAP	159.97	ETS	169.13	ZAE	159.64	ETE	10.20	ZAC	93.82	ETC	255.81	CLP	160.25

PLANETOCENTRIC CONIC

C3	12.736	VHL	3.569	DLA	18.92	RAL	157.25	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	6.271	DPA	-.97	RAP	193.66	ECC	1.2096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 35 13	2745.28	-27.94	77.84	17.61	94.79	15 20 58	2145.3	-26.98	69.31
90.00	7 52 15	4122.84	-2.45	167.68	12.18	61.78	9 0 57	3522.8	-6.21	161.01
100.00	16 8 7	2445.68	-29.23	55.66	17.47	96.53	16 48 53	1845.7	-28.02	47.06
100.00	9 2 1	3897.67	-1.31	150.49	11.55	60.13	10 6 59	3297.7	-5.28	143.95
110.00	17 41 28	2153.66	-32.53	32.88	16.87	101.12	18 17 21	1553.7	-30.66	24.16
110.00	9 45 10	3762.46	1.52	138.47	9.78	55.85	10 47 53	3162.5	-2.98	132.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1841	TRA	-.9453	TC3	3.5711	BAU	.6093	SGT	3026.3	SGR	460.2	SG3	593.6	ST	570.0	SR	396.5	SS	323.0
RDE	-.2447	RRA	-.1057	RC3	.2232	FAU	.13889	RRT	.4148	RRF	-.4628	RTF	-.9185	CRT	-.3976	CRS	.7738	CST	.2287
FDE	.2560	FRA	.7498	FC3	-9.4407	BSP	10325	SGB	3061.0	R23	-.0818	R13	-.9193	LSA	603.3	MSA	468.1	SSA	57.9
BDE	.3062	BRA	.9512	BC3	3.5781	FSP	1841	SG1	3032.4	SG2	417.9	THA	3.68	EL1	603.3	EL2	343.7	ALF	156.51

LAUNCH DATE NOV 30 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 465.718 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.669	GAL	.23	AZL	89.11	HCA	145.73	SMA	199.39	ECC	.26016	INC	.8908	V1	30.200
RP	237.65	LAP	.50	LOP	213.56	VP	21.244	GAP	10.31	AZP	90.74	TAL	1.10	TAP	146.83	RCA	147.52	APO	251.27	V2	23.123
RC	184.919	GL	8.53	GP	3.57	ZAL	83.24	ZAP	159.16	ETS	169.08	ZAE	160.30	ETE	11.20	ZAC	94.02	ETC	255.80	CLP	159.46

PLANETOCENTRIC CONIC

C3	12.458	VHL	3.530	DLA	19.08	RAL	156.23	RAD	6567.5	VEL	11.569	PTH	2.02	VHP	6.126	DPA	-.89	RAP	193.88	ECC	1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 23	2747.11	-27.95	77.97	16.29	94.73	15 15 10	2147.1	-27.00	69.44
90.00	7 49 55	4111.56	-2.81	167.05	10.92	61.81	8 58 27	3511.6	-6.56	160.37
100.00	16 2 28	2446.94	-29.24	55.75	16.15	96.48	16 43 15	1846.9	-28.04	47.15
100.00	8 59 31	3886.96	-1.68	149.91	10.29	60.15	10 4 18	3287.0	-5.64	143.36
110.00	17 36 9	2153.87	-32.54	32.90	15.55	101.11	18 12 3	1553.9	-30.66	24.18
110.00	9 42 20	3752.80	1.15	137.97	8.53	55.83	10 44 53	3152.8	-3.34	131.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1821	TRA	-.9119	TC3	3.6822	BAU	.6148	SGT	3049.1	SGR	461.2	SG3	621.9	ST	560.6	SR	390.0	SS	331.4
RDE	-.2381	RRA	-.1022	RC3	.2557	FAU	.14422	RRT	.4479	RRF	-.5035	RTF	-.9206	CRT	-.4073	CRS	.8061	CST	.1634
FDE	.2807	FRA	.7245	FC3	-10.0220	BSP	9977	SGB	3083.8	R23	-.0934	R13	-.9215	LSA	595.5	MSA	467.0	SSA	58.4
BDE	.2997	BRA	.9176	BC3	3.6911	FSP	1920	SG1	3056.3	SG2	411.4	THA	3.95	EL1	594.6	EL2	335.8	ALF	156.15

LAUNCH DATE NOV 30 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 469.184 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.628	GAL	.32	AZL	89.14	HCA	146.69	SMA	198.57	ECC	.25709	INC	.8589	V1	30.200
RP	237.31	LAP	.47	LOP	214.52	VP	21.216	GAP	9.83	AZP	90.72	TAL	1.55	TAP	148.23	RCA	147.52	APO	249.61	V2	23.157
RC	187.176	GL	8.30	GP	3.74	ZAL	82.30	ZAP	158.34	ETS	169.02	ZAE	160.99	ETE	12.31	ZAC	94.23	ETC	255.80	CLP	158.65

PLANETOCENTRIC CONIC

C3	12.200	VHL	3.493	DLA	19.21	RAL	155.22	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	5.985	DPA	-.79	RAP	194.09	ECC	1.2008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 58	2747.83	-27.96	78.03	14.99	94.70	15 9 46	2147.8	-27.01	69.49
90.00	7 47 17	4101.95	-3.12	166.51	9.68	61.84	8 55 39	3502.0	-6.86	159.83
100.00	15 57 12	2447.22	-29.25	55.77	14.85	96.47	16 37 59	1847.2	-28.04	47.17
100.00	8 56 44	3877.80	-1.99	149.40	9.06	60.17	10 1 22	3277.8	-5.94	142.85
110.00	17 31 8	2153.31	-32.53	32.85	14.25	101.14	18 7 2	1553.3	-30.65	24.14
110.00	9 39 17	3744.47	.83	137.53	7.30	55.83	10 41 42	3144.5	-3.66	131.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1495	TRA	-.9004	TC3	3.7478	BAU	.6131	SGT	3059.5	SGR	464.5	SG3	653.6	ST	535.2	SR	383.8	SS	347.5
RDE	-.2318	RRA	-.0985	RC3	.2930	FAU	.15027	RRT	.4997	RRF	-.5490	RTF	-.9190	CRT	-.3344	CRS	.8433	CST	.1687
FDE	.3165	FRA	.6972	FC3	-10.6632	BSP	10536	SGB	3094.6	R23	-.0944	R13	-.9200	LSA	562.2	MSA	484.5	SSA	60.5
BDE	.2758	BRA	.9057	BC3	3.7592	FSP	2049	SG1	3068.5	SG2	401.2	THA	4.41	EL1	560.9	EL2	345.1	ALF	157.69

LAUNCH DATE NOV 30 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 472.677 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.588	GAL	.40	AZL	89.17	HCA	147.65	SMA	197.78	ECC	.25418	INC	.8250
RP	236.98	LAP	.44	LOP	215.48	VP	21.191	GAP	9.34	AZP	90.70	TAL	1.99	TAP	149.64	RCA	147.51	APO	248.05
RC	189.421	GL	8.04	GP	3.93	ZAL	81.38	ZAP	157.49	ETS	168.95	ZAE	161.70	ETE	13.58	ZAC	94.44	ETC	255.79

V1 30.200 V2 23.191 CLP 157.82

PLANETOCENTRIC CONIC

C3	11.961	VHL	3.458	DLA	19.30	RAL	154.21	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	5.847	DPA	-.67	RAP	194.29

ECC 1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 56	2747.50	-27.95	78.00	13.70	94.71	15 4 43	2147.5	-27.01	69.46
90.00	7 44 18	4093.92	-3.38	166.06	8.45	61.87	8 52 32	3493.9	-7.12	159.37
100.00	15 52 15	2446.55	-29.24	55.72	13.56	96.50	16 33 2	1846.5	-28.03	47.12
100.00	8 53 39	3870.11	-2.25	148.98	7.83	60.18	9 58 9	3270.1	-6.20	142.42
110.00	17 26 24	2152.01	-32.51	32.76	12.96	101.19	18 2 16	1552.0	-30.63	24.05
110.00	9 36 0	3737.41	.56	137.17	6.07	55.82	10 38 17	3137.4	-3.93	130.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1415	TRA	-.8646	TC3	3.8282	BAU	.6144	SGT	3061.0	SGR	469.1	SG3	684.9	ST	518.2	SR	377.0	SS	351.8
RDE	-.2255	RRA	-.0945	RC3	.3328	FAU	.15628	RRT	.5389	RRF	-.5915	RTF	-.9199	CRT	-.3294	CRS	.8664	CST	.1216
FDE	.3372	FRA	.6513	FC-11.3119		BSP	10648	SGB	3096.7	R23	-.1037	R13	-.9211	LSA	548.6	MSA	479.1	SSA	62.2
BDE	.2662	BRA	.8698	BC3	3.8426	FSP	2165	SG1	3071.6	SG2	393.8	THA	4.80	EL1	543.6	EL2	339.3	ALF	157.25

LAUNCH DATE NOV 30 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 476.192 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.551	GAL	.49	AZL	89.21	HCA	148.62	SMA	197.04	ECC	.25141	INC	.7894
RP	236.64	LAP	.41	LOP	216.45	VP	21.169	GAP	8.87	AZP	90.67	TAL	2.42	TAP	151.04	RCA	147.50	APO	246.57
RC	191.655	GL	7.76	GP	4.14	ZAL	80.47	ZAP	156.61	ETS	168.86	ZAE	162.43	ETE	15.02	ZAC	94.67	ETC	255.79

V1 30.200 V2 23.226 CLP 156.96

PLANETOCENTRIC CONIC

C3	11.739	VHL	3.426	DLA	19.36	RAL	153.21	RAD	6567.4	VEL	11.538	PTH	2.01	VHP	5.713	DPA	-.53	RAP	194.47

ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 18	2745.93	-27.95	77.89	12.42	94.77	15 0 4	2145.9	-26.99	69.35
90.00	7 40 57	4087.63	-3.58	165.71	7.24	61.89	8 49 4	3487.6	-7.31	159.01
100.00	15 47 42	2444.77	-29.23	55.59	12.28	96.56	16 28 27	1844.8	-28.01	47.00
100.00	8 50 14	3864.02	-2.45	148.65	6.61	60.20	9 54 38	3264.0	-6.40	142.08
110.00	17 21 58	2149.85	-32.48	32.60	11.68	101.28	17 57 48	1549.8	-30.59	23.89
110.00	9 32 28	3731.71	.34	136.87	4.87	55.82	10 34 39	3131.7	-4.15	130.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1300	TRA	-.8332	TC3	3.9246	BAU	.6188	SGT	3075.8	SGR	477.0	SG3	719.4	ST	500.0	SR	370.4	SS	361.0
RDE	-.2196	RRA	-.0906	RC3	.3775	FAU	.16294	RRT	.5814	RRF	-.6360	RTF	-.9215	CRT	-.3123	CRS	.8886	CST	.0840
FDE	.3636	FRA	.6069	FC-12.0170		BSP	10623	SGB	3112.5	R23	-.1126	R13	-.9229	LSA	536.0	MSA	475.6	SSA	63.8
BDE	.2552	BRA	.8361	BC3	3.9427	FSP	2276	SG1	3088.4	SG2	386.5	THA	5.23	EL1	523.9	EL2	335.9	ALF	157.14

LAUNCH DATE NOV 30 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 479.731 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.515	GAL	.57	AZL	89.25	HCA	149.59	SMA	196.33	ECC	.24877	INC	.7517
RP	236.29	LAP	.38	LOP	217.42	VP	21.150	GAP	8.40	AZP	90.65	TAL	2.85	TAP	152.44	RCA	147.49	APO	245.17
RC	193.877	GL	7.44	GP	4.36	ZAL	79.58	ZAP	155.72	ETS	168.76	ZAE	163.17	ETE	16.67	ZAC	94.91	ETC	255.78

V1 30.200 V2 23.261 CLP 156.09

PLANETOCENTRIC CONIC

C3	11.533	VHL	3.396	DLA	19.38	RAL	152.22	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	5.582	DPA	-.36	RAP	194.65

ECC 1.1898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 8	2743.05	-27.93	77.68	11.15	94.87	14 55 51	2143.1	-26.96	69.15
90.00	7 37 12	4083.12	-3.73	165.45	6.03	61.91	8 45 16	3483.1	-7.46	158.76
100.00	15 43 33	2441.82	-29.20	55.37	11.01	96.68	16 24 15	1841.8	-27.97	46.79
100.00	8 46 29	3859.58	-2.60	148.40	5.41	60.21	9 50 48	3259.6	-6.55	141.84
110.00	17 17 51	2146.77	-32.44	32.36	10.41	101.41	17 53 38	1546.8	-30.53	23.67
110.00	9 28 40	3727.40	.18	136.64	3.67	55.82	10 30 47	3127.4	-4.31	130.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1310	TRA	-.7882	TC3	4.0414	BAU	.6266	SGT	3093.6	SGR	487.5	SG3	756.0	ST	484.2	SR	363.4	SS	362.3
RDE	-.2136	RRA	-.0862	RC3	.4268	FAU	.17007	RRT	.6189	RRF	-.6788	RTF	-.9250	CRT	-.3373	CRS	.9039	CST	.0105
FDE	.3799	FRA	.5466	FC-12.7666		BSP	10351	SGB	3131.8	R23	-.1241	R13	-.9266	LSA	535.7	MSA	454.4	SSA	65.6
BDE	.2505	BRA	.7929	BC3	4.0639	FSP	2379	SG1	3108.5	SG2	381.1	THA	5.66	EL1	511.5	EL2	323.8	ALF	155.39

LAUNCH DATE NOV 30 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 483.289 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.480	GAL	.64	AZL	89.29	HCA	150.56	SMA	195.67	ECC	.24627	INC	.7118
RP	235.94	LAP	.35	LOP	218.39	VP	21.135	GAP	7.94	AZP	90.62	TAL	3.26	TAP	153.82	RCA	147.48	APO	243.85
RC	196.086	GL	7.09	GP	4.60	ZAL	78.72	ZAP	154.79	ETS	168.65	ZAE	163.93	ETE	18.56	ZAC	95.15	ETC	255.78

V1 30.200 V2 23.297 CLP 155.19

PLANETOCENTRIC CONIC

C3	11.342	VHL	3.368	DLA	19.35	RAL	151.24	RAD	6567.4	VEL	11.521	PTH	2.01	VHP	5.454	DPA	-.18	RAP	194.82

ECC 1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 6 30	2738.64	-27.90	77.36	9.90	95.03	14 52 8	2138.6	-26.91	68.83
90.00	7 33 3	4080.60	-3.81	165.31	4.84	61.92	8 41 4	3480.6	-7.53	158.62
100.00	15 39 53	2437.49	-29.17	55.06	9.75	96.84	16 20 30	1837.5	-27.92	46.48
100.00	8 42 21	3856.98	-2.69	148.26	4.22	60.22	9 46 38	3257.0	-6.64	141.69
110.00	17 14 8	2142.59	-32.38	32.05	9.14	101.59	17 49 51	1542.6	-30.45	23.37
110.00	9 24 35	3724.65	.07	136.50	2.49	55.82	10 26 40	3124.6	-4.41	130.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1125	TRA	-.7698	TC3	4.0718	BAU	.6217	SGT	3079.8	SGR	501.6	SG3	791.7	ST	465.6	SR	356.8	SS	372.8
RDE	-.2080	RRA	-.0822	RC3	.4796	FAU	.17686	RRT	.6629	RRF	-.7214	RTF	-.9234	CRT	-.2913	CRS	.9188	CST	.0083
FDE	.4064	FRA	.5012	FC-13.4995		BSP	10692	SGB	3120.4	R23	-.1338	R13	-.9252	LSA	524.5	MSA	451.0	SSA	67.5
BDE	.2365	BRA	.7742	BC3	4.1000	FSP	2528	SG1	3098.0	SG2	373.4	THA	6.25	EL1	487.8	EL2	325.8	ALF	156.37

LAUNCH DATE NOV 30 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 486.869 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.448 GAL .72 AZL 89.33 HCA 151.54 SMA 195.03 ECC .24389 INC .6687 V1 30.200
RP 235.59 LAP .32 LOP 219.36 VP 21.123 GAP 7.48 AZP 90.59 TAL 3.66 TAP 155.20 RCA 147.47 APO 242.60 V2 23.333
RC 198.280 GL 6.71 GP 4.85 ZAL 77.88 ZAP 153.84 ETS 168.53 ZAE 164.69 ETE 20.76 ZAC 95.42 ETC 255.77 CLP 154.27

PLANETOCENTRIC CONIC

C3 11.165 VHL 3.341 DLA 19.29 RAL 150.28 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 5.330 DPA .04 RAP 194.97 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 21	2732.67	-27.87	76.93	8.66	95.25	14 48 54	2132.7	-26.85	68.41
90.00	7 28 28	4080.05	-3.82	165.28	3.65	61.92	8 36 28	3480.1	-7.55	158.59
100.00	15 36 40	2431.77	-29.12	54.64	8.50	97.06	16 17 12	1831.8	-27.84	46.07
100.00	8 37 50	3856.19	-2.72	148.22	3.04	60.22	9 42 6	3256.2	-6.66	141.65
110.00	17 10 47	2137.31	-32.31	31.66	7.89	101.81	17 46 25	1537.3	-30.35	22.99
110.00	9 20 13	3723.42	.02	136.44	1.33	55.82	10 22 16	3123.4	-4.46	130.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1098 TRA -.7380 TC3 4.1449 BAU .6239 SGT 3083.1 SGR 519.4 SG3 831.1 ST 451.8 SR 349.4 SS 371.9
RDE -.2022 RRA -.0777 RC3 .5389 FAU .18448 RRT .7003 RRF -.7613 RTF -.9244 CRT -.2999 CRS .9264 CST -.0395
FDE .4174 FRA .4404 FC-14.3046 BSP 10737 SGB 3126.5 R23 -.1464 R13 -.9266 LSA 521.7 MSA 432.9 SSA 69.9
BDE .2301 BRA .7420 BC3 4.1798 FSP 2667 SG1 3104.8 SG2 368.2 THA 6.83 EL1 475.1 EL2 317.0 ALF 155.45

LAUNCH DATE NOV 30 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 490.468 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.416 GAL .79 AZL 89.38 HCA 152.51 SMA 194.44 ECC .24164 INC .6233 V1 30.200
RP 235.24 LAP .29 LOP 220.34 VP 21.113 GAP 7.04 AZP 90.55 TAL 4.06 TAP 156.57 RCA 147.45 APO 241.42 V2 23.369
RC 200.460 GL 6.29 GP 5.13 ZAL 77.06 ZAP 152.87 ETS 168.39 ZAE 165.46 ETE 23.31 ZAC 95.69 ETC 255.76 CLP 153.32

PLANETOCENTRIC CONIC

C3 11.000 VHL 3.317 DLA 19.17 RAL 149.32 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 5.209 DPA .28 RAP 195.11 ECC 1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 47	2725.01	-27.82	76.37	7.42	95.52	14 46 12	2125.0	-26.76	67.86
90.00	7 23 25	4081.61	-3.77	165.37	2.48	61.92	8 31 26	3481.6	-7.50	158.67
100.00	15 33 58	2424.50	-29.06	54.11	7.26	97.33	16 14 22	1824.5	-27.74	45.55
100.00	8 32 55	3857.35	-2.68	148.28	1.87	60.22	9 37 12	3257.4	-6.62	141.71
110.00	17 7 51	2130.79	-32.22	31.17	6.64	102.09	17 43 21	1530.8	-30.22	22.53
110.00	9 15 31	3723.83	.04	136.46	.17	55.82	10 17 35	3123.8	-4.45	130.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1053 TRA -.7090 TC3 4.2065 BAU .6250 SGT 3082.3 SGR 541.9 SG3 872.1 ST 437.5 SR 342.0 SS 372.3
RDE -.1965 RRA -.0731 RC3 .6040 FAU .19236 RRT .7362 RRF -.7986 RTF -.9252 CRT -.3015 CRS .9324 CST -.0801
FDE .4295 FRA .3781 FC-15.1389 BSP 10760 SGB 3129.6 R23 -.1594 R13 -.9277 LSA 518.2 MSA 416.3 SSA 72.3
BDE .2229 BRA .7128 BC3 4.2496 FSP 2810 SG1 3108.4 SG2 363.6 THA 7.48 EL1 461.2 EL2 309.4 ALF 154.76

LAUNCH DATE NOV 30 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 494.085 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.386 GAL .86 AZL 89.43 HCA 153.50 SMA 193.87 ECC .23949 INC .5742 V1 30.200
RP 234.89 LAP .26 LOP 221.32 VP 21.107 GAP 6.60 AZP 90.51 TAL 4.44 TAP 157.94 RCA 147.44 APO 240.30 V2 23.405
RC 202.623 GL 5.83 GP 5.43 ZAL 76.27 ZAP 151.86 ETS 168.24 ZAE 166.21 ETE 26.30 ZAC 95.99 ETC 255.75 CLP 152.35

PLANETOCENTRIC CONIC

C3 10.848 VHL 3.294 DLA 19.01 RAL 148.37 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 5.092 DPA .55 RAP 195.24 ECC 1.1785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 47	2715.51	-27.75	75.68	6.20	95.86	14 44 3	2115.5	-26.65	67.19
90.00	7 17 52	4085.39	-3.65	165.58	1.32	61.90	8 25 57	3485.4	-7.38	158.89
100.00	15 31 48	2415.58	-28.98	53.45	6.03	97.66	16 12 3	1815.6	-27.62	44.92
100.00	8 27 33	3860.55	-2.57	148.46	.72	60.21	9 31 53	3260.6	-6.52	141.89
110.00	17 5 20	2122.94	-32.11	30.59	5.39	102.42	17 40 43	1522.9	-30.06	21.97
110.00	9 10 30	3725.96	.12	136.57	359.04	55.82	10 12 36	3126.0	-4.36	130.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1045 TRA -.6800 TC3 4.2529 BAU .6245 SGT 3073.6 SGR 568.9 SG3 914.4 ST 425.4 SR 334.0 SS 367.1
RDE -.1906 RRA -.0680 RC3 .6755 FAU .20052 RRT .7680 RRF -.8323 RTF -.9255 CRT -.3171 CRS .9343 CST -.1308
FDE .4329 FRA .3083 FC-16.0025 BSP 10744 SGB 3125.8 R23 -.1743 R13 -.9285 LSA 513.4 MSA 397.4 SSA 75.4
BDE .2174 BRA .6834 BC3 4.3062 FSP 2955 SG1 3104.9 SG2 360.6 THA 8.20 EL1 450.7 EL2 299.0 ALF 153.81

LAUNCH DATE NOV 30 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 497.721 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.358 GAL .92 AZL 89.48 HCA 154.48 SMA 193.34 ECC .23746 INC .5212 V1 30.200
RP 234.53 LAP .22 LOP 222.31 VP 21.103 GAP 6.16 AZP 90.47 TAL 4.81 TAP 159.29 RCA 147.43 APO 239.25 V2 23.442
RC 204.770 GL 5.33 GP 5.76 ZAL 75.50 ZAP 150.82 ETS 168.07 ZAE 166.94 ETE 29.81 ZAC 96.31 ETC 255.75 CLP 151.35

PLANETOCENTRIC CONIC

C3 10.706 VHL 3.272 DLA 18.79 RAL 147.44 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 4.978 DPA .85 RAP 195.36 ECC 1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 25	2704.06	-27.67	74.85	4.98	96.27	14 42 29	2104.1	-26.51	66.38
90.00	7 11 48	4091.49	-3.46	165.92	.16	61.88	8 20 0	3491.5	-7.19	159.23
100.00	15 30 11	2404.87	-28.88	52.67	4.80	98.06	16 10 16	1804.9	-27.47	44.16
100.00	8 21 43	3865.90	-2.39	148.75	359.57	60.19	9 26 8	3265.9	-6.34	142.19
110.00	17 3 16	2113.64	-31.97	29.90	4.14	102.80	17 38 30	1513.6	-29.88	21.31
110.00	9 5 7	3729.90	.27	136.77	357.91	55.82	10 7 17	3129.9	-4.21	130.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1042 TRA -.6522 TC3 4.2942 BAU .6241 SGT 3063.6 SGR 601.6 SG3 958.9 ST 414.0 SR 325.6 SS 359.6
RDE -.1847 RRA -.0627 RC3 .7547 FAU .20909 RRT .7969 RRF -.8625 RTF -.9257 CRT -.3352 CRS .9331 CST -.1824
FDE .4320 FRA .2337 FC-16.9073 BSP 10698 SGB 3122.1 R23 -.1896 R13 -.9294 LSA 507.3 MSA 378.2 SSA 79.0
BDE .2120 BRA .6552 BC3 4.3600 FSP 3103 SG1 3101.4 SG2 359.0 THA 9.02 EL1 441.0 EL2 288.0 ALF 152.94

LAUNCH DATE NOV 30 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 501.374 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.331 GAL .98 AZL 89.53 HCA 155.47 SMA 192.83 ECC .23553 INC .4653 V1 30.200
RP 234.17 LAP .19 LOP 223.29 VP 21.101 GAP 5.73 AZP 90.42 TAL 5.17 TAP 160.63 RCA 147.41 APO 238.25 V2 23.479
RC 206.900 GL 4.77 GP 6.12 ZAL 74.76 ZAP 149.75 ETS 167.89 ZAE 167.64 ETE 33.93 ZAC 96.65 ETC 255.74 CLP 150.32

PLANETOCENTRIC CONIC

C3 10.575 VHL 3.252 DLA 18.51 RAL 146.52 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.867 DPA 1.20 RAP 195.47 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 41	2690.50	-27.57	73.88	3.76	96.75	14 41 31	2090.5	-26.35	65.42
90.00	7 5 11	4100.03	-3.18	166.40	359.02	61.85	8 13 31	3500.0	-6.92	159.72
100.00	15 29 10	2392.24	-28.76	51.75	3.58	98.53	16 9 2	1792.2	-27.28	43.26
100.00	8 15 23	3873.53	-2.13	149.17	358.43	60.18	9 19 56	3273.5	-6.09	142.61
110.00	17 1 42	2102.75	-31.80	29.09	2.90	103.25	17 36 45	1502.8	-29.65	20.54
110.00	8 59 21	3735.77	.50	137.08	356.79	55.82	10 1 36	3135.8	-3.99	130.87

DIFFERENTIAL CORRECTIONS
TDE .1070 TRA -.6259 TC3 4.3155 BAU .6216
RDE -.1785 RRA -.0570 RC3 .8410 FAU .21771
FDE .4228 FRA .1563 FC-17.8229 BSP 10698
BDE .2080 BRA .6285 BC3 4.3966 FSP 3269

MID-COURSE EXECUTION ACCURACY
SGT 3044.0 SGR 639.7 SG3 1003.9
RRT .8212 RRF -.8886 RTF -.9255
SGB 3110.5 R23 -.2066 R13 -.9299
SG1 3089.6 SG2 359.7 THA 9.93

ORBIT DETERMINATION ACCURACY
ST 405.4 SR 316.4 SS 347.6
CRT -.3648 CRS .9277 CST -.2408
LSA 500.4 MSA 357.7 SSA 83.1
EL1 434.7 EL2 274.8 ALF 152.22

LAUNCH DATE NOV 30 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 505.044 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.305 GAL 1.04 AZL 89.60 HCA 156.46 SMA 192.35 ECC .23371 INC .4043 V1 30.200
RP 233.80 LAP .16 LOP 224.28 VP 21.102 GAP 5.31 AZP 90.37 TAL 5.51 TAP 161.97 RCA 147.40 APO 237.30 V2 23.517
RC 209.011 GL 4.16 GP 6.51 ZAL 74.04 ZAP 148.65 ETS 167.69 ZAE 168.26 ETE 38.75 ZAC 97.02 ETC 255.73 CLP 149.26

PLANETOCENTRIC CONIC

C3 10.454 VHL 3.233 DLA 18.17 RAL 145.61 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.760 DPA 1.58 RAP 195.57 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 37	2674.70	-27.43	72.74	2.54	97.30	14 41 12	2074.7	-26.14	64.31
90.00	6 57 59	4111.16	-2.83	167.02	357.88	61.81	8 6 30	3511.2	-6.57	160.35
100.00	15 28 46	2377.54	-28.60	50.69	2.35	99.07	16 8 24	1777.5	-27.05	42.23
100.00	8 8 31	3883.55	-1.79	149.72	357.31	60.16	9 13 15	3283.6	-5.75	143.17
110.00	17 0 38	2090.15	-31.60	28.16	1.65	103.77	17 35 28	1490.2	-29.39	19.66
110.00	8 53 9	3743.70	.80	137.49	355.69	55.83	9 55 33	3143.7	-3.69	131.29

DIFFERENTIAL CORRECTIONS
TDE .1114 TRA -.5972 TC3 4.3344 BAU .6198
RDE -.1719 RRA -.0504 RC3 .9372 FAU .22685
FDE .4047 FRA .0656 FC-18.7866 BSP 10669
BDE .2048 BRA .5994 BC3 4.4346 FSP 3439

MID-COURSE EXECUTION ACCURACY
SGT 3022.6 SGR 684.8 SG3 1051.5
RRT .8423 RRF -.9111 RTF -.9255
SGB 3099.1 R23 -.2229 R13 -.9308
SG1 3077.9 SG2 362.5 THA 10.96

ORBIT DETERMINATION ACCURACY
ST 397.2 SR 306.4 SS 331.2
CRT -.4042 CRS .9163 CST -.3087
LSA 492.3 MSA 333.2 SSA 88.7
EL1 429.5 EL2 259.2 ALF 151.50

LAUNCH DATE NOV 30 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 508.730 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.281 GAL 1.10 AZL 89.66 HCA 157.45 SMA 191.90 ECC .23197 INC .3378 V1 30.200
RP 233.44 LAP .13 LOP 225.28 VP 21.106 GAP 4.90 AZP 90.31 TAL 5.85 TAP 163.30 RCA 147.38 APO 236.41 V2 23.555
RC 211.104 GL 3.49 GP 6.94 ZAL 73.36 ZAP 147.50 ETS 167.46 ZAE 168.80 ETE 44.36 ZAC 97.41 ETC 255.71 CLP 148.17

PLANETOCENTRIC CONIC

C3 10.342 VHL 3.216 DLA 17.76 RAL 144.71 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.656 DPA 2.01 RAP 195.67 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 16	2656.49	-27.27	71.43	1.32	97.94	14 41 33	2056.5	-25.89	63.04
90.00	6 50 10	4125.03	-2.38	167.80	356.75	61.77	7 58 55	3525.0	-6.14	161.13
100.00	15 29 2	2360.60	-28.42	49.46	1.12	99.69	16 8 22	1760.6	-26.79	41.04
100.00	8 1 5	3896.15	-1.37	150.41	356.19	60.14	9 6 2	3296.1	-5.33	143.87
110.00	17 0 6	2075.67	-31.36	27.10	.40	104.35	17 34 41	1475.7	-29.07	18.65
110.00	8 46 31	3753.84	1.19	138.02	354.59	55.83	9 49 4	3153.8	-3.30	131.82

DIFFERENTIAL CORRECTIONS
TDE .1166 TRA -.5736 TC3 4.3372 BAU .6168
RDE -.1648 RRA -.0435 RC3 1.0435 FAU .23622
FDE .3778 FRA -.0246 FC-19.7741 BSP 10609
BDE .2019 BRA .5752 BC3 4.4610 FSP 3610

MID-COURSE EXECUTION ACCURACY
SGT 2996.1 SGR 737.1 SG3 1100.4
RRT .8597 RRF -.9299 RTF -.9248
SGB 3085.4 R23 -.2400 R13 -.9313
SG1 3063.4 SG2 368.2 THA 12.12

ORBIT DETERMINATION ACCURACY
ST 392.2 SR 295.4 SS 311.3
CRT -.4443 CRS .8969 CST -.3703
LSA 483.0 MSA 309.1 SSA 95.4
EL1 426.4 EL2 243.4 ALF 151.45

LAUNCH DATE NOV 30 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 512.431 EARTH TO MARS

RL 147.53 LAL .00 LOL 67.83 VL 33.258 GAL 1.15 AZL 89.74 HCA 158.45 SMA 191.47 ECC .23033 INC .2649 V1 30.200
RP 233.07 LAP .10 LOP 226.27 VP 21.112 GAP 4.49 AZP 90.25 TAL 6.17 TAP 164.61 RCA 147.37 APO 235.57 V2 23.593
RC 213.179 GL 2.75 GP 7.42 ZAL 72.70 ZAP 146.32 ETS 167.22 ZAE 169.22 ETE 50.77 ZAC 97.85 ETC 255.70 CLP 147.05

PLANETOCENTRIC CONIC

C3 10.239 VHL 3.200 DLA 17.26 RAL 143.82 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.556 DPA 2.49 RAP 195.75 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 40	2635.67	-27.07	69.94	.09	98.66	14 42 36	2035.7	-25.59	61.58
90.00	6 41 40	4141.83	-1.84	168.74	355.63	61.74	7 50 42	3541.8	-5.60	162.08
100.00	15 29 58	2341.23	-28.19	48.07	359.88	100.39	16 8 59	1741.2	-26.46	39.69
100.00	7 53 3	3911.50	-.85	151.25	355.08	60.12	8 58 14	3311.5	-4.81	144.71
110.00	17 0 8	2059.12	-31.08	25.90	359.13	105.01	17 34 27	1459.1	-28.70	17.50
110.00	8 39 22	3766.37	1.67	138.68	353.51	55.85	9 42 8	3166.4	-2.83	132.47

DIFFERENTIAL CORRECTIONS
TDE .1267 TRA -.5497 TC3 4.3282 BAU .6134
RDE -.1567 RRA -.0357 RC3 1.1616 FAU .24594
FDE .3312 FRA -.1251 FC-20.7944 BSP 10578
BDE .2015 BRA .5509 BC3 4.4814 FSP 3794

MID-COURSE EXECUTION ACCURACY
SGT 2964.2 SGR 797.4 SG3 1151.1
RRT .8735 RRF -.9454 RTF -.9239
SGB 3069.6 R23 -.2569 R13 -.9319
SG1 3046.3 SG2 377.8 THA 13.43

ORBIT DETERMINATION ACCURACY
ST 392.5 SR 282.1 SS 282.8
CRT -.5021 CRS .8579 CST -.4368
LSA 474.2 MSA 278.7 SSA 105.3
EL1 428.6 EL2 223.4 ALF 151.90

LAUNCH DATE NOV 30 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 516.148 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.235 GAL 1.20 AZL 89.81 HCA 159.45 SMA 191.06 ECC .22878 INC .1856 V1 30.200
RP 232.70 LAP .07 LOP 227.27 VP 21.120 GAP 4.09 AZP 90.17 TAL 6.47 TAP 165.92 RCA 147.35 APO 234.77 V2 23.631
RC 215.236 GL 1.93 GP 7.94 ZAL 72.08 ZAP 145.10 ETS 166.96 ZAE 169.47 ETE 57.93 ZAC 98.32 ETC 255.68 CLP 145.90

PLANETOCENTRIC CONIC

C3 10.146 VHL 3.185 DLA 16.68 RAL 142.94 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.460 DPA 3.03 RAP 195.83 ECC 1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 50	2612.02	-26.81	68.26	358.85	99.47	14 44 22	2012.0	-25.23	59.95
90.00	6 32 26	4161.79	-1.19	169.85	354.52	61.71	7 41 48	3561.8	-4.97	163.20
100.00	15 31 38	2319.20	-27.91	46.49	358.63	101.17	16 10 18	1719.2	-26.08	38.17
100.00	7 44 19	3929.85	-.22	152.26	353.98	60.11	8 49 49	3329.8	-4.20	145.73
110.00	17 0 47	2040.30	-30.74	24.54	357.85	105.75	17 34 47	1440.3	-28.27	16.21
110.00	8 31 40	3781.51	2.24	139.47	352.43	55.88	9 34 42	3181.5	-2.25	133.26

DIFFERENTIAL CORRECTIONS
TDE .1370 TRA -.5257 TC3 4.3062 BAU .6098
RDE -.1478 RRA -.0268 RC3 1.2927 FAU .25587
FDE .2743 FRA -.2358 FC-21.8335 BSP 10498
BDE .2015 BRA .5264 BC3 4.4961 FSP 3976

MID-COURSE EXECUTION ACCURACY
SGT 2925.8 SGR 866.8 SG3 1203.1
RRT .8845 RRF -.9580 RTF -.9228
SGB 3051.5 R23 -.2719 R13 -.9327
SG1 3026.4 SG2 391.0 THA 14.94

ORBIT DETERMINATION ACCURACY
ST 394.0 SR 267.4 SS 254.2
CRT -.5602 CRS .7906 CST -.4872
LSA 465.7 MSA 246.0 SSA 118.1
EL1 430.9 EL2 202.5 ALF 152.68

LAUNCH DATE NOV 30 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 519.879 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.214 GAL 1.25 AZL 89.90 HCA 160.45 SMA 190.68 ECC .22730 INC .0984 V1 30.200
RP 232.32 LAP .03 LOP 228.27 VP 21.130 GAP 3.70 AZP 90.09 TAL 6.76 TAP 167.21 RCA 147.34 APO 234.02 V2 23.670
RC 217.275 GL 1.02 GP 8.52 ZAL 71.48 ZAP 143.83 ETS 166.67 ZAE 169.51 ETE 65.64 ZAC 98.85 ETC 255.66 CLP 144.72

PLANETOCENTRIC CONIC

C3 10.061 VHL 3.172 DLA 16.01 RAL 142.06 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.367 DPA 3.63 RAP 195.90 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 51	2585.29	-26.50	66.36	357.60	100.37	14 46 56	1985.3	-24.80	58.11
90.00	6 22 25	4185.20	-.44	171.16	353.41	61.69	7 32 11	3585.2	-4.22	164.52
100.00	15 34 5	2294.26	-27.56	44.72	357.36	102.05	16 12 19	1694.3	-25.63	36.45
100.00	7 34 52	3951.46	.51	153.44	352.88	60.11	8 40 43	3351.5	-3.47	146.92
110.00	17 2 5	2018.95	-30.33	23.00	356.56	106.58	17 35 44	1419.0	-27.76	14.75
110.00	8 23 22	3799.54	2.93	140.41	351.37	55.93	9 26 41	3199.5	-1.56	134.20

DIFFERENTIAL CORRECTIONS
TDE .1499 TRA -.5028 TC3 4.2685 BAU .6059
RDE -.1374 RRA -.0166 RC3 1.4386 FAU .26599
FDE .1980 FRA -.3556 FC-22.8873 BSP 10402
BDE .2033 BRA .5031 BC3 4.5044 FSP 4162

MID-COURSE EXECUTION ACCURACY
SGT 2880.8 SGR 946.3 SG3 1256.2
RRT .8927 RRF -.9681 RTF -.9213
SGB 3032.2 R23 -.2853 R13 -.9337
SG1 3004.5 SG2 408.8 THA 16.66

ORBIT DETERMINATION ACCURACY
ST 400.3 SR 249.8 SS 225.7
CRT -.6231 CRS .6611 CST -.4939
LSA 459.0 MSA 211.4 SSA 135.2
EL1 436.5 EL2 179.2 ALF 154.07

LAUNCH DATE NOV 30 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 523.624 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.194 GAL 1.30 AZL 90.00 HCA 161.45 SMA 190.32 ECC .22591 INC .0185 V1 30.200
RP 231.95 LAP .00 LOP 229.28 VP 21.142 GAP 3.31 AZP 90.00 TAL 7.04 TAP 168.49 RCA 147.32 APO 233.31 V2 23.709
RC 219.295 GL .01 GP 9.16 ZAL 70.92 ZAP 142.52 ETS 166.35 ZAE 169.32 ETE 73.60 ZAC 99.43 ETC 255.64 CLP 143.49

PLANETOCENTRIC CONIC

C3 9.988 VHL 3.160 DLA 15.21 RAL 141.18 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.279 DPA 4.31 RAP 195.97 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 44	2555.15	-26.11	64.24	356.33	101.36	14 50 19	1955.1	-24.28	56.05
90.00	6 11 32	4212.40	.44	172.67	352.31	61.69	7 21 44	3612.4	-3.35	166.04
100.00	15 37 22	2266.10	-27.15	42.73	356.08	103.02	16 15 8	1666.1	-25.09	34.54
100.00	7 24 35	3976.68	1.37	154.83	351.79	60.14	8 30 52	3376.7	-2.62	148.31
110.00	17 4 5	1994.77	-29.85	21.29	355.24	107.49	17 37 19	1394.8	-27.17	13.12
110.00	8 14 22	3820.77	3.74	141.52	350.31	56.00	9 18 3	3220.8	-.75	135.31

DIFFERENTIAL CORRECTIONS
TDE .1653 TRA -.4825 TC3 4.2194 BAU .6026
RDE -.1251 RRA -.0051 RC3 1.6019 FAU .27636
FDE .0993 FRA -.4815 FC-23.9557 BSP 10353
BDE .2073 BRA .4825 BC3 4.5133 FSP 4361

MID-COURSE EXECUTION ACCURACY
SGT 2832.7 SGR 1037.6 SG3 1310.6
RRT .8985 RRF -.9760 RTF -.9194
SGB 3016.7 R23 -.2964 R13 -.9350
SG1 2985.6 SG2 432.1 THA 18.62

ORBIT DETERMINATION ACCURACY
ST 412.6 SR 228.8 SS 206.6
CRT -.6860 CRS .4210 CST -.3965
LSA 456.1 MSA 187.6 SSA 148.4
EL1 445.9 EL2 154.0 ALF 156.15

LAUNCH DATE NOV 30 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 527.384 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.175 GAL 1.34 AZL 90.11 HCA 162.46 SMA 189.97 ECC .22459 INC .1088 V1 30.200
RP 231.57 LAP -.03 LOP 230.29 VP 21.157 GAP 2.93 AZP 89.90 TAL 7.31 TAP 169.77 RCA 147.31 APO 232.64 V2 23.748
RC 221.297 GL -1.13 GP 9.88 ZAL 70.40 ZAP 141.15 ETS 166.00 ZAE 168.86 ETE 81.42 ZAC 100.08 ETC 255.62 CLP 142.24

PLANETOCENTRIC CONIC

C3 9.925 VHL 3.150 DLA 14.29 RAL 140.30 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.194 DPA 5.07 RAP 196.04 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 34	2521.22	-25.64	61.87	355.03	102.46	14 54 35	1921.2	-23.66	53.76
90.00	5 59 40	4243.82	1.45	174.42	351.22	61.72	7 10 24	3643.8	-2.34	167.80
100.00	15 41 32	2234.32	-26.64	40.50	354.77	104.08	16 18 46	1634.3	-24.44	32.39
100.00	7 13 23	4005.95	2.36	156.43	350.71	60.19	8 20 9	3406.0	-1.63	149.91
110.00	17 6 50	1967.41	-29.27	19.36	353.90	108.49	17 39 38	1367.4	-26.47	11.30
110.00	8 4 35	3845.63	4.69	142.82	349.27	56.10	9 8 40	3245.6	.20	136.61

DIFFERENTIAL CORRECTIONS
TDE .1827 TRA -.4630 TC3 4.1491 BAU .5992
RDE -.1102 RRA .0083 RC3 1.7838 FAU .28671
FDE -.0255 FRA -.6194 FC-25.0095 BSP 10274
BDE .2133 BRA .4631 BC3 4.5162 FSP 4555

MID-COURSE EXECUTION ACCURACY
SGT 2774.8 SGR 1141.7 SG3 1365.2
RRT .9021 RRF -.9822 RTF -.9169
SGB 3000.6 R23 -.3044 R13 -.9366
SG1 2964.9 SG2 461.1 THA 20.89

ORBIT DETERMINATION ACCURACY
ST 429.5 SR 203.3 SS 213.5
CRT -.7462 CRS .0691 CST -.1519
LSA 459.3 MSA 211.1 SSA 126.2
EL1 457.9 EL2 126.9 ALF 158.85

LAUNCH DATE NOV 30 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 531.157 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.158 GAL 1.38 AZL 90.23 HCA 163.47 SMA 189.65 ECC .22335 INC .2287 V1 30.200
RP 231.20 LAP -.06 LOP 231.30 VP 21.173 GAP 2.56 AZP 89.78 TAL 7.55 TAP 171.03 RCA 147.29 APO 232.01 V2 23.788
RC 223.281 GL -2.41 GP 10.69 ZAL 69.92 ZAP 139.73 ETS 165.62 ZAE 168.13 ETE 88.73 ZAC 100.80 ETC 255.58 CLP 140.94

PLANETOCENTRIC CONIC

C3 9.876 VHL 3.143 DLA 13.22 RAL 139.41 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.115 DPA 5.92 RAP 196.13 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 27	2483.04	-25.05	59.23	353.70	103.66	14 59 50	1883.0	-22.92	51.20
90.00	5 46 42	4280.03	2.62	176.45	350.14	61.79	6 58 2	3680.0	-1.17	169.82
100.00	15 46 41	2198.48	-26.02	38.02	353.42	105.25	16 23 20	1598.5	-23.68	30.01
100.00	7 1 9	4039.82	3.50	158.30	349.65	60.29	8 8 28	3439.8	-.48	151.77
110.00	17 10 26	1936.44	-28.59	17.22	352.52	109.60	17 42 42	1336.4	-25.65	9.27
110.00	7 53 53	3874.63	5.79	144.35	348.23	56.25	8 58 28	3274.6	1.31	138.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2030 TRA -.4446 TC3 4.0598 BAU .5968 SGT 2709.5 SGR 1261.1 SG3 1420.0 ST 453.0 SR 171.9 SS 261.3
RDE -.0917 RRA .0242 RC3 1.9875 FAU .29708 RRT .9037 RRF -.9869 RTF -.9137 CRT -.8014 CRS -.2495 CST .1588
FDE -.1830 FRA -.7710 FC-26.0427 BSP 10216 SGB 2988.6 R23 -.3088 R13 -.9388 LSA 477.5 MSA 256.6 SSA 96.0
BDE .2228 BRA .4453 BC3 4.5202 FSP 4749 SG1 2947.1 SG2 496.5 THA 23.52 EL1 474.5 EL2 98.2 ALF 162.30

LAUNCH DATE NOV 30 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 534.943 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.141 GAL 1.41 AZL 90.37 HCA 164.49 SMA 189.35 ECC .22217 INC .3661 V1 30.200
RP 230.82 LAP -.10 LOP 232.32 VP 21.191 GAP 2.19 AZP 89.65 TAL 7.79 TAP 172.28 RCA 147.28 APO 231.41 V2 23.827
RC 225.247 GL -3.87 GP 11.60 ZAL 69.48 ZAP 138.25 ETS 165.19 ZAE 167.12 ETE 95.27 ZAC 101.62 ETC 255.55 CLP 139.60

PLANETOCENTRIC CONIC

C3 9.843 VHL 3.137 DLA 11.98 RAL 138.51 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.041 DPA 6.88 RAP 196.22 ECC 1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 29	2440.00	-24.32	56.28	352.34	104.96	15 6 9	1840.0	-22.03	48.36
90.00	5 32 27	4321.75	3.96	178.78	349.07	61.94	6 44 28	3721.7	.18	172.14
100.00	15 52 55	2157.98	-25.27	35.25	352.05	106.53	16 28 53	1558.0	-22.76	27.35
100.00	6 47 41	4079.00	4.82	160.46	348.60	60.46	7 55 40	3479.0	.85	153.92
110.00	17 14 57	1901.30	-27.76	14.82	351.11	110.80	17 46 38	1301.3	-24.68	7.00
110.00	7 42 9	3908.44	7.06	146.14	347.22	56.47	8 47 17	3308.4	2.60	139.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2272 TRA -.4278 TC3 3.9532 BAU .5963 SGT 2638.7 SGR 1398.0 SG3 1474.0 ST 484.8 SR 133.9 SS 351.3
RDE -.0684 RRA .0428 RC3 2.2155 FAU .30725 RRT .9034 RRF -.9905 RTF -.9098 CRT -.8393 CRS -.3925 CST .4105
FDE -.3796 FRA -.9330 FC-27.0242 BSP 10146 SGB 2986.2 R23 -.3086 R13 -.9419 LSA 530.2 MSA 300.5 SSA 70.6
BDE .2373 BRA .4300 BC3 4.5317 FSP 4937 SG1 2937.2 SG2 538.7 THA 26.54 EL1 498.0 EL2 70.9 ALF 166.67

LAUNCH DATE NOV 30 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 538.743 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.124 GAL 1.45 AZL 90.52 HCA 165.51 SMA 189.06 ECC .22106 INC .5223 V1 30.200
RP 230.43 LAP -.13 LOP 233.33 VP 21.211 GAP 1.83 AZP 89.49 TAL 8.01 TAP 173.52 RCA 147.27 APO 230.85 V2 23.867
RC 227.193 GL -5.52 GP 12.65 ZAL 69.09 ZAP 136.69 ETS 164.72 ZAE 165.85 ETE 100.92 ZAC 102.56 ETC 255.50 CLP 138.22

PLANETOCENTRIC CONIC

C3 9.831 VHL 3.135 DLA 10.53 RAL 137.57 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.972 DPA 7.97 RAP 196.34 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 47	2391.39	-23.43	53.00	350.94	106.37	15 13 38	1791.4	-20.96	45.20
90.00	5 16 42	4369.88	5.49	181.48	348.03	62.18	6 29 32	3769.9	1.73	174.83
100.00	16 0 22	2112.15	-24.34	32.16	350.63	107.90	16 35 34	1512.1	-21.67	24.38
100.00	6 32 48	4124.36	6.34	162.97	347.57	60.73	7 41 33	3524.4	2.39	156.41
110.00	17 20 30	1861.38	-26.77	12.14	349.65	112.10	17 51 32	1261.4	-23.53	4.47
110.00	7 29 9	3947.89	8.54	148.23	346.23	56.77	8 34 57	3347.9	4.11	141.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2674 TRA -.3994 TC3 3.8777 BAU .6051 SGT 2589.0 SGR 1562.7 SG3 1534.0 ST 542.0 SR 88.8 SS 498.4
RDE -.0358 RRA .0682 RC3 2.4817 FAU .31848 RRT .9042 RRF -.9933 RTF -.9088 CRT -.7682 CRS -.2262 CST .6101
FDE -.6534 FRA-1.1417 FC-28.0450 BSP 9863 SGB 3024.1 R23 -.2973 R13 -.9481 LSA 663.5 MSA 327.8 SSA 49.2
BDE .2698 BRA .4052 BC3 4.6038 FSP 5064 SG1 2967.5 SG2 582.4 THA 29.89 EL1 546.3 EL2 56.4 ALF 172.75

LAUNCH DATE NOV 30 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 542.553 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.109 GAL 1.48 AZL 90.70 HCA 166.53 SMA 188.79 ECC .22001 INC .7023 V1 30.200
RP 230.05 LAP -.16 LOP 234.36 VP 21.232 GAP 1.48 AZP 89.32 TAL 8.22 TAP 174.75 RCA 147.25 APO 230.32 V2 23.907
RC 229.120 GL -7.43 GP 13.84 ZAL 68.76 ZAP 135.06 ETS 164.20 ZAE 164.31 ETE 105.63 ZAC 103.63 ETC 255.44 CLP 136.80

PLANETOCENTRIC CONIC

C3 9.847 VHL 3.138 DLA 8.83 RAL 136.61 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.911 DPA 9.22 RAP 196.48 ECC 1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 36	2336.18	-22.32	49.33	349.50	107.89	15 22 32	1736.2	-19.67	41.67
90.00	4 59 12	4425.73	7.26	184.64	347.03	62.55	6 12 57	3825.7	3.53	177.95
100.00	16 9 15	2059.96	-23.21	28.70	349.17	109.39	16 43 34	1460.0	-20.35	21.06
100.00	6 16 14	4177.18	8.08	165.92	346.59	61.12	7 25 51	3577.2	4.17	159.32
110.00	17 27 17	1815.75	-25.56	9.14	348.16	113.51	17 57 33	1215.8	-22.16	1.64
110.00	7 14 41	3994.16	10.25	150.72	345.28	57.21	8 21 16	3394.2	5.86	144.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2903 TRA -.3919 TC3 3.7044 BAU .6085 SGT 2492.0 SGR 1743.6 SG3 1581.3 ST 577.0 SR 74.0 SS 652.6
RDE .0018 RRA .0946 RC3 2.7642 FAU .32728 RRT .8995 RRF -.9953 RTF -.9015 CRT -.1409 CRS .5058 CST .7009
FDE -.9326 FRA-1.3219 FC-28.7740 BSP 10067 SGB 3041.5 R23 -.2886 R13 -.9526 LSA 804.8 MSA 339.4 SSA 37.2
BDE .2903 BRA .4032 BC3 4.6220 FSP 5272 SG1 2973.7 SG2 638.5 THA 33.96 EL1 577.1 EL2 73.2 ALF 178.95

LAUNCH DATE NOV 30 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 546.376 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.095	GAL	1.51	AZL	90.91	HCA	167.55	SMA	188.53	ECC	.21902	INC	.9118	V1	30.200
RP	229.67	LAP	-.20	LOP	235.38	VP	21.255	GAP	1.13	AZP	89.11	TAL	8.41	TAP	175.96	RCA	147.24	APO	229.83	V2	23.948
RC	231.027	GL	-9.64	GP	15.21	ZAL	68.51	ZAP	133.34	ETS	163.62	ZAE	162.50	ETE	109.47	ZAC	104.88	ETC	255.36	CLP	135.34

PLANETOCENTRIC CONIC

C3	9.902	VHL	3.147	DLA	6.83	RAL	135.59	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	3.858	DPA	10.64	RAP	196.68	ECC	1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 10	2273.18	-20.95	45.23	348.03	109.50	15 33 3	1673.2	-18.10	37.71
90.00	4 39 32	4490.93	9.29	188.36	346.09	63.13	5 54 23	3890.9	5.61	181.61
100.00	16 19 46	2000.31	-21.81	24.82	347.69	110.97	16 53 6	1400.3	-18.76	17.35
100.00	5 57 37	4239.03	10.10	169.40	345.66	61.72	7 8 16	3639.0	6.24	162.74
110.00	17 35 28	1763.42	-24.10	5.78	346.63	115.01	18 4 51	1163.4	-20.52	358.46
110.00	6 58 24	4048.68	12.25	153.68	344.39	57.83	8 5 53	3448.7	7.91	147.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3195	TRA	-.3839	TC3	3.5095	BAU	.6181	SGT	2390.0	SGR	1954.8	SG3	1625.1	ST	622.4	SR	132.5	SS	848.9
RDE	.0527	RRA	.1281	RC3	3.0799	FAU	.33534	RRT	.8929	RRF	-.9967	RTF	-.8930	CRT	.5432	CRS	.9362	CST	.7699
FDE	-1.2850	FRA	-1.5270	FC	-29.3199	BSP	10255	SGB	3087.6	R23	-.2721	R13	-.9589	LSA	1003.2	MSA	344.2	SSA	27.8
BDE	.3238	BRA	.4047	BC3	4.6693	FSP	5436	SG1	3007.3	SG2	699.6	THA	38.62	EL1	626.7	EL2	110.5	ALF	6.81

LAUNCH DATE NOV 30 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 550.210 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.081	GAL	1.53	AZL	91.16	HCA	168.58	SMA	188.29	ECC	.21808	INC	1.1599	V1	30.200
RP	229.28	LAP	-.23	LOP	236.41	VP	21.280	GAP	.79	AZP	88.86	TAL	8.58	TAP	177.16	RCA	147.23	APO	229.36	V2	23.988
RC	232.913	GL	-12.21	GP	16.81	ZAL	68.35	ZAP	131.52	ETS	162.97	ZAE	160.41	ETE	112.50	ZAC	106.33	ETC	255.27	CLP	133.82

PLANETOCENTRIC CONIC

C3	10.011	VHL	3.164	DLA	4.46	RAL	134.51	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	3.815	DPA	12.29	RAP	196.94	ECC	1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 51	2200.75	-19.23	40.61	346.53	111.19	15 45 31	1600.7	-16.18	33.26
90.00	4 17 10	4567.75	11.62	192.80	345.25	63.99	5 33 18	3967.7	8.03	185.96
100.00	16 32 17	1931.63	-20.07	20.46	346.18	112.63	17 4 28	1331.6	-16.83	13.16
100.00	5 36 25	4312.10	12.42	173.58	344.83	62.59	6 48 17	3712.1	8.66	166.82
110.00	17 45 19	1703.03	-22.31	2.00	345.08	116.60	18 13 42	1103.0	-18.55	354.88
110.00	6 39 52	4113.47	14.57	157.27	343.60	58.73	7 48 25	3513.5	10.32	150.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3532	TRA	-.3764	TC3	3.2855	BAU	.6352	SGT	2280.2	SGR	2200.3	SG3	1660.7	ST	674.6	SR	246.7	SS	1083.5
RDE	.1210	RRA	.1703	RC3	3.4250	FAU	.34176	RRT	.8840	RRF	-.9977	RTF	-.8828	CRT	.7523	CRS	.9906	CST	.8204
FDE	-1.7096	FRA	-1.7504	FC	-29.5531	BSP	10599	SGB	3168.7	R23	-.2478	R13	-.9665	LSA	1253.1	MSA	345.4	SSA	20.8
BDE	.3734	BRA	.4131	BC3	4.7461	FSP	5593	SG1	3075.5	SG2	762.6	THA	43.84	EL1	701.1	EL2	156.4	ALF	16.21

LAUNCH DATE NOV 30 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 554.056 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.069	GAL	1.56	AZL	91.46	HCA	169.61	SMA	188.07	ECC	.21720	INC	1.4568	V1	30.200
RP	228.89	LAP	-.26	LOP	237.44	VP	21.306	GAP	.46	AZP	88.57	TAL	8.74	TAP	178.36	RCA	147.22	APO	228.92	V2	24.029
RC	234.778	GL	-15.26	GP	18.70	ZAL	68.31	ZAP	129.57	ETS	162.24	ZAE	158.01	ETE	114.82	ZAC	108.05	ETC	255.14	CLP	132.26

PLANETOCENTRIC CONIC

C3	10.204	VHL	3.194	DLA	1.64	RAL	133.32	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	3.785	DPA	14.21	RAP	197.29	ECC	1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 10	2116.71	-17.08	35.38	345.05	112.93	16 0 27	1516.7	-13.83	28.21
90.00	3 51 22	4659.40	14.29	198.20	344.57	65.29	5 9 1	4059.4	10.84	191.22
100.00	16 47 16	1851.88	-17.90	15.52	344.67	114.34	17 18 8	1251.9	-14.47	8.42
100.00	5 11 57	4399.46	15.10	178.69	344.17	63.89	6 25 16	3799.5	11.47	171.78
110.00	17 57 16	1632.81	-20.10	357.75	343.52	118.25	18 24 29	1032.8	-16.17	350.83
110.00	6 18 27	4191.30	17.27	161.69	342.97	60.03	7 28 18	3591.3	13.15	154.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3917	TRA	-.3705	TC3	3.0345	BAU	.6635	SGT	2166.5	SGR	2492.2	SG3	1687.6	ST	732.6	SR	411.6	SS	1364.7
RDE	.2155	RRA	.2252	RC3	3.8015	FAU	.34647	RRT	.8726	RRF	-.9985	RTF	-.8703	CRT	.8345	CRS	.9983	CST	.8579
FDE	-2.2261	FRA	-1.9999	FC	-29.3960	BSP	11025	SGB	3302.2	R23	-.2162	R13	-.9748	LSA	1565.0	MSA	345.3	SSA	15.5
BDE	.4471	BRA	.4335	BC3	4.8641	FSP	5684	SG1	3197.5	SG2	824.9	THA	49.57	EL1	815.3	EL2	203.8	ALF	26.94

LAUNCH DATE NOV 30 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 557.914 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.057	GAL	1.58	AZL	91.82	HCA	170.65	SMA	187.86	ECC	.21638	INC	1.8195	V1	30.200
RP	228.51	LAP	-.30	LOP	238.48	VP	21.334	GAP	.13	AZP	88.20	TAL	8.89	TAP	179.54	RCA	147.21	APO	228.51	V2	24.070
RC	236.623	GL	-18.88	GP	20.94	ZAL	68.44	ZAP	127.46	ETS	161.43	ZAE	155.25	ETE	116.52	ZAC	110.10	ETC	254.96	CLP	130.63

PLANETOCENTRIC CONIC

C3	10.523	VHL	3.244	DLA	-1.75	RAL	131.99	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	3.772	DPA	16.47	RAP	197.77	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 58	2018.00	-14.36	29.40	343.62	114.67	16 18 36	1418.0	-10.92	22.42
90.00	3 20 59	4770.54	17.34	204.93	344.15	67.26	4 40 29	4170.5	14.11	197.75
100.00	17 5 30	1758.23	-15.19	9.90	343.22	116.06	17 34 48	1158.2	-11.56	2.98
100.00	4 43 8	4505.54	18.17	185.07	343.77	65.85	5 58 14	3905.5	14.76	177.94
110.00	18 11 52	1550.45	-17.38	352.92	342.01	119.91	18 37 43	950.5	-13.27	346.21
110.00	5 53 15	4286.08	20.40	167.25	342.61	61.96	7 4 41	3686.1	16.49	160.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.4368	TRA	-.3651	TC3	2.7492	BAU	.7061	SGT	2047.6	SGR	2843.0	SG3	1701.5	ST	797.1	SR	642.7	SS	1698.9
RDE	.3496	RRA	.2992	RC3	4.1990	FAU	.34858	RRT	.8580	RRF	-.9990	RTF	-.8548	CRT	.8783	CRS	.9997	CST	.8864
FDE	-2.8534	FRA	-2.2835	FC	-28.6770	BSP	11644	SGB	3503.6	R23	-.1793	R13	-.9828	LSA	1953.4	MSA	344.7	SSA	11.5
BDE	.5594	BRA	.4720	BC3	5.0189	FSP	5707	SG1	3390.8	SG2	881.9	THA	55.64	EL1	993.8	EL2	246.4	ALF	38.06

LAUNCH DATE NOV 30 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 561.781 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.046	GAL	1.60	AZL	92.27	HCA	171.69	SMA	187.66	ECC	.21560	INC	2.2755	V1	30.200
RP	228.12	LAP	-.33	LOP	239.52	VP	21.363	GAP	-.19	AZP	87.75	TAL	9.02	TAP	180.71	RCA	147.20	APO	228.12	V2	24.111
RC	238.446	GL	-23.24	GP	23.63	ZAL	68.79	ZAP	125.15	ETS	160.52	ZAE	152.07	ETE	117.66	ZAC	112.57	ETC	254.71	CLP	128.93

PLANETOCENTRIC CONIC

C3	11.048	VHL	3.324	DLA	-5.84	RAL	130.47	RAD	6567.4	VEL	11.508	PTH	2.00	VHP	3.784	DPA	19.16	RAP	198.43	ECC	1.1818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 36	1900.12	-10.91	22.47	342.37	116.29	16 41 16	1300.1	-7.29	15.66
90.00	2 44 12	4908.26	20.74	213.60	344.17	70.28	4 6 0	4308.3	17.87	206.11
100.00	17 28 10	1646.64	-11.75	3.40	341.94	117.69	17 55 37	1046.6	-7.95	356.67
100.00	4 8 19	4636.97	21.63	193.30	343.82	68.85	5 25 36	4037.0	18.56	185.85
110.00	18 30 5	1452.82	-13.98	347.39	340.64	121.52	18 54 17	852.8	-9.71	340.89
110.00	5 22 54	4403.56	23.98	174.49	342.73	64.88	6 36 17	3803.6	20.40	167.18

DIFFERENTIAL CORRECTIONS

TDE	.4847	TRA	-.3659	TC3	2.4064	BAU	.7618
RDE	.5345	RRA	.3922	RC3	4.5622	FAU	.34436
FDE	-3.5451	FRA	-2.5445	FC	-26.9858	BSP	12662
BDE	.7216	BRA	.5364	BC3	5.1580	FSP	5718

MID-COURSE EXECUTION ACCURACY

SGT	1912.9	SGR	3241.7	SG3	1681.1		
RRT	.8370	RRF	-.9993	RTF	-.8331		
SGB	3764.0	R23	-.1420	R13	-.9892		
SG1	3647.3	SG2	930.3	THA	61.71		

ORBIT DETERMINATION ACCURACY

ST	858.3	SR	948.1	SS	2051.9
CRT	.9038	CRS	.9999	CST	.9061
LSA	2393.2	MSA	343.7	SSA	8.6
EL1	1248.1	EL2	279.0	ALF	48.15

LAUNCH DATE NOV 30 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 565.660 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.035	GAL	1.61	AZL	92.86	HCA	172.73	SMA	187.48	ECC	.21487	INC	2.8591	V1	30.200
RP	227.73	LAP	-.36	LOP	240.56	VP	21.393	GAP	-.51	AZP	87.16	TAL	9.13	TAP	181.86	RCA	147.20	APO	227.76	V2	24.152
RC	240.248	GL	-28.51	GP	26.91	ZAL	69.46	ZAP	122.58	ETS	159.51	ZAE	148.35	ETE	118.33	ZAC	115.59	ETC	254.36	CLP	127.15

PLANETOCENTRIC CONIC

C3	11.921	VHL	3.453	DLA	-10.81	RAL	128.66	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	3.834	DPA	22.39	RAP	199.35	ECC	1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 33	1755.74	-6.44	14.22	341.52	117.63	17 10 48	1155.7	-2.69	7.54
90.00	1 57 51	5084.28	24.33	225.25	344.94	75.04	3 22 35	4484.3	22.04	217.33
100.00	17 57 29	1510.75	-7.35	355.71	341.03	119.06	18 22 39	910.8	-3.42	349.13
100.00	3 24 36	4804.50	25.32	204.37	344.63	73.55	4 44 40	4204.5	22.82	196.46
110.00	18 53 28	1335.43	-9.71	340.97	339.59	122.94	19 15 43	735.4	-5.31	334.65
110.00	4 45 6	4552.59	27.93	184.26	343.65	69.45	6 0 59	3952.6	24.88	176.42

DIFFERENTIAL CORRECTIONS

TDE	.5463	TRA	-.3656	TC3	2.0388	BAU	.8470
RDE	.8211	RRA	.5363	RC3	4.9080	FAU	.33716
FDE	-4.4093	FRA	-2.8887	FC	-24.4857	BSP	13677
BDE	.9862	BRA	.6490	BC3	5.3146	FSP	5454

MID-COURSE EXECUTION ACCURACY

SGT	1784.7	SGR	3763.5	SG3	1646.7		
RRT	.8109	RRF	-.9996	RTF	-.8062		
SGB	4165.2	R23	-.1056	R13	-.9940		
SG1	4050.6	SG2	970.3	THA	67.61		

ORBIT DETERMINATION ACCURACY

ST	926.2	SR	1393.1	SS	2477.3
CRT	.9216	CRS	1.0000	CST	.9214
LSA	2969.4	MSA	344.4	SSA	6.3
EL1	1645.0	EL2	304.6	ALF	57.24

LAUNCH DATE NOV 30 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 569.547 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.025	GAL	1.63	AZL	93.64	HCA	173.77	SMA	187.31	ECC	.21418	INC	3.6428	V1	30.200
RP	227.34	LAP	-.39	LOP	241.61	VP	21.425	GAP	-.82	AZP	86.38	TAL	9.24	TAP	183.01	RCA	147.19	APO	227.42	V2	24.193
RC	242.030	GL	-34.92	GP	30.94	ZAL	70.57	ZAP	119.67	ETS	158.42	ZAE	143.96	ETE	118.63	ZAC	119.31	ETC	253.84	CLP	125.25

PLANETOCENTRIC CONIC

C3	13.427	VHL	3.664	DLA	-16.86	RAL	126.44	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.942	DPA	26.32	RAP	200.64	ECC	1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 24	1569.64	-.48	3.79	341.56	118.31	17 52 33	969.6	3.31	357.16
90.00	0 55 14	5321.28	27.46	241.88	346.85	82.79	2 23 56	4721.3	26.17	233.44
100.00	18 38 8	1338.18	-1.55	346.18	340.96	119.86	19 0 26	738.2	2.43	339.66
100.00	2 26 12	5027.97	28.67	220.11	346.66	81.16	3 50 0	4428.0	27.15	211.63
110.00	19 25 10	1190.82	-4.28	333.30	339.27	123.95	19 45 1	590.8	.21	327.09
110.00	3 55 39	4748.09	31.82	198.14	345.95	76.80	5 14 47	4148.1	29.68	189.59

DIFFERENTIAL CORRECTIONS

TDE	.6143	TRA	-.3741	TC3	1.6091	BAU	.9530
RDE	1.2373	RRA	.7290	RC3	5.0591	FAU	.31771
FDE	-5.2626	FRA	-3.1563	FC	-20.4843	BSP	15393
BDE	1.3814	BRA	.8194	BC3	5.3088	FSP	5155

MID-COURSE EXECUTION ACCURACY

SGT	1639.2	SGR	4348.3	SG3	1544.8		
RRT	.7720	RRF	-.9997	RTF	-.7662		
SGB	4647.0	R23	-.0761	R13	-.9968		
SG1	4538.5	SG2	998.3	THA	72.92		

ORBIT DETERMINATION ACCURACY

ST	978.5	SR	1970.5	SS	2856.1
CRT	.9318	CRS	1.0000	CST	.9307
LSA	3588.7	MSA	345.3	SSA	4.7
EL1	2176.5	EL2	321.6	ALF	64.58

LAUNCH DATE NOV 30 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 573.442 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.016	GAL	1.64	AZL	94.74	HCA	174.82	SMA	187.15	ECC	.21354	INC	4.7445	V1	30.200
RP	226.95	LAP	-.43	LOP	242.66	VP	21.457	GAP	-1.12	AZP	85.28	TAL	9.33	TAP	184.14	RCA	147.18	APO	227.11	V2	24.235
RC	243.792	GL	-42.71	GP	35.94	ZAL	72.26	ZAP	116.29	ETS	157.33	ZAE	138.70	ETE	118.70	ZAC	123.92	ETC	253.03	CLP	123.16

PLANETOCENTRIC CONIC

C3	16.189	VHL	4.023	DLA	-24.19	RAL	123.55	RAD	6567.6	VEL	11.729	PTH	2.07	VHP	4.153	DPA	31.13	RAP	202.49	ECC	1.2664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 34	1287.64	8.51	347.95	343.89	117.11	19 5 1	687.6	12.08	341.09
90.00	23 11 8	5686.58	27.72	268.47	349.86	96.02	24 45 55	5086.6	28.27	259.85
100.00	19 44 38	1090.52	6.80	332.54	342.96	119.18	20 2 49	490.5	10.64	325.85
100.00	0 56 41	5358.94	29.66	244.56	350.06	93.92	2 26 0	4758.9	29.89	235.76
110.00	20 13 4	1001.36	2.96	323.41	340.59	124.07	20 29 45	401.4	7.41	317.15
110.00	2 44 45	5020.87	34.17	219.01	350.19	88.89	4 8 26	4420.9	33.64	209.81

DIFFERENTIAL CORRECTIONS

TDE	.6925	TRA	-.3964	TC3	1.1271	BAU	1.0860
RDE	1.8764	RRA	1.0099	RC3	4.8898	FAU	.28352
FDE	-6.0216	FRA	-3.3310	FC	-15.1622	BSP	17905
BDE	2.0001	BRA	1.0849	BC3	5.0181	FSP	4690

MID-COURSE EXECUTION ACCURACY

SGT	1475.8	SGR	5010.8	SG3	1364.6		
RRT	.7070	RRF	-.9998	RTF	-.6995		
SGB	5223.6	R23	-.0536	R13	-.9984		
SG1	5122.9	SG2	1020.9	THA	77.74		

ORBIT DETERMINATION ACCURACY

ST	1003.8	SR	2716.1	SS	3130.4
CRT	.9354	CRS	1.0000	CST	.9337
LSA	4250.0	MSA	348.7	SSA	3.5
EL1	2876.2	EL2	335.2	ALF	70.66

LAUNCH DATE NOV 30 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 577.343 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.007 GAL 1.65 AZL 96.40 HCA 175.86 SMA 187.00 ECC .21294 INC 6.4044 V1 30.200
RP 226.56 LAP -.46 LOP 243.71 VP 21.491 GAP -1.42 AZP 83.61 TAL 9.41 TAP 185.27 RCA 147.18 APO 226.82 V2 24.277
RC 245.534 GL -52.08 GP 42.12 ZAL 74.70 ZAP 112.29 ETS 156.44 ZAE 132.36 ETE 118.79 ZAC 129.58 ETC 251.74 CLP 120.76

PLANETOCENTRIC CONIC

C3 21.762 VHL 4.665 DLA -32.90 RAL 119.57 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 4.557 DPA 37.00 RAP 205.17 ECC 1.3581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.50	18 27 16	1341.35	22.04	358.73	350.81	115.07	18 49 37	741.3	25.23	351.14
107.50	22 55 38	5771.94	22.06	272.95	350.81	115.06	24 31 50	5171.9	25.25	265.36
72.50	18 27 16	1341.35	22.04	358.73	350.81	115.07	18 49 37	741.3	25.23	351.14
107.50	22 55 38	5771.94	22.06	272.95	350.81	115.06	24 31 50	5171.9	25.25	265.36
110.00	22 0 27	653.81	15.77	304.65	347.30	120.73	22 11 20	53.8	19.73	297.77
110.00	0 25 33	5507.48	28.62	255.47	353.79	109.54	1 57 21	4907.5	31.01	247.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7963 TRA -.4327 TC3 .6607 BAU 1.2782 SGT 1318.1 SGR 5847.8 SG3 1112.0 ST 996.5 SR 3670.5 SS 3207.2
RDE 2.9391 RRA 1.4889 RC3 4.3433 FAU .23588 RRT .6032 RRF -.9998 RTF -.5929 CRT .9320 CRS 1.0000 CST .9297
FDE-6.5146 FRA-3.4171 FC3-9.3837 BSP 20387 SGB 5994.5 R23 -.0376 R13 -.9992 LSA 4962.2 MSA 357.6 SSA 2.6
BDE 3.0451 BRA 1.5505 BC3 4.3933 FSP 3763 SG1 5903.3 SG2 1041.3 THA 82.01 EL1 3787.2 EL2 350.2 ALF 75.68

LAUNCH DATE NOV 30 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 581.247 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.999 GAL 1.66 AZL 99.19 HCA 176.91 SMA 186.86 ECC .21238 INC 9.1952 V1 30.200
RP 226.17 LAP -.49 LOP 244.77 VP 21.526 GAP -1.72 AZP 80.82 TAL 9.48 TAP 186.39 RCA 147.17 APO 226.54 V2 24.318
RC 247.256 GL -63.16 GP 49.56 ZAL 77.92 ZAP 107.52 ETS 156.26 ZAE 124.81 ETE 119.47 ZAC 136.26 ETC 249.67 CLP 117.65

PLANETOCENTRIC CONIC

C3 34.891 VHL 5.907 DLA -42.96 RAL 113.46 RAD 6568.4 VEL 12.500 PTH 2.26 VHP 5.377 DPA 43.99 RAP 209.00 ECC 1.5742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.24	16 39 4	1704.02	23.45	29.22	355.69	127.09	17 7 28	1104.0	28.10	22.40
123.76	23 55 8	5643.70	23.46	263.45	355.70	127.08	25 29 11	5043.7	28.11	256.64
56.24	16 39 4	1704.02	23.45	29.22	355.69	127.09	17 7 28	1104.0	28.10	22.40
123.76	23 55 8	5643.70	23.46	263.45	355.70	127.08	25 29 11	5043.7	28.11	256.64
56.24	16 39 4	1704.02	23.45	29.22	355.69	127.09	17 7 28	1104.0	28.10	22.40
123.76	23 55 8	5643.70	23.46	263.45	355.70	127.08	25 29 11	5043.7	28.11	256.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9284 TRA -.5076 TC3 .2586 BAU 1.5433 SGT 1164.9 SGR 6739.7 SG3 755.1 ST 922.9 SR 4658.7 SS 2802.4
RDE 4.7069 RRA 2.3126 RC3 3.2985 FAU .16828 RRT .4127 RRF -.9997 RTF -.3957 CRT .9133 CRS 1.0000 CST .9095
FDE-6.0833 FRA-3.1313 FC3-4.1753 BSP 23516 SGB 6839.6 R23 -.0299 R13 -.9994 LSA 5501.7 MSA 374.1 SSA 2.2
BDE 4.7976 BRA 2.3677 BC3 3.3086 FSP 2560 SG1 6757.3 SG2 1058.3 THA 85.82 EL1 4734.9 EL2 369.8 ALF 79.68

LAUNCH DATE NOV 30 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 609.168 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.959 GAL 1.59 AZL 80.77 HCA 184.51 SMA 186.16 ECC .20932 INC 9.2297 V1 30.200
RP 223.44 LAP -.72 LOP 252.28 VP 21.796 GAP -3.57 AZP 99.20 TAL 9.23 TAP 193.74 RCA 147.20 APO 225.13 V2 24.611
RC 258.763 GL 63.70 GP -42.74 ZAL 78.26 ZAP 102.27 ETS 190.01 ZAE 126.41 ETE 219.06 ZAC 46.05 ETC 251.03 CLP 106.81

PLANETOCENTRIC CONIC

C3 34.749 VHL 5.895 DLA 73.04 RAL 189.37 RAD 6568.4 VEL 12.495 PTH 2.26 VHP 4.183 DPA -36.54 RAP 159.14 ECC 1.5719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
16.11	10 10 52	4425.62	-43.55	239.32	119.84	19.69	11 24 38	3825.6	-51.01	235.46
16.11	5 37 4	4703.70	-25.49	245.11	58.16	15.70	6 55 27	4103.7	-33.16	242.95
19.35	8 0 38	4558.07	-34.03	239.07	87.50	20.61	9 16 36	3958.1	-41.47	235.74
160.65	18 43 5	2787.58	-34.03	85.39	87.48	20.61	19 29 32	2187.6	-41.46	82.06
19.35	8 0 38	4558.07	-34.03	239.07	87.50	20.61	9 16 36	3958.1	-41.47	235.74
160.65	18 43 5	2787.58	-34.03	85.39	87.48	20.61	19 29 32	2187.6	-41.46	82.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8179 TRA .0987 TC3 -.5885 BAU 1.4699 SGT 1926.6 SGR 6520.9 SG3 1327.7 ST 1769.8 SR 3707.2 SS 3149.5
RDE 3.5954 RRA 1.2328 RC3-3.1089 FAU .30174 RRT .8015 RRF .9998 RTF .8044 CRT .9600 CRS-1.0000 CST -.9618
FDE 8.4701 FRA 2.8442 FC3-7.5176 BSP 22776 SGB 6799.6 R23 .0357 R13 .9992 LSA 5155.6 MSA 463.4 SSA 3.1
BDE 4.0288 BRA 1.2368 BC3 3.1641 FSP 4546 SG1 6706.7 SG2 1120.2 THA 76.29 EL1 4083.3 EL2 449.8 ALF 65.05

LAUNCH DATE NOV 30 1964 FLIGHT TIME 276.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 613.162 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.955 GAL 1.58 AZL 82.23 HCA 185.59 SMA 186.10 ECC .20901 INC 7.7721 V1 30.200
RP 223.05 LAP -.75 LOP 253.37 VP 21.837 GAP -3.82 AZP 97.74 TAL 9.17 TAP 194.76 RCA 147.20 APO 224.99 V2 24.653
RC 260.326 GL 58.63 GP -37.52 ZAL 76.80 ZAP 102.05 ETS 187.98 ZAE 128.56 ETE 214.27 ZAC 50.94 ETC 252.49 CLP 105.26

PLANETOCENTRIC CONIC

C3 27.229 VHL 5.218 DLA 69.67 RAL 177.30 RAD 6568.1 VEL 12.190 PTH 2.19 VHP 3.769 DPA -31.86 RAP 161.95 ECC 1.4481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
23.24	7 20 40	4487.22	-37.05	232.96	71.07	25.80	8 35 27	3887.2	-44.16	228.53
156.76	17 46 45	2736.05	-37.04	83.31	71.05	25.80	18 32 21	2136.0	-44.15	78.88
23.24	7 20 40	4487.22	-37.05	232.96	71.07	25.80	8 35 27	3887.2	-44.16	228.53
156.76	17 46 45	2736.05	-37.04	83.31	71.05	25.80	18 32 21	2136.0	-44.15	78.88
23.24	7 20 40	4487.22	-37.05	232.96	71.07	25.80	8 35 27	3887.2	-44.16	228.53
156.76	17 46 45	2736.05	-37.04	83.31	71.05	25.80	18 32 21	2136.0	-44.15	78.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7398 TRA .0068 TC3 -.8325 BAU 1.2974 SGT 2098.7 SGR 5884.8 SG3 1672.1 ST 1910.5 SR 3777.1 SS 4007.0
RDE 3.3503 RRA .8959 RC3-3.4654 FAU .36757 RRT .8284 RRF .9998 RTF .8299 CRT .9750 CRS-1.0000 CST -.9760
FDE10.9264 FRA 2.8624 FC-11.6867 BSP 20630 SGB 6247.9 R23 .0529 R13 .9984 LSA 5815.0 MSA 398.0 SSA 3.6
BDE 3.7751 BRA .8959 BC3 3.5640 FSP 5693 SG1 6145.6 SG2 1125.8 THA 72.95 EL1 4215.6 EL2 380.3 ALF 63.52

LAUNCH DATE NOV 30 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 617.169 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.952	GAL	1.57	AZL	83.22	HCA	186.68	SMA	186.04	ECC	.20874	INC	6.7831	V1	30.200
RP	222.66	LAP	-.79	LOP	254.46	VP	21.879	GAP	-4.06	AZP	96.74	TAL	9.09	TAP	195.77	RCA	147.21	APO	224.87	V2	24.695
RC	261.869	GL	54.51	GP	-33.27	ZAL	75.67	ZAP	101.26	ETS	186.15	ZAE	129.53	ETE	209.63	ZAC	54.89	ETC	253.45	CLP	103.50

PLANETOCENTRIC CONIC

C3	22.839	VHL	4.779	DLA	66.49	RAL	170.15	RAD	6567.9	VEL	12.009	PTH	2.14	VHP	3.511	DPA	-27.87	RAP	163.76	ECC	1.3759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.94	7 0 16	4432.74	-38.65	227.03	59.81	30.71	8 14 9	3832.7	-45.39	221.64
153.06	17 10 5	2703.97	-38.64	81.37	59.79	30.70	17 55 9	2104.0	-45.38	75.98
26.94	7 0 16	4432.74	-38.65	227.03	59.81	30.71	8 14 9	3832.7	-45.39	221.64
153.06	17 10 5	2703.97	-38.64	81.37	59.79	30.70	17 55 9	2104.0	-45.38	75.98
26.94	7 0 16	4432.74	-38.65	227.03	59.81	30.71	8 14 9	3832.7	-45.39	221.64
153.06	17 10 5	2703.97	-38.64	81.37	59.79	30.70	17 55 9	2104.0	-45.38	75.98

DIFFERENTIAL CORRECTIONS

TDE	1.6845	TRA	-.0456	TC3	-1.1246	BAU	1.1675	SGT	2292.0	SGR	5337.5
RDE	2.8960	RRA	.6844	RC3	-3.6545	FAU	.41905	RRT	.8571	RRF	.9997
FDE	12.1095	FRA	2.7916	FC	-15.8848	BSP	19093	SGB	5808.7	R23	.0718
BDE	3.3503	BRA	.6859	BC3	3.8236	FSP	6671	SG1	5702.6	SG2	1105.2

MID-COURSE EXECUTION ACCURACY

SG3	1954.5	ST	2020.3	SR	3528.1
RTF	.8581	CRT	.9807	CRS	-1.0000
R13	.9971	LSA	6032.7	MSA	368.2
THA	68.97	EL1	4051.0	EL2	343.9

ORBIT DETERMINATION ACCURACY

SS	4472.2	CST	-.9815	SSA	4.1
ALF	60.45				

LAUNCH DATE NOV 30 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 621.188 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.949	GAL	1.55	AZL	83.93	HCA	187.77	SMA	185.99	ECC	.20848	INC	6.0684	V1	30.200
RP	222.28	LAP	-.82	LOP	255.55	VP	21.922	GAP	-4.30	AZP	96.01	TAL	8.99	TAP	196.76	RCA	147.21	APO	224.76	V2	24.737
RC	263.392	GL	51.10	GP	-29.80	ZAL	74.81	ZAP	100.09	ETS	184.56	ZAE	129.65	ETE	205.40	ZAC	58.08	ETC	254.13	CLP	101.65

PLANETOCENTRIC CONIC

C3	20.019	VHL	4.474	DLA	63.67	RAL	165.56	RAD	6567.8	VEL	11.891	PTH	2.11	VHP	3.340	DPA	-24.49	RAP	164.91	ECC	1.3295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.26	6 49 37	4389.16	-39.40	221.67	51.59	35.03	8 2 46	3789.2	-45.77	215.51
149.74	16 44 10	2684.09	-39.39	79.73	51.57	35.03	17 28 54	2084.1	-45.76	73.58
30.26	6 49 37	4389.16	-39.40	221.67	51.59	35.03	8 2 46	3789.2	-45.77	215.51
149.74	16 44 10	2684.09	-39.39	79.73	51.57	35.03	17 28 54	2084.1	-45.76	73.58
30.26	6 49 37	4389.16	-39.40	221.67	51.59	35.03	8 2 46	3789.2	-45.77	215.51
149.74	16 44 10	2684.09	-39.39	79.73	51.57	35.03	17 28 54	2084.1	-45.76	73.58

DIFFERENTIAL CORRECTIONS

TDE	1.6644	TRA	-.0755	TC3	-1.4545	BAU	1.0684	SGT	2506.8	SGR	4860.8
RDE	2.4790	RRA	.5458	RC3	-3.7177	FAU	.45811	RRT	.8824	RRF	.9996
FDE	12.6269	FRA	2.6979	FC	-19.8114	BSP	18027	SGB	5469.2	R23	.0930
BDE	2.9859	BRA	.5510	BC3	3.9921	FSP	7498	SG1	5363.7	SG2	1068.8

MID-COURSE EXECUTION ACCURACY

SG3	2179.6	ST	2132.7	SR	3211.1
RTF	.8830	CRT	.9840	CRS	-1.0000
R13	.9953	LSA	6081.9	MSA	350.6
THA	64.44	EL1	3841.7	EL2	317.2

ORBIT DETERMINATION ACCURACY

SS	4717.3	CST	-.9848	SSA	4.7
ALF	56.57				

LAUNCH DATE NOV 30 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 625.217 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.947	GAL	1.53	AZL	84.47	HCA	188.87	SMA	185.95	ECC	.20825	INC	5.5269	V1	30.200
RP	221.89	LAP	-.85	LOP	256.65	VP	21.965	GAP	-4.53	AZP	95.46	TAL	8.88	TAP	197.75	RCA	147.22	APO	224.67	V2	24.779
RC	264.895	GL	48.25	GP	-26.92	ZAL	74.16	ZAP	98.67	ETS	183.21	ZAE	129.13	ETE	201.67	ZAC	60.69	ETC	254.63	CLP	99.74

PLANETOCENTRIC CONIC

C3	18.079	VHL	4.252	DLA	61.19	RAL	162.45	RAD	6567.7	VEL	11.809	PTH	2.09	VHP	3.221	DPA	-21.60	RAP	165.63	ECC	1.2975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.19	6 44 15	4353.07	-39.64	216.93	45.35	38.74	7 56 48	3753.1	-45.67	210.19
146.81	16 24 40	2672.11	-39.63	78.44	45.34	38.73	17 9 13	2072.1	-45.66	71.70
33.19	6 44 15	4353.07	-39.64	216.93	45.35	38.74	7 56 48	3753.1	-45.67	210.19
146.81	16 24 40	2672.11	-39.63	78.44	45.34	38.73	17 9 13	2072.1	-45.66	71.70
33.19	6 44 15	4353.07	-39.64	216.93	45.35	38.74	7 56 48	3753.1	-45.67	210.19
146.81	16 24 40	2672.11	-39.63	78.44	45.34	38.73	17 9 13	2072.1	-45.66	71.70

DIFFERENTIAL CORRECTIONS

TDE	1.6628	TRA	-.0989	TC3	-1.8261	BAU	1.0001	SGT	2740.1	SGR	4443.3
RDE	2.1281	RRA	.4451	RC3	-3.7132	FAU	.48961	RRT	.9022	RRF	.9995
FDE	12.7399	FRA	2.5692	FC	-23.4460	BSP	17155	SGB	5220.3	R23	.1155
BDE	2.7006	BRA	.4560	BC3	4.1380	FSP	8122	SG1	5118.5	SG2	1026.0

MID-COURSE EXECUTION ACCURACY

SG3	2356.4	ST	2242.6	SR	2893.4
RTF	.9024	CRT	.9861	CRS	-1.0000
R13	.9928	LSA	6041.4	MSA	340.0
THA	59.56	EL1	3648.8	EL2	295.4

ORBIT DETERMINATION ACCURACY

SS	4818.0	CST	-.9868	SSA	5.4
ALF	52.32				

LAUNCH DATE NOV 30 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 629.257 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.944	GAL	1.50	AZL	84.90	HCA	189.97	SMA	185.91	ECC	.20805	INC	5.1027	V1	30.200
RP	221.51	LAP	-.88	LOP	257.76	VP	22.009	GAP	-4.75	AZP	95.03	TAL	8.75	TAP	198.72	RCA	147.23	APO	224.59	V2	24.820
RC	266.379	GL	45.84	GP	-24.51	ZAL	73.69	ZAP	97.09	ETS	182.06	ZAE	128.17	ETE	198.43	ZAC	62.85	ETC	255.02	CLP	97.80

PLANETOCENTRIC CONIC

C3	16.672	VHL	4.083	DLA	59.02	RAL	160.25	RAD	6567.7	VEL	11.750	PTH	2.07	VHP	3.136	DPA	-19.10	RAP	166.04	ECC	1.2744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.78	6 42 1	4322.32	-39.58	212.77	40.51	41.90	7 54 4	3722.3	-45.30	205.59
144.22	16 9 21	2665.38	-39.57	77.45	40.49	41.89	16 53 47	2065.4	-45.29	70.28
35.78	6 42 1	4322.32	-39.58	212.77	40.51	41.90	7 54 4	3722.3	-45.30	205.59
144.22	16 9 21	2665.38	-39.57	77.45	40.49	41.89	16 53 47	2065.4	-45.29	70.28
35.78	6 42 1	4322.32	-39.58	212.77	40.51	41.90	7 54 4	3722.3	-45.30	205.59
144.22	16 9 21	2665.38	-39.57	77.45	40.49	41.89	16 53 47	2065.4	-45.29	70.28

DIFFERENTIAL CORRECTIONS

TDE	1.6791	TRA	-.1135	TC3	-2.2234	BAU	.9526	SGT	2990.6	SGR	4079.9
RDE	1.8461	RRA	.3758	RC3	-3.6500	FAU	.51323	RRT	.9178	RRF	.9994
FDE	12.6545	FRA	2.4677	FC	-26.6500	BSP	16663	SGB	5058.6	R23	.1376
BDE	2.4955	BRA	.3926	BC3	4.2739	FSP	8648	SG1	4963.5	SG2	975.9

MID-COURSE EXECUTION ACCURACY

SG3	2495.5	ST	2358.6	SR	2610.2
RTF	.9177	CRT	.9876	CRS	-1.0000
R13	.9898	LSA	5978.0	MSA	333.5
THA	54.49	EL1	3507.2	EL2	275.9

ORBIT DETERMINATION ACCURACY

SS	4844.7	CST	-.9883	SSA	6.1
ALF	47.94				

LAUNCH DATE NOV 30 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 633.307 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.943	GAL	1.48	AZL	85.24	HCA	191.07	SMA	185.88	ECC	.20787	INC	4.7609	V1	30.200
RP	221.13	LAP	-.91	LOP	258.86	VP	22.053	GAP	-4.97	AZP	94.67	TAL	8.60	TAP	199.68	RCA	147.24	APO	224.52	V2	24.862
RC	267.844	GL	43.77	GP	-22.46	ZAL	73.36	ZAP	95.40	ETS	181.09	ZAE	126.89	ETE	195.65	ZAC	64.65	ETC	255.34	CLP	95.84

PLANETOCENTRIC CONIC

C3	15.610	VHL	3.951	DLA	57.11	RAL	158.65	RAD	6567.6	VEL	11.704	PTH	2.06	VHP	3.073	DPA	-16.92	RAP	166.24	ECC	1.2569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.08	6 41 43	4295.54	-39.34	209.11	36.66	44.60	7 53 19	3695.5	-44.78	201.62
141.92	15 56 57	2662.18	-39.33	76.73	36.65	44.59	16 41 19	2062.2	-44.77	69.24
38.08	6 41 43	4295.54	-39.34	209.11	36.66	44.60	7 53 19	3695.5	-44.78	201.62
141.92	15 56 57	2662.18	-39.33	76.73	36.65	44.59	16 41 19	2062.2	-44.77	69.24
38.08	6 41 43	4295.54	-39.34	209.11	36.66	44.60	7 53 19	3695.5	-44.78	201.62
141.92	15 56 57	2662.18	-39.33	76.73	36.65	44.59	16 41 19	2062.2	-44.77	69.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7037	TRA	-.1242	TC3	-2.6461	BAU	.9262	SGT	3253.6	SGR	3763.0	SG3	2605.4	ST	2473.4	SR	2359.2	SS	4816.5
RDE	1.6160	RRA	.3225	RC3	-3.5628	FAU	.53252	RRT	.9304	RRF	.9992	RTF	.9300	CRT	.9887	CRS	-1.0000	CST	-.9895
FDE	12.4318	FRA	2.3592	FC	-29.5330	BSP	16382	SGB	4974.5	R23	.1573	R13	.9867	LSA	5897.0	MSA	327.9	SSA	6.9
BDE	2.3482	BRA	.3455	BC3	4.4380	FSP	9042	SG1	4889.1	SG2	917.9	THA	49.46	EL1	3408.5	EL2	256.4	ALF	43.63

LAUNCH DATE NOV 30 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 637.366 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.941	GAL	1.45	AZL	85.52	HCA	192.18	SMA	185.86	ECC	.20771	INC	4.4796	V1	30.200
RP	220.75	LAP	-.94	LOP	259.97	VP	22.098	GAP	-5.19	AZP	94.38	TAL	8.44	TAP	200.62	RCA	147.25	APO	224.46	V2	24.903
RC	269.292	GL	41.99	GP	-20.71	ZAL	73.14	ZAP	93.63	ETS	180.26	ZAE	125.39	ETE	193.27	ZAC	66.18	ETC	255.60	CLP	93.88

PLANETOCENTRIC CONIC

C3	14.781	VHL	3.845	DLA	55.43	RAL	157.49	RAD	6567.6	VEL	11.669	PTH	2.05	VHP	3.027	DPA	-15.00	RAP	166.28	ECC	1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.14	6 42 42	4271.80	-39.01	205.88	33.57	46.91	7 53 53	3671.8	-44.20	198.14
139.86	15 46 42	2661.43	-38.99	76.22	33.56	46.90	16 31 3	2061.4	-44.19	68.49
40.14	6 42 42	4271.80	-39.01	205.88	33.57	46.91	7 53 53	3671.8	-44.20	198.14
139.86	15 46 42	2661.43	-38.99	76.22	33.56	46.90	16 31 3	2061.4	-44.19	68.49
40.14	6 42 42	4271.80	-39.01	205.88	33.57	46.91	7 53 53	3671.8	-44.20	198.14
139.86	15 46 42	2661.43	-38.99	76.22	33.56	46.90	16 31 3	2061.4	-44.19	68.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7357	TRA	-.1306	TC3	-3.0880	BAU	.9152	SGT	3527.9	SGR	3482.5	SG3	2690.0	ST	2589.7	SR	2141.8	SS	4758.4
RDE	1.4283	RRA	.2833	RC3	-3.4514	FAU	.54683	RRT	.9403	RRF	.9989	RTF	.9397	CRT	.9896	CRS	-1.0000	CST	-.9904
FDE	12.1379	FRA	2.2728	FC	-32.0273	BSP	16347	SGB	4957.2	R23	.1735	R13	.9837	LSA	5816.4	MSA	324.1	SSA	7.7
BDE	2.2478	BRA	.3119	BC3	4.6312	FSP	9336	SG1	4882.7	SG2	856.4	THA	44.60	EL1	3352.1	EL2	238.2	ALF	39.54

LAUNCH DATE NOV 30 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 641.435 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.940	GAL	1.42	AZL	85.76	HCA	193.30	SMA	185.84	ECC	.20757	INC	4.2438	V1	30.200
RP	220.37	LAP	-.97	LOP	261.09	VP	22.143	GAP	-5.40	AZP	94.13	TAL	8.27	TAP	201.56	RCA	147.26	APO	224.41	V2	24.945
RC	270.721	GL	40.44	GP	-19.19	ZAL	73.02	ZAP	91.82	ETS	179.55	ZAE	123.72	ETE	191.24	ZAC	67.48	ETC	255.82	CLP	91.92

PLANETOCENTRIC CONIC

C3	14.116	VHL	3.757	DLA	53.92	RAL	156.64	RAD	6567.6	VEL	11.641	PTH	2.04	VHP	2.994	DPA	-13.28	RAP	166.21	ECC	1.2323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.99	6 44 34	4250.37	-38.61	202.99	31.07	48.91	7 55 25	3650.4	-43.59	195.08
138.01	15 38 3	2662.44	-38.60	75.88	31.05	48.90	16 22 25	2062.4	-43.58	67.97
41.99	6 44 34	4250.37	-38.61	202.99	31.07	48.91	7 55 25	3650.4	-43.59	195.08
138.01	15 38 3	2662.44	-38.60	75.88	31.05	48.90	16 22 25	2062.4	-43.58	67.97
41.99	6 44 34	4250.37	-38.61	202.99	31.07	48.91	7 55 25	3650.4	-43.59	195.08
138.01	15 38 3	2662.44	-38.60	75.88	31.05	48.90	16 22 25	2062.4	-43.58	67.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7704	TRA	-.1343	TC3	-3.5484	BAU	.9185	SGT	3810.5	SGR	3233.7	SG3	2754.7	ST	2703.0	SR	1951.4	SS	4675.7
RDE	1.2722	RRA	.2523	RC3	-3.3313	FAU	.55796	RRT	.9483	RRF	.9985	RTF	.9476	CRT	.9903	CRS	-1.0000	CST	-.9911
FDE	11.7882	FRA	2.1913	FC	-34.2189	BSP	16492	SGB	4997.7	R23	.1852	R13	.9812	LSA	5733.5	MSA	320.4	SSA	8.6
BDE	2.1801	BRA	.2859	BC3	4.8671	FSP	9542	SG1	4934.4	SG2	792.4	THA	40.07	EL1	3326.5	EL2	220.5	ALF	35.74

LAUNCH DATE NOV 30 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 645.513 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.940	GAL	1.38	AZL	85.96	HCA	194.41	SMA	185.83	ECC	.20745	INC	4.0433	V1	30.200
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.188	GAP	-5.61	AZP	93.92	TAL	8.07	TAP	202.49	RCA	147.28	APO	224.38	V2	24.986
RC	272.134	GL	39.07	GP	-17.85	ZAL	72.98	ZAP	89.98	ETS	178.95	ZAE	121.95	ETE	189.49	ZAC	68.61	ETC	256.02	CLP	89.98

PLANETOCENTRIC CONIC

C3	13.570	VHL	3.684	DLA	52.57	RAL	156.03	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	2.971	DPA	-11.74	RAP	166.06	ECC	1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.66	6 47 5	4230.86	-38.19	200.40	29.02	50.66	7 57 36	3630.9	-42.97	192.36
136.34	15 30 41	2664.67	-38.18	75.67	29.01	50.65	16 15 6	2064.7	-42.96	67.63
43.66	6 47 5	4230.86	-38.19	200.40	29.02	50.66	7 57 36	3630.9	-42.97	192.36
136.34	15 30 41	2664.67	-38.18	75.67	29.01	50.65	16 15 6	2064.7	-42.96	67.63
43.66	6 47 5	4230.86	-38.19	200.40	29.02	50.66	7 57 36	3630.9	-42.97	192.36
136.34	15 30 41	2664.67	-38.18	75.67	29.01	50.65	16 15 6	2064.7	-42.96	67.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8085	TRA	-.1343	TC3	-4.0207	BAU	.9324	SGT	4099.4	SGR	3010.6	SG3	2801.6	ST	2816.2	SR	1786.6	SS	4581.6
RDE	1.1422	RRA	.2296	RC3	-3.2012	FAU	.56544	RRT	.9546	RRF	.9981	RTF	.9538	CRT	.9908	CRS	-1.0000	CST	-.9916
FDE	11.4152	FRA	2.1361	FC	-36.0733	BSP	16850	SGB	5086.1	R23	.1927	R13	.9793	LSA	5658.0	MSA	317.8	SSA	9.5
BDE	2.1390	BRA	.2660	BC3	5.1394	FSP	9706	SG1	5033.4	SG2	730.3	THA	35.91	EL1	3328.8	EL2	204.5	ALF	32.29

LAUNCH DATE NOV 30 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 649.597 EARTH TO MARS

```
RL  147.53 LAL   -.00 LOL  67.83 VL  32.939 GAL   1.35 AZL  86.13 HCA 195.53 SMA 185.82 ECC .20736 INC 3.8704 V1  30.200
RP  219.62 LAP  -1.04 LOP 263.33 VP  22.234 GAP  -5.81 AZP  93.73 TAL   7.87 TAP 203.40 RCA 147.29 APO 224.35 V2  25.027
RC 273.529 GL   37.87 GP  -16.67 ZAL  73.02 ZAP  88.13 ETS 178.42 ZAE 120.09 ETE 187.99 ZAC  69.59 ETC 256.20 CLP  88.05
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PLANETOCENTRIC CONIC

```
C3  13.113 VHL  3.621 DLA  51.34 RAL 155.62 RAD 6567.5 VEL 11.597 PTH   2.03 VHP  2.956 DPA -10.35 RAP 165.85 ECC 1.2158
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.20	6 50 8	4212.76	-37.76	198.04	27.35	52.20	8 0 20	3612.8	-42.36	189.89
134.80	15 24 21	2667.88	-37.75	75.57	27.34	52.19	16 8 49	2067.9	-42.36	67.43
45.20	6 50 8	4212.76	-37.76	198.04	27.35	52.20	8 0 20	3612.8	-42.36	189.89
134.80	15 24 21	2667.88	-37.75	75.57	27.34	52.19	16 8 49	2067.9	-42.36	67.43
45.20	6 50 8	4212.76	-37.76	198.04	27.35	52.20	8 0 20	3612.8	-42.36	189.89
134.80	15 24 21	2667.88	-37.75	75.57	27.34	52.19	16 8 49	2067.9	-42.36	67.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE 1.8504 TRA -.1292 TC3-4.5008 BAU  .9530    SGT 4393.6 SGR 2807.3 SG3 2830.1    ST  2931.1 SR  1652.7 SS  4507.6
RDE 1.0384 RRA  .2182 RC3-3.0490 FAU .56687    RRT  .9589 RRF  .9975 RTF  .9585    CRT  .9910 CRS-1.0000 CST -.9919
FDE11.0936 FRA 2.1668 FC-37.4268 BSP  17476    SGB 5213.9 R23  .1968 R13  .9779    LSA 5615.8 MSA  320.9 SSA   10.3
BDE 2.1219 BRA  .2536 BC3 5.4363 FSP   9950    SG1 5169.8 SG2  677.0 THA  32.11    EL1 3359.4 EL2  192.9 ALF  29.30
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 653.695 EARTH TO MARS

```
RL  147.53 LAL   -.00 LOL  67.83 VL  32.939 GAL   1.31 AZL  86.28 HCA 196.66 SMA 185.82 ECC .20728 INC 3.7199 V1  30.200
RP  219.25 LAP  -1.07 LOP 264.45 VP  22.280 GAP  -6.00 AZP  93.56 TAL   7.65 TAP 204.30 RCA 147.30 APO 224.34 V2  25.067
RC 274.906 GL   36.80 GP  -15.61 ZAL  73.12 ZAP  86.27 ETS 177.97 ZAE 118.19 ETE 186.69 ZAC  70.45 ETC 256.36 CLP  86.13
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PLANETOCENTRIC CONIC

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C3  12.724 VHL  3.567 DLA  50.22 RAL 155.36 RAD 6567.5 VEL 11.581 PTH   2.03 VHP  2.948 DPA  -9.07 RAP 165.59 ECC 1.2094
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.61	6 53 32	4195.88	-37.33	195.87	25.97	53.57	8 3 28	3595.9	-41.77	187.66
133.39	15 18 49	2671.81	-37.31	75.56	25.96	53.56	16 3 21	2071.8	-41.76	67.35
46.61	6 53 32	4195.88	-37.33	195.87	25.97	53.57	8 3 28	3595.9	-41.77	187.66
133.39	15 18 49	2671.81	-37.31	75.56	25.96	53.56	16 3 21	2071.8	-41.76	67.35
46.61	6 53 32	4195.88	-37.33	195.87	25.97	53.57	8 3 28	3595.9	-41.77	187.66
133.39	15 18 49	2671.81	-37.31	75.56	25.96	53.56	16 3 21	2071.8	-41.76	67.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE 1.8855 TRA -.1266 TC3-4.9979 BAU  .9860    SGT 4689.0 SGR 2628.1 SG3 2854.1    ST  3032.0 SR  1515.6 SS  4366.6
RDE  .9382 RRA  .1981 RC3-2.9365 FAU .57297    RRT  .9637 RRF  .9968 RTF  .9630    CRT  .9915 CRS -.9999 CST -.9924
FDE10.6166 FRA 2.0651 FC-38.9859 BSP  17921    SGB 5375.3 R23  .1961 R13  .9774    LSA 5518.9 MSA  313.7 SSA   11.4
BDE 2.1060 BRA  .2351 BC3 5.7968 FSP   9825    SG1 5339.8 SG2  616.5 THA  28.79    EL1 3385.1 EL2  176.3 ALF  26.44
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 657.800 EARTH TO MARS

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RL  147.53 LAL   -.00 LOL  67.83 VL  32.939 GAL   1.27 AZL  86.41 HCA 197.79 SMA 185.82 ECC .20723 INC 3.5876 V1  30.200
RP  218.89 LAP  -1.10 LOP 265.58 VP  22.326 GAP  -6.20 AZP  93.42 TAL   7.41 TAP 205.20 RCA 147.31 APO 224.33 V2  25.108
RC 276.266 GL   35.84 GP  -14.67 ZAL  73.28 ZAP  84.43 ETS 177.57 ZAE 116.25 ETE 185.58 ZAC  71.21 ETC 256.51 CLP  84.24
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PLANETOCENTRIC CONIC

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C3  12.387 VHL  3.520 DLA  49.19 RAL 155.22 RAD 6567.5 VEL 11.566 PTH   2.02 VHP  2.946 DPA  -7.91 RAP 165.31 ECC 1.2039
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.93	6 57 16	4180.00	-36.89	193.88	24.84	54.80	8 6 56	3580.0	-41.20	185.60
132.07	15 14 2	2676.24	-36.88	75.62	24.83	54.79	15 58 38	2076.2	-41.19	67.35
47.93	6 57 16	4180.00	-36.89	193.88	24.84	54.80	8 6 56	3580.0	-41.20	185.60
132.07	15 14 2	2676.24	-36.88	75.62	24.83	54.79	15 58 38	2076.2	-41.19	67.35
47.93	6 57 16	4180.00	-36.89	193.88	24.84	54.80	8 6 56	3580.0	-41.20	185.60
132.07	15 14 2	2676.24	-36.88	75.62	24.83	54.79	15 58 38	2076.2	-41.19	67.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE 1.9245 TRA -.1174 TC3-5.4968 BAU 1.0217    SGT 4987.2 SGR 2461.6 SG3 2861.5    ST  3136.3 SR  1405.6 SS  4256.7
RDE  .8583 RRA  .1885 RC3-2.8008 FAU .57271    RRT  .9667 RRF  .9960 RTF  .9664    CRT  .9918 CRS -.9999 CST -.9927
FDE10.2177 FRA 2.0627 FC-40.0261 BSP  18643    SGB 5561.7 R23  .1932 R13  .9772    LSA 5462.1 MSA  312.8 SSA   12.3
BDE 2.1072 BRA  .2221 BC3 6.1692 FSP   9851    SG1 5532.6 SG2  567.5 THA  25.80    EL1 3433.0 EL2  164.6 ALF  24.02
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 661.913 EARTH TO MARS

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RL  147.53 LAL   -.00 LOL  67.83 VL  32.940 GAL   1.23 AZL  86.53 HCA 198.92 SMA 185.83 ECC .20719 INC 3.4702 V1  30.200
RP  218.52 LAP  -1.12 LOP 266.72 VP  22.372 GAP  -6.39 AZP  93.28 TAL   7.16 TAP 206.08 RCA 147.33 APO 224.34 V2  25.148
RC 277.609 GL   34.97 GP  -13.81 ZAL  73.50 ZAP  82.60 ETS 177.23 ZAE 114.29 ETE 184.60 ZAC  71.90 ETC 256.64 CLP  82.38
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PLANETOCENTRIC CONIC

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C3  12.093 VHL  3.477 DLA  48.24 RAL 155.20 RAD 6567.5 VEL 11.553 PTH   2.02 VHP  2.948 DPA  -6.84 RAP 165.01 ECC 1.1990
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.16	7 1 19	4164.86	-36.47	192.01	23.93	55.91	8 10 44	3564.9	-40.64	183.69
130.84	15 9 48	2681.19	-36.45	75.74	23.92	55.90	15 54 29	2081.2	-40.63	67.43
49.16	7 1 19	4164.86	-36.47	192.01	23.93	55.91	8 10 44	3564.9	-40.64	183.69
130.84	15 9 48	2681.19	-36.45	75.74	23.92	55.90	15 54 29	2081.2	-40.63	67.43
49.16	7 1 19	4164.86	-36.47	192.01	23.93	55.91	8 10 44	3564.9	-40.64	183.69
130.84	15 9 48	2681.19	-36.45	75.74	23.92	55.90	15 54 29	2081.2	-40.63	67.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE 1.9629 TRA -.1047 TC3-5.9979 BAU 1.0613    SGT 5284.7 SGR 2309.6 SG3 2859.2    ST  3237.5 SR  1308.5 SS  4144.9
RDE  .7892 RRA  .1815 RC3-2.6674 FAU .57058    RRT  .9691 RRF  .9950 RTF  .9692    CRT  .9919 CRS -.9999 CST -.9929
FDE 9.8178 FRA 2.0749 FC-40.8484 BSP  19440    SGB 5767.3 R23  .1878 R13  .9773    LSA 5410.7 MSA  312.1 SSA   13.3
BDE 2.1156 BRA  .2095 BC3 6.5643 FSP   9835    SG1 5743.5 SG2  524.2 THA  23.16    EL1 3488.5 EL2  154.0 ALF  21.89
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LAUNCH DATE NOV 30 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 666.034 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.941	GAL	1.18	AZL	86.63	HCA	200.06	SMA	185.85	ECC	.20718	INC	3.3652
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.418	GAP	-6.57	AZP	93.16	TAL	6.89	TAP	206.95	RCA	147.34	APO	224.35
RC	278.933	GL	34.19	GP	-13.03	ZAL	73.77	ZAP	80.79	ETS	176.93	ZAE	112.33	ETE	183.76	ZAC	72.51	ETC	256.77

V1	30.200	V2	25.188	CLP	80.54														

PLANETOCENTRIC CONIC

C3	11.832	VHL	3.440	DLA	47.35	RAL	155.27	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	2.956	DPA	-5.85	RAP	164.70
ECC	1.1947																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.32	7 5 36	4150.37	-36.04	190.25	23.19	56.93	8 14 47	3550.4	-40.10	181.90
129.68	15 6 5	2686.52	-36.03	75.91	23.18	56.92	15 50 51	2086.5	-40.09	67.56
50.32	7 5 36	4150.37	-36.04	190.25	23.19	56.93	8 14 47	3550.4	-40.10	181.90
129.68	15 6 5	2686.52	-36.03	75.91	23.18	56.92	15 50 51	2086.5	-40.09	67.56
50.32	7 5 36	4150.37	-36.04	190.25	23.19	56.93	8 14 47	3550.4	-40.10	181.90
129.68	15 6 5	2686.52	-36.03	75.91	23.18	56.92	15 50 51	2086.5	-40.09	67.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9971	TRA	-.0912	TC3	-6.5094	BAU	1.1052	SGT	5583.1	SGR	2168.6	SG3	2847.0	ST	3329.9	SR	1220.4
RDE	.7279	RRA	.1750	RC3	-2.5377	FAU	.56695	RRT	.9709	RRF	.9937	RTF	.9716	CRT	.9921	CRS	-.9999
FDE	9.4016	FRA	2.0789	FC	-41.4815	BSP	20235	SGB	5989.5	R23	.1801	R13	.9777	LSA	5354.8	MSA	310.8
BDE	2.1257	BRA	.1973	BC3	6.9866	FSP	9770	SG1	5969.7	SG2	485.9	THA	20.81	EL1	3543.6	EL2	144.3

SS	4024.1																
CST	-.9930																
SSA	14.3																
ALF	20.02																

LAUNCH DATE NOV 30 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 670.164 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.942	GAL	1.13	AZL	86.73	HCA	201.20	SMA	185.87	ECC	.20718	INC	3.2707
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.465	GAP	-6.75	AZP	93.05	TAL	6.61	TAP	207.81	RCA	147.36	APO	224.37
RC	280.240	GL	33.49	GP	-12.32	ZAL	74.09	ZAP	79.00	ETS	176.67	ZAE	110.38	ETE	183.02	ZAC	73.07	ETC	256.89

V1	30.200	V2	25.228	CLP	78.73												

PLANETOCENTRIC CONIC

C3	11.600	VHL	3.406	DLA	46.51	RAL	155.43	RAD	6567.4	VEL	11.532	PTH	2.01	VHP	2.967	DPA	-4.94	RAP	164.40
ECC	1.1909																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.43	7 10 8	4136.39	-35.63	188.59	22.60	57.86	8 19 4	3536.4	-39.57	180.22
128.57	15 2 48	2692.19	-35.62	76.13	22.59	57.85	15 47 40	2092.2	-39.57	67.75
51.43	7 10 8	4136.39	-35.63	188.59	22.60	57.86	8 19 4	3536.4	-39.57	180.22
128.57	15 2 48	2692.19	-35.62	76.13	22.59	57.85	15 47 40	2092.2	-39.57	67.75
51.43	7 10 8	4136.39	-35.63	188.59	22.60	57.86	8 19 4	3536.4	-39.57	180.22
128.57	15 2 48	2692.19	-35.62	76.13	22.59	57.85	15 47 40	2092.2	-39.57	67.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0307	TRA	-.0736	TC3	-7.0201	BAU	1.1511	SGT	5879.5	SGR	2039.8	SG3	2828.1	ST	3419.6	SR	1142.8
RDE	.6746	RRA	.1709	RC3	-2.4115	FAU	.56187	RRT	.9719	RRF	.9922	RTF	.9735	CRT	.9921	CRS	-.9999
FDE	8.9944	FRA	2.1066	FC	-41.9348	BSP	21091	SGB	6223.3	R23	.1712	R13	.9781	LSA	5306.1	MSA	310.9
BDE	2.1398	BRA	.1861	BC3	7.4227	FSP	9675	SG1	6206.7	SG2	454.5	THA	18.74	EL1	3603.0	EL2	136.0

SS	3905.3																
CST	-.9930																
SSA	15.3																
ALF	18.37																

LAUNCH DATE NOV 30 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 674.300 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.943	GAL	1.08	AZL	86.81	HCA	202.34	SMA	185.89	ECC	.20720	INC	3.1851
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.511	GAP	-6.93	AZP	92.95	TAL	6.32	TAP	208.66	RCA	147.37	APO	224.40
RC	281.529	GL	32.84	GP	-11.67	ZAL	74.45	ZAP	77.24	ETS	176.44	ZAE	108.43	ETE	182.38	ZAC	73.57	ETC	257.00

V1	30.200	V2	25.268	CLP	76.97												

PLANETOCENTRIC CONIC

C3	11.390	VHL	3.375	DLA	45.71	RAL	155.66	RAD	6567.4	VEL	11.523	PTH	2.01	VHP	2.982	DPA	-4.10	RAP	164.10
ECC	1.1875																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.48	7 14 55	4122.72	-35.22	187.00	22.15	58.73	8 23 38	3522.7	-39.06	178.60
127.52	14 59 52	2698.26	-35.21	76.39	22.14	58.72	15 44 50	2098.3	-39.05	68.00
52.48	7 14 55	4122.72	-35.22	187.00	22.15	58.73	8 23 38	3522.7	-39.06	178.60
127.52	14 59 52	2698.26	-35.21	76.39	22.14	58.72	15 44 50	2098.3	-39.05	68.00
52.48	7 14 55	4122.72	-35.22	187.00	22.15	58.73	8 23 38	3522.7	-39.06	178.60
127.52	14 59 52	2698.26	-35.21	76.39	22.14	58.72	15 44 50	2098.3	-39.05	68.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0686	TRA	-.0462	TC3	-7.5135	BAU	1.1953	SGT	6169.7	SGR	1918.0	SG3	2795.4	ST	3515.3	SR	1080.9
RDE	.6318	RRA	.1723	RC3	-2.2726	FAU	.55189	RRT	.9717	RRF	.9903	RTF	.9750	CRT	.9921	CRS	-.9999
FDE	8.6599	FRA	2.2121	FC	-41.9483	BSP	22159	SGB	6461.0	R23	.1617	R13	.9785	LSA	5291.3	MSA	315.6
BDE	2.1629	BRA	.1784	BC3	7.8497	FSP	9711	SG1	6446.4	SG2	433.6	THA	16.89	EL1	3675.4	EL2	130.0

SS	3817.3																
CST	-.9929																
SSA	16.1																
ALF	16.99																

LAUNCH DATE NOV 30 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 678.447 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.945	GAL	1.03	AZL	86.89	HCA	203.49	SMA	185.92	ECC	.20724	INC	3.1073
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.557	GAP	-7.10	AZP	92.85	TAL	6.01	TAP	209.50	RCA	147.39	APO	224.45
RC	282.801	GL	32.25	GP	-11.07	ZAL	74.85	ZAP	75.51	ETS	176.24	ZAE	106.50	ETE	181.81	ZAC	74.04	ETC	257.10

V1	30.200	V2	25.307	CLP	75.23												

PLANETOCENTRIC CONIC

C3	11.200	VHL	3.347	DLA	44.96	RAL	155.96	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	3.001	DPA	-3.32	RAP	163.81
ECC	1.1843																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.50	7 19 55	4109.40	-34.82	185.47	21.82	59.54	8 28 24	3509.4	-38.56	177.06
126.50	14 57 15	2704.63	-34.81	76.69	21.81	59.53	15 42 19	2104.6	-38.55	68.28
53.50	7 19 55	4109.40	-34.82	185.47	21.82	59.54	8 28 24	3509.4	-38.56	177.06
126.50	14 57 15	2704.63	-34.81	76.69	21.81	59.53	15 42 19	2104.6	-38.55	68.28
53.50	7 19 55	4109.40	-34.82	185.47	21.82	59.54	8 28 24	3509.4	-38.56	177.06
126.50	14 57 15	2704.63	-34.81	76.69	21.81	59.53	15 42 19	2104.6	-38.55	68.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0926	TRA	-.0262	TC3	-8.0362	BAU	1.2460	SGT	6463.1	SGR	1807.5	SG3	2764.4	ST	3586.3	SR	1014.1
RDE	.5875	RRA	.1678	RC3	-2.1601	FAU	.54568	RRT	.9720	RRF	.9881	RTF	.9765	CRT	.9921	CRS	-.9998
FDE	8.2187	FRA	2.2120	FC	-42.1795	BSP	22942	SGB	6711.1	R23	.1495	R13	.9791	LSA	5227.2	MSA	313.4
BDE	2.1735	BRA	.1698	BC3	8.3214	FSP	9494	SG1	6698.6	SG2	409.7	THA	15.27	EL1	3724.9	EL2	122.4

SS	3678.6																
CST	-.9928																
SSA	17.2																
ALF	15.69																

LAUNCH DATE NOV 30 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 682.602 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.947 GAL .98 AZL 86.96 HCA 204.64 SMA 185.95 ECC .20730 INC 3.0362 V1 30.200
RP 216.74 LAP -1.27 LOP 272.44 VP 22.604 GAP -7.27 AZP 92.76 TAL 5.69 TAP 210.33 RCA 147.40 APO 224.50 V2 25.346
RC 284.057 GL 31.70 GP -10.52 ZAL 75.29 ZAP 73.81 ETS 176.07 ZAE 104.60 ETE 181.32 ZAC 74.47 ETC 257.20 CLP 73.53

PLANETOCENTRIC CONIC

C3 11.027 VHL 3.321 DLA 44.23 RAL 156.32 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 3.023 DPA -2.59 RAP 163.54 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.48	7 25 7	4096.27	-34.42	183.99	21.59	60.30	8 33 24	3496.3	-38.07	175.57
125.52	14 54 54	2711.33	-34.41	77.02	21.58	60.29	15 40 5	2111.3	-38.06	68.60
54.48	7 25 7	4096.27	-34.42	183.99	21.59	60.30	8 33 24	3496.3	-38.07	175.57
125.52	14 54 54	2711.33	-34.41	77.02	21.58	60.29	15 40 5	2111.3	-38.06	68.60
54.48	7 25 7	4096.27	-34.42	183.99	21.59	60.30	8 33 24	3496.3	-38.07	175.57
125.52	14 54 54	2711.33	-34.41	77.02	21.58	60.29	15 40 5	2111.3	-38.06	68.60

DIFFERENTIAL CORRECTIONS
TDE 2.1183 TRA .0016 TC3-8.5455 BAU 1.2954
RDE .5504 RRA .1662 RC3-2.0463 FAU .53733
FDE 7.8240 FRA 2.2541 FC-42.1865 BSP 23842
BDE 2.1886 BRA .1662 BC3 8.7871 FSP 9328

MID-COURSE EXECUTION ACCURACY
SGT 6750.4 SGR 1705.6 SG3 2727.7
RRT .9715 RRF .9856 RTF .9777
SGB 6962.6 R23 .1369 R13 .9797
SG1 6951.5 SG2 392.5 THA 13.84

ORBIT DETERMINATION ACCURACY
ST 3658.8 SR 958.2 SS 3558.2
CRT .9922 CRS -.9998 CST -.9927
LSA 5183.4 MSA 313.3 SSA 18.2
EL1 3780.4 EL2 116.0 ALF 14.58

LAUNCH DATE NOV 30 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 686.765 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.949 GAL .92 AZL 87.03 HCA 205.80 SMA 185.99 ECC .20738 INC 2.9708 V1 30.200
RP 216.39 LAP -1.29 LOP 273.59 VP 22.650 GAP -7.43 AZP 92.68 TAL 5.35 TAP 211.15 RCA 147.42 APO 224.55 V2 25.385
RC 285.296 GL 31.19 GP -10.01 ZAL 75.78 ZAP 72.15 ETS 175.92 ZAE 102.72 ETE 180.88 ZAC 74.86 ETC 257.29 CLP 71.86

PLANETOCENTRIC CONIC

C3 10.868 VHL 3.297 DLA 43.53 RAL 156.73 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.048 DPA -1.92 RAP 163.28 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.44	7 30 33	4083.28	-34.02	182.55	21.45	61.02	8 38 37	3483.3	-37.59	174.13
124.56	14 52 47	2718.38	-34.01	77.38	21.45	61.01	15 38 5	2118.4	-37.58	68.97
55.44	7 30 33	4083.28	-34.02	182.55	21.45	61.02	8 38 37	3483.3	-37.59	174.13
124.56	14 52 47	2718.38	-34.01	77.38	21.45	61.01	15 38 5	2118.4	-37.58	68.97
55.44	7 30 33	4083.28	-34.02	182.55	21.45	61.02	8 38 37	3483.3	-37.59	174.13
124.56	14 52 47	2718.38	-34.01	77.38	21.45	61.01	15 38 5	2118.4	-37.58	68.97

DIFFERENTIAL CORRECTIONS
TDE 2.1405 TRA .0320 TC3-9.0545 BAU 1.3453
RDE .5170 RRA .1650 RC3-1.9353 FAU .52785
FDE 7.4290 FRA 2.2955 FC-42.0479 BSP 24722
BDE 2.2020 BRA .1681 BC3 9.2591 FSP 9127

MID-COURSE EXECUTION ACCURACY
SGT 7034.6 SGR 1610.0 SG3 2684.8
RRT .9704 RRF .9825 RTF .9788
SGB 7216.5 R23 .1237 R13 .9803
SG1 7206.5 SG2 379.2 THA 12.56

ORBIT DETERMINATION ACCURACY
ST 3724.5 SR 907.1 SS 3434.6
CRT .9922 CRS -.9998 CST -.9926
LSA 5137.4 MSA 313.2 SSA 19.2
EL1 3831.8 EL2 110.0 ALF 13.60

LAUNCH DATE NOV 30 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 690.935 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.951 GAL .86 AZL 87.09 HCA 206.96 SMA 186.03 ECC .20747 INC 2.9105 V1 30.200
RP 216.05 LAP -1.32 LOP 274.75 VP 22.697 GAP -7.59 AZP 92.59 TAL 5.00 TAP 211.95 RCA 147.43 APO 224.62 V2 25.423
RC 286.520 GL 30.72 GP -9.53 ZAL 76.30 ZAP 70.52 ETS 175.78 ZAE 100.87 ETE 180.50 ZAC 75.24 ETC 257.37 CLP 70.24

PLANETOCENTRIC CONIC

C3 10.722 VHL 3.274 DLA 42.85 RAL 157.20 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 3.075 DPA -1.31 RAP 163.05 ECC 1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.39	7 36 15	4070.25	-33.63	181.13	21.41	61.70	8 44 5	3470.2	-37.11	172.70
123.61	14 50 50	2725.88	-33.62	77.79	21.40	61.69	15 36 16	2125.9	-37.10	69.37
56.39	7 36 15	4070.25	-33.63	181.13	21.41	61.70	8 44 5	3470.2	-37.11	172.70
123.61	14 50 50	2725.88	-33.62	77.79	21.40	61.69	15 36 16	2125.9	-37.10	69.37
56.39	7 36 15	4070.25	-33.63	181.13	21.41	61.70	8 44 5	3470.2	-37.11	172.70
123.61	14 50 50	2725.88	-33.62	77.79	21.40	61.69	15 36 16	2125.9	-37.10	69.37

DIFFERENTIAL CORRECTIONS
TDE 2.1604 TRA .0668 TC3-9.5568 BAU 1.3947
RDE .4875 RRA .1646 RC3-1.8261 FAU .51709
FDE 7.0490 FRA 2.3460 FC-41.7525 BSP 25635
BDE 2.2147 BRA .1776 BC3 9.7297 FSP 8947

MID-COURSE EXECUTION ACCURACY
SGT 7313.4 SGR 1520.5 SG3 2636.5
RRT .9687 RRF .9789 RTF .9798
SGB 7469.8 R23 .1104 R13 .9809
SG1 7460.6 SG2 370.3 THA 11.42

ORBIT DETERMINATION ACCURACY
ST 3785.2 SR 861.8 SS 3314.8
CRT .9922 CRS -.9997 CST -.9924
LSA 5095.1 MSA 313.4 SSA 20.2
EL1 3880.6 EL2 104.6 ALF 12.74

LAUNCH DATE NOV 30 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 695.113 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.954 GAL .80 AZL 87.15 HCA 208.12 SMA 186.07 ECC .20759 INC 2.8546 V1 30.200
RP 215.71 LAP -1.34 LOP 275.92 VP 22.743 GAP -7.75 AZP 92.52 TAL 4.63 TAP 212.75 RCA 147.44 APO 224.70 V2 25.461
RC 287.729 GL 30.29 GP -9.09 ZAL 76.86 ZAP 68.94 ETS 175.67 ZAE 99.04 ETE 180.16 ZAC 75.58 ETC 257.44 CLP 68.65

PLANETOCENTRIC CONIC

C3 10.587 VHL 3.254 DLA 42.19 RAL 157.72 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 3.106 DPA -.74 RAP 162.85 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.32	7 42 11	4057.19	-33.23	179.72	21.44	62.36	8 49 48	3457.2	-36.64	171.30
122.68	14 49 2	2733.79	-33.22	78.24	21.43	62.34	15 34 36	2133.8	-36.63	69.82
57.32	7 42 11	4057.19	-33.23	179.72	21.44	62.36	8 49 48	3457.2	-36.64	171.30
122.68	14 49 2	2733.79	-33.22	78.24	21.43	62.34	15 34 36	2133.8	-36.63	69.82
57.32	7 42 11	4057.19	-33.23	179.72	21.44	62.36	8 49 48	3457.2	-36.64	171.30
122.68	14 49 2	2733.79	-33.22	78.24	21.43	62.34	15 34 36	2133.8	-36.63	69.82

DIFFERENTIAL CORRECTIONS
TDE 2.1757 TRA .1052 TC-10.0555 BAU 1.4439
RDE .4607 RRA .1649 RC3-1.7210 FAU .50576
FDE 6.6712 FRA 2.4048 FC-41.3573 BSP 26528
BDE 2.2240 BRA .1956 BC310.2017 FSP 8754

MID-COURSE EXECUTION ACCURACY
SGT 7586.8 SGR 1437.4 SG3 2584.8
RRT .9661 RRF .9747 RTF .9805
SGB 7721.8 R23 .0977 R13 .9814
SG1 7713.2 SG2 365.3 THA 10.40

ORBIT DETERMINATION ACCURACY
ST 3837.0 SR 820.5 SS 3192.9
CRT .9922 CRS -.9996 CST -.9920
LSA 5048.9 MSA 314.8 SSA 21.2
EL1 3922.5 EL2 99.7 ALF 11.99

LAUNCH DATE NOV 30 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 699.298 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.957 GAL .73 AZL 87.20 HCA 209.29 SMA 186.12 ECC .20772 INC 2.8026 V1 30.200
RP 215.38 LAP -1.37 LOP 277.08 VP 22.789 GAP -7.90 AZP 92.44 TAL 4.25 TAP 213.54 RCA 147.46 APO 224.78 V2 25.498
RC 288.924 GL 29.88 GP -8.68 ZAL 77.46 ZAP 67.39 ETS 175.57 ZAE 97.26 ETE 179.86 ZAC 75.91 ETC 257.51 CLP 67.11

PLANETOCENTRIC CONIC

C3 10.462 VHL 3.235 DLA 41.53 RAL 158.29 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.138 DPA -.21 RAP 162.67 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.24	7 48 22	4044.04	-32.84	178.33	21.54	62.99	8 55 46	3444.0	-36.16	169.91
121.76	14 47 23	2742.15	-32.83	78.72	21.53	62.97	15 33 5	2142.2	-36.15	70.31
58.24	7 48 22	4044.04	-32.84	178.33	21.54	62.99	8 55 46	3444.0	-36.16	169.91
121.76	14 47 23	2742.15	-32.83	78.72	21.53	62.97	15 33 5	2142.2	-36.15	70.31
58.24	7 48 22	4044.04	-32.84	178.33	21.54	62.99	8 55 46	3444.0	-36.16	169.91
121.76	14 47 23	2742.15	-32.83	78.72	21.53	62.97	15 33 5	2142.2	-36.15	70.31

DIFFERENTIAL CORRECTIONS
TDE 2.1879 TRA .1477 TC-10.5494 BAU 1.4929
RDE .4366 RRA .1654 RC3-1.6205 FAU .49408
FDE 6.2990 FRA 2.4649 FC-40.8835 BSP 27415
BDE 2.2311 BRA .2217 BC310.6732 FSP 8549

MID-COURSE EXECUTION ACCURACY
SGT 7856.0 SGR 1360.3 SG3 2530.8
RRT .9628 RRF .9697 RTF .9811
SGB 7972.9 R23 .0854 R13 .9818
SG1 7964.7 SG2 362.7 THA 9.48

ORBIT DETERMINATION ACCURACY
ST 3882.5 SR 782.9 SS 3070.0
CRT .9923 CRS -.9995 CST -.9916
LSA 5001.1 MSA 316.3 SSA 22.1
EL1 3959.5 EL2 95.1 ALF 11.32

LAUNCH DATE NOV 30 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 703.491 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.960 GAL .66 AZL 87.25 HCA 210.46 SMA 186.17 ECC .20787 INC 2.7542 V1 30.200
RP 215.05 LAP -1.40 LOP 278.26 VP 22.834 GAP -8.05 AZP 92.37 TAL 3.85 TAP 214.31 RCA 147.47 APO 224.87 V2 25.535
RC 290.105 GL 29.49 GP -8.29 ZAL 78.10 ZAP 65.87 ETS 175.48 ZAE 95.50 ETE 179.59 ZAC 76.22 ETC 257.57 CLP 65.60

PLANETOCENTRIC CONIC

C3 10.347 VHL 3.217 DLA 40.89 RAL 158.90 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.173 DPA .28 RAP 162.51 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.17	7 54 50	4030.60	-32.44	176.93	21.71	63.59	9 2 1	3430.6	-35.69	168.52
120.83	14 45 46	2751.12	-32.42	79.26	21.70	63.58	15 31 37	2151.1	-35.68	70.85
59.17	7 54 50	4030.60	-32.44	176.93	21.71	63.59	9 2 1	3430.6	-35.69	168.52
120.83	14 45 46	2751.12	-32.42	79.26	21.70	63.58	15 31 37	2151.1	-35.68	70.85
59.17	7 54 50	4030.60	-32.44	176.93	21.71	63.59	9 2 1	3430.6	-35.69	168.52
120.83	14 45 46	2751.12	-32.42	79.26	21.70	63.58	15 31 37	2151.1	-35.68	70.85

DIFFERENTIAL CORRECTIONS
TDE 2.1981 TRA .1949 TC-11.0314 BAU 1.5405
RDE .4154 RRA .1664 RC3-1.5231 FAU .48178
FDE 5.9469 FRA 2.5310 FC-40.3100 BSP 28323
BDE 2.2370 BRA .2563 BC311.1360 FSP 8345

MID-COURSE EXECUTION ACCURACY
SGT 8118.2 SGR 1288.9 SG3 2474.6
RRT .9586 RRF .9640 RTF .9817
SGB 8219.9 R23 .0739 R13 .9822
SG1 8211.9 SG2 362.8 THA 8.67

ORBIT DETERMINATION ACCURACY
ST 3923.4 SR 749.7 SS 2953.1
CRT .9924 CRS -.9994 CST -.9912
LSA 4957.2 MSA 318.2 SSA 23.0
EL1 3993.3 EL2 90.6 ALF 10.74

LAUNCH DATE NOV 30 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 707.691 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.963 GAL .59 AZL 87.29 HCA 211.63 SMA 186.22 ECC .20804 INC 2.7089 V1 30.200
RP 214.72 LAP -1.42 LOP 279.43 VP 22.880 GAP -8.20 AZP 92.31 TAL 3.44 TAP 215.08 RCA 147.48 APO 224.97 V2 25.572
RC 291.272 GL 29.13 GP -7.93 ZAL 78.77 ZAP 64.40 ETS 175.41 ZAE 93.78 ETE 179.36 ZAC 76.51 ETC 257.63 CLP 64.13

PLANETOCENTRIC CONIC

C3 10.241 VHL 3.200 DLA 40.26 RAL 159.55 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.211 DPA .72 RAP 162.39 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.10	8 1 35	4016.93	-32.03	175.53	21.93	64.18	9 8 32	3416.9	-35.21	167.13
119.90	14 44 14	2760.62	-32.02	79.84	21.93	64.17	15 30 14	2160.6	-35.20	71.43
60.10	8 1 35	4016.93	-32.03	175.53	21.93	64.18	9 8 32	3416.9	-35.21	167.13
119.90	14 44 14	2760.62	-32.02	79.84	21.93	64.17	15 30 14	2160.6	-35.20	71.43
60.10	8 1 35	4016.93	-32.03	175.53	21.93	64.18	9 8 32	3416.9	-35.21	167.13
119.90	14 44 14	2760.62	-32.02	79.84	21.93	64.17	15 30 14	2160.6	-35.20	71.43

DIFFERENTIAL CORRECTIONS
TDE 2.2040 TRA .2453 TC-11.5129 BAU 1.5883
RDE .3964 RRA .1674 RC3-1.4298 FAU .46930
FDE 5.6058 FRA 2.5927 FC-39.6748 BSP 29179
BDE 2.2394 BRA .2970 BC311.6013 FSP 8131

MID-COURSE EXECUTION ACCURACY
SGT 8378.4 SGR 1222.8 SG3 2416.9
RRT .9535 RRF .9574 RTF .9822
SGB 8467.1 R23 .0630 R13 .9826
SG1 8459.3 SG2 364.9 THA 7.94

ORBIT DETERMINATION ACCURACY
ST 3956.1 SR 719.9 SS 2837.7
CRT .9926 CRS -.9992 CST -.9906
LSA 4911.1 MSA 319.8 SSA 23.9
EL1 4020.1 EL2 86.2 ALF 10.24

LAUNCH DATE NOV 30 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 711.898 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.966 GAL .52 AZL 87.33 HCA 212.81 SMA 186.28 ECC .20823 INC 2.6663 V1 30.200
RP 214.40 LAP -1.44 LOP 280.61 VP 22.925 GAP -8.34 AZP 92.24 TAL 3.02 TAP 215.83 RCA 147.49 APO 225.07 V2 25.608
RC 292.426 GL 28.79 GP -7.60 ZAL 79.48 ZAP 62.97 ETS 175.34 ZAE 92.09 ETE 179.15 ZAC 76.80 ETC 257.67 CLP 62.71

PLANETOCENTRIC CONIC

C3 10.142 VHL 3.185 DLA 39.63 RAL 160.24 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 3.250 DPA 1.13 RAP 162.29 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.04	8 8 40	4002.81	-31.62	174.10	22.22	64.76	9 15 22	3402.8	-34.73	165.71
118.96	14 42 40	2770.87	-31.61	80.47	22.22	64.74	15 28 51	2170.9	-34.72	72.08
61.04	8 8 40	4002.81	-31.62	174.10	22.22	64.76	9 15 22	3402.8	-34.73	165.71
118.96	14 42 40	2770.87	-31.61	80.47	22.22	64.74	15 28 51	2170.9	-34.72	72.08
61.04	8 8 40	4002.81	-31.62	174.10	22.22	64.76	9 15 22	3402.8	-34.73	165.71
118.96	14 42 40	2770.87	-31.61	80.47	22.22	64.74	15 28 51	2170.9	-34.72	72.08

DIFFERENTIAL CORRECTIONS
TDE 2.2064 TRA .3005 TC-11.9809 BAU 1.6346
RDE .3791 RRA .1687 RC3-1.3382 FAU .45604
FDE 5.2713 FRA 2.6589 FC-38.9277 BSP 30034
BDE 2.2387 BRA .3446 BC312.0554 FSP 7910

MID-COURSE EXECUTION ACCURACY
SGT 8630.4 SGR 1160.6 SG3 2355.5
RRT .9473 RRF .9497 RTF .9827
SGB 8708.1 R23 .0534 R13 .9830
SG1 8700.2 SG2 368.9 THA 7.27

ORBIT DETERMINATION ACCURACY
ST 3981.8 SR 692.7 SS 2721.9
CRT .9928 CRS -.9990 CST -.9899
LSA 4861.9 MSA 322.3 SSA 24.8
EL1 4040.7 EL2 81.9 ALF 9.80

LAUNCH DATE NOV 30 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 716.113 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.970 GAL .45 AZL 87.37 HCA 213.99 SMA 186.34 ECC .20844 INC 2.6263 V1 30.200
RP 214.08 LAP -1.47 LOP 281.79 VP 22.970 GAP -8.48 AZP 92.18 TAL 2.58 TAP 216.57 RCA 147.50 APO 225.18 V2 25.644
RC 293.566 GL 28.46 GP -7.28 ZAL 80.22 ZAP 61.57 ETS 175.28 ZAE 90.43 ETE 178.97 ZAC 77.06 ETC 257.71 CLP 61.32

PLANETOCENTRIC CONIC

C3 10.051 VHL 3.170 DLA 39.00 RAL 160.97 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.291 DPA 1.50 RAP 162.23 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.99	8 16 3	3988.23	-31.20	172.65	22.57	65.32	9 22 32	3388.2	-34.24	164.27
118.01	14 41 6	2781.86	-31.19	81.16	22.56	65.30	15 27 28	2181.9	-34.23	72.78
61.99	8 16 3	3988.23	-31.20	172.65	22.57	65.32	9 22 32	3388.2	-34.24	164.27
118.01	14 41 6	2781.86	-31.19	81.16	22.56	65.30	15 27 28	2181.9	-34.23	72.78
61.99	8 16 3	3988.23	-31.20	172.65	22.57	65.32	9 22 32	3388.2	-34.24	164.27
118.01	14 41 6	2781.86	-31.19	81.16	22.56	65.30	15 27 28	2181.9	-34.23	72.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.2049 TRA .3593 TC-12.4396 BAU 1.6801 SGT 8876.5 SGR 1103.0 SG3 2294.0 ST 3999.7 SR 667.5 SS 2603.6
RDE .3633 RRA .1698 RC3-1.2515 FAU .44301 RRT .9402 RRF .9409 RTF .9831 CRT .9931 CRS -.9986 CST -.9892
FDE 4.9404 FRA 2.7148 FC-38.1562 BSP 30885 SGB 8944.8 R23 .0438 R13 .9833 LSA 4807.9 MSA 323.9 SSA 25.7
BDE 2.2347 BRA .3974 BC312.5024 FSP 7687 SG1 8937.0 SG2 373.1 THA 6.68 EL1 4054.2 EL2 77.5 ALF 9.41

LAUNCH DATE NOV 30 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 720.334 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.973 GAL .37 AZL 87.41 HCA 215.18 SMA 186.41 ECC .20867 INC 2.5885 V1 30.200
RP 213.77 LAP -1.49 LOP 282.97 VP 23.015 GAP -8.62 AZP 92.12 TAL 2.13 TAP 217.31 RCA 147.51 APO 225.30 V2 25.679
RC 294.693 GL 28.14 GP -6.98 ZAL 81.00 ZAP 60.21 ETS 175.23 ZAE 88.81 ETE 178.80 ZAC 77.32 ETC 257.75 CLP 59.96

PLANETOCENTRIC CONIC

C3 9.968 VHL 3.157 DLA 38.36 RAL 161.74 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 3.334 DPA 1.84 RAP 162.19 ECC 1.1641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.96	8 23 48	3973.10	-30.77	171.17	22.96	65.86	9 30 1	3373.1	-33.75	162.80
117.04	14 39 28	2793.68	-30.76	81.92	22.96	65.85	15 26 1	2193.7	-33.74	73.55
62.96	8 23 48	3973.10	-30.77	171.17	22.96	65.86	9 30 1	3373.1	-33.75	162.80
117.04	14 39 28	2793.68	-30.76	81.92	22.96	65.85	15 26 1	2193.7	-33.74	73.55
62.96	8 23 48	3973.10	-30.77	171.17	22.96	65.86	9 30 1	3373.1	-33.75	162.80
117.04	14 39 28	2793.68	-30.76	81.92	22.96	65.85	15 26 1	2193.7	-33.74	73.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.1983 TRA .4233 TC-12.8908 BAU 1.7250 SGT 9117.7 SGR 1049.8 SG3 2231.6 ST 4007.5 SR 644.7 SS 2486.4
RDE .3490 RRA .1715 RC3-1.1675 FAU .42971 RRT .9315 RRF .9308 RTF .9833 CRT .9934 CRS -.9980 CST -.9881
FDE 4.6186 FRA 2.7850 FC-37.3194 BSP 31688 SGB 9178.0 R23 .0364 R13 .9835 LSA 4748.7 MSA 328.0 SSA 26.5
BDE 2.2258 BRA .4567 BC312.9435 FSP 7463 SG1 9170.1 SG2 379.6 THA 6.13 EL1 4058.4 EL2 73.2 ALF 9.08

LAUNCH DATE NOV 30 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 724.562 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.977 GAL .29 AZL 87.45 HCA 216.36 SMA 186.47 ECC .20892 INC 2.5528 V1 30.200
RP 213.46 LAP -1.51 LOP 284.16 VP 23.059 GAP -8.76 AZP 92.06 TAL 1.66 TAP 218.03 RCA 147.52 APO 225.43 V2 25.714
RC 295.805 GL 27.84 GP -6.70 ZAL 81.82 ZAP 58.89 ETS 175.19 ZAE 87.23 ETE 178.66 ZAC 77.57 ETC 257.78 CLP 58.65

PLANETOCENTRIC CONIC

C3 9.893 VHL 3.145 DLA 37.73 RAL 162.54 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.379 DPA 2.15 RAP 162.19 ECC 1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.95	8 31 57	3957.22	-30.34	169.64	23.41	66.40	9 37 54	3357.2	-33.25	161.28
116.05	14 37 42	2806.53	-30.33	82.75	23.40	66.39	15 24 29	2206.5	-33.24	74.40
63.95	8 31 57	3957.22	-30.34	169.64	23.41	66.40	9 37 54	3357.2	-33.25	161.28
116.05	14 37 42	2806.53	-30.33	82.75	23.40	66.39	15 24 29	2206.5	-33.24	74.40
63.95	8 31 57	3957.22	-30.34	169.64	23.41	66.40	9 37 54	3357.2	-33.25	161.28
116.05	14 37 42	2806.53	-30.33	82.75	23.40	66.39	15 24 29	2206.5	-33.24	74.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.1898 TRA .4897 TC-13.3321 BAU 1.7691 SGT 9355.2 SGR 1001.2 SG3 2170.7 ST 4011.3 SR 625.0 SS 2376.8
RDE .3366 RRA .1723 RC3-1.0887 FAU .41693 RRT .9221 RRF .9195 RTF .9838 CRT .9938 CRS -.9973 CST -.9873
FDE 4.3215 FRA 2.8284 FC-36.4865 BSP 32521 SGB 9408.6 R23 .0279 R13 .9840 LSA 4692.8 MSA 328.3 SSA 27.4
BDE 2.2156 BRA .5192 BC313.3765 FSP 7259 SG1 9400.7 SG2 385.5 THA 5.65 EL1 4059.2 EL2 68.5 ALF 8.80

LAUNCH DATE NOV 30 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 728.796 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 32.981 GAL .20 AZL 87.48 HCA 217.55 SMA 186.54 ECC .20919 INC 2.5190 V1 30.200
RP 213.16 LAP -1.53 LOP 285.35 VP 23.103 GAP -8.89 AZP 92.00 TAL 1.18 TAP 218.74 RCA 147.52 APO 225.57 V2 25.748
RC 296.904 GL 27.55 GP -6.44 ZAL 82.67 ZAP 57.60 ETS 175.15 ZAE 85.68 ETE 178.53 ZAC 77.81 ETC 257.80 CLP 57.37

PLANETOCENTRIC CONIC

C3 9.824 VHL 3.134 DLA 37.09 RAL 163.37 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.426 DPA 2.42 RAP 162.21 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.97	8 40 33	3940.41	-29.89	168.05	23.90	66.94	9 46 13	3340.4	-32.74	159.71
115.03	14 35 46	2820.58	-29.88	83.67	23.90	66.92	15 22 46	2220.6	-32.72	75.34
64.97	8 40 33	3940.41	-29.89	168.05	23.90	66.94	9 46 13	3340.4	-32.74	159.71
115.03	14 35 46	2820.58	-29.88	83.67	23.90	66.92	15 22 46	2220.6	-32.72	75.34
64.97	8 40 33	3940.41	-29.89	168.05	23.90	66.94	9 46 13	3340.4	-32.74	159.71
115.03	14 35 46	2820.58	-29.88	83.67	23.90	66.92	15 22 46	2220.6	-32.72	75.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.1766 TRA .5623 TC-13.7554 BAU 1.8115 SGT 9583.6 SGR 955.4 SG3 2106.5 ST 4006.0 SR 606.3 SS 2262.6
RDE .3250 RRA .1739 RC3-1.0103 FAU .40338 RRT .9107 RRF .9066 RTF .9840 CRT .9943 CRS -.9963 CST -.9859
FDE 4.0211 FRA 2.8902 FC-35.5470 BSP 33219 SGB 9631.1 R23 .0217 R13 .9841 LSA 4628.5 MSA 332.4 SSA 28.1
BDE 2.2008 BRA .5886 BC313.7925 FSP 6962 SG1 9623.1 SG2 393.1 THA 5.20 EL1 4051.1 EL2 64.0 ALF 8.56

LAUNCH DATE NOV 30 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 733.037 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.986	GAL	.12	AZL	87.51	HCA	218.75	SMA	186.62	ECC	.20948	INC	2.4869
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.147	GAP	-9.02	AZP	91.94	TAL	.69	TAP	219.44	RCA	147.52	APO	225.71
RC	297.989	GL	27.26	GP	-6.19	ZAL	83.55	ZAP	56.36	ETS	175.12	ZAE	84.16	ETE	178.42	ZAC	78.04	ETC	257.82

PLANETOCENTRIC CONIC

C3	9.763	VHL	3.125	DLA	36.44	RAL	164.24	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.474	DPA	2.67	RAP	162.26

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.03	8 49 36	3922.70	-29.43	166.39	24.44	67.46	9 54 58	3322.7	-32.21	158.07
113.97	14 33 38	2835.82	-29.42	84.68	24.43	67.45	15 20 54	2235.8	-32.20	76.36
66.03	8 49 36	3922.70	-29.43	166.39	24.44	67.46	9 54 58	3322.7	-32.21	158.07
113.97	14 33 38	2835.82	-29.42	84.68	24.43	67.45	15 20 54	2235.8	-32.20	76.36
66.03	8 49 36	3922.70	-29.43	166.39	24.44	67.46	9 54 58	3322.7	-32.21	158.07
113.97	14 33 38	2835.82	-29.42	84.68	24.43	67.45	15 20 54	2235.8	-32.20	76.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1569	TRA	.6375	TC-14.1643	BAU	1.8528	SGT	9803.3	SGR	911.0	SG3	2038.8	ST	3987.9	SR	587.6	SS	2135.8
RDE	.3136	RRA	.1747	RC3 -.9340	FAU	.38961	RRT	.8980	RRF	.8916	RTF	.9842	CRT	.9948	CRS	-.9948	CST	-.9842
FDE	3.7065	FRA	2.9272	FC-34.5484	BSP	33983	SGB	9845.5	R23	.0144	R13	.9843	LSA	4549.4	MSA	335.1	SSA	28.9
BDE	2.1796	BRA	.6610	BC314.1951	FSP	6740	SG1	9837.4	SG2	399.6	THA	4.78	EL1	4030.6	EL2	59.1	ALF	8.34

LAUNCH DATE NOV 30 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 737.282 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.990	GAL	.03	AZL	87.54	HCA	219.95	SMA	186.69	ECC	.20979	INC	2.4562
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.190	GAP	-9.15	AZP	91.88	TAL	.18	TAP	220.13	RCA	147.53	APO	225.86
RC	299.061	GL	26.98	GP	-5.96	ZAL	84.47	ZAP	55.15	ETS	175.09	ZAE	82.68	ETE	178.32	ZAC	78.27	ETC	257.83

PLANETOCENTRIC CONIC

C3	9.709	VHL	3.116	DLA	35.79	RAL	165.14	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.524	DPA	2.88	RAP	162.35

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.14	8 59 11	3903.72	-28.96	164.65	25.02	67.98	10 4 15	3303.7	-31.67	156.35
112.86	14 31 12	2852.60	-28.95	85.80	25.02	67.97	15 18 45	2252.6	-31.67	77.50
67.14	8 59 11	3903.72	-28.96	164.65	25.02	67.98	10 4 15	3303.7	-31.67	156.35
112.86	14 31 12	2852.60	-28.95	85.80	25.02	67.97	15 18 45	2252.6	-31.67	77.50
67.14	8 59 11	3903.72	-28.96	164.65	25.02	67.98	10 4 15	3303.7	-31.67	156.35
112.86	14 31 12	2852.60	-28.95	85.80	25.02	67.97	15 18 45	2252.6	-31.67	77.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1383	TRA	.7247	TC-14.5733	BAU	1.8950	SGT	10031.9	SGR	878.0	SG3	1995.3	ST	3972.0	SR	571.6	SS	2019.2
RDE	.3037	RRA	.1771	RC3 -.8757	FAU	.38066	RRT	.8868	RRF	.8771	RTF	.9841	CRT	.9954	CRS	-.9925	CST	-.9817
FDE	3.4131	FRA	3.0074	FC-33.9429	BSP	34774	SGB	10070.3	R23	.0065	R13	.9841	LSA	4479.0	MSA	344.6	SSA	29.6
BDE	2.1598	BRA	.7461	BC314.5996	FSP	6429	SG1	10062.1	SG2	404.5	THA	4.45	EL1	4012.6	EL2	54.4	ALF	8.15

LAUNCH DATE NOV 30 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 741.535 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.994	GAL	-.06	AZL	87.57	HCA	221.15	SMA	186.77	ECC	.21012	INC	2.4271
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.232	GAP	-9.27	AZP	91.83	TAL	359.66	TAP	220.81	RCA	147.53	APO	226.02
RC	300.120	GL	26.71	GP	-5.74	ZAL	85.43	ZAP	53.97	ETS	175.07	ZAE	81.22	ETE	178.23	ZAC	78.49	ETC	257.83

PLANETOCENTRIC CONIC

C3	9.663	VHL	3.108	DLA	35.13	RAL	166.06	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.576	DPA	3.07	RAP	162.46

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.29	9 9 22	3883.33	-28.47	162.81	25.65	68.50	10 14 5	3283.3	-31.12	154.53
111.71	14 28 25	2871.11	-28.46	87.05	25.64	68.48	15 16 16	2271.1	-31.12	78.77
68.29	9 9 22	3883.33	-28.47	162.81	25.65	68.50	10 14 5	3283.3	-31.12	154.53
111.71	14 28 25	2871.11	-28.46	87.05	25.64	68.48	15 16 16	2271.1	-31.12	78.77
68.29	9 9 22	3883.33	-28.47	162.81	25.65	68.50	10 14 5	3283.3	-31.12	154.53
111.71	14 28 25	2871.11	-28.46	87.05	25.64	68.48	15 16 16	2271.1	-31.12	78.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1410	TRA	.8207	TC-14.8965	BAU	1.9270	SGT	10235.3	SGR	845.6	SG3	1913.4	ST	3994.8	SR	572.5	SS	2034.5
RDE	.3034	RRA	.1802	RC3 -.7840	FAU	.36036	RRT	.8632	RRF	.8596	RTF	.9853	CRT	.9962	CRS	-.9917	CST	-.9826
FDE	3.3709	FRA	3.1041	FC-32.2871	BSP	35925	SGB	10270.2	R23	.0150	R13	.9854	LSA	4506.7	MSA	338.0	SSA	30.0
BDE	2.1624	BRA	.8402	BC314.9171	FSP	6549	SG1	10261.3	SG2	425.8	THA	4.09	EL1	4035.3	EL2	49.1	ALF	8.13

LAUNCH DATE NOV 30 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 745.794 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	32.999	GAL	-.15	AZL	87.60	HCA	222.35	SMA	186.85	ECC	.21048	INC	2.3992
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.275	GAP	-9.40	AZP	91.77	TAL	359.12	TAP	221.47	RCA	147.52	APO	226.18
RC	301.167	GL	26.44	GP	-5.53	ZAL	86.41	ZAP	52.82	ETS	175.05	ZAE	79.80	ETE	178.15	ZAC	78.71	ETC	257.83

PLANETOCENTRIC CONIC

C3	9.624	VHL	3.102	DLA	34.45	RAL	167.01	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	3.628	DPA	3.24	RAP	162.61

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.50	9 20 14	3861.15	-27.97	160.84	26.31	69.01	10 24 35	3261.2	-30.56	152.58
110.50	14 25 8	2891.70	-27.96	88.45	26.31	69.00	15 13 20	2291.7	-30.55	80.19
69.50	9 20 14	3861.15	-27.97	160.84	26.31	69.01	10 24 35	3261.2	-30.56	152.58
110.50	14 25 8	2891.70	-27.96	88.45	26.31	69.00	15 13 20	2291.7	-30.55	80.19
69.50	9 20 14	3861.15	-27.97	160.84	26.31	69.01	10 24 35	3261.2	-30.56	152.58
110.50	14 25 8	2891.70	-27.96	88.45	26.31	69.00	15 13 20	2291.7	-30.55	80.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0912	TRA	.9044	TC-15.3104	BAU	1.9721	SGT	10452.6	SGR	811.1	SG3	1860.5	ST	3920.2	SR	551.5	SS	1856.4
RDE	.2912	RRA	.1809	RC3 -.7290	FAU	.35121	RRT	.8486	RRF	.8397	RTF	.9848	CRT	.9967	CRS	-.9871	CST	-.9781
FDE	2.9801	FRA	3.1301	FC-31.5945	BSP	36451	SGB	10484.0	R23	.0049	R13	.9848	LSA	4358.2	MSA	350.9	SSA	30.9
BDE	2.1114	BRA	.9223	BC315.3277	FSP	6221	SG1	10475.2	SG2	428.2	THA	3.77	EL1	3958.5	EL2	44.6	ALF	7.98

LAUNCH DATE NOV 30 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 750.059 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.004 GAL -.25 AZL 87.63 HCA 223.56 SMA 186.94 ECC .21086 INC 2.3724 V1 30.200
RP 211.73 LAP -1.63 LOP 291.36 VP 23.316 GAP -9.52 AZP 91.72 TAL 358.57 TAP 222.13 RCA 147.52 APO 226.35 V2 25.911
RC 302.203 GL 26.17 GP -5.34 ZAL 87.43 ZAP 51.71 ETS 175.03 ZAE 78.41 ETE 178.08 ZAC 78.92 ETC 257.83 CLP 51.51

PLANETOCENTRIC CONIC

C3 9.593 VHL 3.097 DLA 33.76 RAL 167.99 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.683 DPA 3.38 RAP 162.78 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.79	9 31 52	3836.97	-27.45	158.73	27.02	69.52	10 35 48	3237.0	-29.98	150.49
109.21	14 21 19	2914.62	-27.44	90.02	27.02	69.51	15 9 54	2314.6	-29.97	81.78
70.79	9 31 52	3836.97	-27.45	158.73	27.02	69.52	10 35 48	3237.0	-29.98	150.49
109.21	14 21 19	2914.62	-27.44	90.02	27.02	69.51	15 9 54	2314.6	-29.97	81.78
110.00	15 6 38	2776.14	-30.46	80.39	28.16	73.67	15 52 54	2176.1	-32.39	71.70
110.00	13 45 43	3023.44	-24.52	97.14	25.67	65.40	14 36 7	2423.4	-27.62	89.35

DIFFERENTIAL CORRECTIONS
TDE 2.0555 TRA .9995 TC-15.6618 BAU 2.0104
RDE .2844 RRA .1823 RC3 -.6632 FAU .33789
FDE 2.7286 FRA 3.1754 FC-30.4942 BSP 37142
BDE 2.0751 BRA 1.0160 BC315.6759 FSP 6013

MID-COURSE EXECUTION ACCURACY
SGT10654.9 SGR 781.1 SG3 1796.2
RRT .8277 RRF .8179 RTF .9849
SGB10683.5 R23 .0024 R13 .9849
SG110674.6 SG2 437.5 THA 3.48

ORBIT DETERMINATION ACCURACY
ST 3871.6 SR 540.1 SS 1751.3
CRT .9972 CRS -.9824 CST -.9749
LSA 4268.5 MSA 356.8 SSA 31.6
EL1 3908.9 EL2 40.0 ALF 7.92

LAUNCH DATE NOV 30 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 754.330 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.009 GAL -.35 AZL 87.65 HCA 224.77 SMA 187.02 ECC .21126 INC 2.3469 V1 30.200
RP 211.47 LAP -1.65 LOP 292.57 VP 23.357 GAP -9.64 AZP 91.67 TAL 358.00 TAP 222.78 RCA 147.51 APO 226.53 V2 25.941
RC 303.228 GL 25.91 GP -5.15 ZAL 88.49 ZAP 50.63 ETS 175.01 ZAE 77.05 ETE 178.02 ZAC 79.13 ETC 257.82 CLP 50.44

PLANETOCENTRIC CONIC

C3 9.570 VHL 3.094 DLA 33.07 RAL 169.00 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.738 DPA 3.50 RAP 162.98 ECC 1.1575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.17	9 44 28	3810.04	-26.92	156.43	27.76	70.03	10 47 58	3210.0	-29.39	148.21
107.83	14 16 43	2940.60	-26.91	91.81	27.76	70.02	15 5 44	2340.6	-29.38	83.59
72.17	9 44 28	3810.04	-26.92	156.43	27.76	70.03	10 47 58	3210.0	-29.39	148.21
107.83	14 16 43	2940.60	-26.91	91.81	27.76	70.02	15 5 44	2340.6	-29.38	83.59
110.00	15 36 11	2696.49	-31.84	74.59	29.44	76.84	16 21 8	2096.5	-33.32	65.67
110.00	13 24 11	3102.15	-22.20	102.07	25.53	63.31	14 15 53	2502.1	-25.59	94.56

DIFFERENTIAL CORRECTIONS
TDE 2.0164 TRA 1.0987 TC-15.9946 BAU 2.0478
RDE .2785 RRA .1832 RC3 -.6016 FAU .32533
FDE 2.4910 FRA 3.2051 FC-29.4309 BSP 37797
BDE 2.0355 BRA 1.1139 BC316.0059 FSP 5800

MID-COURSE EXECUTION ACCURACY
SGT10852.3 SGR 754.0 SG3 1734.5
RRT .8057 RRF .7944 RTF .9851
SGB10878.4 R23 -.0011 R13 .9851
SG110869.3 SG2 445.9 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 3816.6 SR 530.1 SS 1650.2
CRT .9976 CRS -.9764 CST -.9714
LSA 4176.0 MSA 361.1 SSA 32.2
EL1 3853.0 EL2 36.0 ALF 7.89

LAUNCH DATE NOV 30 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 758.605 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.014 GAL -.45 AZL 87.68 HCA 225.99 SMA 187.11 ECC .21169 INC 2.3222 V1 30.200
RP 211.20 LAP -1.67 LOP 293.79 VP 23.398 GAP -9.75 AZP 91.61 TAL 357.42 TAP 223.41 RCA 147.50 APO 226.72 V2 25.971
RC 304.242 GL 25.64 GP -4.97 ZAL 89.57 ZAP 49.58 ETS 175.00 ZAE 75.72 ETE 177.97 ZAC 79.34 ETC 257.80 CLP 49.39

PLANETOCENTRIC CONIC

C3 9.555 VHL 3.091 DLA 32.35 RAL 170.03 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.795 DPA 3.59 RAP 163.20 ECC 1.1573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.66	9 58 13	3779.87	-26.37	153.89	28.55	70.54	11 1 13	3179.9	-28.77	145.70
106.34	14 11 11	2970.17	-26.36	93.86	28.54	70.53	15 0 41	2370.2	-28.77	85.67
73.66	9 58 13	3779.87	-26.37	153.89	28.55	70.54	11 1 13	3179.9	-28.77	145.70
106.34	14 11 11	2970.17	-26.36	93.86	28.54	70.53	15 0 41	2370.2	-28.77	85.67
110.00	15 58 36	2638.49	-32.66	70.26	30.49	79.28	16 42 35	2038.5	-33.79	61.21
110.00	13 9 58	3159.55	-20.40	105.56	25.69	61.96	14 2 37	2559.5	-23.99	98.25

DIFFERENTIAL CORRECTIONS
TDE 1.9730 TRA 1.2028 TC-16.3172 BAU 2.0856
RDE .2733 RRA .1842 RC3 -.5452 FAU .31396
FDE 2.2603 FRA 3.2341 FC-28.4457 BSP 38422
BDE 1.9919 BRA 1.2168 BC316.3263 FSP 5581

MID-COURSE EXECUTION ACCURACY
SGT11050.0 SGR 730.4 SG3 1678.0
RRT .7829 RRF .7696 RTF .9853
SGB11074.1 R23 -.0050 R13 .9853
SG111064.8 SG2 453.8 THA 2.97

ORBIT DETERMINATION ACCURACY
ST 3754.1 SR 520.9 SS 1550.7
CRT .9979 CRS -.9684 CST -.9670
LSA 4078.4 MSA 366.8 SSA 32.8
EL1 3789.9 EL2 33.5 ALF 7.88

LAUNCH DATE NOV 30 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 762.885 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.019 GAL -.55 AZL 87.70 HCA 227.20 SMA 187.20 ECC .21214 INC 2.2986 V1 30.200
RP 210.95 LAP -1.69 LOP 295.01 VP 23.438 GAP -9.87 AZP 91.56 TAL 356.83 TAP 224.03 RCA 147.49 APO 226.91 V2 26.001
RC 305.247 GL 25.37 GP -4.81 ZAL 90.69 ZAP 48.56 ETS 174.99 ZAE 74.42 ETE 177.92 ZAC 79.54 ETC 257.78 CLP 48.38

PLANETOCENTRIC CONIC

C3 9.549 VHL 3.090 DLA 31.63 RAL 171.08 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.854 DPA 3.67 RAP 163.45 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.29	10 13 27	3745.25	-25.80	151.04	29.37	71.05	11 15 52	3145.3	-28.15	142.87
104.71	14 4 20	3004.54	-25.79	96.25	29.36	71.03	14 54 24	2404.5	-28.14	88.09
75.29	10 13 27	3745.25	-25.80	151.04	29.37	71.05	11 15 52	3145.3	-28.15	142.87
104.71	14 4 20	3004.54	-25.79	96.25	29.36	71.03	14 54 24	2404.5	-28.14	88.09
110.00	16 17 58	2589.79	-33.21	66.57	31.45	81.40	17 1 8	1989.8	-34.04	57.43
110.00	12 58 59	3208.00	-18.82	108.43	26.01	60.92	13 52 27	2608.0	-22.55	101.28

DIFFERENTIAL CORRECTIONS
TDE 1.9259 TRA 1.3135 TC-16.6126 BAU 2.1218
RDE .2688 RRA .1854 RC3 -.4892 FAU .30221
FDE 2.0424 FRA 3.2696 FC-27.3984 BSP 39088
BDE 1.9445 BRA 1.3265 BC316.6198 FSP 5386

MID-COURSE EXECUTION ACCURACY
SGT11240.4 SGR 709.2 SG3 1620.5
RRT .7576 RRF .7430 RTF .9854
SGB11262.7 R23 -.0074 R13 .9854
SG111253.2 SG2 462.4 THA 2.74

ORBIT DETERMINATION ACCURACY
ST 3685.3 SR 513.0 SS 1457.4
CRT .9978 CRS -.9578 CST -.9615
LSA 3978.4 MSA 374.5 SSA 33.4
EL1 3720.7 EL2 33.5 ALF 7.91

LAUNCH DATE NOV 30 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 767.170 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.024 GAL -.66 AZL 87.72 HCA 228.42 SMA 187.29 ECC .21262 INC 2.2758 V1 30.200
RP 210.70 LAP -1.70 LOP 296.23 VP 23.477 GAP -9.98 AZP 91.51 TAL 356.22 TAP 224.65 RCA 147.47 APO 227.12 V2 26.029
RC 306.243 GL 25.10 GP -4.65 ZAL 91.84 ZAP 47.57 ETS 174.97 ZAE 73.15 ETE 177.88 ZAC 79.74 ETC 257.76 CLP 47.40

PLANETOCENTRIC CONIC

C3 9.552 VHL 3.091 DLA 30.88 RAL 172.15 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.913 DPA 3.72 RAP 163.73 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.13	10 30 38	3704.65	-25.22	147.76	30.22	71.55	11 32 22	3104.7	-27.50	139.62
102.87	13 55 41	3045.28	-25.21	99.11	30.22	71.54	14 46 26	2445.3	-27.49	90.97
77.13	10 30 38	3704.65	-25.22	147.76	30.22	71.55	11 32 22	3104.7	-27.50	139.62
102.87	13 55 41	3045.28	-25.21	99.11	30.22	71.54	14 46 26	2445.3	-27.49	90.97
110.00	16 35 33	2546.54	-33.60	63.26	32.37	83.33	17 18 0	1946.5	-34.16	54.06
110.00	12 49 56	3251.39	-17.37	110.95	26.45	60.08	13 44 7	2651.4	-21.21	103.94

DIFFERENTIAL CORRECTIONS
TDE 1.8753 TRA 1.4301 TC-16.8905 BAU 2.1578
RDE .2651 RRA .1867 RC3 -.4359 FAU .29084
FDE 1.8350 FRA 3.3037 FC-26.3585 BSP 39715
BDE 1.8939 BRA 1.4422 BC316.8961 FSP 5186

MID-COURSE EXECUTION ACCURACY
SGT11429.6 SGR 690.4 SG3 1564.7
RRT .7308 RRF .7149 RTF .9855
SGB11450.5 R23 -.0095 R13 .9855
SG111440.8 SG2 470.8 THA 2.53

ORBIT DETERMINATION ACCURACY
ST 3611.5 SR 506.2 SS 1369.0
CRT .9973 CRS -.9440 CST -.9549
LSA 3876.2 MSA 383.4 SSA 33.9
EL1 3646.6 EL2 36.8 ALF 7.96

LAUNCH DATE NOV 30 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 771.459 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.030 GAL -.77 AZL 87.75 HCA 229.64 SMA 187.39 ECC .21313 INC 2.2537 V1 30.200
RP 210.46 LAP -1.72 LOP 297.45 VP 23.516 GAP -10.10 AZP 91.46 TAL 355.60 TAP 225.25 RCA 147.45 APO 227.32 V2 26.057
RC 307.229 GL 24.83 GP -4.50 ZAL 93.02 ZAP 46.61 ETS 174.96 ZAE 71.90 ETE 177.84 ZAC 79.94 ETC 257.73 CLP 46.44

PLANETOCENTRIC CONIC

C3 9.565 VHL 3.093 DLA 30.13 RAL 173.24 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.974 DPA 3.75 RAP 164.03 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.26	10 50 40	3655.12	-24.62	143.83	31.12	72.06	11 51 35	3055.1	-26.84	135.72
100.74	13 44 20	3095.33	-24.60	102.63	31.11	72.04	14 35 55	2495.3	-26.83	94.52
79.26	10 50 40	3655.12	-24.62	143.83	31.12	72.06	11 51 35	3055.1	-26.84	135.72
100.74	13 44 20	3095.33	-24.60	102.63	31.11	72.04	14 35 55	2495.3	-26.83	94.52
110.00	16 51 58	2506.94	-33.87	60.20	33.26	85.12	17 33 45	1906.9	-34.18	50.97
110.00	12 42 13	3291.51	-15.99	113.25	26.97	59.38	13 37 4	2691.5	-19.93	106.35

DIFFERENTIAL CORRECTIONS
TDE 1.8194 TRA 1.5509 TC-17.1413 BAU 2.1926
RDE .2619 RRA .1876 RC3 -.3845 FAU .27965
FDE 1.6342 FRA 3.3274 FC-25.3106 BSP 40348
BDE 1.8381 BRA 1.5622 BC317.1456 FSP 5005

MID-COURSE EXECUTION ACCURACY
SGT11611.0 SGR 673.4 SG3 1509.1
RRT .7024 RRF .6850 RTF .9856
SGB11630.5 R23 -.0119 R13 .9856
SG111620.7 SG2 478.9 THA 2.34

ORBIT DETERMINATION ACCURACY
ST 3529.1 SR 500.0 SS 1282.8
CRT .9962 CRS -.9261 CST -.9469
LSA 3767.6 MSA 392.4 SSA 34.3
EL1 3564.1 EL2 43.4 ALF 8.03

LAUNCH DATE NOV 30 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 775.752 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.035 GAL -.89 AZL 87.77 HCA 230.87 SMA 187.48 ECC .21366 INC 2.2325 V1 30.200
RP 210.22 LAP -1.73 LOP 298.67 VP 23.553 GAP -10.21 AZP 91.41 TAL 354.97 TAP 225.84 RCA 147.43 APO 227.54 V2 26.085
RC 308.206 GL 24.55 GP -4.36 ZAL 94.23 ZAP 45.67 ETS 174.95 ZAE 70.68 ETE 177.81 ZAC 80.14 ETC 257.70 CLP 45.51

PLANETOCENTRIC CONIC

C3 9.588 VHL 3.096 DLA 29.35 RAL 174.34 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 4.036 DPA 3.77 RAP 164.36 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.93	11 15 36	3589.98	-23.99	138.78	32.04	72.57	12 15 26	2990.0	-26.15	130.69
98.07	13 28 14	3161.41	-23.98	107.32	32.04	72.55	14 20 56	2561.4	-26.15	99.23
100.00	14 30 56	2960.58	-27.18	93.40	33.00	77.06	15 20 17	2360.6	-28.69	84.93
100.00	12 55 36	3266.04	-20.87	113.86	30.84	68.10	13 50 2	2666.0	-23.66	106.18
110.00	17 7 32	2470.00	-34.05	57.33	34.13	86.81	17 48 42	1870.0	-34.12	48.08
110.00	12 35 29	3329.39	-14.67	115.38	27.58	58.77	13 30 58	2729.4	-18.69	108.58

DIFFERENTIAL CORRECTIONS
TDE 1.7606 TRA 1.6780 TC-17.3631 BAU 2.2261
RDE .2594 RRA .1885 RC3 -.3346 FAU .26850
FDE 1.4463 FRA 3.3487 FC-24.2441 BSP 40972
BDE 1.7796 BRA 1.6885 BC317.3663 FSP 4819

MID-COURSE EXECUTION ACCURACY
SGT11786.6 SGR 658.4 SG3 1453.8
RRT .6723 RRF .6536 RTF .9857
SGB11805.0 R23 -.0139 R13 .9857
SG111795.0 SG2 487.0 THA 2.15

ORBIT DETERMINATION ACCURACY
ST 3443.8 SR 494.8 SS 1203.6
CRT .9941 CRS -.9037 CST -.9375
LSA 3659.3 MSA 402.1 SSA 34.7
EL1 3478.7 EL2 53.0 ALF 8.13

LAUNCH DATE NOV 30 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 780.050 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.041 GAL -1.00 AZL 87.79 HCA 232.10 SMA 187.58 ECC .21422 INC 2.2119 V1 30.200
RP 209.99 LAP -1.75 LOP 299.90 VP 23.591 GAP -10.32 AZP 91.36 TAL 354.32 TAP 226.41 RCA 147.40 APO 227.77 V2 26.111
RC 309.174 GL 24.27 GP -4.22 ZAL 95.47 ZAP 44.76 ETS 174.94 ZAE 69.48 ETE 177.78 ZAC 80.34 ETC 257.67 CLP 44.60

PLANETOCENTRIC CONIC

C3 9.621 VHL 3.102 DLA 28.56 RAL 175.47 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 4.099 DPA 3.76 RAP 164.71 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.08	11 53 44	3482.20	-23.36	130.63	33.00	73.07	12 51 46	2882.2	-25.45	122.57
93.92	12 59 4	3270.55	-23.34	115.14	33.00	73.06	13 53 35	2670.5	-25.45	107.07
100.00	15 2 28	2873.37	-28.36	87.19	34.33	80.12	15 50 21	2273.4	-29.43	78.55
100.00	12 33 2	3354.61	-18.53	119.39	31.08	66.11	13 28 56	2754.6	-21.60	111.94
110.00	17 22 28	2435.08	-34.15	54.61	35.01	88.42	18 3 3	1835.1	-33.99	45.36
110.00	12 29 31	3365.66	-13.38	117.40	28.26	58.25	13 25 37	2765.7	-17.48	110.69

DIFFERENTIAL CORRECTIONS
TDE 1.6971 TRA 1.8094 TC-17.5670 BAU 2.2599
RDE .2575 RRA .1893 RC3 -.2878 FAU .25798
FDE 1.2668 FRA 3.3672 FC-23.2131 BSP 41573
BDE 1.7165 BRA 1.8192 BC317.5694 FSP 4645

MID-COURSE EXECUTION ACCURACY
SGT11961.3 SGR 645.4 SG3 1401.2
RRT .6414 RRF .6213 RTF .9858
SGB11978.7 R23 -.0157 R13 .9857
SG111968.5 SG2 494.9 THA 1.99

ORBIT DETERMINATION ACCURACY
ST 3352.2 SR 490.4 SS 1129.8
CRT .9909 CRS -.8751 CST -.9260
LSA 3547.2 MSA 413.3 SSA 35.0
EL1 3387.3 EL2 65.2 ALF 8.25

LAUNCH DATE NOV 30 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 784.351 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.047 GAL -1.12 AZL 87.81 HCA 233.33 SMA 187.68 ECC .21481 INC 2.1919 V1 30.200
RP 209.77 LAP -1.76 LOP 301.13 VP 23.627 GAP -10.43 AZP 91.31 TAL 353.65 TAP 226.98 RCA 147.37 APO 228.00 V2 26.137
RC 310.132 GL 23.98 GP -4.09 ZAL 96.74 ZAP 43.88 ETS 174.93 ZAE 68.31 ETE 177.75 ZAC 80.53 ETC 257.63 CLP 43.72

PLANETOCENTRIC CONIC

C3 9.666 VHL 3.109 DLA 27.76 RAL 176.61 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.164 DPA 3.74 RAP 165.09 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 15	3216.89	-25.86	111.92	34.87	78.04	14 13 52	2616.9	-27.25	103.53
90.00	11 41 38	3537.67	-19.60	133.31	32.88	69.15	12 40 36	2937.7	-22.26	125.65
100.00	15 26 52	2808.74	-29.02	82.50	35.49	82.51	16 13 40	2208.7	-29.76	73.78
100.00	12 17 43	3421.05	-16.65	123.43	31.56	64.81	13 14 44	2821.1	-19.90	116.15
110.00	17 36 54	2401.79	-34.18	52.00	35.88	89.95	18 16 55	1801.8	-33.81	42.78
110.00	12 24 10	3400.77	-12.11	119.33	28.99	57.79	13 20 51	2800.8	-16.28	112.71

DIFFERENTIAL CORRECTIONS
TDE 1.6295 TRA 1.9477 TC-17.7421 BAU 2.2929
RDE .2562 RRA .1901 RC3 -.2427 FAU .24759
FDE 1.0969 FRA 3.3864 FC-22.1762 BSP 42168
BDE 1.6496 BRA 1.9569 BC317.7438 FSP 4472

MID-COURSE EXECUTION ACCURACY
SGT12131.5 SGR 634.4 SG3 1349.5
RRT .6093 RRF .5882 RTF .9858
SGB12148.1 R23 -.0170 R13 .9858
SG112137.7 SG2 502.8 THA 1.83

ORBIT DETERMINATION ACCURACY
ST 3257.2 SR 486.8 SS 1063.1
CRT .9862 CRS -.8393 CST -.9123
LSA 3434.1 MSA 426.3 SSA 35.2
EL1 3292.4 EL2 79.8 ALF 8.39

LAUNCH DATE NOV 30 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 788.656 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.053 GAL -1.24 AZL 87.83 HCA 234.56 SMA 187.79 ECC .21544 INC 2.1725 V1 30.200
RP 209.55 LAP -1.77 LOP 302.37 VP 23.663 GAP -10.53 AZP 91.26 TAL 352.97 TAP 227.53 RCA 147.33 APO 228.24 V2 26.162
RC 311.080 GL 23.69 GP -3.97 ZAL 98.03 ZAP 43.02 ETS 174.92 ZAE 67.15 ETE 177.73 ZAC 80.73 ETC 257.59 CLP 42.87

PLANETOCENTRIC CONIC

C3 9.722 VHL 3.118 DLA 26.94 RAL 177.76 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.229 DPA 3.70 RAP 165.48 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 59	3125.23	-26.99	105.45	36.23	81.09	14 45 4	2525.2	-27.94	96.92
90.00	11 18 6	3631.61	-17.22	139.17	33.23	67.17	12 18 37	3031.6	-20.17	131.74
100.00	15 48 3	2754.31	-29.44	78.51	36.58	84.57	16 33 57	2154.3	-29.88	69.73
100.00	12 5 43	3477.77	-14.97	126.81	32.17	63.82	13 3 41	2877.8	-18.37	119.67
110.00	17 50 55	2369.82	-34.16	49.51	36.77	91.43	18 30 25	1769.8	-33.58	40.31
110.00	12 19 20	3435.02	-10.86	121.20	29.79	57.39	13 16 35	2835.0	-15.08	114.64

DIFFERENTIAL CORRECTIONS
TDE 1.5577 TRA 2.0910 TC-17.8880 BAU 2.3250
RDE .2553 RRA .1907 RC3 -.1995 FAU .23740
FDE .9334 FRA 3.3990 FC-21.1413 BSP 42750
BDE 1.5785 BRA 2.0997 BC317.8891 FSP 4305

MID-COURSE EXECUTION ACCURACY
SGT12296.3 SGR 624.6 SG3 1298.4
RRT .5761 RRF .5539 RTF .9858
SGB12312.2 R23 -.0185 R13 .9858
SG112301.6 SG2 510.3 THA 1.68

ORBIT DETERMINATION ACCURACY
ST 3158.7 SR 483.8 SS 1001.8
CRT .9794 CRS -.7947 CST -.8961
LSA 3319.6 MSA 440.7 SSA 35.4
EL1 3194.1 EL2 96.5 ALF 8.54

LAUNCH DATE NOV 30 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 792.963 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.058 GAL -1.37 AZL 87.85 HCA 235.80 SMA 187.89 ECC .21609 INC 2.1537 V1 30.200
RP 209.34 LAP -1.78 LOP 303.61 VP 23.698 GAP -10.64 AZP 91.21 TAL 352.28 TAP 228.08 RCA 147.29 APO 228.49 V2 26.186
RC 312.019 GL 23.39 GP -3.86 ZAL 99.35 ZAP 42.18 ETS 174.91 ZAE 66.03 ETE 177.71 ZAC 80.92 ETC 257.54 CLP 42.04

PLANETOCENTRIC CONIC

C3 9.790 VHL 3.129 DLA 26.10 RAL 178.92 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.296 DPA 3.65 RAP 165.90 ECC 1.1611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 15	3057.54	-27.61	100.60	37.42	83.45	15 9 13	2457.5	-28.23	91.99
90.00	11 2 6	3702.07	-15.31	143.46	33.81	65.88	12 3 48	3102.1	-18.44	136.18
100.00	16 7 18	2705.98	-29.70	74.94	37.63	86.43	16 52 24	2106.0	-29.88	66.14
100.00	11 55 44	3528.86	-13.42	129.81	32.87	63.04	12 54 33	2928.9	-16.93	122.77
110.00	18 4 36	2338.99	-34.08	47.10	37.67	92.85	18 43 35	1739.0	-33.31	37.95
110.00	12 14 56	3468.62	-9.62	123.01	30.64	57.04	13 12 45	2868.6	-13.90	116.52

DIFFERENTIAL CORRECTIONS
TDE 1.4815 TRA 2.2401 TC-18.0094 BAU 2.3572
RDE .2551 RRA .1912 RC3 -.1583 FAU .22747
FDE .7778 FRA 3.4092 FC-20.1158 BSP 43292
BDE 1.5033 BRA 2.2482 BC318.0100 FSP 4137

MID-COURSE EXECUTION ACCURACY
SGT12459.3 SGR 616.4 SG3 1248.5
RRT .5423 RRF .5190 RTF .9858
SGB12474.6 R23 -.0196 R13 .9858
SG112463.8 SG2 517.8 THA 1.54

ORBIT DETERMINATION ACCURACY
ST 3058.1 SR 481.5 SS 947.8
CRT .9701 CRS -.7404 CST -.8771
LSA 3205.0 MSA 457.1 SSA 35.5
EL1 3093.6 EL2 115.6 ALF 8.70

LAUNCH DATE NOV 30 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 797.273 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.064 GAL -1.50 AZL 87.86 HCA 237.04 SMA 188.00 ECC .21678 INC 2.1354 V1 30.200
RP 209.14 LAP -1.79 LOP 304.84 VP 23.732 GAP -10.75 AZP 91.16 TAL 351.57 TAP 228.61 RCA 147.24 APO 228.75 V2 26.209
RC 312.950 GL 23.08 GP -3.75 ZAL 100.69 ZAP 41.37 ETS 174.90 ZAE 64.92 ETE 177.70 ZAC 81.12 ETC 257.50 CLP 41.23

PLANETOCENTRIC CONIC

C3 9.871 VHL 3.142 DLA 25.25 RAL 180.09 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.364 DPA 3.58 RAP 166.34 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 10	3000.66	-27.98	96.48	38.56	85.48	15 30 11	2400.7	-28.32	87.83
90.00	10 49 33	3762.23	-13.60	147.06	34.51	64.92	11 52 16	3162.2	-16.87	139.90
100.00	16 25 16	2661.84	-29.84	71.67	38.68	88.15	17 9 37	2061.8	-29.78	62.86
100.00	11 47 9	3576.28	-11.94	132.55	33.66	62.39	12 46 45	2976.3	-15.54	125.61
110.00	18 17 59	2309.14	-33.95	44.78	38.58	94.22	18 56 28	1709.1	-33.00	35.67
110.00	12 10 55	3501.74	-8.39	124.79	31.54	56.74	13 9 16	2901.7	-12.71	118.35

DIFFERENTIAL CORRECTIONS
TDE 1.4019 TRA 2.3941 TC-18.0994 BAU 2.3886
RDE .2554 RRA .1915 RC3 -.1194 FAU .21791
FDE .6330 FRA 3.4123 FC-19.1115 BSP 43840
BDE 1.4250 BRA 2.4017 BC318.0998 FSP 3978

MID-COURSE EXECUTION ACCURACY
SGT12616.9 SGR 609.6 SG3 1200.0
RRT .5081 RRF .4837 RTF .9858
SGB12631.6 R23 -.0209 R13 .9858
SG112620.7 SG2 524.9 THA 1.41

ORBIT DETERMINATION ACCURACY
ST 2958.0 SR 479.9 SS 902.0
CRT .9574 CRS -.6773 CST -.8569
LSA 3093.2 MSA 473.9 SSA 35.5
EL1 2993.5 EL2 136.9 ALF 8.85

LAUNCH DATE NOV 30 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 801.586 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.071 GAL -1.63 AZL 87.88 HCA 238.28 SMA 188.10 ECC .21750 INC 2.1175 V1 30.200
RP 208.94 LAP -1.80 LOP 306.09 VP 23.766 GAP -10.85 AZP 91.11 TAL 350.85 TAP 229.13 RCA 147.19 APO 229.02 V2 26.232
RC 313.871 GL 22.76 GP -3.64 ZAL 102.05 ZAP 40.58 ETS 174.89 ZAE 63.84 ETE 177.68 ZAC 81.31 ETC 257.45 CLP 40.44

PLANETOCENTRIC CONIC

C3 9.966 VHL 3.157 DLA 24.39 RAL 181.28 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.433 DPA 3.49 RAP 166.80 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 4	2950.28	-28.20	92.81	39.67	87.31	15 49 14	2350.3	-28.27	84.14
90.00	10 39 6	3816.42	-12.02	150.24	35.30	64.17	11 42 42	3216.4	-15.40	143.20
100.00	16 42 15	2620.79	-29.89	68.62	39.71	89.75	17 25 56	2020.8	-29.61	59.82
100.00	11 39 35	3621.14	-10.51	135.11	34.52	61.85	12 39 57	3021.1	-14.19	128.26
110.00	18 31 8	2280.17	-33.79	42.54	39.50	95.54	19 9 8	1680.2	-32.65	33.48
110.00	12 7 12	3534.52	-7.16	126.53	32.50	56.49	13 6 7	2934.5	-11.52	120.15

DIFFERENTIAL CORRECTIONS
TDE 1.3188 TRA 2.5560 TC-18.1577 BAU 2.4193
RDE .2562 RRA .1917 RC3 -.0824 FAU .20857
FDE .4973 FRA 3.4154 FC-18.1180 BSP 44391
BDE 1.3434 BRA 2.5632 BC318.1579 FSP 3822

MID-COURSE EXECUTION ACCURACY
SGT12771.4 SGR 604.1 SG3 1152.7
RRT .4738 RRF .4486 RTF .9858
SGB12785.6 R23 -.0220 R13 .9858
SG112774.6 SG2 531.9 THA 1.29

ORBIT DETERMINATION ACCURACY
ST 2860.4 SR 479.0 SS 865.1
CRT .9407 CRS -.6048 CST -.8356
LSA 2986.0 MSA 492.4 SSA 35.4
EL1 2895.8 EL2 160.5 ALF 8.98

LAUNCH DATE NOV 30 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 805.901 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.077 GAL -1.77 AZL 87.90 HCA 239.52 SMA 188.21 ECC .21826 INC 2.1001 V1 30.200
RP 208.76 LAP -1.81 LOP 307.33 VP 23.798 GAP -10.96 AZP 91.07 TAL 350.11 TAP 229.63 RCA 147.13 APO 229.29 V2 26.254
RC 314.784 GL 22.44 GP -3.54 ZAL 103.43 ZAP 39.81 ETS 174.88 ZAE 62.77 ETE 177.67 ZAC 81.51 ETC 257.40 CLP 39.68

PLANETOCENTRIC CONIC

C3 10.076 VHL 3.174 DLA 23.51 RAL 182.47 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.503 DPA 3.39 RAP 167.27 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 35	2904.36	-28.30	89.45	40.76	88.99	16 6 59	2304.4	-28.14	80.79
90.00	10 30 5	3866.69	-10.51	153.17	36.17	63.55	11 34 31	3266.7	-13.98	146.21
100.00	16 58 30	2582.17	-29.87	65.75	40.76	91.26	17 41 32	1982.2	-29.37	56.98
100.00	11 32 50	3664.11	-9.12	137.55	35.44	61.41	12 33 54	3064.1	-12.87	130.76
110.00	18 44 2	2251.99	-33.58	40.36	40.45	96.81	19 21 34	1652.0	-32.27	31.37
110.00	12 3 47	3567.06	-5.93	128.25	33.50	56.27	13 3 14	2967.1	-10.32	121.91

DIFFERENTIAL CORRECTIONS
TDE 1.2314 TRA 2.7233 TC-18.1883 BAU 2.4500
RDE .2575 RRA .1918 RC3 -.0475 FAU .19951
FDE .3660 FRA 3.4146 FC-17.1430 BSP 44953
BDE 1.2580 BRA 2.7300 BC318.1884 FSP 3680

MID-COURSE EXECUTION ACCURACY
SGT12923.0 SGR 599.6 SG3 1106.6
RRT .4394 RRF .4131 RTF .9857
SGB12936.9 R23 -.0232 R13 .9857
SG112925.7 SG2 538.5 THA 1.17

ORBIT DETERMINATION ACCURACY
ST 2765.3 SR 478.5 SS 835.3
CRT .9189 CRS -.5216 CST -.8126
LSA 2882.5 MSA 513.4 SSA 35.2
EL1 2800.2 EL2 186.4 ALF 9.07

LAUNCH DATE NOV 30 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 810.217 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.083 GAL -1.91 AZL 87.92 HCA 240.76 SMA 188.32 ECC .21905 INC 2.0831 V1 30.200
RP 208.58 LAP -1.82 LOP 308.57 VP 23.830 GAP -11.07 AZP 91.02 TAL 349.36 TAP 230.13 RCA 147.07 APO 229.58 V2 26.274
RC 315.690 GL 22.11 GP -3.45 ZAL 104.84 ZAP 39.06 ETS 174.87 ZAE 61.73 ETE 177.66 ZAC 81.70 ETC 257.34 CLP 38.93

PLANETOCENTRIC CONIC

C3 10.200 VHL 3.194 DLA 22.62 RAL 183.66 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.574 DPA 3.28 RAP 167.77 ECC 1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 4	2861.76	-28.31	86.34	41.85	90.55	16 23 46	2261.8	-27.94	77.69
90.00	10 22 7	3914.21	-9.05	155.90	37.11	63.06	11 27 21	3314.2	-12.60	149.02
100.00	17 14 9	2545.53	-29.78	63.03	41.80	92.69	17 56 35	1945.5	-29.09	54.29
100.00	11 26 44	3705.68	-7.75	139.88	36.41	61.04	12 28 29	3105.7	-11.56	133.16
110.00	18 56 45	2224.55	-33.34	38.26	41.41	98.04	19 33 49	1624.5	-31.87	29.33
110.00	12 0 37	3599.42	-4.71	129.96	34.54	56.10	13 0 37	2999.4	-9.13	123.65

DIFFERENTIAL CORRECTIONS
TDE 1.1412 TRA 2.8976 TC-18.1829 BAU 2.4796
RDE .2594 RRA .1917 RC3 -.0142 FAU .19057
FDE .2443 FRA 3.4115 FC-16.1742 BSP 45501
BDE 1.1703 BRA 2.9039 BC318.1829 FSP 3539

MID-COURSE EXECUTION ACCURACY
SGT13069.0 SGR 596.3 SG3 1061.3
RRT .4051 RRF .3780 RTF .9856
SGB13082.6 R23 -.0241 R13 .9856
SG113071.3 SG2 545.0 THA 1.06

ORBIT DETERMINATION ACCURACY
ST 2677.1 SR 478.6 SS 814.2
CRT .8911 CRS -.4324 CST -.7915
LSA 2787.7 MSA 535.3 SSA 34.9
EL1 2711.0 EL2 214.5 ALF 9.11

LAUNCH DATE NOV 30 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 814.535 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.089 GAL -2.05 AZL 87.93 HCA 242.01 SMA 188.44 ECC .21988 INC 2.0665 V1 30.200
RP 208.40 LAP -1.82 LOP 309.82 VP 23.861 GAP -11.17 AZP 90.97 TAL 348.60 TAP 230.61 RCA 147.00 APO 229.87 V2 26.294
RC 316.588 GL 21.77 GP -3.36 ZAL 106.26 ZAP 38.33 ETS 174.86 ZAE 60.70 ETE 177.65 ZAC 81.90 ETC 257.29 CLP 38.21

PLANETOCENTRIC CONIC

C3 10.341 VHL 3.216 DLA 21.72 RAL 184.86 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.647 DPA 3.15 RAP 168.28 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 46	2821.78	-28.25	83.41	42.95	92.02	16 39 48	2221.8	-27.67	74.80
90.00	10 15 0	3959.71	-7.64	158.50	38.11	62.65	11 20 59	3359.7	-11.25	151.67
100.00	17 29 18	2510.56	-29.64	60.43	42.86	94.05	18 11 8	1910.6	-28.77	51.74
100.00	11 21 9	3746.16	-6.41	142.14	37.44	60.74	12 23 36	3146.2	-10.27	135.47
110.00	19 9 16	2197.81	-33.06	36.22	42.40	99.21	19 45 53	1597.8	-31.44	27.37
110.00	11 57 41	3631.68	-3.48	131.65	35.63	55.97	12 58 12	3031.7	-7.92	125.38

DIFFERENTIAL CORRECTIONS
TDE 1.0463 TRA 3.0769 TC-18.1519 BAU 2.5096
RDE .2618 RRA .1914 RC3 .0167 FAU .18204
FDE .1308 FRA 3.4024 FC-15.2396 BSP 45997
BDE 1.0786 BRA 3.0829 BC318.1519 FSP 3396

MID-COURSE EXECUTION ACCURACY
SGT13213.3 SGR 593.8 SG3 1017.5
RRT .3710 RRF .3431 RTF .9856
SGB13226.6 R23 -.0250 R13 .9855
SG113215.1 SG2 551.3 THA .96

ORBIT DETERMINATION ACCURACY
ST 2594.6 SR 479.4 SS 800.3
CRT .8560 CRS -.3393 CST -.7740
LSA 2700.1 MSA 557.1 SSA 34.5
EL1 2627.2 EL2 244.8 ALF 9.07

LAUNCH DATE NOV 30 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 818.854 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.096 GAL -2.19 AZL 87.95 HCA 243.26 SMA 188.55 ECC .22076 INC 2.0502 V1 30.200
RP 208.24 LAP -1.83 LOP 311.07 VP 23.891 GAP -11.28 AZP 90.92 TAL 347.82 TAP 231.08 RCA 146.93 APO 230.17 V2 26.314
RC 317.480 GL 21.42 GP -3.27 ZAL 107.69 ZAP 37.62 ETS 174.84 ZAE 59.70 ETE 177.64 ZAC 82.09 ETC 257.23 CLP 37.50

PLANETOCENTRIC CONIC

C3 10.499 VHL 3.240 DLA 20.80 RAL 186.07 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.721 DPA 3.01 RAP 168.82 ECC 1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 50	2783.95	-28.13	80.65	44.06	93.40	16 55 14	2183.9	-27.36	72.07
90.00	10 8 32	4003.66	-6.26	160.99	39.16	62.33	11 15 16	3403.7	-9.92	154.22
100.00	17 44 1	2477.04	-29.46	57.96	43.94	95.34	18 25 18	1877.0	-28.40	49.31
100.00	11 16 3	3785.80	-5.09	144.33	38.52	60.50	12 19 8	3185.8	-8.98	137.71
110.00	19 21 36	2171.73	-32.76	34.24	43.41	100.35	19 57 48	1571.7	-30.99	25.47
110.00	11 54 57	3663.87	-2.25	133.33	36.76	55.88	12 56 0	3063.9	-6.71	127.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9497 TRA 3.2640 TC-18.0872 BAU 2.5388 SGT13354.1 SGR 592.1 SG3 974.7 ST 2524.7 SR 480.6 SS 793.3
RDE .2648 RRA .1910 RC3 .0458 FAU .17366 RRT .3375 RRF .3088 RTF .9854 CRT .8132 CRS -.2449 CST -.7609
FDE .0249 FRA 3.3913 FC-14.3192 BSP 46530 SGB13367.2 R23 -.0259 R13 .9854 LSA 2626.3 MSA 579.5 SSA 34.1
BDE .9859 BRA 3.2696 BC318.0873 FSP 3262 SG113355.6 SG2 557.3 THA .86 EL1 2555.1 EL2 276.4 ALF 8.90

LAUNCH DATE NOV 30 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 823.173 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.102 GAL -2.34 AZL 87.97 HCA 244.51 SMA 188.66 ECC .22167 INC 2.0343 V1 30.200
RP 208.08 LAP -1.84 LOP 312.32 VP 23.920 GAP -11.38 AZP 90.88 TAL 347.03 TAP 231.54 RCA 146.84 APO 230.49 V2 26.332
RC 318.367 GL 21.06 GP -3.19 ZAL 109.14 ZAP 36.93 ETS 174.83 ZAE 58.71 ETE 177.63 ZAC 82.29 ETC 257.18 CLP 36.82

PLANETOCENTRIC CONIC

C3 10.675 VHL 3.267 DLA 19.88 RAL 187.27 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.795 DPA 2.86 RAP 169.36 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 21	2747.93	-27.96	78.03	45.17	94.70	17 10 9	2147.9	-27.01	69.49
90.00	10 2 38	4046.42	-4.90	163.40	40.27	62.08	11 10 4	3446.4	-8.60	156.67
100.00	17 58 21	2444.83	-29.23	55.59	45.03	96.56	18 39 6	1844.8	-28.01	47.00
100.00	11 11 19	3824.76	-3.78	146.49	39.65	60.33	12 15 4	3224.8	-7.70	139.89
110.00	19 33 46	2146.32	-32.44	32.33	44.44	101.43	20 9 32	1546.3	-30.52	23.64
110.00	11 52 24	3696.04	-1.02	135.01	37.93	55.83	12 54 0	3096.0	-5.50	128.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8487 TRA 3.4573 TC-17.9900 BAU 2.5675 SGT13489.8 SGR 591.2 SG3 933.2 ST 2465.8 SR 482.2 SS 792.3
RDE .2682 RRA .1903 RC3 .0728 FAU .16555 RRT .3046 RRF .2749 RTF .9852 CRT .7614 CRS -.1498 CST -.7526
FDE -.0760 FRA 3.3772 FC-13.4260 BSP 47051 SGB13502.8 R23 -.0270 R13 .9852 LSA 2564.5 MSA 602.0 SSA 33.6
BDE .8901 BRA 3.4625 BC317.9901 FSP 3132 SG113491.0 SG2 563.0 THA .77 EL1 2493.4 EL2 309.1 ALF 8.60

LAUNCH DATE NOV 30 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 827.492 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.109 GAL -2.50 AZL 87.98 HCA 245.77 SMA 188.78 ECC .22263 INC 2.0187 V1 30.200
RP 207.93 LAP -1.84 LOP 313.58 VP 23.948 GAP -11.49 AZP 90.83 TAL 346.22 TAP 231.98 RCA 146.75 APO 230.81 V2 26.349
RC 319.247 GL 20.70 GP -3.11 ZAL 110.60 ZAP 36.26 ETS 174.82 ZAE 57.74 ETE 177.63 ZAC 82.49 ETC 257.12 CLP 36.15

PLANETOCENTRIC CONIC

C3 10.870 VHL 3.297 DLA 18.95 RAL 188.48 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.871 DPA 2.69 RAP 169.93 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 24	2713.52	-27.74	75.54	46.31	95.93	17 24 38	2113.5	-26.63	67.05
90.00	9 57 12	4088.23	-3.56	165.74	41.43	61.89	11 5 20	3488.2	-7.30	159.05
100.00	18 12 21	2413.79	-28.97	53.32	46.14	97.73	18 52 35	1813.8	-27.59	44.79
100.00	11 6 56	3863.18	-2.48	148.60	40.83	60.20	12 11 19	3263.2	-6.43	142.04
110.00	19 45 45	2121.54	-32.09	30.48	45.50	102.48	20 21 7	1521.5	-30.04	21.87
110.00	11 50 1	3728.20	.21	136.68	39.15	55.82	12 52 9	3128.2	-4.28	130.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7447 TRA 3.6574 TC-17.8662 BAU 2.5965 SGT13624.6 SGR 590.9 SG3 892.8 ST 2421.6 SR 484.4 SS 796.2
RDE .2722 RRA .1895 RC3 .0979 FAU .15767 RRT .2723 RRF .2419 RTF .9850 CRT .7008 CRS -.0596 CST -.7517
FDE -.1683 FRA 3.3604 FC-12.5572 BSP 47565 SGB13637.4 R23 -.0277 R13 .9849 LSA 2518.8 MSA 622.4 SSA 33.0
BDE .7929 BRA 3.6623 BC317.8665 FSP 3004 SG113625.5 SG2 568.5 THA .68 EL1 2445.8 EL2 342.2 ALF 8.14

LAUNCH DATE NOV 30 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 831.811 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.116 GAL -2.65 AZL 88.00 HCA 247.02 SMA 188.90 ECC .22363 INC 2.0034 V1 30.200
RP 207.79 LAP -1.84 LOP 314.83 VP 23.975 GAP -11.60 AZP 90.78 TAL 345.40 TAP 232.42 RCA 146.66 APO 231.14 V2 26.366
RC 320.122 GL 20.32 GP -3.03 ZAL 112.07 ZAP 35.61 ETS 174.80 ZAE 56.78 ETE 177.62 ZAC 82.69 ETC 257.06 CLP 35.49

PLANETOCENTRIC CONIC

C3 11.086 VHL 3.330 DLA 18.01 RAL 189.68 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 4.949 DPA 2.52 RAP 170.51 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 3	2680.52	-27.48	73.16	47.46	97.10	17 38 43	2080.5	-26.22	64.72
90.00	9 52 9	4129.27	-2.24	168.03	42.63	61.76	11 0 59	3529.3	-6.00	161.37
100.00	18 26 2	2383.85	-28.67	51.15	47.27	98.84	19 5 46	1783.9	-27.15	42.67
100.00	11 2 51	3901.17	-1.20	150.69	42.05	60.13	12 7 52	3301.2	-5.16	144.14
110.00	19 57 36	2097.41	-31.72	28.70	46.58	103.47	20 32 33	1497.4	-29.54	20.17
110.00	11 47 47	3760.38	1.44	138.36	40.40	55.84	12 50 27	3160.4	-3.05	132.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6393 TRA 3.8656 TC-17.7072 BAU 2.6243 SGT13754.0 SGR 591.2 SG3 853.1 ST 2395.6 SR 487.1 SS 803.3
RDE .2767 RRA .1884 RC3 .1211 FAU .14992 RRT .2408 RRF .2098 RTF .9847 CRT .6322 CRS .0240 CST -.7575
FDE -.2523 FRA 3.3393 FC-11.7077 BSP 48087 SGB13766.7 R23 -.0285 R13 .9847 LSA 2492.2 MSA 639.7 SSA 32.4
BDE .6966 BRA 3.8701 BC317.7076 FSP 2882 SG113754.7 SG2 573.8 THA .59 EL1 2415.8 EL2 374.3 ALF 7.51

LAUNCH DATE NOV 30 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 836.129 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.122	GAL	-2.81	AZL	88.01	HCA	248.28	SMA	189.02	ECC	.22468	INC	1.9883	V1	30.200
RP	207.66	LAP	-1.85	LOP	316.09	VP	24.001	GAP	-11.70	AZP	90.74	TAL	344.56	TAP	232.84	RCA	146.55	APO	231.49	V2	26.381
RC	320.992	GL	19.94	GP	-2.96	ZAL	113.55	ZAP	34.97	ETS	174.79	ZAE	55.84	ETE	177.62	ZAC	82.89	ETC	257.00	CLP	34.86

PLANETOCENTRIC CONIC

C3	11.322	VHL	3.365	DLA	17.07	RAL	190.88	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	5.027	DPA	2.33	RAP	171.11	ECC	1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 19	2648.83	-27.20	70.88	48.63	98.20	17 52 28	2048.8	-25.78	62.50
90.00	9 47 28	4169.68	-.94	170.29	43.88	61.70	10 56 58	3569.7	-4.72	163.65
100.00	18 39 27	2354.94	-28.35	49.06	48.42	99.89	19 18 42	1754.9	-26.69	40.65
100.00	10 59 1	3938.80	.08	152.75	43.31	60.11	12 4 40	3338.8	-3.90	146.22
110.00	20 9 16	2073.92	-31.33	26.98	47.68	104.42	20 43 50	1473.9	-29.03	18.53
110.00	11 45 42	3792.58	2.67	140.04	41.70	55.91	12 48 54	3192.6	-1.83	133.84

DIFFERENTIAL CORRECTIONS

TDE	.5301	TRA	4.0796	TC-17.5231	BAU	2.6525	
RDE	.2818	RRA	.1871	RC3 .1423	FAU	.14251	
FDE	-.3315	FRA	3.3140	FC-10.8966	BSP	48595	
BDE	.6004	BRA	4.0839	BC317.5236	FSP	2763	

MID-COURSE EXECUTION ACCURACY

SGT13881.0	SGR	592.0	SG3	814.8			
RRT	.2100	RRF	.1781	RTF	.9844		
SGB13893.6	R23	-.0296	R13	.9844			
SG113881.6	SG2	578.8	THA	.51			

ORBIT DETERMINATION ACCURACY

ST	2385.9	SR	490.1	SS	813.0		
CRT	.5559	CRS	.1029	CST	-.7678		
LSA	2482.8	MSA	654.4	SSA	31.7		
EL1	2401.9	EL2	404.7	ALF	6.71		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 840.445 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.129	GAL	-2.98	AZL	88.03	HCA	249.53	SMA	189.14	ECC	.22578	INC	1.9734	V1	30.200
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.027	GAP	-11.81	AZP	90.69	TAL	343.71	TAP	233.25	RCA	146.44	APO	231.84	V2	26.396
RC	321.856	GL	19.56	GP	-2.89	ZAL	115.03	ZAP	34.35	ETS	174.77	ZAE	54.92	ETE	177.61	ZAC	83.09	ETC	256.94	CLP	34.24

PLANETOCENTRIC CONIC

C3	11.581	VHL	3.403	DLA	16.12	RAL	192.08	RAD	6567.4	VEL	11.531	PTH	2.01	VHP	5.107	DPA	2.13	RAP	171.72	ECC	1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 16	2618.34	-26.88	68.71	49.82	99.25	18 5 54	2018.3	-25.33	60.38
90.00	9 43 5	4209.57	.35	172.51	45.17	61.68	10 53 15	3609.6	-3.44	165.88
100.00	18 52 36	2327.02	-28.01	47.05	49.60	100.90	19 31 23	1727.0	-26.22	38.71
100.00	10 55 26	3976.13	1.35	154.80	44.62	60.14	12 1 42	3376.1	-2.64	148.28
110.00	20 20 47	2051.09	-30.93	25.32	48.82	105.33	20 54 58	1451.1	-28.52	16.95
110.00	11 43 44	3824.83	3.90	141.73	43.03	56.01	12 47 29	3224.8	-.59	135.52

DIFFERENTIAL CORRECTIONS

TDE	.4180	TRA	4.3007	TC-17.3113	BAU	2.6804	
RDE	.2874	RRA	.1856	RC3 .1616	FAU	.13527	
FDE	-.4035	FRA	3.2855	FC-10.1121	BSP	49083	
BDE	.5073	BRA	4.3047	BC317.3120	FSP	2647	

MID-COURSE EXECUTION ACCURACY

SGT14004.7	SGR	593.2	SG3	777.5			
RRT	.1800	RRF	.1474	RTF	.9840		
SGB14017.3	R23	-.0306	R13	.9840			
SG114005.1	SG2	583.5	THA	.44			

ORBIT DETERMINATION ACCURACY

ST	2394.4	SR	493.5	SS	824.1		
CRT	.4738	CRS	.1745	CST	-.7828		
LSA	2492.6	MSA	664.6	SSA	31.0		
EL1	2406.1	EL2	432.5	ALF	5.77		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 844.760 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.136	GAL	-3.15	AZL	88.04	HCA	250.79	SMA	189.26	ECC	.22693	INC	1.9588	V1	30.200
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.051	GAP	-11.92	AZP	90.64	TAL	342.85	TAP	233.64	RCA	146.31	APO	232.21	V2	26.409
RC	322.714	GL	19.17	GP	-2.83	ZAL	116.51	ZAP	33.74	ETS	174.76	ZAE	54.01	ETE	177.61	ZAC	83.29	ETC	256.88	CLP	33.64

PLANETOCENTRIC CONIC

C3	11.864	VHL	3.444	DLA	15.18	RAL	193.27	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	5.188	DPA	1.92	RAP	172.34	ECC	1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 54	2589.00	-26.54	66.63	51.04	100.24	18 19 3	1989.0	-24.86	58.36
90.00	9 38 59	4249.02	1.62	174.71	46.51	61.73	10 49 48	3649.0	-2.17	168.09
100.00	19 5 30	2300.04	-27.65	45.13	50.80	101.85	19 43 50	1700.0	-25.73	36.85
100.00	10 52 4	4013.21	2.60	156.83	45.96	60.21	11 58 57	3413.2	-1.38	150.31
110.00	20 32 9	2028.91	-30.52	23.72	49.97	106.20	21 5 58	1428.9	-28.00	15.43
110.00	11 41 54	3857.11	5.12	143.43	44.40	56.16	12 46 11	3257.1	.64	137.21

DIFFERENTIAL CORRECTIONS

TDE	.3035	TRA	4.5296	TC-17.0734	BAU	2.7082	
RDE	.2935	RRA	.1838	RC3 .1791	FAU	.12821	
FDE	-.4693	FRA	3.2538	FC3-9.3558	BSP	49586	
BDE	.4222	BRA	4.5333	BC317.0744	FSP	2535	

MID-COURSE EXECUTION ACCURACY

SGT14125.8	SGR	594.8	SG3	741.2			
RRT	.1509	RRF	.1176	RTF	.9836		
SGB14138.4	R23	-.0315	R13	.9835			
SG114126.1	SG2	588.0	THA	.36			

ORBIT DETERMINATION ACCURACY

ST	2421.7	SR	497.3	SS	835.8		
CRT	.3883	CRS	.2393	CST	-.8004		
LSA	2521.8	MSA	670.7	SSA	30.2		
EL1	2429.6	EL2	456.8	ALF	4.73		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 849.072 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.143	GAL	-3.32	AZL	88.06	HCA	252.05	SMA	189.38	ECC	.22813	INC	1.9444	V1	30.200
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.074	GAP	-12.03	AZP	90.60	TAL	341.97	TAP	234.02	RCA	146.18	APO	232.59	V2	26.422
RC	323.566	GL	18.77	GP	-2.76	ZAL	118.00	ZAP	33.15	ETS	174.74	ZAE	53.12	ETE	177.60	ZAC	83.49	ETC	256.82	CLP	33.05

PLANETOCENTRIC CONIC

C3	12.173	VHL	3.489	DLA	14.23	RAL	194.46	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	5.270	DPA	1.70	RAP	172.98	ECC	1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 14	2560.74	-26.19	64.63	52.27	101.18	18 31 55	1960.7	-24.38	56.43
90.00	9 35 7	4288.10	2.88	176.90	47.89	61.82	10 46 35	3688.1	-.91	170.27
100.00	19 18 9	2273.99	-27.27	43.29	52.02	102.75	19 56 3	1674.0	-25.24	35.07
100.00	10 48 54	4050.07	3.85	158.86	47.35	60.33	11 56 24	3450.1	-.13	152.33
110.00	20 43 21	2007.40	-30.10	22.18	51.16	107.02	21 16 49	1407.4	-27.48	13.97
110.00	11 40 11	3889.43	6.34	145.13	45.80	56.34	12 45 0	3289.4	1.88	138.89

DIFFERENTIAL CORRECTIONS

TDE	.1866	TRA	4.7654	TC-16.8132	BAU	2.7363	
RDE	.3001	RRA	.1817	RC3 .1947	FAU	.12138	
FDE	-.5297	FRA	3.2188	FC3-8.6330	BSP	50073	
BDE	.3534	BRA	4.7688	BC316.8143	FSP	2427	

MID-COURSE EXECUTION ACCURACY

SGT14244.7	SGR	596.7	SG3	706.1			
RRT	.1226	RRF	.0885	RTF	.9830		
SGB14257.2	R23	-.0325	R13	.9830			
SG114244.9	SG2	592.2	THA	.29			

ORBIT DETERMINATION ACCURACY

ST	2466.6	SR	501.4	SS	847.7		
CRT	.3018	CRS	.2982	CST	-.8187		
LSA	2569.0	MSA	673.1	SSA	29.5		
EL1	2471.4	EL2	477.1	ALF	3.65		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 853.382 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.150	GAL	-3.50	AZL	88.07	HCA	253.32	SMA	189.51	ECC	.22938	INC	1.9302	V1	30.200
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.097	GAP	-12.15	AZP	90.55	TAL	341.08	TAP	234.39	RCA	146.04	APO	232.98	V2	26.434
RC	324.413	GL	18.37	GP	-2.70	ZAL	119.48	ZAP	32.58	ETS	174.72	ZAE	52.24	ETE	177.60	ZAC	83.70	ETC	256.76	CLP	32.48

PLANETOCENTRIC CONIC

C3	12.507	VHL	3.537	DLA	13.28	RAL	195.65	RAD	6567.5	VEL	11.571	PTH	2.02	VHP	5.354	DPA	1.47	RAP	173.64	ECC	1.2058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 19	2533.52	-25.81	62.73	53.53	102.06	18 44 32	1933.5	-23.89	54.59
90.00	9 31 29	4326.84	4.12	179.07	49.30	61.96	10 43 36	3726.8	.34	172.43
100.00	19 30 35	2248.85	-26.88	41.52	53.26	103.60	20 8 4	1648.8	-24.74	33.37
100.00	10 45 54	4086.74	5.08	160.89	48.78	60.50	11 54 1	3486.7	1.11	154.35
110.00	20 54 24	1986.57	-29.68	20.71	52.37	107.79	21 27 31	1386.6	-26.96	12.58
110.00	11 38 34	3921.79	7.56	146.84	47.25	56.56	12 43 56	3321.8	3.11	140.58

DIFFERENTIAL CORRECTIONS

TDE	.0679	TRA	5.0096	TC-16.5273	BAU	2.7638	
RDE	.3072	RRA	.1794	RC3 .2087	FAU	.11472	
FDE	-.5833	FRA	3.1808	FC3-7.9403	BSP	50561	
BDE	.3146	BRA	5.0128	BC316.5287	FSP	2321	

MID-COURSE EXECUTION ACCURACY

SGT14359.9	SGR	598.9	SG3	671.9			
RRT	.0952	RRF	.0604	RTF	.9824		
SGB14372.4	R23	-.0334	R13	.9824			
SG114360.0	SG2	596.2	THA	.23			

ORBIT DETERMINATION ACCURACY

ST	2528.5	SR	505.8	SS	858.5		
CRT	.2168	CRS	.3504	CST	-.8372		
LSA	2633.3	MSA	671.5	SSA	28.8		
EL1	2531.0	EL2	493.2	ALF	2.58		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 857.688 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.157	GAL	-3.68	AZL	88.08	HCA	254.58	SMA	189.63	ECC	.23070	INC	1.9162	V1	30.200
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.118	GAP	-12.26	AZP	90.51	TAL	340.17	TAP	234.75	RCA	145.89	APO	233.38	V2	26.444
RC	325.253	GL	17.96	GP	-2.64	ZAL	120.96	ZAP	32.02	ETS	174.70	ZAE	51.38	ETE	177.59	ZAC	83.90	ETC	256.70	CLP	31.92

PLANETOCENTRIC CONIC

C3	12.871	VHL	3.588	DLA	12.33	RAL	196.82	RAD	6567.5	VEL	11.587	PTH	2.03	VHP	5.439	DPA	1.24	RAP	174.30	ECC	1.2118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 8	2507.32	-25.43	60.91	54.81	102.90	18 56 55	1907.3	-23.40	52.82
90.00	9 28 2	4365.29	5.35	181.23	50.76	62.15	10 40 48	3765.3	1.58	174.57
100.00	19 42 47	2224.61	-26.48	39.83	54.53	104.40	20 19 52	1624.6	-24.24	31.74
100.00	10 43 4	4123.24	6.30	162.91	50.24	60.72	11 51 47	3523.2	2.35	156.35
110.00	21 5 18	1966.44	-29.25	19.30	53.60	108.53	21 38 4	1366.4	-26.44	11.24
110.00	11 37 3	3954.17	8.77	148.57	48.73	56.83	12 42 57	3354.2	4.35	142.28

DIFFERENTIAL CORRECTIONS

TDE	-.0534	TRA	5.2606	TC-16.2230	BAU	2.7917	
RDE	.3149	RRA	.1767	RC3 .2207	FAU	.10833	
FDE	-.6326	FRA	3.1377	FC3-7.2869	BSP	51044	
BDE	.3194	BRA	5.2635	BC316.2245	FSP	2217	

MID-COURSE EXECUTION ACCURACY

SGT14472.7	SGR	601.2	SG3	638.8			
RRT	.0687	RRF	.0328	RTF	.9818		
SGB14485.2	R23	-.0349	R13	.9818			
SG114472.8	SG2	599.8	THA	.16			

ORBIT DETERMINATION ACCURACY

ST	2604.9	SR	510.3	SS	868.2		
CRT	.1347	CRS	.3982	CST	-.8543		
LSA	2711.7	MSA	667.5	SSA	28.0		
EL1	2605.8	EL2	505.5	ALF	1.57		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 861.990 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.164	GAL	-3.87	AZL	88.10	HCA	255.84	SMA	189.76	ECC	.23207	INC	1.9023	V1	30.200
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.139	GAP	-12.38	AZP	90.47	TAL	339.25	TAP	235.09	RCA	145.72	APO	233.80	V2	26.454
RC	326.088	GL	17.55	GP	-2.59	ZAL	122.44	ZAP	31.47	ETS	174.68	ZAE	50.53	ETE	177.59	ZAC	84.11	ETC	256.64	CLP	31.38

PLANETOCENTRIC CONIC

C3	13.264	VHL	3.642	DLA	11.39	RAL	197.99	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	5.525	DPA	.99	RAP	174.98	ECC	1.2183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 42	2482.11	-25.03	59.17	56.12	103.69	19 9 4	1882.1	-22.90	51.14
90.00	9 24 47	4403.49	6.56	183.38	52.26	62.39	10 38 10	3803.5	2.81	176.71
100.00	19 54 47	2201.25	-26.07	38.21	55.82	105.16	20 31 28	1601.2	-23.74	30.19
100.00	10 40 23	4159.58	7.50	164.93	51.75	60.98	11 49 42	3559.6	3.58	158.35
110.00	21 16 2	1947.02	-28.82	17.95	54.86	109.22	21 48 29	1347.0	-25.93	9.96
110.00	11 35 37	3986.58	9.98	150.31	50.25	57.13	12 42 4	3386.6	5.58	143.98

DIFFERENTIAL CORRECTIONS

TDE	-.1770	TRA	5.5193	TC-15.9016	BAU	2.8200	
RDE	.3231	RRA	.1738	RC3 .2313	FAU	.10206	
FDE	-.6757	FRA	3.0919	FC3-6.6618	BSP	51504	
BDE	.3684	BRA	5.5220	BC315.9033	FSP	2117	

MID-COURSE EXECUTION ACCURACY

SGT14583.8	SGR	603.8	SG3	606.6			
RRT	.0428	RRF	.0061	RTF	.9810		
SGB14596.3	R23	-.0360	R13	.9810			
SG114583.8	SG2	603.2	THA	.10			

ORBIT DETERMINATION ACCURACY

ST	2694.3	SR	515.2	SS	876.0		
CRT	.0569	CRS	.4406	CST	-.8702		
LSA	2802.6	MSA	660.9	SSA	27.3		
EL1	2694.5	EL2	514.3	ALF	.65		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 866.287 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.171	GAL	-4.06	AZL	88.11	HCA	257.11	SMA	189.89	ECC	.23350	INC	1.8885	V1	30.200
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.158	GAP	-12.50	AZP	90.42	TAL	338.31	TAP	235.42	RCA	145.55	APO	234.23	V2	26.463
RC	326.917	GL	17.14	GP	-2.53	ZAL	123.91	ZAP	30.94	ETS	174.66	ZAE	49.69	ETE	177.58	ZAC	84.32	ETC	256.58	CLP	30.85

PLANETOCENTRIC CONIC

C3	13.688	VHL	3.700	DLA	10.45	RAL	199.15	RAD	6567.5	VEL	11.622	PTH	2.04	VHP	5.613	DPA	.73	RAP	175.67	ECC	1.2253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 1	2457.88	-24.63	57.50	57.44	104.43	19 20 59	1857.9	-22.41	49.54
90.00	9 21 41	4441.44	7.75	185.53	53.79	62.68	10 35 43	3841.4	4.03	178.83
100.00	20 6 34	2178.77	-25.66	36.67	57.13	105.88	20 42 52	1578.8	-23.24	28.71
100.00	10 37 50	4195.77	8.69	166.96	53.29	61.29	11 47 46	3595.8	4.80	160.34
110.00	21 26 36	1928.31	-28.40	16.66	56.14	109.88	21 58 44	1328.3	-25.43	8.74
110.00	11 34 17	4019.00	11.17	152.06	51.80	57.48	12 41 16	3419.0	6.80	145.69

DIFFERENTIAL CORRECTIONS

TDE	-.3025	TRA	5.7850	TC-15.5639	BAU	2.8485	
RDE	.3318	RRA	.1705	RC3 .2402	FAU	.09603	
FDE	-.7142	FRA	3.0415	FC3-6.0736	BSP	51950	
BDE	.4490	BRA	5.7875	BC315.5658	FSP	2018	

MID-COURSE EXECUTION ACCURACY

SGT14691.6	SGR	606.4	SG3	575.5			
RRT	.0178	RRF	-.0201	RTF	.9801		
SGB14704.1	R23	-.0376	R13	.9801			
SG114691.6	SG2	606.3	THA	.04			

ORBIT DETERMINATION ACCURACY

ST	2794.3	SR	520.2	SS	881.8		
CRT	-.0154	CRS	.4793	CST	-.8840		
LSA	2903.3	MSA	653.0	SSA	26.6		
EL1	2794.3	EL2	520.1	ALF	179.83		

LAUNCH DATE NOV 30 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 870.579 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.178 GAL -4.25 AZL 88.13 HCA 258.38 SMA 190.02 ECC .23500 INC 1.8749 V1 30.200
RP 206.89 LAP -1.84 LOP 326.20 VP 24.176 GAP -12.62 AZP 90.38 TAL 337.36 TAP 235.74 RCA 145.36 APO 234.67 V2 26.471
RC 327.742 GL 16.73 GP -2.48 ZAL 125.37 ZAP 30.42 ETS 174.64 ZAE 48.87 ETE 177.58 ZAC 84.53 ETC 256.53 CLP 30.33

PLANETOCENTRIC CONIC

C3 14.146 VHL 3.761 DLA 9.52 RAL 200.29 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 5.702 DPA .47 RAP 176.38 ECC 1.2328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 7	2434.60	-24.23	55.92	58.79	105.12	19 32 42	1834.6	-21.92	48.01
90.00	9 18 45	4479.16	8.92	187.68	55.37	63.01	10 33 24	3879.2	5.23	180.95
100.00	20 18 8	2157.18	-25.25	35.19	58.47	106.55	20 54 5	1557.2	-22.74	27.29
100.00	10 35 25	4231.82	9.87	169.00	54.87	61.64	11 45 57	3631.8	6.00	162.34
110.00	21 37 1	1910.34	-27.98	15.43	57.45	110.49	22 8 51	1310.3	-24.93	7.58
110.00	11 33 2	4051.42	12.35	153.83	53.39	57.87	12 40 33	3451.4	8.02	147.42

DIFFERENTIAL CORRECTIONS
TDE -.4307 TRA 6.0591 TC-15.2128 BAU 2.8775
RDE .3411 RRA .1669 RC3 .2476 FAU .09018
FDE -.7480 FRA 2.9874 FC3-5.5188 BSP 52373
BDE .5494 BRA 6.0614 BC315.2148 FSP 1921

MID-COURSE EXECUTION ACCURACY
SGT14797.9 SGR 609.2 SG3 545.3
RRT -.0066 RRF -.0457 RTF .9792
SGB14810.4 R23 .0392 R13 -.9792
SG114797.9 SG2 609.1 THA 179.98

ORBIT DETERMINATION ACCURACY
ST 2903.7 SR 525.3 SS 885.5
CRT -.0824 CRS .5144 CST -.8962
LSA 3012.7 MSA 644.1 SSA 25.9
EL1 2904.0 EL2 523.5 ALF 179.12

LAUNCH DATE NOV 30 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 874.864 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.185 GAL -4.45 AZL 88.14 HCA 259.64 SMA 190.15 ECC .23656 INC 1.8614 V1 30.200
RP 206.84 LAP -1.83 LOP 327.46 VP 24.193 GAP -12.74 AZP 90.33 TAL 336.40 TAP 236.04 RCA 145.17 APO 235.13 V2 26.477
RC 328.562 GL 16.31 GP -2.44 ZAL 126.82 ZAP 29.92 ETS 174.62 ZAE 48.05 ETE 177.57 ZAC 84.74 ETC 256.47 CLP 29.83

PLANETOCENTRIC CONIC

C3 14.640 VHL 3.826 DLA 8.60 RAL 201.43 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 5.793 DPA .20 RAP 177.09 ECC 1.2409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 0	2412.28	-23.82	54.41	60.17	105.78	19 44 12	1812.3	-21.43	46.55
90.00	9 15 57	4516.67	10.07	189.84	56.98	63.40	10 31 14	3916.7	6.42	183.06
100.00	20 29 31	2136.46	-24.84	33.79	59.83	107.18	21 5 7	1536.5	-22.26	25.95
100.00	10 33 7	4267.73	11.02	171.04	56.48	62.04	11 44 15	3667.7	7.19	164.34
110.00	21 47 17	1893.11	-27.56	14.26	58.78	111.07	22 18 50	1293.1	-24.44	6.48
110.00	11 31 51	4083.84	13.51	155.62	55.02	58.30	12 39 55	3483.8	9.22	149.15

DIFFERENTIAL CORRECTIONS
TDE -.5597 TRA 6.3412 TC-14.8479 BAU 2.9065
RDE .3508 RRA .1630 RC3 .2536 FAU .08447
FDE -.7767 FRA 2.9305 FC3-4.9952 BSP 52807
BDE .6606 BRA 6.3433 BC314.8501 FSP 1828

MID-COURSE EXECUTION ACCURACY
SGT14900.7 SGR 612.0 SG3 516.0
RRT -.0301 RRF -.0704 RTF .9780
SGB14913.2 R23 .0409 R13 -.9780
SG114900.7 SG2 611.7 THA 179.93

ORBIT DETERMINATION ACCURACY
ST 3019.8 SR 530.6 SS 886.8
CRT -.1429 CRS .5458 CST -.9065
LSA 3127.9 MSA 634.7 SSA 25.2
EL1 3020.8 EL2 524.9 ALF 178.52

LAUNCH DATE NOV 30 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 879.143 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.192 GAL -4.66 AZL 88.15 HCA 260.91 SMA 190.28 ECC .23819 INC 1.8480 V1 30.200
RP 206.79 LAP -1.82 LOP 328.73 VP 24.210 GAP -12.87 AZP 90.29 TAL 335.42 TAP 236.33 RCA 144.96 APO 235.60 V2 26.483
RC 329.378 GL 15.90 GP -2.39 ZAL 128.26 ZAP 29.43 ETS 174.60 ZAE 47.26 ETE 177.57 ZAC 84.95 ETC 256.42 CLP 29.34

PLANETOCENTRIC CONIC

C3 15.171 VHL 3.895 DLA 7.68 RAL 202.56 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 5.886 DPA -.08 RAP 177.82 ECC 1.2497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 39	2390.88	-23.42	52.97	61.56	106.39	19 55 30	1790.9	-20.95	45.17
90.00	9 13 18	4553.98	11.20	192.00	58.63	63.82	10 29 12	3954.0	7.60	185.18
100.00	20 40 42	2116.61	-24.44	32.45	61.22	107.77	21 15 58	1516.6	-21.78	24.67
100.00	10 30 56	4303.49	12.15	173.09	58.13	62.48	11 42 40	3703.5	8.37	166.34
110.00	21 57 23	1876.63	-27.15	13.15	60.14	111.61	22 28 39	1276.6	-23.97	5.43
110.00	11 30 45	4116.23	14.67	157.42	56.68	58.77	12 39 21	3516.2	10.42	150.89

DIFFERENTIAL CORRECTIONS
TDE -.6916 TRA 6.6309 TC-14.4750 BAU 2.9363
RDE .3611 RRA .1587 RC3 .2582 FAU .07893
FDE -.8008 FRA 2.8692 FC3-4.5044 BSP 53204
BDE .7802 BRA 6.6328 BC314.4773 FSP 1735

MID-COURSE EXECUTION ACCURACY
SGT15001.9 SGR 614.9 SG3 487.5
RRT -.0531 RRF -.0946 RTF .9768
SGB15014.5 R23 .0427 R13 -.9768
SG115001.9 SG2 614.1 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 3141.4 SR 535.9 SS 885.4
CRT -.1983 CRS .5746 CST -.9154
LSA 3247.8 MSA 625.0 SSA 24.6
EL1 3143.2 EL2 525.0 ALF 178.01

LAUNCH DATE NOV 30 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 883.414 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.200 GAL -4.86 AZL 88.17 HCA 262.18 SMA 190.41 ECC .23990 INC 1.8347 V1 30.200
RP 206.75 LAP -1.82 LOP 330.00 VP 24.225 GAP -12.99 AZP 90.25 TAL 334.43 TAP 236.61 RCA 144.73 APO 236.09 V2 26.488
RC 330.190 GL 15.48 GP -2.34 ZAL 129.68 ZAP 28.95 ETS 174.58 ZAE 46.47 ETE 177.56 ZAC 85.17 ETC 256.36 CLP 28.86

PLANETOCENTRIC CONIC

C3 15.741 VHL 3.968 DLA 6.78 RAL 203.68 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 5.980 DPA -.37 RAP 178.55 ECC 1.2591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 6	2370.42	-23.02	51.60	62.98	106.96	20 6 36	1770.4	-20.48	43.85
90.00	9 10 45	4591.09	12.31	194.16	60.31	64.30	10 27 16	3991.1	8.75	187.29
100.00	20 51 41	2097.63	-24.04	31.19	62.62	108.33	21 26 38	1497.6	-21.31	23.45
100.00	10 28 52	4339.11	13.27	175.15	59.82	62.97	11 41 11	3739.1	9.54	168.34
110.00	22 7 19	1860.90	-26.75	12.11	61.52	112.12	22 38 20	1260.9	-23.51	4.44
110.00	11 29 43	4148.60	15.80	159.25	58.38	59.29	12 38 51	3548.6	11.61	152.65

DIFFERENTIAL CORRECTIONS
TDE -.8246 TRA 6.9293 TC-14.0934 BAU 2.9664
RDE .3719 RRA .1541 RC3 .2617 FAU .07356
FDE -.8210 FRA 2.8045 FC3-4.0459 BSP 53591
BDE .9046 BRA 6.9310 BC314.0958 FSP 1645

MID-COURSE EXECUTION ACCURACY
SGT15100.7 SGR 617.8 SG3 460.0
RRT -.0754 RRF -.1184 RTF .9753
SGB15113.3 R23 .0449 R13 -.9753
SG115100.7 SG2 616.1 THA 179.82

ORBIT DETERMINATION ACCURACY
ST 3266.5 SR 541.3 SS 881.6
CRT -.2479 CRS .6010 CST -.9227
LSA 3370.6 MSA 615.6 SSA 24.0
EL1 3269.3 EL2 523.9 ALF 177.59

LAUNCH DATE NOV 30 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 887.677 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.207 GAL -5.08 AZL 88.18 HCA 263.45 SMA 190.54 ECC .24168 INC 1.8215 V1 30.200
RP 206.71 LAP -1.81 LOP 331.27 VP 24.239 GAP -13.13 AZP 90.21 TAL 333.43 TAP 236.87 RCA 144.49 APO 236.59 V2 26.492
RC 331.000 GL 15.07 GP -2.30 ZAL 131.09 ZAP 28.48 ETS 174.56 ZAE 45.70 ETE 177.55 ZAC 85.38 ETC 256.31 CLP 28.39

PLANETOCENTRIC CONIC

C3 16.354 VHL 4.044 DLA 5.89 RAL 204.78 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 6.075 DPA -.67 RAP 179.30 ECC 1.2691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 20	2350.87	-22.63	50.30	64.42	107.50	20 17 31	1750.9	-20.02	42.60
90.00	9 8 20	4627.99	13.39	196.34	62.03	64.81	10 25 28	4028.0	9.89	189.41
100.00	21 2 28	2079.51	-23.64	29.98	64.05	108.84	21 37 8	1479.5	-20.85	22.30
100.00	10 26 53	4374.59	14.35	177.22	61.55	63.50	11 39 48	3774.6	10.68	170.36
110.00	22 17 6	1845.94	-26.37	11.12	62.92	112.59	22 47 52	1245.9	-23.07	3.50
110.00	11 28 45	4180.92	16.91	161.09	60.11	59.84	12 38 25	3580.9	12.78	154.42

DIFFERENTIAL CORRECTIONS
TDE -.9594 TRA 7.2356 TC-13.7069 BAU 2.9974
RDE .3832 RRA .1491 RC3 .2639 FAU .06835
FDE -.8367 FRA 2.7358 FC3-3.6184 BSP 53957
BDE 1.0331 BRA 7.2371 BC313.7094 FSP 1557

MID-COURSE EXECUTION ACCURACY
SGT15197.4 SGR 620.8 SG3 433.3
RRT -.0971 RRF -.1416 RTF .9737
SGB15210.0 R23 .0471 R13 -.9737
SG115197.5 SG2 617.8 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 3393.7 SR 546.7 SS 875.1
CRT -.2928 CRS .6251 CST -.9287
LSA 3494.8 MSA 606.4 SSA 23.4
EL1 3397.6 EL2 522.1 ALF 177.23

LAUNCH DATE NOV 30 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 891.931 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.214 GAL -5.30 AZL 88.19 HCA 264.72 SMA 190.68 ECC .24353 INC 1.8083 V1 30.200
RP 206.69 LAP -1.80 LOP 332.54 VP 24.252 GAP -13.26 AZP 90.17 TAL 332.41 TAP 237.12 RCA 144.24 APO 237.11 V2 26.494
RC 331.806 GL 14.66 GP -2.26 ZAL 132.49 ZAP 28.02 ETS 174.53 ZAE 44.93 ETE 177.54 ZAC 85.60 ETC 256.26 CLP 27.94

PLANETOCENTRIC CONIC

C3 17.011 VHL 4.124 DLA 5.01 RAL 205.87 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 6.173 DPA -.97 RAP 180.06 ECC 1.2800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 23	2332.23	-22.24	49.07	65.88	108.00	20 28 15	1732.2	-19.57	41.42
90.00	9 6 1	4664.71	14.44	198.52	63.78	65.38	10 23 46	4064.7	11.00	191.53
100.00	21 13 5	2062.25	-23.26	28.85	65.50	109.32	21 47 27	1462.3	-20.41	21.21
100.00	10 25 0	4409.91	15.42	179.31	63.31	64.07	11 38 30	3809.9	11.80	172.38
110.00	22 26 44	1831.75	-25.99	10.18	64.34	113.03	22 57 15	1231.8	-22.65	2.62
110.00	11 27 50	4213.18	18.01	162.95	61.88	60.44	12 38 3	3613.2	13.94	156.20

DIFFERENTIAL CORRECTIONS
TDE-1.0962 TRA 7.5494 TC-13.3182 BAU 3.0294
RDE .3950 RRA .1437 RC3 .2651 FAU .06330
FDE -.8482 FRA 2.6631 FC3-3.2215 BSP 54301
BDE 1.1652 BRA 7.5507 BC313.3208 FSP 1470

MID-COURSE EXECUTION ACCURACY
SGT15291.9 SGR 623.7 SG3 407.5
RRT -.1183 RRF -.1644 RTF .9718
SGB15304.6 R23 .0495 R13 -.9718
SG115292.1 SG2 619.4 THA 179.72

ORBIT DETERMINATION ACCURACY
ST 3521.7 SR 552.0 SS 865.9
CRT -.3333 CRS .6472 CST -.9338
LSA 3619.3 MSA 597.4 SSA 22.9
EL1 3526.6 EL2 519.8 ALF 176.94

LAUNCH DATE NOV 30 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 896.174 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.222 GAL -5.53 AZL 88.20 HCA 265.98 SMA 190.81 ECC .24547 INC 1.7952 V1 30.200
RP 206.68 LAP -1.79 LOP 333.81 VP 24.264 GAP -13.40 AZP 90.13 TAL 331.38 TAP 237.36 RCA 143.97 APO 237.65 V2 26.496
RC 332.609 GL 14.25 GP -2.22 ZAL 133.87 ZAP 27.58 ETS 174.51 ZAE 44.18 ETE 177.53 ZAC 85.82 ETC 256.21 CLP 27.50

PLANETOCENTRIC CONIC

C3 17.715 VHL 4.209 DLA 4.14 RAL 206.95 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 6.272 DPA -1.28 RAP 180.83 ECC 1.2915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 13	2314.48	-21.86	47.91	67.36	108.46	20 38 47	1714.5	-19.14	40.30
90.00	9 3 48	4701.22	15.46	200.71	65.57	65.98	10 22 9	4101.2	12.09	193.66
100.00	21 23 30	2045.85	-22.89	27.77	66.97	109.77	21 57 36	1445.9	-19.98	20.18
100.00	10 23 12	4445.08	16.45	181.40	65.10	64.69	11 37 17	3845.1	12.91	174.41
110.00	22 36 12	1818.33	-25.63	9.31	65.78	113.43	23 6 30	1218.3	-22.24	1.79
110.00	11 26 59	4245.37	19.08	164.83	63.69	61.08	12 37 45	3645.4	15.08	158.00

DIFFERENTIAL CORRECTIONS
TDE-1.2340 TRA 7.8734 TC-12.9252 BAU 3.0617
RDE .4073 RRA .1379 RC3 .2653 FAU .05839
FDE -.8561 FRA 2.5868 FC3-2.8536 BSP 54632
BDE 1.2995 BRA 7.8746 BC312.9280 FSP 1386

MID-COURSE EXECUTION ACCURACY
SGT15384.4 SGR 626.7 SG3 382.4
RRT -.1388 RRF -.1868 RTF .9697
SGB15397.2 R23 .0524 R13 -.9697
SG115384.7 SG2 620.6 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3649.9 SR 557.4 SS 854.3
CRT -.3694 CRS .6679 CST -.9378
LSA 3743.6 MSA 589.1 SSA 22.3
EL1 3655.8 EL2 517.1 ALF 176.71

LAUNCH DATE NOV 30 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 900.406 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.229 GAL -5.76 AZL 88.22 HCA 267.25 SMA 190.95 ECC .24749 INC 1.7821 V1 30.200
RP 206.67 LAP -1.78 LOP 335.08 VP 24.275 GAP -13.54 AZP 90.09 TAL 330.33 TAP 237.59 RCA 143.69 APO 238.21 V2 26.497
RC 333.409 GL 13.84 GP -2.18 ZAL 135.23 ZAP 27.15 ETS 174.49 ZAE 43.44 ETE 177.53 ZAC 86.04 ETC 256.17 CLP 27.07

PLANETOCENTRIC CONIC

C3 18.469 VHL 4.298 DLA 3.29 RAL 208.02 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 6.373 DPA -1.59 RAP 181.61 ECC 1.3039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 52	2297.62	-21.49	46.81	68.85	108.89	20 49 9	1697.6	-18.72	39.24
90.00	9 1 41	4737.54	16.46	202.91	67.40	66.63	10 20 38	4137.5	13.16	195.79
100.00	21 33 44	2030.30	-22.52	26.76	68.46	110.19	22 7 35	1430.3	-19.57	19.21
100.00	10 21 29	4480.10	17.46	183.52	66.93	65.34	11 36 9	3880.1	13.99	176.44
110.00	22 45 31	1805.67	-25.29	8.48	67.24	113.81	23 15 36	1205.7	-21.85	1.02
110.00	11 26 12	4277.49	20.12	166.74	65.53	61.77	12 37 30	3677.5	16.19	159.82

DIFFERENTIAL CORRECTIONS
TDE-1.3735 TRA 8.2047 TC-12.5339 BAU 3.0954
RDE .4201 RRA .1317 RC3 .2646 FAU .05360
FDE -.8603 FRA 2.5065 FC3-2.5128 BSP 54930
BDE 1.4363 BRA 8.2058 BC312.5367 FSP 1303

MID-COURSE EXECUTION ACCURACY
SGT15474.6 SGR 629.6 SG3 358.2
RRT -.1589 RRF -.2087 RTF .9672
SGB15487.4 R23 .0555 R13 -.9672
SG115474.9 SG2 621.5 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 3776.6 SR 562.6 SS 840.2
CRT -.4021 CRS .6871 CST -.9409
LSA 3866.1 MSA 581.2 SSA 21.8
EL1 3783.5 EL2 514.2 ALF 176.51

LAUNCH DATE NOV 30 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 904.626 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.237 GAL -5.99 AZL 88.23 HCA 268.52 SMA 191.08 ECC .24960 INC 1.7691 V1 30.200
RP 206.67 LAP -1.77 LOP 336.35 VP 24.285 GAP -13.69 AZP 90.05 TAL 329.27 TAP 237.79 RCA 143.39 APO 238.78 V2 26.497
RC 334.204 GL 13.44 GP -2.14 ZAL 136.58 ZAP 26.73 ETS 174.46 ZAE 42.71 ETE 177.51 ZAC 86.26 ETC 256.13 CLP 26.65

PLANETOCENTRIC CONIC

C3 19.275 VHL 4.390 DLA 2.45 RAL 209.08 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 6.476 DPA -1.92 RAP 182.39 ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 19	2281.64	-21.14	45.77	70.37	109.29	20 59 21	1681.6	-18.31	38.24
90.00	8 59 39	4773.66	17.42	205.13	69.25	67.32	10 19 13	4173.7	14.20	197.93
100.00	21 43 48	2015.58	-22.18	25.80	69.97	110.57	22 17 24	1415.6	-19.18	18.29
100.00	10 19 51	4514.94	18.44	185.64	68.79	66.04	11 35 6	3914.9	15.04	178.49
110.00	22 54 40	1793.78	-24.96	7.72	68.72	114.15	23 24 34	1193.8	-21.48	.29
110.00	11 25 28	4309.51	21.14	168.66	67.40	62.49	12 37 18	3709.5	17.29	161.65

DIFFERENTIAL CORRECTIONS
TDE-1.5147 TRA 8.5457 TC-12.1430 BAU 3.1299
RDE .4334 RRA .1251 RC3 .2631 FAU .04896
FDE -.8611 FRA 2.4224 FC3-2.1989 BSP 55208
BDE 1.5755 BRA 8.5467 BC312.1458 FSP 1222

MID-COURSE EXECUTION ACCURACY
SGT15562.8 SGR 632.4 SG3 334.7
RRT -.1785 RRF -.2304 RTF .9643
SGB15575.7 R23 .0590 R13 -.9643
SG115563.2 SG2 622.2 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 3901.8 SR 567.7 SS 823.7
CRT -.4316 CRS .7052 CST -.9434
LSA 3986.9 MSA 573.8 SSA 21.3
EL1 3909.6 EL2 511.1 ALF 176.34

LAUNCH DATE NOV 30 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 908.834 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.244 GAL -6.24 AZL 88.24 HCA 269.79 SMA 191.22 ECC .25181 INC 1.7560 V1 30.200
RP 206.68 LAP -1.76 LOP 337.62 VP 24.294 GAP -13.84 AZP 90.01 TAL 328.20 TAP 237.99 RCA 143.07 APO 239.37 V2 26.495
RC 334.996 GL 13.04 GP -2.11 ZAL 137.91 ZAP 26.32 ETS 174.44 ZAE 41.99 ETE 177.50 ZAC 86.48 ETC 256.08 CLP 26.24

PLANETOCENTRIC CONIC

C3 20.138 VHL 4.488 DLA 1.63 RAL 210.12 RAD 6567.8 VEL 11.896 PTH 2.11 VHP 6.581 DPA -2.24 RAP 183.19 ECC 1.3314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 36	2266.51	-20.79	44.80	71.91	109.67	21 9 22	1666.5	-17.92	37.30
90.00	8 57 42	4809.57	18.35	207.35	71.14	68.05	10 17 52	4209.6	15.21	200.08
100.00	21 53 42	2001.69	-21.84	24.91	71.49	110.93	22 27 3	1401.7	-18.80	17.43
100.00	10 18 17	4549.62	19.38	187.79	70.69	66.79	11 34 7	3949.6	16.07	180.55
110.00	23 3 41	1782.64	-24.64	7.00	70.22	114.47	23 33 23	1182.6	-21.13	359.62
110.00	11 24 48	4341.44	22.13	170.61	69.32	63.26	12 37 9	3741.4	18.37	163.50

DIFFERENTIAL CORRECTIONS
TDE-1.6576 TRA 8.8947 TC-11.7560 BAU 3.1658
RDE .4471 RRA .1181 RC3 .2609 FAU .04444
FDE -.8585 FRA 2.3342 FC3-1.9104 BSP 55452
BDE 1.7169 BRA 8.8955 BC311.7589 FSP 1143

MID-COURSE EXECUTION ACCURACY
SGT15648.7 SGR 635.2 SG3 311.9
RRT -.1976 RRF -.2518 RTF .9610
SGB15661.5 R23 .0628 R13 -.9610
SG115649.2 SG2 622.7 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 4024.4 SR 572.7 SS 804.9
CRT -.4583 CRS .7223 CST -.9451
LSA 4104.9 MSA 566.7 SSA 20.8
EL1 4033.1 EL2 508.0 ALF 176.21

LAUNCH DATE NOV 30 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 913.027 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.252 GAL -6.49 AZL 88.26 HCA 271.06 SMA 191.36 ECC .25410 INC 1.7430 V1 30.200
RP 206.70 LAP -1.74 LOP 338.89 VP 24.302 GAP -14.00 AZP 89.97 TAL 327.11 TAP 238.17 RCA 142.74 APO 239.99 V2 26.493
RC 335.784 GL 12.65 GP -2.07 ZAL 139.21 ZAP 25.93 ETS 174.41 ZAE 41.29 ETE 177.49 ZAC 86.71 ETC 256.05 CLP 25.85

PLANETOCENTRIC CONIC

C3 21.060 VHL 4.589 DLA .82 RAL 211.15 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 6.688 DPA -2.58 RAP 184.00 ECC 1.3466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 41	2252.23	-20.46	43.88	73.46	110.01	21 19 13	1652.2	-17.55	36.41
90.00	8 55 50	4845.28	19.24	209.59	73.06	68.82	10 16 36	4245.3	16.19	202.24
100.00	22 3 25	1988.62	-21.52	24.07	73.03	111.26	22 36 33	1388.6	-18.44	16.63
100.00	10 16 48	4584.12	20.29	189.94	72.62	67.57	11 33 12	3984.1	17.07	182.63
110.00	23 12 32	1772.26	-24.35	6.34	71.73	114.77	23 42 4	1172.3	-20.80	358.99
110.00	11 24 10	4373.25	23.10	172.58	71.26	64.07	12 37 3	3773.2	19.42	165.37

DIFFERENTIAL CORRECTIONS
TDE-1.8008 TRA 9.2542 TC-11.3711 BAU 3.2024
RDE .4614 RRA .1106 RC3 .2580 FAU .04003
FDE -.8523 FRA 2.2425 FC3-1.6457 BSP 55693
BDE 1.8590 BRA 9.2549 BC311.3740 FSP 1065

MID-COURSE EXECUTION ACCURACY
SGT15732.2 SGR 637.9 SG3 289.8
RRT -.2162 RRF -.2728 RTF .9571
SGB15745.1 R23 .0671 R13 -.9571
SG115732.8 SG2 622.8 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4143.6 SR 577.6 SS 783.8
CRT -.4820 CRS .7384 CST -.9462
LSA 4219.4 MSA 560.1 SSA 20.4
EL1 4153.1 EL2 504.9 ALF 176.10

LAUNCH DATE NOV 30 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 917.204 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.259 GAL -6.74 AZL 88.27 HCA 272.33 SMA 191.50 ECC .25650 INC 1.7300 V1 30.200
RP 206.73 LAP -1.73 LOP 340.16 VP 24.309 GAP -14.16 AZP 89.93 TAL 326.01 TAP 238.34 RCA 142.38 APO 240.62 V2 26.490
RC 336.567 GL 12.26 GP -2.04 ZAL 140.50 ZAP 25.54 ETS 174.39 ZAE 40.59 ETE 177.48 ZAC 86.93 ETC 256.01 CLP 25.46

PLANETOCENTRIC CONIC

C3 22.046 VHL 4.695 DLA .03 RAL 212.17 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 6.797 DPA -2.92 RAP 184.82 ECC 1.3628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 36	2238.77	-20.15	43.02	75.03	110.33	21 28 55	1638.8	-17.20	35.59
90.00	8 54 3	4880.78	20.10	211.84	75.01	69.63	10 15 24	4280.8	17.15	204.41
100.00	22 12 58	1976.34	-21.22	23.28	74.59	111.57	22 45 54	1376.3	-18.10	15.88
100.00	10 15 23	4618.44	21.17	192.11	74.58	68.39	11 32 21	4018.4	18.05	184.71
110.00	23 21 14	1762.62	-24.07	5.73	73.26	115.03	23 50 37	1162.6	-20.50	358.41
110.00	11 23 35	4404.93	24.02	174.57	73.24	64.92	12 37 0	3804.9	20.44	167.26

DIFFERENTIAL CORRECTIONS
TDE-1.9463 TRA 9.6221 TC-10.9928 BAU 3.2408
RDE .4761 RRA .1028 RC3 .2545 FAU .03574
FDE -.8432 FRA 2.1466 FC3-1.4036 BSP 55878
BDE 2.0036 BRA 9.6226 BC310.9958 FSP 989

MID-COURSE EXECUTION ACCURACY
SGT15813.6 SGR 640.6 SG3 268.5
RRT -.2344 RRF -.2935 RTF .9525
SGB15826.6 R23 .0719 R13 -.9525
SG115814.3 SG2 622.7 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 4259.6 SR 582.2 SS 760.7
CRT -.5038 CRS .7538 CST -.9468
LSA 4330.7 MSA 553.9 SSA 20.0
EL1 4269.9 EL2 501.7 ALF 176.01

LAUNCH DATE NOV 30 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 921.365 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.267 GAL -7.01 AZL 88.28 HCA 273.60 SMA 191.64 ECC .25899 INC 1.7169 V1 30.200
RP 206.77 LAP -1.71 LOP 341.43 VP 24.314 GAP -14.33 AZP 89.89 TAL 324.90 TAP 238.50 RCA 142.01 APO 241.27 V2 26.485
RC 337.346 GL 11.88 GP -2.01 ZAL 141.77 ZAP 25.16 ETS 174.36 ZAE 39.90 ETE 177.46 ZAC 87.16 ETC 255.98 CLP 25.09

PLANETOCENTRIC CONIC

C3 23.098 VHL 4.806 DLA -.74 RAL 213.18 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 6.908 DPA -3.26 RAP 185.64 ECC 1.3801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 21	2226.13	-19.85	42.21	76.61	110.62	21 38 27	1626.1	-16.86	34.81
90.00	8 52 20	4916.06	20.92	214.11	76.99	70.47	10 14 16	4316.1	18.07	206.59
100.00	22 22 21	1964.85	-20.93	22.55	76.17	111.85	22 55 6	1364.9	-17.78	15.17
100.00	10 14 1	4652.57	22.01	194.30	76.57	69.24	11 31 34	4052.6	18.99	186.81
110.00	23 29 48	1753.71	-23.82	5.16	74.80	115.28	23 59 2	1153.7	-20.21	357.87
110.00	11 23 4	4436.49	24.92	176.59	75.25	65.81	12 37 0	3836.5	21.44	169.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.0919 TRA10.0001 TC-10.6203 BAU 3.2804 SGT15892.8 SGR 643.2 SG3 247.9 ST 4371.2 SR 586.7 SS 735.5
RDE .4913 RRA .0944 RC3 .2506 FAU .03156 RRT -.2522 RRF -.3140 RTF .9469 CRT -.5233 CRS .7686 CST -.9468
FDE -.8310 FRA 2.0469 FC3-1.1829 BSP 56056 SGB15905.8 R23 .0773 R13 -.9470 LSA 4437.5 MSA 548.1 SSA 19.5
BDE 2.1488 BRA10.0005 BC310.6233 FSP 914 SG115893.6 SG2 622.4 THA 179.41 EL1 4382.1 EL2 498.7 ALF 175.93

LAUNCH DATE NOV 30 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 925.508 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.275 GAL -7.28 AZL 88.30 HCA 274.87 SMA 191.78 ECC .26160 INC 1.7038 V1 30.200
RP 206.81 LAP -1.70 LOP 342.69 VP 24.319 GAP -14.50 AZP 89.86 TAL 323.77 TAP 238.64 RCA 141.61 APO 241.95 V2 26.480
RC 338.120 GL 11.50 GP -1.98 ZAL 143.02 ZAP 24.80 ETS 174.33 ZAE 39.23 ETE 177.45 ZAC 87.39 ETC 255.95 CLP 24.73

PLANETOCENTRIC CONIC

C3 24.220 VHL 4.921 DLA -1.50 RAL 214.18 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 7.021 DPA -3.61 RAP 186.48 ECC 1.3986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 56	2214.28	-19.56	41.46	78.21	110.89	21 47 50	1614.3	-16.55	34.08
90.00	8 50 42	4951.13	21.70	216.38	79.00	71.35	10 13 13	4351.1	18.95	208.79
100.00	22 31 34	1954.13	-20.65	21.87	77.76	112.10	23 4 9	1354.1	-17.47	14.52
100.00	10 12 44	4686.51	22.81	196.50	78.59	70.14	11 30 51	4086.5	19.90	188.92
110.00	23 38 13	1745.51	-23.58	4.65	76.36	115.50	24 7 19	1145.5	-19.95	357.39
110.00	11 22 35	4467.90	25.78	178.62	77.30	66.73	12 37 3	3867.9	22.41	171.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.2404 TRA10.3870 TC-10.2557 BAU 3.3218 SGT15969.8 SGR 645.7 SG3 227.9 ST 4479.4 SR 590.9 SS 708.5
RDE .5069 RRA .0856 RC3 .2462 FAU .02747 RRT -.2696 RRF -.3343 RTF .9403 CRT -.5413 CRS .7832 CST -.9462
FDE -.8159 FRA 1.9428 FC3 -.9818 BSP 56168 SGB15982.8 R23 .0835 R13 -.9403 LSA 4541.0 MSA 542.5 SSA 19.2
BDE 2.2970 BRA10.3873 BC310.2586 FSP 841 SG115970.7 SG2 621.8 THA 179.37 EL1 4490.9 EL2 495.6 ALF 175.86

LAUNCH DATE NOV 30 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 929.632 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.282 GAL -7.55 AZL 88.31 HCA 276.13 SMA 191.92 ECC .26431 INC 1.6907 V1 30.200
RP 206.87 LAP -1.68 LOP 343.96 VP 24.323 GAP -14.68 AZP 89.82 TAL 322.63 TAP 238.77 RCA 141.20 APO 242.65 V2 26.474
RC 338.890 GL 11.13 GP -1.95 ZAL 144.25 ZAP 24.45 ETS 174.31 ZAE 38.56 ETE 177.43 ZAC 87.61 ETC 255.92 CLP 24.37

PLANETOCENTRIC CONIC

C3 25.419 VHL 5.042 DLA -2.24 RAL 215.16 RAD 6568.0 VEL 12.116 PTH 2.17 VHP 7.137 DPA -3.97 RAP 187.32 ECC 1.4183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 21	2203.20	-19.29	40.76	79.83	111.14	21 57 4	1603.2	-16.25	33.41
90.00	8 49 7	4985.98	22.44	218.67	81.04	72.26	10 12 13	4386.0	19.81	210.99
100.00	22 40 39	1944.16	-20.40	21.25	79.36	112.34	23 13 3	1344.2	-17.19	13.92
100.00	10 11 30	4720.24	23.57	198.72	80.63	71.07	11 30 10	4120.2	20.77	191.04
110.00	23 46 30	1738.02	-23.36	4.18	77.94	115.70	24 15 28	1138.0	-19.71	356.94
110.00	11 22 8	4499.15	26.60	180.68	79.37	67.70	12 37 7	3899.2	23.34	173.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.3879 TRA10.7853 TC3-9.8962 BAU 3.3640 SGT16043.6 SGR 648.1 SG3 208.6 ST 4582.0 SR 594.9 SS 679.5
RDE .5229 RRA .0763 RC3 .2415 FAU .02345 RRT -.2864 RRF -.3559 RTF .9321 CRT -.5573 CRS .7971 CST -.9449
FDE -.7976 FRA 1.8352 FC3 -.7987 BSP 56302 SGB16056.7 R23 .0903 R13 -.9322 LSA 4639.1 MSA 537.3 SSA 18.8
BDE 2.4445 BRA10.7856 BC3 9.8991 FSP 770 SG116044.7 SG2 620.9 THA 179.34 EL1 4594.2 EL2 492.7 ALF 175.81

LAUNCH DATE NOV 30 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 933.735 EARTH TO MARS

RL 147.53 LAL -.00 LOL 67.83 VL 33.290 GAL -7.84 AZL 88.32 HCA 277.40 SMA 192.07 ECC .26714 INC 1.6775 V1 30.200
RP 206.93 LAP -1.66 LOP 345.23 VP 24.325 GAP -14.86 AZP 89.78 TAL 321.48 TAP 238.88 RCA 140.76 APO 243.38 V2 26.466
RC 339.657 GL 10.77 GP -1.92 ZAL 145.46 ZAP 24.10 ETS 174.28 ZAE 37.91 ETE 177.41 ZAC 87.84 ETC 255.90 CLP 24.03

PLANETOCENTRIC CONIC

C3 26.697 VHL 5.167 DLA -2.96 RAL 216.13 RAD 6568.1 VEL 12.169 PTH 2.18 VHP 7.255 DPA -4.33 RAP 188.18 ECC 1.4394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 36	2192.86	-19.04	40.11	81.45	111.37	22 6 9	1592.9	-15.96	32.78
90.00	8 47 36	5020.59	23.14	220.97	83.10	73.21	10 11 17	4420.6	20.62	213.20
100.00	22 49 34	1934.92	-20.16	20.66	80.97	112.55	23 21 49	1334.9	-16.92	13.36
100.00	10 10 20	4753.77	24.29	200.95	82.71	72.03	11 29 34	4153.8	21.61	193.18
110.00	23 54 38	1731.21	-23.15	3.75	79.52	115.88	24 23 29	1131.2	-19.48	356.54
110.00	11 21 45	4530.25	27.39	182.75	81.48	68.70	12 37 15	3930.2	24.25	174.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.5379 TRA11.1931 TC3-9.5469 BAU 3.4085 SGT16115.8 SGR 650.4 SG3 189.9 ST 4680.8 SR 598.6 SS 649.2
RDE .5394 RRA .0665 RC3 .2365 FAU .01954 RRT -.3030 RRF -.3736 RTF .9221 CRT -.5721 CRS .8112 CST -.9430
FDE -.7771 FRA 1.7233 FC3 -.6336 BSP 56360 SGB16128.9 R23 .0984 R13 -.9221 LSA 4733.5 MSA 532.3 SSA 18.4
BDE 2.5946 BRA11.1933 BC3 9.5498 FSP 701 SG116117.0 SG2 619.8 THA 179.30 EL1 4693.5 EL2 489.7 ALF 175.77

LAUNCH DATE NOV 30 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 937.815 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.298	GAL	-8.13	AZL	88.34	HCA	278.67	SMA	192.21	ECC	.27009	INC	1.6642	V1	30.200
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.327	GAP	-15.05	AZP	89.75	TAL	320.31	TAP	238.98	RCA	140.30	APO	244.13	V2	26.458
RC	340.420	GL	10.41	GP	-1.89	ZAL	146.65	ZAP	23.77	ETS	174.26	ZAE	37.26	ETE	177.39	ZAC	88.08	ETC	255.88	CLP	23.70

PLANETOCENTRIC CONIC

C3	28.060	VHL	5.297	DLA	-3.67	RAL	217.09	RAD	6568.1	VEL	12.224	PTH	2.20	VHP	7.376	DPA	-4.69	RAP	189.04	ECC	1.4618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 42	2183.25	-18.80	39.51	83.09	111.58	22 15 5	1583.3	-15.70	32.20
90.00	8 46 9	5054.98	23.80	223.27	85.19	74.19	10 10 24	4455.0	21.40	215.42
100.00	22 58 20	1926.39	-19.93	20.13	82.60	112.75	23 30 26	1326.4	-16.68	12.85
100.00	10 9 13	4787.08	24.98	203.19	84.81	73.02	11 29 0	4187.1	22.41	195.33
110.00	0 6 34	1725.07	-22.97	3.37	81.12	116.04	0 35 19	1125.1	-19.28	356.17
110.00	11 21 24	4561.16	28.14	184.85	83.62	69.74	12 37 25	3961.2	25.12	176.97

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-2.6893	TRA	11.6106	TC3	-9.2081	BAU	3.4554	SGT	16186.1	SGR	652.6	SG3	172.0	ST 4774.9 SR 602.1 SS 617.3
RDE	.5564	RRA	.0563	RC3	.2312	FAU	.01571	RRT	-.3193	RRF	-.3928	RTF	.9094	CRT -.5856 CRS .8252 CST -.9404
FDE	-.7538	FRA	1.6070	FC3	-.4847	BSP	56395	SGB	16199.3	R23	.1076	R13	-.9094	LSA 4823.3 MSA 527.5 SSA 18.1
BDE	2.7462	BRA	11.6108	BC3	9.2110	FSP	633	SG	116187.5	SG2	618.4	THA	179.26	EL1 4788.0 EL2 486.7 ALF 175.73

LAUNCH DATE NOV 30 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 941.872 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.306	GAL	-8.43	AZL	88.35	HCA	279.93	SMA	192.36	ECC	.27317	INC	1.6509	V1	30.200
RP	207.08	LAP	-1.63	LOP	347.76	VP	24.327	GAP	-15.25	AZP	89.72	TAL	319.14	TAP	239.07	RCA	139.81	APO	244.90	V2	26.449
RC	341.179	GL	10.06	GP	-1.87	ZAL	147.82	ZAP	23.45	ETS	174.23	ZAE	36.63	ETE	177.37	ZAC	88.31	ETC	255.86	CLP	23.38

PLANETOCENTRIC CONIC

C3	29.513	VHL	5.433	DLA	-4.36	RAL	218.04	RAD	6568.2	VEL	12.284	PTH	2.21	VHP	7.500	DPA	-5.06	RAP	189.91	ECC	1.4857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 39	2174.35	-18.57	38.95	84.74	111.77	22 23 54	1574.3	-15.45	31.66
90.00	8 44 46	5089.13	24.41	225.58	87.30	75.19	10 9 35	4489.1	22.14	217.65
100.00	23 6 57	1918.54	-19.73	19.64	84.24	112.93	23 38 56	1318.5	-16.45	12.38
100.00	10 8 9	4820.17	25.61	205.44	86.93	74.04	11 28 29	4220.2	23.18	197.49
110.00	0 14 27	1719.57	-22.81	3.03	82.73	116.18	0 43 6	1119.6	-19.10	355.85
110.00	11 21 5	4591.90	28.84	186.96	85.78	70.81	12 37 37	3991.9	25.95	178.97

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-2.8403	TRA	12.0408	TC3	-8.8749	BAU	3.5029	SGT	16252.9	SGR	654.6	SG3	154.7	ST 4863.6 SR 605.3 SS 584.0
RDE	.5737	RRA	.0455	RC3	.2257	FAU	.01193	RRT	-.3350	RRF	-.4111	RTF	.8931	CRT -.5976 CRS .8392 CST -.9367
FDE	-.7279	FRA	1.4870	FC3	-.3499	BSP	56425	SGB	16266.1	R23	.1183	R13	-.8931	LSA 4908.0 MSA 523.0 SSA 17.7
BDE	2.8976	BRA	12.0409	BC3	8.8778	FSP	567	SG	116254.4	SG2	616.8	THA	179.23	EL1 4877.2 EL2 483.9 ALF 175.70

LAUNCH DATE NOV 30 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 945.903 EARTH TO MARS

RL	147.53	LAL	-.00	LOL	67.83	VL	33.313	GAL	-8.73	AZL	88.36	HCA	281.19	SMA	192.50	ECC	.27637	INC	1.6375	V1	30.200
RP	207.17	LAP	-1.61	LOP	349.02	VP	24.327	GAP	-15.45	AZP	89.68	TAL	317.94	TAP	239.14	RCA	139.30	APO	245.70	V2	26.438
RC	341.936	GL	9.72	GP	-1.84	ZAL	148.97	ZAP	23.14	ETS	174.21	ZAE	36.01	ETE	177.35	ZAC	88.54	ETC	255.85	CLP	23.07

PLANETOCENTRIC CONIC

C3	31.063	VHL	5.573	DLA	-5.03	RAL	218.97	RAD	6568.2	VEL	12.346	PTH	2.23	VHP	7.626	DPA	-5.43	RAP	190.79	ECC	1.5112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 28	2166.11	-18.36	38.44	86.40	111.94	22 32 34	1566.1	-15.23	31.16
90.00	8 43 26	5123.03	24.98	227.90	89.42	76.22	10 8 49	4523.0	22.84	219.89
100.00	23 15 26	1911.35	-19.53	19.19	85.89	113.09	23 47 18	1311.4	-16.24	11.94
100.00	10 7 9	4853.03	26.21	207.70	89.08	75.09	11 28 2	4253.0	23.91	199.66
110.00	0 22 11	1714.69	-22.66	2.72	84.35	116.31	0 50 46	1114.7	-18.94	355.56
110.00	11 20 49	4622.45	29.51	189.09	87.97	71.91	12 37 51	4022.4	26.75	180.99

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	-2.9923	TRA	12.4815	TC3	-8.5529	BAU	3.5530	SGT	16317.8	SGR	656.6	SG3	138.2	ST 4947.4 SR 608.1 SS 549.5
RDE	.5914	RRA	.0343	RC3	.2201	FAU	.00822	RRT	-.3504	RRF	-.4286	RTF	.8717	CRT -.6087 CRS .8536 CST -.9320
FDE	-.6997	FRA	1.3625	FC3	-.2290	BSP	56408	SGB	16331.0	R23	.1310	R13	-.8718	LSA 4987.9 MSA 518.6 SSA 17.4
BDE	3.0502	BRA	12.4816	BC3	8.5557	FSP	504	SG	116319.5	SG2	614.9	THA	179.19	EL1 4961.4 EL2 481.1 ALF 175.68

LAUNCH DATE DEC 1 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 20 1965

HELIOCENTRIC CONIC DISTANCE 386.439 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	36.130	GAL	-3.58	AZL	88.59	HCA	118.29	SMA	268.59	ECC	.45424	INC	1.4101	V1	30.205
RP	245.44	LAP	1.24	LOP	187.14	VP	24.235	GAP	26.59	AZP	90.67	TAL	348.53	TAP	106.82	RCA	146.58	APO	390.59	V2	22.343
RC	121.300	GL	8.18	GP	1.26	ZAL	108.50	ZAP	176.70	ETS	156.24	ZAE	154.63	ETE	359.57	ZAC	89.82	ETC	256.10	CLP	176.95

PLANETOCENTRIC CONIC

C3	38.862	VHL	6.234	DLA	8.48	RAL	181.02	RAD	6568.5	VEL	12.658	PTH	2.30	VHP	12.058	DPA	.73	RAP	184.80	ECC	1.6396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 33	2645.19	-27.16	70.62	57.17	98.33	18 23 39	2045.2	-25.73	62.25
90.00	7 49 43	4756.99	16.98	204.10	51.61	66.99	9 9 0	4157.0	13.72	196.94
100.00	19 5 1	2369.57	-28.52	50.11	56.93	99.36	19 44 30	1769.6	-26.93	41.67
100.00	9 6 56	4507.85	18.24	185.21	51.03	65.90	10 22 4	3907.8	14.83	178.07
110.00	20 22 38	2126.64	-32.16	30.86	56.13	102.26	20 58 5	1526.6	-30.14	22.23
110.00	10 5 48	4323.54	21.58	169.52	49.33	62.83	11 17 52	3723.5	17.77	162.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.7072	TRA	-1.8205	TC3	.6150	BAU	.3200	SGT	1967.8	SGR	599.8	SG3	146.8	ST	824.9	SR	550.6	SS	332.4
RDE	-.5937	RRA	-.2637	RC3	-.0360	FAU	.05287	RRT	.0216	RRF	-.0318	RTF	-.7955	CRT	-.6987	CRS	-.4975	CST	.9636
FDE	-.2107	FRA	.8956	FC3	-1.1778	BSP	6412	SGB	2057.2	R23	-.0128	R13	-.7956	LSA	975.3	MSA	376.9	SSA	31.0
BDE	.9233	BRA	1.8395	BC3	.6160	FSP	378	SG1	1967.9	SG2	599.7	THA	.42	EL1	927.9	EL2	350.2	ALF	150.37

LAUNCH DATE DEC 1 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 22 1965

HELIOCENTRIC CONIC DISTANCE 387.587 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.981	GAL	-3.39	AZL	88.60	HCA	119.19	SMA	262.88	ECC	.44209	INC	1.3974	V1	30.205
RP	245.23	LAP	1.22	LOP	188.04	VP	24.032	GAP	25.97	AZP	90.68	TAL	348.93	TAP	108.13	RCA	146.66	APO	379.09	V2	22.364
RC	123.232	GL	8.31	GP	1.30	ZAL	107.78	ZAP	176.22	ETS	158.56	ZAE	154.25	ETE	359.81	ZAC	89.94	ETC	256.08	CLP	176.45

PLANETOCENTRIC CONIC

C3	36.723	VHL	6.060	DLA	8.89	RAL	180.41	RAD	6568.4	VEL	12.573	PTH	2.28	VHP	11.770	DPA	.59	RAP	185.18	ECC	1.6044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 55	2643.95	-27.15	70.53	55.67	98.37	18 17 59	2044.0	-25.71	62.16
90.00	7 50 28	4729.62	16.24	202.43	50.01	66.48	9 9 18	4129.6	12.93	195.32
100.00	18 59 36	2367.63	-28.50	49.97	55.43	99.43	19 39 3	1767.6	-26.90	41.53
100.00	9 7 29	4481.17	17.49	183.58	49.43	65.36	10 22 10	3881.2	14.02	176.51
110.00	20 17 42	2123.20	-32.11	30.61	54.62	102.41	20 53 5	1523.2	-30.07	21.99
110.00	10 5 51	4298.37	20.79	167.99	47.71	62.24	11 17 30	3698.4	16.91	161.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6987	TRA	-1.7826	TC3	.6881	BAU	.3383	SGT	2010.5	SGR	596.8	SG3	154.3	ST	836.0	SR	547.7	SS	331.5
RDE	-.5740	RRA	-.2553	RC3	-.0366	FAU	.05418	RRT	.0178	RRF	-.0382	RTF	-.8077	CRT	-.7012	CRS	-.4707	CST	.9545
FDE	-.2009	FRA	.9085	FC3	-1.2773	BSP	6335	SGB	2097.2	R23	-.0224	R13	-.8077	LSA	982.2	MSA	378.2	SSA	31.1
BDE	.9042	BRA	1.8008	BC3	.6890	FSP	411	SG1	2010.5	SG2	596.7	THA	.33	EL1	936.7	EL2	348.5	ALF	150.93

LAUNCH DATE DEC 1 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 388.958 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.839	GAL	-3.20	AZL	88.62	HCA	120.09	SMA	257.67	ECC	.43051	INC	1.3845	V1	30.205
RP	245.01	LAP	1.20	LOP	188.94	VP	23.838	GAP	25.35	AZP	90.69	TAL	349.34	TAP	109.44	RCA	146.74	APO	368.59	V2	22.385
RC	125.213	GL	8.44	GP	1.34	ZAL	107.03	ZAP	175.74	ETS	160.35	ZAE	153.91	ETE	.05	ZAC	90.07	ETC	256.06	CLP	175.96

PLANETOCENTRIC CONIC

C3	34.738	VHL	5.894	DLA	9.30	RAL	179.77	RAD	6568.4	VEL	12.494	PTH	2.26	VHP	11.489	DPA	.46	RAP	185.57	ECC	1.5717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 6	2643.27	-27.14	70.49	54.16	98.40	18 12 9	2043.3	-25.70	62.11
90.00	7 51 12	4702.22	15.49	200.77	48.42	66.00	9 9 34	4102.2	12.12	193.72
100.00	18 54 0	2366.24	-28.48	49.87	53.92	99.48	19 33 26	1766.2	-26.88	41.44
100.00	9 7 59	4454.49	16.72	181.97	47.84	64.86	10 22 14	3854.5	13.20	174.95
110.00	20 12 37	2120.24	-32.07	30.39	53.11	102.53	20 47 57	1520.2	-30.01	21.78
110.00	10 5 52	4273.25	19.99	166.48	46.11	61.67	11 17 5	3673.2	16.05	159.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6751	TRA	-1.7593	TC3	.7495	BAU	.3485	SGT	2053.0	SGR	593.2	SG3	162.6	ST	837.7	SR	544.2	SS	332.4
RDE	-.5548	RRA	-.2470	RC3	-.0367	FAU	.05584	RRT	.0242	RRF	-.0405	RTF	-.8121	CRT	-.6932	CRS	-.4580	CST	.9533
FDE	-.1967	FRA	.9151	FC3	-1.3915	BSP	6609	SGB	2137.0	R23	-.0191	R13	-.8122	LSA	980.9	MSA	381.1	SSA	31.9
BDE	.8738	BRA	1.7766	BC3	.7504	FSP	432	SG1	2053.0	SG2	593.0	THA	.44	EL1	935.1	EL2	351.4	ALF	151.34

LAUNCH DATE DEC 1 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 390.527 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.703	GAL	-3.02	AZL	88.63	HCA	121.00	SMA	252.89	ECC	.41947	INC	1.3713	V1	30.205
RP	244.80	LAP	1.18	LOP	189.85	VP	23.654	GAP	24.74	AZP	90.71	TAL	349.77	TAP	110.76	RCA	146.81	APO	358.97	V2	22.407
RC	127.239	GL	8.56	GP	1.38	ZAL	106.26	ZAP	175.25	ETS	161.78	ZAE	153.63	ETE	.29	ZAC	90.20	ETC	256.04	CLP	175.45

PLANETOCENTRIC CONIC

C3	32.892	VHL	5.735	DLA	9.72	RAL	179.11	RAD	6568.3	VEL	12.420	PTH	2.24	VHP	11.216	DPA	.33	RAP	185.95	ECC	1.5413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 5	2643.18	-27.14	70.48	52.64	98.40	18 6 8	2043.2	-25.70	62.11
90.00	7 51 55	4674.76	14.73	199.12	46.84	65.54	9 9 50	4074.8	11.30	192.11
100.00	18 48 13	2365.40	-28.47	49.81	52.41	99.51	19 27 38	1765.4	-26.86	41.38
100.00	9 8 28	4427.78	15.94	180.37	46.25	64.38	10 22 16	3827.8	12.37	173.40
110.00	20 7 20	2117.80	-32.03	30.20	51.60	102.63	20 42 38	1517.8	-29.96	21.60
110.00	10 5 50	4248.14	19.17	165.00	44.50	61.14	11 16 38	3648.1	15.17	158.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.6534	TRA	-1.7327	TC3	.8181	BAU	.3601	SGT	2095.4	SGR	589.4	SG3	171.2	ST	839.3	SR	540.6	SS	332.0
RDE	-.5362	RRA	-.2389	RC3	-.0366	FAU	.05755	RRT	.0294	RRF	-.0439	RTF	-.8175	CRT	-.6864	CRS	-.4408	CST	.9502
FDE	-.1905	FRA	.9212	FC3	-1.5147	BSP	6827	SGB	2176.8	R23	-.0179	R13	-.8175	LSA	979.1	MSA	383.8	SSA	32.7
BDE	.8452	BRA	1.7491	BC3	.8189	FSP	456	SG1	2095.5	SG2	589.1	THA	.51	EL1	933.7	EL2	353.4	ALF	151.75

LAUNCH DATE DEC 1 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 392.272 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.573	GAL	-2.84	AZL	88.64	HCA	121.90	SMA	248.50	ECC	.40895	INC	1.3578	V1	30.205
RP	244.57	LAP	1.15	LOP	190.75	VP	23.478	GAP	24.12	AZP	90.72	TAL	350.20	TAP	112.10	RCA	146.88	APO	350.13	V2	22.429
RC	129.306	GL	8.67	GP	1.43	ZAL	105.46	ZAP	174.75	ETS	162.93	ZAE	153.40	ETE	.53	ZAC	90.33	ETC	256.02	CLP	174.95

PLANETOCENTRIC CONIC

C3	31.177	VHL	5.584	DLA	10.15	RAL	178.42	RAD	6568.2	VEL	12.351	PTH	2.23	VHP	10.949	DPA	.21	RAP	186.33	ECC	1.5131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 53	2643.68	-27.15	70.51	51.12	98.38	17 59 57	2043.7	-25.71	62.14
90.00	7 52 36	4647.30	13.94	197.48	45.25	65.10	9 10 3	4047.3	10.47	190.52
100.00	18 42 15	2365.13	-28.47	49.79	50.89	99.52	19 21 40	1765.1	-26.86	41.36
100.00	9 8 55	4401.09	15.15	178.78	44.66	63.92	10 22 16	3801.1	11.52	171.87
110.00	20 1 54	2115.87	-32.00	30.06	50.09	102.71	20 37 10	1515.9	-29.92	21.47
110.00	10 5 45	4223.11	18.34	163.53	42.91	60.64	11 16 8	3623.1	14.29	156.76

DIFFERENTIAL CORRECTIONS

TDE	.6322	TRA	-1.7050	TC3	.8910	BAU	.3717
RDE	-.5183	RRA	-.2312	RC3	-.0362	FAU	.05930
FDE	-.1830	FRA	.9275	FC3	-1.6465	BSP	7025
BDE	.8175	BRA	1.7206	BC3	.8917	FSP	484

MID-COURSE EXECUTION ACCURACY

SGT	2137.7	SGR	585.3	SG3	180.2		
RRT	.0344	RRF	-.0482	RTF	-.8230		
SGB	2216.4	R23	-.0176	R13	-.8230		
SG1	2137.8	SG2	584.9	THA	.58		

ORBIT DETERMINATION ACCURACY

ST	840.3	SR	536.7	SS	331.0		
CRT	-.6796	CRS	-.4204	CST	.9459		
LSA	976.4	MSA	386.4	SSA	33.4		
EL1	931.7	EL2	355.1	ALF	152.14		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 150.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 394.177 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.449	GAL	-2.67	AZL	88.66	HCA	122.81	SMA	244.46	ECC	.39891	INC	1.3441	V1	30.205
RP	244.34	LAP	1.13	LOP	191.66	VP	23.311	GAP	23.51	AZP	90.73	TAL	350.64	TAP	113.45	RCA	146.94	APO	341.98	V2	22.451
RC	131.411	GL	8.78	GP	1.47	ZAL	104.64	ZAP	174.24	ETS	163.88	ZAE	153.21	ETE	.76	ZAC	90.46	ETC	256.01	CLP	174.43

PLANETOCENTRIC CONIC

C3	29.583	VHL	5.439	DLA	10.58	RAL	177.70	RAD	6568.2	VEL	12.286	PTH	2.21	VHP	10.690	DPA	.08	RAP	186.71	ECC	1.4869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 30	2644.76	-27.16	70.59	49.60	98.34	17 53 35	2044.8	-25.72	62.22
90.00	7 53 15	4619.88	13.15	195.86	43.68	64.70	9 10 15	4019.9	9.64	188.94
100.00	18 36 6	2365.42	-28.47	49.81	49.37	99.51	19 15 32	1765.4	-26.86	41.38
100.00	9 9 19	4374.46	14.35	177.21	43.08	63.49	10 22 14	3774.5	10.68	170.35
110.00	19 56 19	2114.45	-31.98	29.96	48.57	102.77	20 31 33	1514.5	-29.89	21.37
110.00	10 5 37	4198.19	17.50	162.08	41.33	60.16	11 15 35	3598.2	13.40	155.37

DIFFERENTIAL CORRECTIONS

TDE	.6111	TRA	-1.6762	TC3	.9694	BAU	.3836
RDE	-.5011	RRA	-.2237	RC3	-.0354	FAU	.06112
FDE	-.1742	FRA	.9333	FC3	-1.7888	BSP	7208
BDE	.7903	BRA	1.6911	BC3	.9701	FSP	513

MID-COURSE EXECUTION ACCURACY

SGT	2180.2	SGR	581.0	SG3	189.7		
RRT	.0396	RRF	-.0532	RTF	-.8287		
SGB	2256.3	R23	-.0179	R13	-.8288		
SG1	2180.3	SG2	580.5	THA	.65		

ORBIT DETERMINATION ACCURACY

ST	840.2	SR	532.7	SS	329.3		
CRT	-.6727	CRS	-.3969	CST	.9404		
LSA	972.4	MSA	389.1	SSA	34.1		
EL1	928.7	EL2	356.6	ALF	152.51		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 396.226 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.330	GAL	-2.50	AZL	88.67	HCA	123.72	SMA	240.73	ECC	.38934	INC	1.3301	V1	30.205
RP	244.11	LAP	1.11	LOP	192.57	VP	23.152	GAP	22.90	AZP	90.74	TAL	351.08	TAP	114.80	RCA	147.00	APO	334.45	V2	22.475
RC	133.550	GL	8.89	GP	1.52	ZAL	103.79	ZAP	173.72	ETS	164.67	ZAE	153.08	ETE	1.00	ZAC	90.59	ETC	255.99	CLP	173.91

PLANETOCENTRIC CONIC

C3	28.101	VHL	5.301	DLA	11.02	RAL	176.95	RAD	6568.1	VEL	12.226	PTH	2.20	VHP	10.438	DPA	-.03	RAP	187.08	ECC	1.4625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 56	2646.42	-27.17	70.71	48.08	98.29	17 47 2	2046.4	-25.75	62.33
90.00	7 53 52	4592.54	12.35	194.25	42.11	64.32	9 10 25	3992.5	8.80	187.37
100.00	18 29 48	2366.26	-28.48	49.87	47.85	99.48	19 9 14	1766.3	-26.88	41.44
100.00	9 9 41	4347.93	13.54	175.66	41.51	63.09	10 22 9	3747.9	9.82	168.84
110.00	19 50 34	2113.54	-31.97	29.89	47.06	102.81	20 25 47	1513.5	-29.87	21.30
110.00	10 5 25	4173.42	16.66	160.66	39.75	59.71	11 14 58	3573.4	12.51	154.01

DIFFERENTIAL CORRECTIONS

TDE	.5900	TRA	-1.6457	TC3	1.0532	BAU	.3959
RDE	-.4845	RRA	-.2165	RC3	-.0343	FAU	.06304
FDE	-.1641	FRA	.9378	FC3	-1.9421	BSP	7374
BDE	.7634	BRA	1.6599	BC3	1.0537	FSP	544

MID-COURSE EXECUTION ACCURACY

SGT	2222.0	SGR	576.5	SG3	199.6		
RRT	.0448	RRF	-.0588	RTF	-.8344		
SGB	2295.6	R23	-.0188	R13	-.8345		
SG1	2222.2	SG2	575.9	THA	.71		

ORBIT DETERMINATION ACCURACY

ST	838.6	SR	528.5	SS	326.7		
CRT	-.6658	CRS	-.3696	CST	.9334		
LSA	966.8	MSA	391.8	SSA	34.9		
EL1	924.5	EL2	357.7	ALF	152.85		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 398.406 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.216	GAL	-2.33	AZL	88.68	HCA	124.63	SMA	237.27	ECC	.38021	INC	1.3156	V1	30.205
RP	243.87	LAP	1.08	LOP	193.48	VP	23.002	GAP	22.29	AZP	90.75	TAL	351.54	TAP	116.17	RCA	147.06	APO	327.49	V2	22.498
RC	135.719	GL	8.99	GP	1.57	ZAL	102.91	ZAP	173.20	ETS	165.34	ZAE	152.99	ETE	1.25	ZAC	90.73	ETC	255.98	CLP	173.38

PLANETOCENTRIC CONIC

C3	26.725	VHL	5.170	DLA	11.46	RAL	176.18	RAD	6568.1	VEL	12.170	PTH	2.18	VHP	10.192	DPA	-.15	RAP	187.45	ECC	1.4398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 12	2648.65	-27.20	70.87	46.56	98.21	17 40 20	2048.6	-25.78	62.49
90.00	7 54 27	4565.33	11.54	192.66	40.55	63.96	9 10 32	3965.3	7.95	185.82
100.00	18 23 19	2367.65	-28.50	49.97	46.34	99.43	19 2 47	1767.6	-26.90	41.54
100.00	9 10 1	4321.56	12.72	174.13	39.95	62.72	10 22 2	3721.6	8.96	167.35
110.00	19 44 40	2113.12	-31.96	29.86	45.55	102.82	20 19 53	1513.1	-29.87	21.27
110.00	10 5 10	4148.85	15.81	159.26	38.18	59.29	11 14 18	3548.8	11.62	152.66

DIFFERENTIAL CORRECTIONS

TDE	.5697	TRA	-1.6152	TC3	1.1416	BAU	.4081
RDE	-.4685	RRA	-.2095	RC3	-.0328	FAU	.06504
FDE	-.1536	FRA	.9418	FC3	-2.1070	BSP	7539
BDE	.7376	BRA	1.6287	BC3	1.1421	FSP	576

MID-COURSE EXECUTION ACCURACY

SGT	2264.6	SGR	571.7	SG3	210.0		
RRT	.0501	RRF	-.0648	RTF	-.8400		
SGB	2335.6	R23	-.0199	R13	-.8401		
SG1	2264.8	SG2	571.0	THA	.77		

ORBIT DETERMINATION ACCURACY

ST	836.8	SR	524.1	SS	323.9		
CRT	-.6589	CRS	-.3410	CST	.9254		
LSA	960.8	MSA	394.2	SSA	35.6		
EL1	919.9	EL2	358.6	ALF	153.18		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 400.704 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.107	GAL	-2.16	AZL	88.70	HCA	125.54	SMA	234.07	ECC	.37150	INC	1.3010
RP	243.63	LAP	1.06	LOP	194.39	VP	22.859	GAP	21.69	AZP	90.76	TAL	352.01	TAP	117.55	RCA	147.11	APO	321.03
RC	137.915	GL	9.09	GP	1.62	ZAL	102.02	ZAP	172.66	ETS	165.90	ZAE	152.94	ETE	1.49	ZAC	90.86	ETC	255.96

V1	30.205	V2	22.522	CLP	172.84														

PLANETOCENTRIC CONIC

C3	25.446	VHL	5.044	DLA	11.90	RAL	175.39	RAD	6568.0	VEL	12.117	PTH	2.17	VHP	9.952	DPA	-.26	RAP	187.81
ECC	1.4188																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 18	2651.41	-27.22	71.07	45.05	98.11	17 33 30	2051.4	-25.82	62.68
90.00	7 54 59	4538.28	10.73	191.09	39.01	63.64	9 10 38	3938.3	7.10	184.29
100.00	18 16 42	2369.55	-28.52	50.11	44.82	99.36	18 56 12	1769.5	-26.93	41.67
100.00	9 10 17	4295.38	11.90	172.62	38.40	62.37	10 21 52	3695.4	8.11	165.88
110.00	19 38 38	2113.19	-31.96	29.86	44.04	102.82	20 13 51	1513.2	-29.87	21.28
110.00	10 4 50	4124.51	14.96	157.89	36.63	58.90	11 13 35	3524.5	10.73	151.34

DIFFERENTIAL CORRECTIONS

TDE	.5483	TRA	-1.5836	TC3	1.2343	BAU	.4200
RDE	-.4531	RRA	-.2027	RC3	-.0307	FAU	.06715
FDE	-.1413	FRA	.9444	FC3	-2.2846	BSP	7704
BDE	.7113	BRA	1.5965	BC3	1.2346	FSP	612

MID-COURSE EXECUTION ACCURACY

SGT	2306.0	SGR	566.8	SG3	221.0		
RRT	.0563	RRF	-.0718	RTF	-.8454		
SGB	2374.6	R23	-.0212	R13	-.8454		
SG1	2306.2	SG2	565.8	THA	.84		

ORBIT DETERMINATION ACCURACY

ST	832.7	SR	519.5	SS	320.2		
CRT	-.6510	CRS	-.3074	CST	.9155		
LSA	952.2	MSA	397.1	SSA	36.4		
EL1	913.2	EL2	359.6	ALF	153.47		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 403.110 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	35.003	GAL	-2.00	AZL	88.71	HCA	126.46	SMA	231.10	ECC	.36319	INC	1.2859
RP	243.38	LAP	1.03	LOP	195.30	VP	22.723	GAP	21.09	AZP	90.76	TAL	352.48	TAP	118.93	RCA	147.16	APO	315.03
RC	140.134	GL	9.17	GP	1.68	ZAL	101.10	ZAP	172.12	ETS	166.38	ZAE	152.94	ETE	1.75	ZAC	90.99	ETC	255.95

V1	30.205	V2	22.547	CLP	172.30														

PLANETOCENTRIC CONIC

C3	24.258	VHL	4.925	DLA	12.35	RAL	174.57	RAD	6568.0	VEL	12.068	PTH	2.16	VHP	9.718	DPA	-.36	RAP	188.17
ECC	1.3992																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 16	2654.71	-27.25	71.30	43.53	98.00	17 26 30	2054.7	-25.87	62.91
90.00	7 55 29	4511.46	9.92	189.54	37.47	63.34	9 10 40	3911.5	6.26	182.77
100.00	18 9 56	2371.96	-28.54	50.29	43.31	99.28	18 49 28	1772.0	-26.97	41.84
100.00	9 10 30	4269.45	11.08	171.14	36.86	62.06	10 21 39	3669.4	7.25	164.43
110.00	19 32 28	2113.71	-31.97	29.90	42.54	102.80	20 7 42	1513.7	-29.88	21.31
110.00	10 4 27	4100.45	14.11	156.54	35.09	58.54	11 12 48	3500.5	9.84	150.04

DIFFERENTIAL CORRECTIONS

TDE	.5267	TRA	-1.5525	TC3	1.3313	BAU	.4318
RDE	-.4383	RRA	-.1962	RC3	-.0281	FAU	.06937
FDE	-.1283	FRA	.9464	FC3	-2.4758	BSP	7861
BDE	.6852	BRA	1.5648	BC3	1.3316	FSP	648

MID-COURSE EXECUTION ACCURACY

SGT	2348.0	SGR	561.6	SG3	232.5		
RRT	.0632	RRF	-.0793	RTF	-.8505		
SGB	2414.2	R23	-.0223	R13	-.8506		
SG1	2348.3	SG2	560.4	THA	.92		

ORBIT DETERMINATION ACCURACY

ST	827.4	SR	514.7	SS	316.3		
CRT	-.6424	CRS	-.2706	CST	.9042		
LSA	942.4	MSA	400.0	SSA	37.3		
EL1	905.3	EL2	360.5	ALF	153.74		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 405.614 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.903	GAL	-1.85	AZL	88.73	HCA	127.37	SMA	228.33	ECC	.35527	INC	1.2704
RP	243.12	LAP	1.01	LOP	196.22	VP	22.594	GAP	20.49	AZP	90.77	TAL	352.95	TAP	120.33	RCA	147.21	APO	309.45
RC	142.373	GL	9.25	GP	1.74	ZAL	100.16	ZAP	171.57	ETS	166.80	ZAE	152.98	ETE	2.01	ZAC	91.13	ETC	255.94

V1	30.205	V2	22.572	CLP	171.75														

PLANETOCENTRIC CONIC

C3	23.155	VHL	4.812	DLA	12.79	RAL	173.72	RAD	6567.9	VEL	12.022	PTH	2.15	VHP	9.490	DPA	-.46	RAP	188.53
ECC	1.3811																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 5	2658.50	-27.29	71.58	42.02	97.87	17 19 23	2058.5	-25.92	63.18
90.00	7 55 55	4484.90	9.10	188.01	35.94	63.07	9 10 40	3884.9	5.42	181.27
100.00	18 3 2	2374.84	-28.58	50.49	41.80	99.17	18 42 37	1774.8	-27.01	42.04
100.00	9 10 39	4243.79	10.25	169.68	35.33	61.77	10 21 23	3643.8	6.40	163.01
110.00	19 26 11	2114.68	-31.98	29.97	41.04	102.76	20 1 26	1514.7	-29.90	21.38
110.00	10 4 0	4076.72	13.26	155.23	33.56	58.20	11 11 56	3476.7	8.96	148.77

DIFFERENTIAL CORRECTIONS

TDE	.5053	TRA	-1.5202	TC3	1.4331	BAU	.4437
RDE	-.4241	RRA	-.1900	RC3	-.0248	FAU	.07169
FDE	-.1142	FRA	.9468	FC3	-2.6804	BSP	8011
BDE	.6597	BRA	1.5320	BC3	1.4333	FSP	687

MID-COURSE EXECUTION ACCURACY

SGT	2389.5	SGR	556.2	SG3	244.5		
RRT	.0706	RRF	-.0876	RTF	-.8555		
SGB	2453.4	R23	-.0239	R13	-.8556		
SG1	2389.8	SG2	554.8	THA	.99		

ORBIT DETERMINATION ACCURACY

ST	820.8	SR	509.8	SS	312.0		
CRT	-.6336	CRS	-.2299	CST	.8906		
LSA	931.2	MSA	403.0	SSA	38.1		
EL1	896.2	EL2	361.3	ALF	153.99		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 408.209 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.808	GAL	-1.69	AZL	88.75	HCA	128.29	SMA	225.75	ECC	.34771	INC	1.2544
RP	242.87	LAP	.98	LOP	197.14	VP	22.473	GAP	19.90	AZP	90.78	TAL	353.44	TAP	121.73	RCA	147.25	APO	304.25
RC	144.629	GL	9.32	GP	1.80	ZAL	99.21	ZAP	171.01	ETS	167.15	ZAE	153.06	ETE	2.28	ZAC	91.27	ETC	255.93

V1	30.205	V2	22.598	CLP	171.19														

PLANETOCENTRIC CONIC

C3	22.130	VHL	4.704	DLA	13.24	RAL	172.85	RAD	6567.9	VEL	11.980	PTH	2.14	VHP	9.267	DPA	-.55	RAP	188.88
ECC	1.3642																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 47	2662.75	-27.33	71.88	40.51	97.72	17 12 10	2062.8	-25.98	63.47
90.00	7 56 18	4458.65	8.29	186.51	34.43	62.83	9 10 37	3858.7	4.58	179.79
100.00	17 56 1	2378.16	-28.61	50.73	40.30	99.05	18 35 40	1778.2	-27.06	42.27
100.00	9 10 44	4218.47	9.43	168.24	33.81	61.50	10 21 3	3618.5	5.56	161.60
110.00	19 19 48	2116.05	-32.00	30.07	39.54	102.70	19 55 4	1516.0	-29.93	21.48
110.00	10 3 28	4053.35	12.42	153.94	32.04	57.89	11 11 1	3453.4	8.09	147.52

DIFFERENTIAL CORRECTIONS

TDE	.4837	TRA	-1.4875	TC3	1.5384	BAU	.4552
RDE	-.4105	RRA	-.1839	RC3	-.0208	FAU	.07414
FDE	-.0991	FRA	.9460	FC3	-2.9002	BSP	8169
BDE	.6344	BRA	1.4988	BC3	1.5385	FSP	728

MID-COURSE EXECUTION ACCURACY

SGT	2430.2	SGR	550.7	SG3	257.2		
RRT	.0787	RRF	-.0967	RTF	-.8603		
SGB	2491.8	R23	-.0254	R13	-.8604		
SG1	2430.6	SG2	548.9	THA	1.08		

ORBIT DETERMINATION ACCURACY

ST	812.8	SR	504.7	SS	307.4		
CRT	-.6240	CRS	-.1852	CST	.8747		
LSA	918.4	MSA	406.1	SSA	39.1		
EL1	885.7	EL2	361.9	ALF	154.20		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 410.888 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.717	GAL	-1.54	AZL	88.76	HCA	129.21	SMA	223.34	ECC	.34050	INC	1.2380	V1	30.205
RP	242.60	LAP	.96	LOP	198.06	VP	22.358	GAP	19.31	AZP	90.78	TAL	353.93	TAP	123.14	RCA	147.29	APO	299.39	V2	22.624
RC	146.900	GL	9.38	GP	1.86	ZAL	98.24	ZAP	170.44	ETS	167.46	ZAE	153.19	ETE	2.56	ZAC	91.41	ETC	255.92	CLP	170.62

PLANETOCENTRIC CONIC

C3	21.178	VHL	4.602	DLA	13.68	RAL	171.96	RAD	6567.9	VEL	11.940	PTH	2.12	VHP	9.050	DPA	-.64	RAP	189.22	ECC	1.3485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 21	2667.47	-27.37	72.22	39.01	97.56	17 4 48	2067.5	-26.04	63.80
90.00	7 56 37	4432.71	7.48	185.04	32.92	62.61	9 10 30	3832.7	3.75	178.34
100.00	17 48 53	2381.93	-28.65	51.01	38.80	98.91	18 28 35	1781.9	-27.12	42.54
100.00	9 10 46	4193.49	8.62	166.83	32.31	61.27	10 20 39	3593.5	4.72	160.22
110.00	19 13 17	2117.83	-32.03	30.21	38.05	102.63	19 48 35	1517.8	-29.96	21.61
110.00	10 2 51	4030.35	11.58	152.68	30.53	57.61	11 10 1	3430.4	7.23	146.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4757	TRA	-1.4407	TC3	1.6745	BAU	.4741	SGT	2476.7	SGR	545.5	SG3	270.2	ST	812.2	SR	499.8	SS	302.7
RDE	-.3976	RRA	-.1783	RC3	-.0166	FAU	.07656	RRT	.0777	RRF	-.1081	RTF	-.8700	CRT	-.6289	CRS	-.1246	CST	.8406
FDE	-.0795	FRA	.9471	FC3	-3.1296	BSP	7986	SGB	2536.1	R23	-.0371	R13	-.8702	LSA	913.0	MSA	407.4	SSA	39.2
BDE	.6200	BRA	1.4517	BC3	1.6746	FSP	778	SG1	2477.1	SG2	543.7	THA	1.03	EL1	884.4	EL2	356.9	ALF	154.38

LAUNCH DATE DEC 1 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 413.642 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.630	GAL	-1.40	AZL	88.78	HCA	130.13	SMA	221.09	ECC	.33363	INC	1.2213	V1	30.205
RP	242.34	LAP	.93	LOP	198.98	VP	22.249	GAP	18.72	AZP	90.79	TAL	354.42	TAP	124.55	RCA	147.33	APO	294.86	V2	22.651
RC	149.184	GL	9.43	GP	1.93	ZAL	97.25	ZAP	169.86	ETS	167.72	ZAE	153.35	ETE	2.85	ZAC	91.55	ETC	255.91	CLP	170.04

PLANETOCENTRIC CONIC

C3	20.296	VHL	4.505	DLA	14.12	RAL	171.05	RAD	6567.8	VEL	11.903	PTH	2.11	VHP	8.839	DPA	-.72	RAP	189.56	ECC	1.3340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 51	2672.52	-27.42	72.58	37.51	97.38	16 57 24	2072.5	-26.11	64.16
90.00	7 56 51	4407.28	6.68	183.59	31.43	62.42	9 10 19	3807.3	2.93	176.92
100.00	17 41 42	2386.01	-28.69	51.30	37.31	98.76	18 21 28	1786.0	-27.19	42.83
100.00	9 10 42	4169.02	7.82	165.46	30.82	61.06	10 20 11	3569.0	3.90	158.87
110.00	19 6 44	2119.91	-32.06	30.36	36.57	102.54	19 42 4	1519.9	-30.00	21.75
110.00	10 2 9	4007.89	10.76	151.46	29.04	57.36	11 8 57	3407.9	6.38	145.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4463	TRA	-1.4153	TC3	1.7721	BAU	.4808	SGT	2513.3	SGR	539.4	SG3	284.3	ST	796.5	SR	494.3	SS	298.1
RDE	-.3850	RRA	-.1725	RC3	-.0107	FAU	.07932	RRT	.0933	RRF	-.1184	RTF	-.8715	CRT	-.6098	CRS	-.0763	CST	.8264
FDE	-.0640	FRA	.9423	FC3	-3.3835	BSP	8312	SGB	2570.5	R23	-.0333	R13	-.8717	LSA	892.3	MSA	412.2	SSA	40.6
BDE	.5894	BRA	1.4258	BC3	1.7721	FSP	819	SG1	2513.8	SG2	537.0	THA	1.20	EL1	865.3	EL2	360.6	ALF	154.55

LAUNCH DATE DEC 1 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 416.466 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.546	GAL	-1.25	AZL	88.80	HCA	131.06	SMA	218.99	ECC	.32708	INC	1.2039	V1	30.205
RP	242.06	LAP	.91	LOP	199.90	VP	22.147	GAP	18.14	AZP	90.79	TAL	354.91	TAP	125.97	RCA	147.36	APO	290.61	V2	22.678
RC	151.478	GL	9.47	GP	2.00	ZAL	96.25	ZAP	169.27	ETS	167.95	ZAE	153.55	ETE	3.16	ZAC	91.69	ETC	255.90	CLP	169.46

PLANETOCENTRIC CONIC

C3	19.477	VHL	4.413	DLA	14.55	RAL	170.12	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	8.632	DPA	-.80	RAP	189.90	ECC	1.3205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 17	2677.91	-27.46	72.97	36.02	97.19	16 49 55	2077.9	-26.18	64.54
90.00	7 57 1	4382.30	5.89	182.18	29.96	62.25	9 10 3	3782.3	2.13	175.52
100.00	17 34 25	2390.42	-28.74	51.62	35.82	98.60	18 14 16	1790.4	-27.25	43.14
100.00	9 10 33	4145.02	7.02	164.12	29.34	60.87	10 19 38	3545.0	3.09	157.55
110.00	19 0 7	2122.29	-32.10	30.54	35.10	102.44	19 35 29	1522.3	-30.05	21.92
110.00	10 1 21	3985.91	9.95	150.27	27.56	57.13	11 7 47	3385.9	5.55	143.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4209	TRA	-1.3851	TC3	1.8799	BAU	.4895	SGT	2550.2	SGR	533.4	SG3	299.0	ST	782.1	SR	488.7	SS	293.3
RDE	-.3729	RRA	-.1669	RC3	-.0041	FAU	.08218	RRT	.1069	RRF	-.1301	RTF	-.8742	CRT	-.5941	CRS	-.0204	CST	.8048
FDE	-.0464	FRA	.9355	FC3	-3.6529	BSP	8576	SGB	2605.3	R23	-.0326	R13	-.8743	LSA	872.7	MSA	416.3	SSA	41.9
BDE	.5623	BRA	1.3951	BC3	1.8799	FSP	866	SG1	2550.8	SG2	530.2	THA	1.34	EL1	848.0	EL2	362.6	ALF	154.69

LAUNCH DATE DEC 1 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 419.356 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.467	GAL	-1.11	AZL	88.81	HCA	131.98	SMA	217.01	ECC	.32084	INC	1.1861	V1	30.205
RP	241.79	LAP	.88	LOP	200.83	VP	22.051	GAP	17.57	AZP	90.79	TAL	355.41	TAP	127.40	RCA	147.39	APO	286.64	V2	22.706
RC	153.781	GL	9.49	GP	2.08	ZAL	95.24	ZAP	168.67	ETS	168.15	ZAE	153.79	ETE	3.48	ZAC	91.84	ETC	255.89	CLP	168.86

PLANETOCENTRIC CONIC

C3	18.717	VHL	4.326	DLA	14.98	RAL	169.17	RAD	6567.8	VEL	11.836	PTH	2.10	VHP	8.431	DPA	-.87	RAP	190.23	ECC	1.3080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 39	2683.58	-27.51	73.38	34.54	96.99	16 42 22	2083.6	-26.26	64.94
90.00	7 57 5	4357.84	5.11	180.81	28.50	62.11	9 9 43	3757.8	1.34	174.16
100.00	17 27 6	2395.10	-28.79	51.96	34.34	98.42	18 7 1	1795.1	-27.32	43.47
100.00	9 10 19	4121.56	6.24	162.82	27.88	60.71	10 19 1	3521.6	2.29	156.26
110.00	18 53 26	2124.94	-32.14	30.73	33.63	102.33	19 28 51	1524.9	-30.10	22.11
110.00	10 0 28	3964.48	9.16	149.12	26.10	56.92	11 6 32	3364.5	4.74	142.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3964	TRA	-1.3533	TC3	1.9951	BAU	.4992	SGT	2588.0	SGR	527.4	SG3	314.5	ST	766.8	SR	483.2	SS	289.2
RDE	-.3613	RRA	-.1616	RC3	.0035	FAU	.08519	RRT	.1210	RRF	-.1437	RTF	-.8776	CRT	-.5782	CRS	.0453	CST	.7761
FDE	-.0264	FRA	.9290	FC3	-3.9404	BSP	8757	SGB	2641.2	R23	-.0332	R13	-.8778	LSA	852.0	MSA	421.2	SSA	43.1
BDE	.5364	BRA	1.3629	BC3	1.9951	FSP	916	SG1	2588.8	SG2	523.3	THA	1.47	EL1	829.9	EL2	364.2	ALF	154.81

LAUNCH DATE DEC 1 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 422.306 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 34.390 GAL -.98 AZL 88.83 HCA 132.91 SMA 215.16 ECC .31488 INC 1.1677 V1 30.205
RP 241.51 LAP .86 LOP 201.76 VP 21.960 GAP 17.00 AZP 90.80 TAL 355.91 TAP 128.82 RCA 147.41 APO 282.92 V2 22.734
RC 156.092 GL 9.50 GP 2.16 ZAL 94.22 ZAP 168.05 ETS 168.32 ZAE 154.06 ETE 3.82 ZAC 91.99 ETC 255.88 CLP 168.25

PLANETOCENTRIC CONIC

C3 18.012 VHL 4.244 DLA 15.39 RAL 168.21 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 8.234 DPA -.93 RAP 190.55 ECC 1.2964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 58	2689.48	-27.56	73.80	33.07	96.78	16 34 48	2089.5	-26.33	65.35
90.00	7 57 3	4333.96	4.35	179.47	27.05	61.99	9 9 17	3734.0	.57	172.82
100.00	17 19 44	2400.00	-28.83	52.32	32.88	98.24	17 59 44	1800.0	-27.39	43.81
100.00	9 9 59	4098.68	5.48	161.55	26.43	60.57	10 18 17	3498.7	1.52	155.00
110.00	18 46 44	2127.80	-32.18	30.95	32.18	102.21	19 22 12	1527.8	-30.16	22.31
110.00	9 59 28	3943.65	8.38	148.01	24.65	56.74	11 5 12	3343.6	3.95	141.73

DIFFERENTIAL CORRECTIONS
TDE .3749 TRA-1.3198 TC3 2.1145 BAU .5092
RDE -.3503 RRA -.1565 RC3 .0122 FAU .08831
FDE -.0063 FRA .9204 FC3-4.2446 BSP 8942
BDE .5131 BRA 1.3290 BC3 2.1145 FSP 971

MID-COURSE EXECUTION ACCURACY
SGT 2625.4 SGR 521.3 SG3 330.6
RRT .1346 RRF -.1583 RTF -.8812
SGB 2676.7 R23 -.0352 R13 -.8814
SG1 2626.4 SG2 516.4 THA 1.59

ORBIT DETERMINATION ACCURACY
ST 752.6 SR 477.5 SS 285.7
CRT -.5646 CRS .1119 CST .7427
LSA 832.6 MSA 425.2 SSA 44.2
EL1 813.3 EL2 364.7 ALF 154.92

LAUNCH DATE DEC 1 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 425.311 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 34.317 GAL -.85 AZL 88.85 HCA 133.84 SMA 213.43 ECC .30920 INC 1.1487 V1 30.205
RP 241.22 LAP .83 LOP 202.69 VP 21.875 GAP 16.43 AZP 90.80 TAL 356.41 TAP 130.26 RCA 147.43 APO 279.42 V2 22.762
RC 158.408 GL 9.50 GP 2.24 ZAL 93.20 ZAP 167.43 ETS 168.46 ZAE 154.37 ETE 4.18 ZAC 92.14 ETC 255.87 CLP 167.63

PLANETOCENTRIC CONIC

C3 17.358 VHL 4.166 DLA 15.80 RAL 167.23 RAD 6567.7 VEL 11.779 PTH 2.08 VHP 8.042 DPA -.98 RAP 190.87 ECC 1.2857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 17	2695.54	-27.61	74.24	31.60	96.57	16 27 13	2095.5	-26.41	65.78
90.00	7 56 55	4310.73	3.61	178.16	25.61	61.89	9 8 46	3710.7	-.18	171.53
100.00	17 12 22	2405.05	-28.88	52.69	31.42	98.06	17 52 27	1805.0	-27.47	44.17
100.00	9 9 32	4076.45	4.73	160.32	24.99	60.45	10 17 28	3476.5	.76	153.78
110.00	18 40 1	2130.81	-32.22	31.17	30.73	102.09	19 15 32	1530.8	-30.22	22.53
110.00	9 58 22	3923.45	7.62	146.93	23.21	56.58	11 3 46	3323.5	3.18	140.67

DIFFERENTIAL CORRECTIONS
TDE .3523 TRA-1.2862 TC3 2.2380 BAU .5194
RDE -.3397 RRA -.1515 RC3 .0221 FAU .09164
FDE .0160 FRA .9106 FC3-4.5704 BSP 9061
BDE .4894 BRA 1.2951 BC3 2.2382 FSP 1024

MID-COURSE EXECUTION ACCURACY
SGT 2663.0 SGR 515.3 SG3 347.7
RRT .1502 RRF -.1747 RTF -.8849
SGB 2712.4 R23 -.0372 R13 -.8851
SG1 2664.2 SG2 509.2 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 736.2 SR 471.7 SS 283.1
CRT -.5486 CRS .1857 CST .7037
LSA 810.8 MSA 430.3 SSA 45.4
EL1 794.3 EL2 365.6 ALF 154.99

LAUNCH DATE DEC 1 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 428.369 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 34.247 GAL -.72 AZL 88.87 HCA 134.78 SMA 211.79 ECC .30379 INC 1.1290 V1 30.205
RP 240.93 LAP .80 LOP 203.62 VP 21.796 GAP 15.87 AZP 90.80 TAL 356.92 TAP 131.69 RCA 147.45 APO 276.14 V2 22.791
RC 160.729 GL 9.49 GP 2.33 ZAL 92.16 ZAP 166.79 ETS 168.58 ZAE 154.72 ETE 4.57 ZAC 92.29 ETC 255.86 CLP 166.99

PLANETOCENTRIC CONIC

C3 16.752 VHL 4.093 DLA 16.19 RAL 166.23 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 7.855 DPA -1.02 RAP 191.18 ECC 1.2757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 37	2701.68	-27.65	74.68	30.15	96.35	16 19 38	2101.7	-26.49	66.21
90.00	7 56 40	4288.20	2.88	176.90	24.20	61.82	9 8 8	3688.2	-.91	170.27
100.00	17 5 0	2410.18	-28.93	53.06	29.97	97.86	17 45 10	1810.2	-27.54	44.53
100.00	9 8 58	4054.93	4.01	159.13	23.57	60.35	10 16 32	3454.9	.03	152.60
110.00	18 33 18	2133.92	-32.26	31.40	29.29	101.96	19 8 52	1533.9	-30.28	22.75
110.00	9 57 9	3903.95	6.89	145.90	21.79	56.44	11 2 13	3304.0	2.43	139.65

DIFFERENTIAL CORRECTIONS
TDE .3287 TRA-1.2509 TC3 2.3572 BAU .5280
RDE -.3297 RRA -.1467 RC3 .0333 FAU .09501
FDE .0404 FRA .8973 FC3-4.9099 BSP 9234
BDE .4656 BRA 1.2595 BC3 2.3574 FSP 1084

MID-COURSE EXECUTION ACCURACY
SGT 2694.4 SGR 509.4 SG3 365.2
RRT .1677 RRF -.1929 RTF -.8881
SGB 2742.1 R23 -.0392 R13 -.8883
SG1 2695.8 SG2 501.9 THA 1.88

ORBIT DETERMINATION ACCURACY
ST 717.2 SR 465.9 SS 281.2
CRT -.5304 CRS .2660 CST .6582
LSA 786.3 MSA 435.9 SSA 46.6
EL1 772.7 EL2 366.6 ALF 154.99

LAUNCH DATE DEC 1 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 431.476 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 34.180 GAL -.59 AZL 88.89 HCA 135.71 SMA 210.26 ECC .29864 INC 1.1086 V1 30.205
RP 240.64 LAP .77 LOP 204.56 VP 21.722 GAP 15.32 AZP 90.79 TAL 357.42 TAP 133.13 RCA 147.47 APO 273.05 V2 22.821
RC 163.052 GL 9.46 GP 2.42 ZAL 91.13 ZAP 166.14 ETS 168.68 ZAE 155.09 ETE 4.99 ZAC 92.44 ETC 255.86 CLP 166.35

PLANETOCENTRIC CONIC

C3 16.190 VHL 4.024 DLA 16.57 RAL 165.23 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 7.672 DPA -1.06 RAP 191.48 ECC 1.2664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 58	2707.84	-27.70	75.13	28.70	96.13	16 12 6	2107.8	-26.56	66.65
90.00	7 56 17	4266.44	2.18	175.69	22.79	61.76	9 7 23	3666.4	-1.61	169.06
100.00	16 57 40	2415.34	-28.98	53.44	28.53	97.67	17 37 56	1815.3	-27.62	44.90
100.00	9 8 16	4034.17	3.31	157.99	22.17	60.27	10 15 30	3434.2	-.67	151.46
110.00	18 26 37	2137.08	-32.31	31.64	27.86	101.82	19 2 14	1537.1	-30.34	22.98
110.00	9 55 49	3885.20	6.18	144.91	20.38	56.31	11 0 34	3285.2	1.72	138.67

DIFFERENTIAL CORRECTIONS
TDE .3094 TRA-1.2170 TC3 2.4834 BAU .5376
RDE -.3200 RRA -.1420 RC3 .0459 FAU .09865
FDE .0628 FRA .8837 FC3-5.2751 BSP 9346
BDE .4451 BRA 1.2253 BC3 2.4838 FSP 1145

MID-COURSE EXECUTION ACCURACY
SGT 2730.8 SGR 503.5 SG3 384.0
RRT .1852 RRF -.2121 RTF -.8914
SGB 2776.8 R23 -.0422 R13 -.8916
SG1 2732.4 SG2 494.5 THA 2.02

ORBIT DETERMINATION ACCURACY
ST 701.4 SR 460.0 SS 280.7
CRT -.5156 CRS .3379 CST .6123
LSA 765.6 MSA 440.3 SSA 47.9
EL1 754.5 EL2 366.4 ALF 155.06

LAUNCH DATE DEC 1 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 434.628 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.116	GAL	-.47	AZL	88.91	HCA	136.65	SMA	208.81	ECC	.29372	INC	1.0874
RP	240.34	LAP	.75	LOP	205.49	VP	21.653	GAP	14.77	AZP	90.79	TAL	357.92	TAP	134.57	RCA	147.48	APO	270.15
RC	165.375	GL	9.41	GP	2.52	ZAL	90.09	ZAP	165.48	ETS	168.76	ZAE	155.51	ETE	5.43	ZAC	92.60	ETC	255.85

V1	30.205	V2	22.851	CLP	165.69														

PLANETOCENTRIC CONIC

C3	15.669	VHL	3.958	DLA	16.93	RAL	164.21	RAD	6567.6	VEL	11.707	PTH	2.06	VHP	7.493	DPA	-1.08	RAP	191.78
ECC	1.2579																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 23	2713.94	-27.74	75.57	27.27	95.92	16 4 37	2113.9	-26.63	67.08
90.00	7 55 45	4245.49	1.51	174.52	21.40	61.72	9 6 30	3645.5	-2.29	167.89
100.00	16 50 24	2420.45	-29.03	53.81	27.10	97.48	17 30 44	1820.5	-27.69	45.26
100.00	9 7 25	4014.21	2.64	156.89	20.77	60.21	10 14 19	3414.2	-1.35	150.37
110.00	18 19 58	2140.22	-32.35	31.87	26.44	101.69	18 55 38	1540.2	-30.40	23.20
110.00	9 54 21	3867.21	5.50	143.96	18.99	56.21	10 58 48	3267.2	1.03	137.73

DIFFERENTIAL CORRECTIONS

TDE	.2955	TRA	-1.1803	TC3	2.6130	BAU	.5475
RDE	-.3107	RRA	-.1376	RC3	.0599	FAU	.10234
FDE	.0857	FRA	.8703	FC3	-5.6542	BSP	9436
BDE	.4288	BRA	1.1882	BC3	2.6137	FSP	1218

MID-COURSE EXECUTION ACCURACY

SGT	2766.0	SGR	497.8	SG3	403.3		
RRT	.2014	RRF	-.2332	RTF	-.8952		
SGB	2810.5	R23	-.0481	R13	-.8956		
SG1	2767.9	SG2	487.3	THA	2.14		

ORBIT DETERMINATION ACCURACY

ST	688.3	SR	454.1	SS	281.8		
CRT	-.5081	CRS	.4079	CST	.5572		
LSA	748.4	MSA	443.6	SSA	48.9		
EL1	740.0	EL2	363.8	ALF	155.05		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 437.822 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	34.055	GAL	-.35	AZL	88.93	HCA	137.59	SMA	207.45	ECC	.28904	INC	1.0656
RP	240.04	LAP	.72	LOP	206.43	VP	21.588	GAP	14.22	AZP	90.79	TAL	358.42	TAP	136.01	RCA	147.49	APO	267.42
RC	167.697	GL	9.35	GP	2.63	ZAL	89.05	ZAP	164.80	ETS	168.82	ZAE	155.95	ETE	5.92	ZAC	92.76	ETC	255.84

V1	30.205	V2	22.881	CLP	165.02														

PLANETOCENTRIC CONIC

C3	15.187	VHL	3.897	DLA	17.27	RAL	163.19	RAD	6567.6	VEL	11.686	PTH	2.06	VHP	7.319	DPA	-1.10	RAP	192.06
ECC	1.2499																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 55	2719.87	-27.78	76.00	25.85	95.70	15 57 15	2119.9	-26.70	67.50
90.00	7 55 3	4225.49	.86	173.40	20.03	61.70	9 5 29	3625.5	-2.93	166.77
100.00	16 43 13	2425.41	-29.07	54.17	25.68	97.29	17 23 39	1825.4	-27.75	45.61
100.00	9 6 26	3995.18	1.99	155.84	19.40	60.17	10 13 1	3395.2	-1.99	149.32
110.00	18 13 24	2143.26	-32.39	32.10	25.04	101.56	18 49 7	1543.3	-30.46	23.42
110.00	9 52 44	3850.09	4.86	143.06	17.62	56.12	10 56 54	3250.1	.37	136.84

DIFFERENTIAL CORRECTIONS

TDE	.2682	TRA	-1.1504	TC3	2.7337	BAU	.5553
RDE	-.3019	RRA	-.1331	RC3	.0760	FAU	.10646
FDE	.1143	FRA	.8513	FC3	-6.0687	BSP	9644
BDE	.4038	BRA	1.1581	BC3	2.7348	FSP	1285

MID-COURSE EXECUTION ACCURACY

SGT	2798.7	SGR	492.4	SG3	424.3		
RRT	.2278	RRF	-.2577	RTF	-.8973		
SGB	2841.7	R23	-.0483	R13	-.8977		
SG1	2801.0	SG2	479.1	THA	2.36		

ORBIT DETERMINATION ACCURACY

ST	664.8	SR	448.1	SS	284.9		
CRT	-.4775	CRS	.4904	CST	.5066		
LSA	718.9	MSA	452.3	SSA	50.5		
EL1	712.6	EL2	367.3	ALF	155.14		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 441.056 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.997	GAL	-.24	AZL	88.96	HCA	138.53	SMA	206.17	ECC	.28459	INC	1.0427
RP	239.73	LAP	.69	LOP	207.37	VP	21.529	GAP	13.69	AZP	90.78	TAL	358.92	TAP	137.45	RCA	147.50	APO	264.84
RC	170.016	GL	9.27	GP	2.74	ZAL	88.02	ZAP	164.10	ETS	168.87	ZAE	156.43	ETE	6.44	ZAC	92.93	ETC	255.84

V1	30.205	V2	22.912	CLP	164.33														

PLANETOCENTRIC CONIC

C3	14.741	VHL	3.839	DLA	17.60	RAL	162.16	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	7.149	DPA	-1.10	RAP	192.34
ECC	1.2426																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 33	2725.57	-27.82	76.41	24.44	95.50	15 49 58	2125.6	-26.77	67.90
90.00	7 54 11	4206.44	.25	172.34	18.67	61.68	9 4 18	3606.4	-3.54	165.71
100.00	16 36 9	2430.16	-29.11	54.52	24.28	97.12	17 16 39	1830.2	-27.82	45.95
100.00	9 5 16	3977.08	1.38	154.85	18.04	60.14	10 11 33	3377.1	-2.60	148.33
110.00	18 6 55	2146.16	-32.43	32.32	23.65	101.44	18 42 42	1546.2	-30.52	23.63
110.00	9 50 59	3833.84	4.24	142.20	16.26	56.05	10 54 53	3233.8	-.25	135.99

DIFFERENTIAL CORRECTIONS

TDE	.2507	TRA	-1.1164	TC3	2.8451	BAU	.5610
RDE	-.2934	RRA	-.1287	RC3	.0934	FAU	.11047
FDE	.1399	FRA	.8305	FC3	-6.4882	BSP	9737
BDE	.3859	BRA	1.1238	BC3	2.8466	FSP	1352

MID-COURSE EXECUTION ACCURACY

SGT	2822.7	SGR	487.3	SG3	445.2		
RRT	.2508	RRF	-.2830	RTF	-.8991		
SGB	2864.5	R23	-.0527	R13	-.8995		
SG1	2825.4	SG2	471.3	THA	2.55		

ORBIT DETERMINATION ACCURACY

ST	647.4	SR	442.1	SS	288.4		
CRT	-.4611	CRS	.5587	CST	.4505		
LSA	697.2	MSA	457.2	SSA	51.9		
EL1	693.0	EL2	366.4	ALF	155.14		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 444.327 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.941	GAL	-.13	AZL	88.98	HCA	139.47	SMA	204.96	ECC	.28034	INC	1.0190
RP	239.42	LAP	.66	LOP	208.32	VP	21.474	GAP	13.15	AZP	90.77	TAL	359.41	TAP	138.89	RCA	147.50	APO	262.42
RC	172.331	GL	9.18	GP	2.85	ZAL	86.99	ZAP	163.39	ETS	168.90	ZAE	156.94	ETE	7.02	ZAC	93.10	ETC	255.83

V1	30.205	V2	22.943	CLP	163.63														

PLANETOCENTRIC CONIC

C3	14.327	VHL	3.785	DLA	17.90	RAL	161.12	RAD	6567.6	VEL	11.650	PTH	2.05	VHP	6.982	DPA	-1.10	RAP	192.62
ECC	1.2358																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 20	2730.94	-27.86	76.80	23.04	95.31	15 42 51	2130.9	-26.83	68.28
90.00	7 53 8	4188.43	-.34	171.34	17.33	61.68	9 2 57	3588.4	-4.12	164.70
100.00	16 29 13	2434.62	-29.15	54.85	22.88	96.95	17 9 48	1834.6	-27.88	46.27
100.00	9 3 56	3959.99	.80	153.91	16.70	60.12	10 9 56	3360.0	-3.18	147.39
110.00	18 0 34	2148.85	-32.47	32.52	22.26	101.33	18 36 23	1548.8	-30.57	23.82
110.00	9 49 5	3818.52	3.66	141.40	14.91	55.99	10 52 44	3218.5	-.83	135.19

DIFFERENTIAL CORRECTIONS

TDE	.2252	TRA	-1.0993	TC3	2.9490	BAU	.5653
RDE	-.2854	RRA	-.1249	RC3	.1125	FAU	.11454
FDE	.1719	FRA	.8260	FC3	-6.9212	BSP	9971
BDE	.3636	BRA	1.1064	BC3	2.9511	FSP	1443

MID-COURSE EXECUTION ACCURACY

SGT	2856.2	SGR	483.1	SG3	467.3		
RRT	.2828	RRF	-.3138	RTF	-.9003		
SGB	2896.8	R23	-.0545	R13	-.9007		
SG1	2859.6	SG2	462.8	THA	2.81		

ORBIT DETERMINATION ACCURACY

ST	629.2	SR	436.2	SS	300.3		
CRT	-.4221	CRS	.6278	CST	.4107		
LSA	672.4	MSA	470.4	SSA	52.9		
EL1	669.3	EL2	371.7	ALF	155.80		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 447.633 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.887 GAL -.02 AZL 89.01 HCA 140.42 SMA 203.82 ECC .27630 INC .9943 V1 30.205
RP 239.11 LAP .63 LOP 209.27 VP 21.423 GAP 12.63 AZP 90.77 TAL 359.90 TAP 140.33 RCA 147.50 APO 260.13 V2 22.975
RC 174.639 GL 9.06 GP 2.98 ZAL 85.97 ZAP 162.67 ETS 168.92 ZAE 157.48 ETE 7.64 ZAC 93.27 ETC 255.82 CLP 162.92

PLANETOCENTRIC CONIC

C3 13.944 VHL 3.734 DLA 18.18 RAL 160.08 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 6.820 DPA -1.08 RAP 192.88 ECC 1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 16	2735.94	-27.89	77.16	21.66	95.13	15 35 52	2135.9	-26.88	68.64
90.00	7 51 53	4171.48	-.88	170.39	16.00	61.70	9 1 24	3571.5	-4.66	163.75
100.00	16 22 26	2438.74	-29.18	55.15	21.50	96.79	17 3 5	1838.7	-27.93	46.57
100.00	9 2 24	3943.92	.25	153.03	15.36	60.11	10 8 8	3343.9	-3.72	146.50
110.00	17 54 19	2151.28	-32.50	32.70	20.89	101.22	18 30 10	1551.3	-30.61	23.99
110.00	9 47 1	3804.14	3.11	140.65	13.58	55.94	10 50 25	3204.1	-1.38	134.44

DIFFERENTIAL CORRECTIONS
TDE .1972 TRA-1.0587 TC3 3.0454 BAU .5683
RDE -.2784 RRA -.1211 RC3 .1328 FAU .11841
FDE .2246 FRA .8100 FC3-7.3515 BSP 10183
BDE .3412 BRA 1.0656 BC3 3.0483 FSP 1535

MID-COURSE EXECUTION ACCURACY
SGT 2861.5 SGR 480.2 SG3 488.6
RRT .3135 RRF -.3490 RTF -.9035
SGB 2901.5 R23 -.0615 R13 -.9041
SG1 2865.5 SG2 455.3 THA 3.09

ORBIT DETERMINATION ACCURACY
ST 599.4 SR 431.2 SS 322.7
CRT -.3828 CRS .7230 CST .3298
LSA 636.6 MSA 491.2 SSA 52.9
EL1 635.8 EL2 375.6 ALF 155.61

LAUNCH DATE DEC 1 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 450.973 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.836 GAL .08 AZL 89.03 HCA 141.37 SMA 202.74 ECC .27246 INC .9685 V1 30.205
RP 238.79 LAP .60 LOP 210.21 VP 21.377 GAP 12.11 AZP 90.76 TAL .39 TAP 141.76 RCA 147.50 APO 257.98 V2 23.007
RC 176.939 GL 8.93 GP 3.11 ZAL 84.96 ZAP 161.93 ETS 168.93 ZAE 158.05 ETE 8.33 ZAC 93.45 ETC 255.82 CLP 162.19

PLANETOCENTRIC CONIC

C3 13.590 VHL 3.686 DLA 18.44 RAL 159.04 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 6.662 DPA -1.05 RAP 193.13 ECC 1.2237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 29	2740.30	-27.91	77.48	20.29	94.97	15 29 10	2140.3	-26.93	68.95
90.00	7 50 24	4155.86	-1.39	169.52	14.69	61.71	8 59 40	3555.9	-5.16	162.87
100.00	16 15 54	2442.29	-29.21	55.41	20.14	96.66	16 56 37	1842.3	-27.98	46.82
100.00	9 0 40	3929.11	-.25	152.22	14.06	60.11	10 6 9	3329.1	-4.22	145.69
110.00	17 48 17	2153.28	-32.53	32.85	19.53	101.14	18 24 10	1553.3	-30.65	24.14
110.00	9 44 47	3790.88	2.60	139.96	12.27	55.90	10 47 58	3190.9	-1.89	133.75

DIFFERENTIAL CORRECTIONS
TDE .2123 TRA -.9800 TC3 3.2749 BAU .5957
RDE -.2698 RRA -.1154 RC3 .1603 FAU .12542
FDE .2090 FRA .7232 FC3-7.9898 BSP 9859
BDE .3434 BRA .9868 BC3 3.2789 FSP 1575

MID-COURSE EXECUTION ACCURACY
SGT 2918.4 SGR 475.0 SG3 519.9
RRT .3250 RRF -.3697 RTF -.9122
SGB 2956.8 R23 -.0698 R13 -.9128
SG1 2922.6 SG2 448.6 THA 3.10

ORBIT DETERMINATION ACCURACY
ST 588.4 SR 423.2 SS 295.2
CRT -.4451 CRS .7232 CST .2546
LSA 633.6 MSA 455.8 SSA 56.9
EL1 633.6 EL2 351.9 ALF 153.50

LAUNCH DATE DEC 1 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 454.343 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.787 GAL .18 AZL 89.06 HCA 142.32 SMA 201.72 ECC .26880 INC .9416 V1 30.205
RP 238.47 LAP .58 LOP 211.17 VP 21.334 GAP 11.60 AZP 90.75 TAL .87 TAP 143.19 RCA 147.50 APO 255.94 V2 23.040
RC 179.231 GL 8.77 GP 3.25 ZAL 83.96 ZAP 161.16 ETS 168.92 ZAE 158.65 ETE 9.10 ZAC 93.63 ETC 255.81 CLP 161.44

PLANETOCENTRIC CONIC

C3 13.262 VHL 3.642 DLA 18.67 RAL 158.00 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 6.507 DPA -1.00 RAP 193.37 ECC 1.2183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 55	2744.10	-27.93	77.75	18.94	94.84	15 22 40	2144.1	-26.97	69.22
90.00	7 48 41	4141.44	-1.85	168.71	13.39	61.74	8 57 42	3541.4	-5.62	162.06
100.00	16 9 34	2445.33	-29.23	55.63	18.79	96.54	16 50 20	1845.3	-28.02	47.04
100.00	8 58 43	3915.44	-.71	151.47	12.76	60.12	10 3 58	3315.4	-4.68	144.93
110.00	17 42 24	2154.88	-32.55	32.97	18.19	101.07	18 18 19	1554.9	-30.68	24.25
110.00	9 42 22	3778.65	2.13	139.32	10.98	55.88	10 45 21	3178.6	-2.36	133.11

DIFFERENTIAL CORRECTIONS
TDE .1874 TRA -.9702 TC3 3.3550 BAU .5957
RDE -.2629 RRA -.1117 RC3 .1859 FAU .12993
FDE .2441 FRA .7123 FC3-8.4818 BSP 10051
BDE .3228 BRA .9766 BC3 3.3602 FSP 1674

MID-COURSE EXECUTION ACCURACY
SGT 2941.8 SGR 473.1 SG3 544.5
RRT .3649 RRF -.4074 RTF -.9110
SGB 2979.6 R23 -.0724 R13 -.9117
SG1 2947.0 SG2 439.7 THA 3.43

ORBIT DETERMINATION ACCURACY
ST 570.9 SR 417.3 SS 311.9
CRT -.3976 CRS .7746 CST .2269
LSA 609.7 MSA 471.6 SSA 58.1
EL1 609.5 EL2 358.7 ALF 154.35

LAUNCH DATE DEC 1 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 457.743 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.741 GAL .28 AZL 89.09 HCA 143.28 SMA 200.76 ECC .26531 INC .9133 V1 30.205
RP 238.14 LAP .55 LOP 212.12 VP 21.296 GAP 11.09 AZP 90.73 TAL 1.34 TAP 144.62 RCA 147.49 APO 254.02 V2 23.073
RC 181.513 GL 8.59 GP 3.41 ZAL 82.97 ZAP 160.38 ETS 168.90 ZAE 159.27 ETE 9.95 ZAC 93.82 ETC 255.81 CLP 160.67

PLANETOCENTRIC CONIC

C3 12.958 VHL 3.600 DLA 18.87 RAL 156.97 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 6.356 DPA -.94 RAP 193.61 ECC 1.2133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 38	2747.16	-27.95	77.98	17.59	94.73	15 16 25	2147.2	-27.00	69.44
90.00	7 46 42	4128.37	-2.27	167.98	12.11	61.77	8 55 30	3528.4	-6.03	161.32
100.00	16 3 30	2447.71	-29.25	55.80	17.45	96.45	16 44 18	1847.7	-28.05	47.21
100.00	8 56 31	3903.05	-1.13	150.79	11.48	60.13	10 1 34	3303.0	-5.10	144.25
110.00	17 36 45	2155.99	-32.56	33.06	16.86	101.02	18 12 41	1556.0	-30.70	24.33
110.00	9 39 46	3767.54	1.71	138.74	9.70	55.85	10 42 33	3167.5	-2.78	132.53

DIFFERENTIAL CORRECTIONS
TDE .1663 TRA -.9377 TC3 3.4573 BAU .6001
RDE -.2562 RRA -.1077 RC3 .2150 FAU .13522
FDE .2789 FRA .6803 FC3-9.0339 BSP 10111
BDE .3054 BRA .9438 BC3 3.4640 FSP 1765

MID-COURSE EXECUTION ACCURACY
SGT 2958.6 SGR 472.3 SG3 571.9
RRT .4029 RRF -.4462 RTF -.9129
SGB 2996.0 R23 -.0769 R13 -.9137
SG1 2964.8 SG2 431.3 THA 3.76

ORBIT DETERMINATION ACCURACY
ST 547.3 SR 411.4 SS 326.3
CRT -.3636 CRS .8206 CST .1831
LSA 583.9 MSA 480.4 SSA 59.5
EL1 582.2 EL2 360.3 ALF 154.25

LAUNCH DATE DEC 1 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 461.171 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.696	GAL	.38	AZL	89.12	HCA	144.23	SMA	199.85	ECC	.26200	INC	.8837	V1	30.205
RP	237.81	LAP	.52	LOP	213.08	VP	21.262	GAP	10.59	AZP	90.72	TAL	1.81	TAP	146.05	RCA	147.49	APO	252.21	V2	23.106
RC	183.786	GL	8.39	GP	3.57	ZAL	81.99	ZAP	159.58	ETS	168.86	ZAE	159.92	ETE	10.90	ZAC	94.01	ETC	255.80	CLP	159.89

PLANETOCENTRIC CONIC

C3	12.677	VHL	3.560	DLA	19.04	RAL	155.93	RAD	6567.5	VEL	11.579	PTH	2.02	VHP	6.209	DPA	-.86	RAP	193.83	ECC	1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 40	2749.41	-27.96	78.14	16.27	94.64	15 10 29	2149.4	-27.03	69.60
90.00	7 44 26	4116.71	-2.65	167.33	10.84	61.80	8 53 3	3516.7	-6.40	160.66
100.00	15 57 42	2449.36	-29.26	55.93	16.13	96.39	16 38 32	1849.4	-28.07	47.33
100.00	8 54 4	3891.98	-1.51	150.18	10.21	60.14	9 58 56	3292.0	-5.47	143.63
110.00	17 31 18	2156.52	-32.57	33.10	15.54	101.00	18 7 15	1556.5	-30.71	24.37
110.00	9 36 58	3757.59	1.33	138.22	8.44	55.84	10 39 35	3157.6	-3.16	132.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1620	TRA	-.9031	TC3	3.5907	BAU	.6100	SGT	2994.9	SGR	472.5	SG3	601.7	ST	535.3	SR	404.9	SS	331.2
RDE	-.2494	RRA	-.1036	RC3	.2474	FAU	.14108	RRT	.4360	RRF	-.4847	RTF	-.9159	CRT	-.3683	CRS	.8449	CST	.1284
FDE	.2984	FRA	.6445	FC3	-9.6344	BSP	10079	SGB	3031.9	R23	-.0857	R13	-.9168	LSA	575.6	MSA	474.5	SSA	61.1
BDE	.2974	BRA	.9090	BC3	3.5992	FSP	1861	SG1	3002.1	SG2	424.2	THA	4.02	EL1	570.9	EL2	353.0	ALF	153.77

LAUNCH DATE DEC 1 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 464.625 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.653	GAL	.47	AZL	89.15	HCA	146.19	SMA	198.99	ECC	.25886	INC	.8525	V1	30.205
RP	237.48	LAP	.49	LOP	214.04	VP	21.231	GAP	10.10	AZP	90.70	TAL	2.27	TAP	147.47	RCA	147.48	APO	250.50	V2	23.140
RC	186.049	GL	8.17	GP	3.74	ZAL	81.03	ZAP	158.76	ETS	168.82	ZAE	160.60	ETE	11.96	ZAC	94.22	ETC	255.80	CLP	159.08

PLANETOCENTRIC CONIC

C3	12.417	VHL	3.524	DLA	19.18	RAL	154.91	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	6.066	DPA	-.77	RAP	194.04	ECC	1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 3	2750.68	-27.97	78.23	14.96	94.60	15 4 54	2150.7	-27.04	69.69
90.00	7 41 52	4106.59	-2.97	166.77	9.59	61.83	8 50 19	3506.6	-6.72	160.09
100.00	15 52 15	2450.14	-29.27	55.98	14.82	96.36	16 33 5	1850.1	-28.08	47.38
100.00	8 51 21	3882.36	-1.83	149.65	8.96	60.16	9 56 4	3282.4	-5.79	143.10
110.00	17 26 9	2156.38	-32.57	33.08	14.23	101.01	18 2 5	1556.4	-30.71	24.36
110.00	9 33 57	3748.89	1.00	137.76	7.19	55.83	10 36 26	3148.9	-3.49	131.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1431	TRA	-.8738	TC3	3.6581	BAU	.6091	SGT	2993.9	SGR	474.3	SG3	630.4	ST	513.6	SR	398.6	SS	342.6
RDE	-.2431	RRA	-.0994	RC3	.2819	FAU	.14658	RRT	.4772	RRF	-.5256	RTF	-.9159	CRT	-.3339	CRS	.8741	CST	.0993
FDE	.3276	FRA	.6032	FC3	-10.2195	BSP	10319	SGB	3031.2	R23	-.0910	R13	-.9169	LSA	555.9	MSA	476.6	SSA	63.0
BDE	.2821	BRA	.8794	BC3	3.6689	FSP	1972	SG1	3002.6	SG2	415.6	THA	4.41	EL1	545.4	EL2	353.8	ALF	153.75

LAUNCH DATE DEC 1 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 468.104 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.613	GAL	.55	AZL	89.18	HCA	146.16	SMA	198.17	ECC	.25586	INC	.8197	V1	30.205
RP	237.15	LAP	.46	LOP	215.00	VP	21.203	GAP	9.61	AZP	90.68	TAL	2.72	TAP	148.88	RCA	147.47	APO	248.88	V2	23.174
RC	188.300	GL	7.92	GP	3.92	ZAL	80.09	ZAP	157.92	ETS	168.76	ZAE	161.30	ETE	13.16	ZAC	94.43	ETC	255.79	CLP	158.26

PLANETOCENTRIC CONIC

C3	12.176	VHL	3.489	DLA	19.29	RAL	153.89	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	5.926	DPA	-.66	RAP	194.24	ECC	1.2004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 49	2750.92	-27.97	78.25	13.66	94.59	14 59 39	2150.9	-27.04	69.71
90.00	7 38 59	4098.05	-3.25	166.29	8.36	61.85	8 47 17	3498.0	-6.99	159.61
100.00	15 47 8	2450.00	-29.27	55.97	13.52	96.37	16 27 58	1850.0	-28.08	47.37
100.00	8 48 21	3874.20	-2.11	149.20	7.73	60.18	9 52 55	3274.2	-6.06	142.65
110.00	17 21 15	2155.52	-32.56	33.02	12.94	101.04	17 57 11	1555.5	-30.69	24.30
110.00	9 30 43	3741.44	.71	137.38	5.96	55.82	10 33 5	3141.4	-3.78	131.17

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1300	TRA	-.8408	TC3	3.7534	BAU	.6132	SGT	3007.8	SGR	478.4	SG3	662.1	ST	494.3	SR	392.4	SS	353.7
RDE	-.2370	RRA	-.0952	RC3	.3204	FAU	.15274	RRT	.5177	RRF	-.5681	RTF	-.9175	CRT	-.3132	CRS	.8972	CST	.0611
FDE	.3556	FRA	.5572	FC3	-10.8597	BSP	10428	SGB	3045.6	R23	-.0985	R13	-.9186	LSA	545.4	MSA	470.8	SSA	64.8
BDE	.2703	BRA	.8462	BC3	3.7670	FSP	2084	SG1	3018.2	SG2	407.9	THA	4.79	EL1	524.2	EL2	351.3	ALF	153.32

LAUNCH DATE DEC 1 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 471.608 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.574	GAL	.64	AZL	89.21	HCA	147.12	SMA	197.40	ECC	.25302	INC	.7853	V1	30.205
RP	236.81	LAP	.43	LOP	215.96	VP	21.180	GAP	9.13	AZP	90.66	TAL	3.17	TAP	150.29	RCA	147.46	APO	247.35	V2	23.209
RC	190.540	GL	7.65	GP	4.12	ZAL	79.17	ZAP	157.06	ETS	168.69	ZAE	162.02	ETE	14.52	ZAC	94.65	ETC	255.79	CLP	157.41

PLANETOCENTRIC CONIC

C3	11.953	VHL	3.457	DLA	19.36	RAL	152.88	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	5.789	DPA	-.53	RAP	194.44	ECC	1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 59	2750.00	-27.97	78.18	12.38	94.62	14 54 49	2150.0	-27.03	69.64
90.00	7 35 46	4091.17	-3.47	165.90	7.14	61.88	8 43 57	3491.2	-7.20	159.22
100.00	15 42 23	2448.82	-29.26	55.89	12.24	96.41	16 23 12	1848.8	-28.06	47.29
100.00	8 45 3	3867.58	-2.33	148.84	6.51	60.19	9 49 30	3267.6	-6.28	142.28
110.00	17 16 40	2153.85	-32.54	32.90	11.65	101.11	17 52 34	1553.9	-30.66	24.18
110.00	9 27 15	3735.31	.48	137.06	4.75	55.82	10 29 31	3135.3	-4.01	130.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1209	TRA	-.8105	TC3	3.8446	BAU	.6171	SGT	3022.4	SGR	484.8	SG3	695.4	ST	478.5	SR	385.9	SS	362.1
RDE	-.2310	RRA	-.0909	RC3	.3628	FAU	.15923	RRT	.5580	RRF	-.6110	RTF	-.9188	CRT	-.3014	CRS	.9132	CST	.0239
FDE	.3789	FRA	.5110	FC3	-11.5320	BSP	10459	SGB	3061.0	R23	-.1074	R13	-.9201	LSA	541.0	MSA	460.2	SSA	66.6
BDE	.2607	BRA	.8156	BC3	3.8617	FSP	2196	SG1	3034.7	SG2	400.6	THA	5.21	EL1	507.4	EL2	347.0	ALF	152.86

LAUNCH DATE DEC 1 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 475.134 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.537	GAL	.72	AZL	89.25	HCA	148.09	SMA	196.68	ECC	.25031	INC	.7488	V1	30.205
RP	236.46	LAP	.40	LOP	216.93	VP	21.159	GAP	8.66	AZP	90.64	TAL	3.60	TAP	151.69	RCA	147.44	APO	245.91	V2	23.244
RC	192.768	GL	7.35	GP	4.34	ZAL	78.27	ZAP	156.17	ETS	168.61	ZAE	162.75	ETE	16.07	ZAC	94.88	ETC	255.78	CLP	156.55

PLANETOCENTRIC CONIC

C3	11.747	VHL	3.427	DLA	19.40	RAL	151.88	RAD	6567.4	VEL	11.538	PTH	2.01	VHP	5.656	DPA	-.37	RAP	194.62	ECC	1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 36	2747.83	-27.96	78.03	11.12	94.70	14 50 24	2147.8	-27.01	69.49
90.00	7 32 11	4086.03	-3.63	165.62	5.93	61.90	8 40 17	3486.0	-7.36	158.92
100.00	15 38 2	2446.52	-29.24	55.72	10.98	96.50	16 18 49	1846.5	-28.03	47.12
100.00	8 41 25	3862.57	-2.50	148.57	5.30	60.20	9 45 48	3262.6	-6.45	142.00
110.00	17 12 24	2151.31	-32.50	32.70	10.38	101.22	17 48 15	1551.3	-30.61	24.00
110.00	9 23 33	3730.55	.30	136.81	3.55	55.82	10 25 44	3130.5	-4.19	130.60

DIFFERENTIAL CORRECTIONS

TDE	.1143	TRA	-.7774	TC3	3.9330	BAU	.6210
RDE	-.2252	RRA	-.0865	RC3	.4092	FAU	.16601
FDE	.4001	FRA	.4574	FC-12	2.2346	BSP	10470
BDE	.2525	BRA	.7821	BC3	3.9543	FSP	2313

MID-COURSE EXECUTION ACCURACY

SGT	3033.7	SGR	493.8	SG3	730.3		
RRT	.5977	RRF	-.6537	RTF	-.9204		
SGB	3073.6	R23	-.1174	R13	-.9220		
SG1	3048.2	SG2	394.0	THA	5.65		

ORBIT DETERMINATION ACCURACY

ST	462.4	SR	379.3	SS	368.8
CRT	-.2977	CRS	.9257	CST	-.0197
LSA	539.6	MSA	444.8	SSA	68.6
EL1	491.6	EL2	340.6	ALF	151.92

LAUNCH DATE DEC 1 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 478.682 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.501	GAL	.80	AZL	89.29	HCA	149.06	SMA	195.99	ECC	.24775	INC	.7102	V1	30.205
RP	236.12	LAP	.37	LOP	217.90	VP	21.142	GAP	8.19	AZP	90.61	TAL	4.03	TAP	153.09	RCA	147.43	APO	244.54	V2	23.279
RC	194.983	GL	7.02	GP	4.56	ZAL	77.39	ZAP	155.26	ETS	168.52	ZAE	163.51	ETE	17.84	ZAC	95.12	ETC	255.78	CLP	155.66

PLANETOCENTRIC CONIC

C3	11.556	VHL	3.399	DLA	19.40	RAL	150.90	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	5.526	DPA	-.20	RAP	194.78	ECC	1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 42	2744.28	-27.94	77.77	9.87	94.83	14 46 26	2144.3	-26.97	69.23
90.00	7 28 12	4082.73	-3.74	165.43	4.73	61.91	8 36 15	3482.7	-7.47	158.74
100.00	15 34 8	2442.98	-29.21	55.46	9.72	96.63	16 14 51	1843.0	-27.99	46.87
100.00	8 37 27	3859.27	-2.61	148.38	4.11	60.21	9 41 46	3259.3	-6.56	141.82
110.00	17 8 29	2147.79	-32.46	32.44	9.12	101.37	17 44 17	1547.8	-30.55	23.73
110.00	9 19 35	3727.22	.17	136.63	2.37	55.82	10 21 43	3127.2	-4.32	130.42

DIFFERENTIAL CORRECTIONS

TDE	.1054	TRA	-.7490	TC3	4.0050	BAU	.6228
RDE	-.2195	RRA	-.0819	RC3	.4600	FAU	.17308
FDE	.4211	FRA	.4018	FC-12	2.9664	BSP	10553
BDE	.2435	BRA	.7535	BC3	4.0314	FSP	2441

MID-COURSE EXECUTION ACCURACY

SGT	3039.4	SGR	506.0	SG3	766.7		
RRT	.6383	RRF	-.6959	RTF	-.9211		
SGB	3081.2	R23	-.1276	R13	-.9229		
SG1	3056.7	SG2	387.3	THA	6.17		

ORBIT DETERMINATION ACCURACY

ST	446.6	SR	372.6	SS	376.0
CRT	-.2843	CRS	.9354	CST	-.0510
LSA	537.6	MSA	430.8	SSA	70.8
EL1	474.7	EL2	336.1	ALF	151.32

LAUNCH DATE DEC 1 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 482.251 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.467	GAL	.87	AZL	89.33	HCA	150.03	SMA	195.33	ECC	.24531	INC	.6693	V1	30.205
RP	235.77	LAP	.33	LOP	218.88	VP	21.128	GAP	7.73	AZP	90.58	TAL	4.44	TAP	154.47	RCA	147.42	APO	243.25	V2	23.315
RC	197.185	GL	6.66	GP	4.81	ZAL	76.54	ZAP	154.32	ETS	168.41	ZAE	164.27	ETE	19.89	ZAC	95.37	ETC	255.77	CLP	154.74

PLANETOCENTRIC CONIC

C3	11.379	VHL	3.373	DLA	19.35	RAL	149.92	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	5.400	DPA	.00	RAP	194.94	ECC	1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 18	2739.26	-27.91	77.40	8.63	95.01	14 42 57	2139.3	-26.92	68.88
90.00	7 23 50	4081.34	-3.78	165.35	3.55	61.92	8 31 51	3481.3	-7.51	158.66
100.00	15 30 41	2438.12	-29.18	55.10	8.48	96.82	16 11 19	1838.1	-27.92	46.52
100.00	8 33 8	3857.71	-2.67	148.30	2.93	60.22	9 37 25	3257.7	-6.61	141.73
110.00	17 4 56	2143.22	-32.39	32.10	7.87	101.56	17 40 39	1543.2	-30.46	23.42
110.00	9 15 22	3725.37	.10	136.54	1.21	55.82	10 17 27	3125.4	-4.39	130.32

DIFFERENTIAL CORRECTIONS

TDE	.0997	TRA	-.7174	TC3	4.0717	BAU	.6244
RDE	-.2139	RRA	-.0770	RC3	.5155	FAU	.18042
FDE	.4386	FRA	.3380	FC-13	7.7260	BSP	10589
BDE	.2360	BRA	.7215	BC3	4.1042	FSP	2574

MID-COURSE EXECUTION ACCURACY

SGT	3040.2	SGR	521.7	SG3	804.4		
RRT	.6765	RRF	-.7363	RTF	-.9220		
SGB	3084.6	R23	-.1392	R13	-.9242		
SG1	3060.9	SG2	381.6	THA	6.73		

ORBIT DETERMINATION ACCURACY

ST	430.8	SR	365.8	SS	380.6
CRT	-.2828	CRS	.9421	CST	-.0927
LSA	536.6	MSA	413.4	SSA	73.2
EL1	459.6	EL2	328.8	ALF	150.08

LAUNCH DATE DEC 1 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 485.840 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.435	GAL	.95	AZL	89.37	HCA	151.01	SMA	194.72	ECC	.24300	INC	.6256	V1	30.205
RP	235.42	LAP	.30	LOP	219.85	VP	21.116	GAP	7.28	AZP	90.55	TAL	4.84	TAP	155.85	RCA	147.40	APO	242.03	V2	23.351
RC	199.372	GL	6.26	GP	5.08	ZAL	75.70	ZAP	153.35	ETS	168.29	ZAE	165.03	ETE	22.27	ZAC	95.64	ETC	255.76	CLP	153.81

PLANETOCENTRIC CONIC

C3	11.216	VHL	3.349	DLA	19.26	RAL	148.96	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	5.277	DPA	.23	RAP	195.08	ECC	1.1846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 25	2732.65	-27.87	76.92	7.40	95.25	14 39 58	2132.7	-26.85	68.41
90.00	7 19 1	4081.94	-3.76	165.39	2.38	61.91	8 27 3	3481.9	-7.49	158.69
100.00	15 27 43	2431.83	-29.12	54.64	7.25	97.05	16 8 15	1831.8	-27.84	46.07
100.00	8 28 25	3858.00	-2.66	148.31	1.77	60.22	9 32 43	3258.0	-6.60	141.75
110.00	17 1 47	2137.52	-32.32	31.67	6.63	101.81	17 37 24	1537.5	-30.35	23.01
110.00	9 10 50	3725.07	.09	136.52	.06	55.82	10 12 56	3125.1	-4.40	130.31

DIFFERENTIAL CORRECTIONS

TDE	.0958	TRA	-.6868	TC3	4.1274	BAU	.6249
RDE	-.2083	RRA	-.0719	RC3	.5763	FAU	.18803
FDE	.4527	FRA	.2707	FC-14	5139	BSP	10568
BDE	.2293	BRA	.6906	BC3	4.1675	FSP	2708

MID-COURSE EXECUTION ACCURACY

SGT	3036.2	SGR	541.2	SG3	843.6		
RRT	.7125	RRF	-.7744	RTF	-.9228		
SGB	3084.1	R23	-.1519	R13	-.9253		
SG1	3061.0	SG2	376.7	THA	7.35		

ORBIT DETERMINATION ACCURACY

ST	416.1	SR	358.7	SS	383.2
CRT	-.2871	CRS	.9457	CST	-.1366
LSA	535.0	MSA	395.8	SSA	75.8
EL1	446.3	EL2	320.3	ALF	148.73

LAUNCH DATE DEC 1 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 489.448 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.404	GAL	1.02	AZL	89.42	HCA	151.99	SMA	194.13	ECC	.24080	INC	.5793	V1	30.205
RP	235.06	LAP	.27	LOP	220.83	VP	21.108	GAP	6.83	AZP	90.51	TAL	5.23	TAP	157.23	RCA	147.38	APO	240.88	V2	23.387
RC	201.544	GL	5.83	GP	5.36	ZAL	74.90	ZAP	152.36	ETS	168.16	ZAE	165.80	ETE	25.04	ZAC	95.92	ETC	255.76	CLP	152.84

PLANETOCENTRIC CONIC

C3	11.064	VHL	3.326	DLA	19.13	RAL	148.01	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	5.157	DPA	.48	RAP	195.22	ECC	1.1821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 7	2724.35	-27.81	76.32	6.19	95.54	14 37 31	2124.4	-26.75	67.82
90.00	7 13 46	4084.62	-3.68	165.54	1.23	61.90	8 21 51	3484.6	-7.41	158.84
100.00	15 25 15	2424.01	-29.06	54.07	6.03	97.35	16 5 39	1824.0	-27.74	45.52
100.00	8 23 19	3860.20	-2.58	148.44	.62	60.21	9 27 39	3260.2	-6.53	141.87
110.00	16 59 2	2130.60	-32.22	31.16	5.40	102.10	17 34 33	1530.6	-30.22	22.51
110.00	9 6 1	3726.38	.14	136.59	358.92	55.82	10 8 8	3126.4	-4.35	130.38

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.0942	TRA	-.6576	TC3	4.1809	BAU .6257	SGT 3033.1	SGR 565.5	SG3 885.2	ST 403.3	SR 351.1	SS 382.2
RDE	-.2026	RRA	-.0664	RC3	.6435	FAU .19611	RRT .7459	RRF -.8097	RTF -.9235	CRT -.3001	CRS .9460	CST -.1857
FDE	.4608	FRA	.1983	FC-15.3454		BSP 10581	SGB 3085.3	R23 -.1656	R13 -.9265	LSA 531.8	MSA 378.0	SSA 78.9
BDE	.2234	BRA	.6609	BC3 4.2301		FSP 2853	SG1 3062.7	SG2 373.0	THA 8.04	EL1 435.7	EL2 310.1	ALF 147.42

LAUNCH DATE DEC 1 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 493.075 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.375	GAL	1.08	AZL	89.47	HCA	152.97	SMA	193.58	ECC	.23872	INC	.5293	V1	30.205
RP	234.71	LAP	.24	LOP	221.81	VP	21.102	GAP	6.39	AZP	90.47	TAL	5.61	TAP	158.59	RCA	147.37	APO	239.79	V2	23.424
RC	203.699	GL	5.35	GP	5.68	ZAL	74.11	ZAP	151.33	ETS	168.01	ZAE	166.54	ETE	28.28	ZAC	96.23	ETC	255.75	CLP	151.85

PLANETOCENTRIC CONIC

C3	10.923	VHL	3.305	DLA	18.94	RAL	147.08	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	5.041	DPA	.77	RAP	195.34	ECC	1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 23	2714.25	-27.74	75.59	4.98	95.90	14 35 38	2114.2	-26.64	67.10
90.00	7 8 2	4089.48	-3.52	165.81	.08	61.88	8 16 12	3489.5	-7.26	159.12
100.00	15 23 20	2414.55	-28.97	53.38	4.82	97.70	16 3 34	1814.5	-27.60	44.84
100.00	8 17 47	3864.42	-2.44	148.67	359.48	60.20	9 22 12	3264.4	-6.39	142.11
110.00	16 56 44	2122.34	-32.10	30.54	4.17	102.44	17 32 6	1522.3	-30.05	21.93
110.00	9 0 53	3729.39	.25	136.75	357.80	55.82	10 3 2	3129.4	-4.23	130.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.0927	TRA	-.6299	TC3	4.2178	BAU .6248	SGT 3021.9	SGR 594.6	SG3 928.2	ST 390.9	SR 343.3	SS 379.1
RDE	-.1969	RRA	-.0606	RC3	.7170	FAU .20444	RRT .7763	RRF -.8417	RTF -.9237	CRT -.3138	CRS .9437	CST -.2343
FDE	.4650	FRA	.1202	FC-16.2034		BSP 10603	SGB 3079.8	R23 -.1803	R13 -.9272	LSA 526.9	MSA 360.4	SSA 82.5
BDE	.2176	BRA	.6329	BC3 4.2783		FSP 3006	SG1 3057.5	SG2 370.4	THA 8.81	EL1 425.3	EL2 299.5	ALF 146.27

LAUNCH DATE DEC 1 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 496.719 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.347	GAL	1.14	AZL	89.52	HCA	153.96	SMA	193.05	ECC	.23674	INC	.4764	V1	30.205
RP	234.35	LAP	.21	LOP	222.80	VP	21.099	GAP	5.96	AZP	90.43	TAL	5.98	TAP	159.94	RCA	147.35	APO	238.76	V2	23.461
RC	205.837	GL	4.84	GP	6.02	ZAL	73.36	ZAP	150.27	ETS	167.85	ZAE	167.26	ETE	32.08	ZAC	96.55	ETC	255.74	CLP	150.83

PLANETOCENTRIC CONIC

C3	10.793	VHL	3.285	DLA	18.70	RAL	146.16	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	4.929	DPA	1.09	RAP	195.45	ECC	1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 16	2702.22	-27.66	74.72	3.78	96.33	14 34 19	2102.2	-26.49	66.25
90.00	7 1 49	4096.61	-3.29	166.21	358.95	61.86	8 10 5	3496.6	-7.03	159.52
100.00	15 21 58	2403.33	-28.87	52.56	3.61	98.12	16 2 1	1803.3	-27.44	44.05
100.00	8 11 49	3870.73	-2.23	149.01	358.36	60.18	9 16 19	3270.7	-6.18	142.46
110.00	16 54 52	2112.65	-31.95	29.82	2.95	102.84	17 30 5	1512.7	-29.86	21.24
110.00	8 55 23	3734.18	.44	137.00	356.70	55.82	9 57 38	3134.2	-4.05	130.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.0952	TRA	-.6032	TC3	4.2485	BAU .6237	SGT 3008.9	SGR 629.1	SG3 972.8	ST 381.6	SR 334.7	SS 370.9
RDE	-.1909	RRA	-.0544	RC3	.7978	FAU .21309	RRT .8027	RRF -.8699	RTF -.9237	CRT -.3443	CRS .9375	CST -.2951
FDE	.4604	FRA	.0384	FC-17.0919		BSP 10577	SGB 3074.0	R23 -.1963	R13 -.9280	LSA 520.6	MSA 341.6	SSA 86.8
BDE	.2134	BRA	.6057	BC3 4.3227		FSP 3164	SG1 3051.6	SG2 369.9	THA 9.67	EL1 419.4	EL2 285.9	ALF 145.45

LAUNCH DATE DEC 1 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 500.380 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.321	GAL	1.20	AZL	89.58	HCA	154.95	SMA	192.56	ECC	.23487	INC	.4180	V1	30.205
RP	233.98	LAP	.18	LOP	223.79	VP	21.099	GAP	5.54	AZP	90.38	TAL	6.34	TAP	161.29	RCA	147.33	APO	237.78	V2	23.498
RC	207.958	GL	4.27	GP	6.38	ZAL	72.63	ZAP	149.18	ETS	167.67	ZAE	167.92	ETE	36.53	ZAC	96.90	ETC	255.73	CLP	149.79

PLANETOCENTRIC CONIC

C3	10.673	VHL	3.267	DLA	18.41	RAL	145.25	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	4.819	DPA	1.45	RAP	195.55	ECC	1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 48	2688.15	-27.55	73.71	2.59	96.83	14 33 36	2088.2	-26.32	65.26
90.00	6 55 4	4106.12	-2.99	166.74	357.83	61.83	8 3 30	3506.1	-6.73	160.06
100.00	15 21 11	2390.24	-28.74	51.61	2.41	98.60	16 1 1	1790.2	-27.25	43.12
100.00	8 5 22	3879.27	-1.94	149.48	357.25	60.16	9 10 1	3279.3	-5.89	142.93
110.00	16 53 29	2101.41	-31.78	28.99	1.72	103.31	17 28 31	1501.4	-29.62	20.45
110.00	8 49 32	3740.85	.69	137.34	355.60	55.82	9 51 53	3140.9	-3.80	131.14

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.0991	TRA	-.5770	TC3	4.2662	BAU .6218	SGT 2989.6	SGR 669.6	SG3 1019.3	ST 373.6	SR 325.3	SS 358.1
RDE	-.1846	RRA	-.0475	RC3	.8869	FAU .22209	RRT .8256	RRF -.8946	RTF -.9235	CRT -.3818	CRS .9261	CST -.3610
FDE	.4468	FRA	-.0524	FC-18.0151		BSP 10500	SGB 3063.7	R23 -.2129	R13 -.9286	LSA 511.9	MSA 321.0	SSA 92.3
BDE	.2095	BRA	.5790	BC3 4.3574		FSP 3317	SG1 3041.1	SG2 371.4	THA 10.64	EL1 414.8	EL2 270.8	ALF 145.01

LAUNCH DATE DEC 1 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 504.058 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.295	GAL	1.26	AZL	89.64	HCA	155.94	SMA	192.09	ECC	.23309	INC	.3560
RP	233.62	LAP	.15	LOP	224.78	VP	21.101	GAP	5.12	AZP	90.33	TAL	6.68	TAP	162.62	RCA	147.31	APO	236.86
RC	210.060	GL	3.66	GP	6.79	ZAL	71.93	ZAP	148.06	ETS	167.48	ZAE	168.51	ETE	41.71	ZAC	97.27	ETC	255.72

V1 30.205 V2 23.536 CLP 148.71

PLANETOCENTRIC CONIC

C3	10.562	VHL	3.250	DLA	18.05	RAL	144.36	RAD	6567.4	VEL	11.487	PTH	2.00	VHP	4.713	DPA	1.85	RAP	195.64

ECC 1.1738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 58	2671.89	-27.41	72.54	1.40	97.40	14 33 30	2071.9	-26.10	64.11
90.00	6 47 45	4118.14	-2.60	167.41	356.72	61.79	7 56 23	3518.1	-6.35	160.74
100.00	15 21 0	2375.12	-28.58	50.51	1.20	99.16	16 0 35	1775.1	-27.02	42.06
100.00	7 58 24	3890.14	-1.57	150.08	356.15	60.14	9 3 14	3290.1	-5.53	143.53
110.00	16 52 37	2088.49	-31.57	28.04	.50	103.84	17 27 26	1488.5	-29.35	19.54
110.00	8 43 17	3749.54	1.02	137.80	354.53	55.83	9 45 46	3149.5	-3.47	131.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1039	TRA	-.5526	TC3	4.2711	BAU	.6189	SGT	2964.8	SGR	716.7	SG3	1067.1	ST	367.3	SR	315.1	SS	343.1
RDE	-.1780	RRA	-.0401	RC3	.9848	FAU	.23132	RRT	.8451	RRF	-.9156	RTF	-.9230	CRT	-.4232	CRS	.9093	CST	-.4271
FDE	.4270	FRA	-.1472	FC	-18.9607	BSP	10529	SGB	3050.2	R23	-.2298	R13	-.9292	LSA	502.4	MSA	299.7	SSA	98.8
BDE	.2061	BRA	.5540	BC3	4.3831	FSP	3499	SG1	3027.1	SG2	375.3	THA	11.73	EL1	411.4	EL2	254.9	ALF	144.99

LAUNCH DATE DEC 1 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 507.751 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.271	GAL	1.32	AZL	89.71	HCA	156.93	SMA	191.64	ECC	.23141	INC	.2893
RP	233.25	LAP	.11	LOP	225.77	VP	21.106	GAP	4.71	AZP	90.27	TAL	7.01	TAP	163.94	RCA	147.30	APO	235.99
RC	212.144	GL	2.98	GP	7.23	ZAL	71.27	ZAP	146.89	ETS	167.27	ZAE	169.00	ETE	47.69	ZAC	97.68	ETC	255.70

V1 30.205 V2 23.574 CLP 147.61

PLANETOCENTRIC CONIC

C3	10.460	VHL	3.234	DLA	17.61	RAL	143.47	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	4.611	DPA	2.30	RAP	195.72

ECC 1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 51	2653.29	-27.24	71.20	.20	98.05	14 34 4	2053.3	-25.85	62.81
90.00	6 39 51	4132.81	-2.13	168.23	355.62	61.76	7 48 43	3532.8	-5.89	161.57
100.00	15 21 28	2357.83	-28.38	49.27	360.00	99.79	16 0 46	1757.8	-26.74	40.85
100.00	7 50 54	3903.50	-1.12	150.81	355.06	60.13	8 55 58	3303.5	-5.08	144.27
110.00	16 52 16	2073.73	-31.33	26.96	359.27	104.43	17 26 50	1473.7	-29.03	18.51
110.00	8 36 36	3760.37	1.44	138.36	353.46	55.84	9 39 16	3160.4	-3.05	132.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1115	TRA	-.5280	TC3	4.2643	BAU	.6156	SGT	2934.4	SGR	771.1	SG3	1116.4	ST	364.0	SR	303.7	SS	323.3
RDE	-.1707	RRA	-.0318	RC3	1.0928	FAU	.24085	RRT	.8609	RRF	-.9332	RTF	-.9223	CRT	-.4772	CRS	.8816	CST	-.4991
FDE	.3949	FRA	-.2516	FC	-19.9336	BSP	10444	SGB	3034.0	R23	-.2466	R13	-.9299	LSA	492.0	MSA	275.0	SSA	107.6
BDE	.2039	BRA	.5289	BC3	4.4021	FSP	3669	SG1	3009.8	SG2	382.4	THA	12.96	EL1	410.9	EL2	236.4	ALF	145.46

LAUNCH DATE DEC 1 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 511.461 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.249	GAL	1.37	AZL	89.78	HCA	157.93	SMA	191.22	ECC	.22982	INC	.2149
RP	232.88	LAP	.08	LOP	226.77	VP	21.112	GAP	4.30	AZP	90.20	TAL	7.32	TAP	165.26	RCA	147.28	APO	235.17
RC	214.210	GL	2.23	GP	7.71	ZAL	70.63	ZAP	145.69	ETS	167.04	ZAE	169.34	ETE	54.45	ZAC	98.12	ETC	255.69

V1 30.205 V2 23.612 CLP 146.47

PLANETOCENTRIC CONIC

C3	10.367	VHL	3.220	DLA	17.11	RAL	142.60	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	4.512	DPA	2.80	RAP	195.79

ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 26	2632.18	-27.03	69.69	359.00	98.78	14 35 19	2032.2	-25.54	61.34
90.00	6 31 18	4150.31	-1.57	169.21	354.53	61.72	7 40 29	3550.3	-5.33	162.56
100.00	15 22 36	2338.19	-28.15	47.85	358.79	100.50	16 1 35	1738.2	-26.41	39.48
100.00	7 42 49	3919.53	-.57	151.69	353.98	60.11	8 48 9	3319.5	-4.55	145.16
110.00	16 52 29	2056.97	-31.04	25.74	358.04	105.10	17 26 46	1457.0	-28.65	17.35
110.00	8 29 26	3773.52	1.94	139.05	352.41	55.87	9 32 19	3173.5	-2.55	132.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1211	TRA	-.5058	TC3	4.2478	BAU	.6123	SGT	2901.0	SGR	833.9	SG3	1167.8	ST	364.6	SR	290.4	SS	298.9
RDE	-.1625	RRA	-.0226	RC3	1.2129	FAU	.25076	RRT	.8738	RRF	-.9478	RTF	-.9212	CRT	-.5364	CRS	.8353	CST	-.5625
FDE	.3480	FRA	-.3617	FC	-20.9409	BSP	10371	SGB	3018.5	R23	-.2628	R13	-.9305	LSA	480.4	MSA	248.2	SSA	119.4
BDE	.2026	BRA	.5063	BC3	4.4176	FSP	3848	SG1	2992.8	SG2	393.1	THA	14.35	EL1	412.8	EL2	216.5	ALF	146.59

LAUNCH DATE DEC 1 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 515.185 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.227	GAL	1.42	AZL	89.86	HCA	158.93	SMA	190.83	ECC	.22831	INC	.1347
RP	232.51	LAP	.05	LOP	227.77	VP	21.121	GAP	3.90	AZP	90.13	TAL	7.63	TAP	166.56	RCA	147.26	APO	234.40
RC	216.258	GL	1.41	GP	8.24	ZAL	70.02	ZAP	144.45	ETS	166.79	ZAE	169.50	ETE	61.88	ZAC	98.60	ETC	255.67

V1 30.205 V2 23.650 CLP 145.29

PLANETOCENTRIC CONIC

C3	10.283	VHL	3.207	DLA	16.51	RAL	141.74	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	4.417	DPA	3.35	RAP	195.85

ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 47	2608.35	-26.77	68.00	357.80	99.59	14 37 16	2008.4	-25.17	59.69
90.00	6 22 5	4170.85	-.90	170.36	353.45	61.70	7 31 36	3570.9	-4.68	163.71
100.00	15 24 27	2316.00	-27.86	46.27	357.57	101.29	16 3 3	1716.0	-26.02	37.95
100.00	7 34 6	3938.44	.07	152.73	352.91	60.11	8 39 45	3338.4	-3.91	146.20
110.00	16 53 18	2038.01	-30.69	24.37	356.79	105.84	17 27 16	1438.0	-28.22	16.05
110.00	8 21 45	3789.19	2.54	139.87	351.36	55.90	9 24 54	3189.2	-1.95	133.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1329	TRA	-.4838	TC3	4.2152	BAU	.6083	SGT	2859.6	SGR	905.5	SG3	1220.1	ST	368.9	SR	275.1	SS	273.1
RDE	-.1532	RRA	-.0122	RC3	1.3454	FAU	.26083	RRT	.8836	RRF	-.9597	RTF	-.9198	CRT	-.6018	CRS	.7567	CST	-.6057
FDE	.2858	FRA	-.4819	FC	-21.9599	BSP	10294	SGB	2999.5	R23	-.2775	R13	-.9314	LSA	469.5	MSA	218.4	SSA	135.2
BDE	.2028	BRA	.4839	BC3	4.4247	FSP	4034	SG1	2971.7	SG2	408.0	THA	15.94	EL1	417.2	EL2	194.3	ALF	148.16

LAUNCH DATE DEC 1 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 518.923 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.206	GAL	1.46	AZL	89.95	HCA	159.94	SMA	190.45	ECC	.22688	INC	.0474
RP	232.14	LAP	.02	LOP	228.78	VP	21.132	GAP	3.51	AZP	90.05	TAL	7.91	TAP	167.85	RCA	147.24	APO	233.66
RC	218.287	GL	.50	GP	8.83	ZAL	69.45	ZAP	143.16	ETS	166.52	ZAE	169.45	ETE	69.73	ZAC	99.13	ETC	255.65

V1	30.205	V2	23.689	CLP	144.09														

PLANETOCENTRIC CONIC

C3	10.208	VHL	3.195	DLA	15.82	RAL	140.89	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	4.326	DPA	3.97	RAP	195.92
ECC	1.1680																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 57	2581.56	-26.45	66.10	356.58	100.49	14 39 58	1981.6	-24.74	57.85
90.00	6 12 6	4194.70	-.13	171.69	352.38	61.68	7 22 1	3594.7	-3.92	165.05
100.00	15 27 2	2291.00	-27.52	44.49	356.34	102.16	16 5 13	1691.0	-25.56	36.23
100.00	7 24 41	3960.50	.82	153.94	351.85	60.12	8 30 42	3360.5	-3.17	147.42
110.00	16 54 44	2016.62	-30.29	22.84	355.53	106.67	17 28 21	1416.6	-27.71	14.59
110.00	8 13 29	3807.64	3.24	140.83	350.33	55.95	9 16 57	3207.6	-1.25	134.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1459	TRA	-.4644	TC3	4.1665	BAU	.6040	SGT	2811.7	SGR	987.2	SG3	1273.3	ST	377.2	SR	257.3	SS	250.1
RDE	-.1426	RRA	-.0006	RC3	1.4922	FAU	.27104	RRT	.8908	RRF	-.9691	RTF	-.9178	CRT	-.6650	CRS	.6244	CST	-.5952
FDE	.2071	FRA	-.6074	FC	-22.9876	BSP	10236	SGB	2980.0	R23	-.2907	R13	-.9323	LSA	459.3	MSA	190.9	SSA	153.6
BDE	.2040	BRA	.4644	BC3	4.4256	FSP	4229	SG1	2949.1	SG2	427.7	THA	17.75	EL1	423.3	EL2	171.3	ALF	150.25

LAUNCH DATE DEC 1 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 522.676 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.187	GAL	1.50	AZL	90.05	HCA	160.94	SMA	190.10	ECC	.22553	INC	.0523
RP	231.76	LAP	-.02	LOP	229.78	VP	21.146	GAP	3.13	AZP	89.95	TAL	8.19	TAP	169.13	RCA	147.23	APO	232.97
RC	220.299	GL	-.51	GP	9.49	ZAL	68.91	ZAP	141.82	ETS	166.22	ZAE	169.15	ETE	77.66	ZAC	99.71	ETC	255.63

V1	30.205	V2	23.728	CLP	142.84														

PLANETOCENTRIC CONIC

C3	10.143	VHL	3.185	DLA	15.03	RAL	140.03	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	4.239	DPA	4.66	RAP	195.97
ECC	1.1669																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 56	2551.52	-26.06	63.99	355.34	101.48	14 43 28	1951.5	-24.22	55.80
90.00	6 1 18	4222.18	.75	173.22	351.32	61.69	7 11 40	3622.2	-3.03	166.59
100.00	15 30 26	2262.92	-27.10	42.51	355.09	103.12	16 8 9	1662.9	-25.02	34.32
100.00	7 14 30	3986.02	1.68	155.34	350.80	60.15	8 20 56	3386.0	-2.30	148.82
110.00	16 56 51	1992.51	-29.80	21.13	354.25	107.57	17 30 4	1392.5	-27.11	12.97
110.00	8 4 34	3829.19	4.06	141.96	349.32	56.03	9 8 23	3229.2	-.43	135.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1625	TRA	-.4439	TC3	4.1078	BAU	.6006	SGT	2759.5	SGR	1080.6	SG3	1327.9	ST	391.3	SR	235.8	SS	237.6
RDE	-.1298	RRA	.0131	RC3	1.6560	FAU	.28151	RRT	.8958	RRF	-.9767	RTF	-.9157	CRT	-.7326	CRS	.4010	CST	-.4824
FDE	.1041	FRA	-.7483	FC	-24.0284	BSP	10134	SGB	2963.6	R23	-.3004	R13	-.9339	LSA	452.5	MSA	198.7	SSA	144.9
BDE	.2080	BRA	.4440	BC3	4.4291	FSP	4420	SG1	2928.8	SG2	452.4	THA	19.82	EL1	433.3	EL2	145.0	ALF	152.90

LAUNCH DATE DEC 1 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 526.442 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.168	GAL	1.54	AZL	90.16	HCA	161.95	SMA	189.77	ECC	.22425	INC	.1570
RP	231.38	LAP	-.05	LOP	230.79	VP	21.161	GAP	2.75	AZP	89.85	TAL	8.44	TAP	170.40	RCA	147.21	APO	232.32
RC	222.292	GL	-1.64	GP	10.21	ZAL	68.41	ZAP	140.43	ETS	165.90	ZAE	168.59	ETE	85.28	ZAC	100.37	ETC	255.60

V1	30.205	V2	23.768	CLP	141.56														

PLANETOCENTRIC CONIC

C3	10.089	VHL	3.176	DLA	14.10	RAL	139.18	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.157	DPA	5.44	RAP	196.04
ECC	1.1660																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 51	2517.87	-25.59	61.64	354.08	102.57	14 47 49	1917.9	-23.60	53.53
90.00	5 49 35	4253.74	1.77	174.98	350.27	61.73	7 0 29	3653.7	-2.02	168.35
100.00	15 34 41	2231.39	-26.59	40.30	353.82	104.18	16 11 52	1631.4	-24.38	32.20
100.00	7 3 26	4015.41	2.68	156.95	349.77	60.22	8 10 22	3415.4	-1.31	150.43
110.00	16 59 42	1965.36	-29.23	19.22	352.94	108.57	17 32 28	1365.4	-26.42	11.17
110.00	7 54 54	3854.21	5.01	143.27	348.31	56.14	8 59 9	3254.2	.53	137.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1806	TRA	-.4257	TC3	4.0283	BAU	.5972	SGT	2698.4	SGR	1187.0	SG3	1382.9	ST	410.4	SR	209.9	SS	249.3
RDE	-.1144	RRA	.0288	RC3	1.8382	FAU	.29201	RRT	.8987	RRF	-.9826	RTF	-.9128	CRT	-.7933	CRS	.1045	CST	-.2366
FDE	-.0257	FRA	-.8992	FC	-25.0580	BSP	10064	SGB	2948.0	R23	-.3072	R13	-.9358	LSA	450.4	MSA	241.8	SSA	115.5
BDE	.2138	BRA	.4267	BC3	4.4279	FSP	4615	SG1	2908.1	SG2	483.1	THA	22.22	EL1	445.7	EL2	117.7	ALF	156.15

LAUNCH DATE DEC 1 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 530.221 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.151	GAL	1.58	AZL	90.28	HCA	162.97	SMA	189.45	ECC	.22305	INC	.2786
RP	231.01	LAP	-.08	LOP	231.81	VP	21.178	GAP	2.38	AZP	89.73	TAL	8.69	TAP	171.66	RCA	147.19	APO	231.71
RC	224.266	GL	-2.91	GP	11.03	ZAL	67.96	ZAP	138.99	ETS	165.54	ZAE	167.76	ETE	92.28	ZAC	101.09	ETC	255.57

V1	30.205	V2	23.807	CLP	140.25														

PLANETOCENTRIC CONIC

C3	10.048	VHL	3.170	DLA	13.04	RAL	138.32	RAD	6567.4	VEL	11.465	PTH	1.99	VHP	4.079	DPA	6.30	RAP	196.10
ECC	1.1654																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 46	2480.16	-25.00	59.03	352.80	103.75	14 53 6	1880.2	-22.86	51.01
90.00	5 36 49	4289.79	2.93	176.99	349.24	61.82	6 48 19	3689.8	-.86	170.36
100.00	15 39 53	2195.99	-25.98	37.85	352.52	105.33	16 16 29	1596.0	-23.62	29.84
100.00	6 51 24	4049.19	3.82	158.81	348.75	60.33	7 58 53	3449.2	-.16	152.29
110.00	17 3 22	1934.76	-28.55	17.10	351.61	109.65	17 35 37	1334.8	-25.60	9.16
110.00	7 44 24	3883.19	6.11	144.80	347.33	56.30	8 49 7	3283.2	1.64	138.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2004	TRA	-.4122	TC3	3.9286	BAU	.5947	SGT	2630.5	SGR	1307.9	SG3	1437.0	ST	435.3	SR	179.0	SS	294.6
RDE	-.0956	RRA	.0464	RC3	2.0404	FAU	.30233	RRT	.8991	RRF	-.9871	RTF	-.9087	CRT	-.8423	CRS	-.1538	CST	.0628
FDE	-.1836	FRA	-1.0521	FC	-26.0489	BSP	10022	SGB	2937.7	R23	-.3112	R13	-.9380	LSA	462.7	MSA	293.6	SSA	89.2
BDE	.2221	BRA	.4148	BC3	4.4269	FSP	4815	SG1	2891.2	SG2	520.8	THA	24.95	EL1	461.8	EL2	90.9	ALF	160.09

LAUNCH DATE DEC 1 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 534.014 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.134 GAL 1.62 AZL 90.41 HCA 163.98 SMA 189.15 ECC .22191 INC .4145 V1 30.205
RP 230.62 LAP -.11 LOP 232.82 VP 21.197 GAP 2.01 AZP 89.60 TAL 8.92 TAP 172.90 RCA 147.18 APO 231.13 V2 23.847
RC 226.222 GL -4.34 GP 11.95 ZAL 67.54 ZAP 137.49 ETS 165.15 ZAE 166.67 ETE 98.46 ZAC 101.91 ETC 255.53 CLP 138.89

PLANETOCENTRIC CONIC

C3 10.023 VHL 3.166 DLA 11.81 RAL 137.45 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.007 DPA 7.28 RAP 196.18 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 46	2437.87	-24.29	56.14	351.49	105.03	14 59 24	1837.9	-21.99	48.22
90.00	5 22 52	4331.10	4.26	179.30	348.22	61.98	6 35 3	3731.1	.48	172.67
100.00	15 46 6	2156.19	-25.23	35.13	351.19	106.58	16 22 3	1556.2	-22.72	27.23
100.00	6 38 13	4088.01	5.12	160.96	347.75	60.51	7 46 21	3488.0	1.16	154.42
110.00	17 7 54	1900.22	-27.73	14.74	350.25	110.83	17 39 35	1300.2	-24.65	6.93
110.00	7 32 54	3916.75	7.37	146.58	346.36	56.53	8 38 11	3316.7	2.92	140.32

DIFFERENTIAL CORRECTIONS
TDE .2239 TRA -.3974 TC3 3.8162 BAU .5948
RDE -.0718 RRA .0677 RC3 2.2671 FAU .31266
FDE -.3819 FRA-1.2250 FC-27.0050 BSP 9973
BDE .2351 BRA .4031 BC3 4.4388 FSP 5006

MID-COURSE EXECUTION ACCURACY
SGT 2557.9 SGR 1446.8 SG3 1491.5
RRT .8982 RRF -.9906 RTF -.9044
SGB 2938.7 R23 -.3093 R13 -.9416
SG1 2884.1 SG2 564.0 THA 28.10

ORBIT DETERMINATION ACCURACY
ST 466.9 SR 141.9 SS 379.6
CRT -.8722 CRS -.2710 CST .3271
LSA 513.4 MSA 337.9 SSA 67.0
EL1 483.4 EL2 67.1 ALF 164.86

LAUNCH DATE DEC 1 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 537.821 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.118 GAL 1.65 AZL 90.57 HCA 165.00 SMA 188.87 ECC .22083 INC .5679 V1 30.205
RP 230.24 LAP -.15 LOP 233.85 VP 21.217 GAP 1.66 AZP 89.45 TAL 9.13 TAP 174.14 RCA 147.16 APO 230.58 V2 23.887
RC 228.159 GL -5.96 GP 12.99 ZAL 67.18 ZAP 135.91 ETS 164.72 ZAE 165.33 ETE 103.74 ZAC 102.85 ETC 255.49 CLP 137.49

PLANETOCENTRIC CONIC

C3 10.020 VHL 3.165 DLA 10.38 RAL 136.56 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.940 DPA 8.38 RAP 196.28 ECC 1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 59	2390.34	-23.41	52.93	350.14	106.40	15 6 49	1790.3	-20.94	45.13
90.00	5 7 31	4378.49	5.77	181.97	347.24	62.23	6 20 29	3778.5	2.01	175.31
100.00	15 53 29	2111.36	-24.33	32.10	349.83	107.93	16 28 40	1511.4	-21.65	24.33
100.00	6 23 42	4132.70	6.61	163.44	346.77	60.78	7 32 35	3532.7	2.67	156.87
110.00	17 13 26	1861.17	-26.76	12.12	348.85	112.11	17 44 27	1261.2	-23.52	4.46
110.00	7 20 14	3955.65	8.83	148.65	345.42	56.84	8 26 10	3355.6	4.40	142.36

DIFFERENTIAL CORRECTIONS
TDE .2626 TRA -.3713 TC3 3.7272 BAU .6034
RDE -.0384 RRA .0964 RC3 2.5301 FAU .32395
FDE -.6586 FRA-1.4478 FC-27.9906 BSP 9680
BDE .2654 BRA .3836 BC3 4.5048 FSP 5119

MID-COURSE EXECUTION ACCURACY
SGT 2502.1 SGR 1613.0 SG3 1551.7
RRT .8982 RRF -.9933 RTF -.9026
SGB 2977.0 R23 -.2967 R13 -.9482
SG1 2914.1 SG2 608.7 THA 31.61

ORBIT DETERMINATION ACCURACY
ST 522.4 SR 99.8 SS 521.0
CRT -.7768 CRS -.0960 CST .5508
LSA 651.6 MSA 357.0 SSA 47.6
EL1 528.2 EL2 62.2 ALF 171.44

LAUNCH DATE DEC 1 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 541.637 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.104 GAL 1.68 AZL 90.75 HCA 166.03 SMA 188.61 ECC .21982 INC .7447 V1 30.205
RP 229.86 LAP -.18 LOP 234.87 VP 21.239 GAP 1.30 AZP 89.28 TAL 9.33 TAP 175.36 RCA 147.15 APO 230.07 V2 23.927
RC 230.076 GL -7.81 GP 14.18 ZAL 66.89 ZAP 134.27 ETS 164.24 ZAE 163.73 ETE 108.13 ZAC 103.91 ETC 255.43 CLP 136.05

PLANETOCENTRIC CONIC

C3 10.043 VHL 3.169 DLA 8.72 RAL 135.63 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.880 DPA 9.62 RAP 196.41 ECC 1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 38	2336.61	-22.33	49.36	348.77	107.88	15 15 34	1736.6	-19.68	41.69
90.00	4 50 31	4433.13	7.49	185.06	346.29	62.61	6 4 24	3833.1	3.76	178.36
100.00	16 2 13	2060.58	-23.22	28.74	348.44	109.37	16 36 33	1460.6	-20.37	21.10
100.00	6 7 37	4184.39	8.32	166.32	345.85	61.19	7 17 21	3584.4	4.41	159.72
110.00	17 20 7	1816.78	-25.59	9.20	347.42	113.48	17 50 24	1216.8	-22.19	1.70
110.00	7 6 12	4000.96	10.51	151.09	344.53	57.28	8 12 53	3401.0	6.12	144.74

DIFFERENTIAL CORRECTIONS
TDE .2850 TRA -.3667 TC3 3.5507 BAU .6079
RDE .0001 RRA .1262 RC3 2.8093 FAU .33300
FDE -.9422 FRA-1.6379 FC-28.7059 BSP 9867
BDE .2850 BRA .3878 BC3 4.5277 FSP 5313

MID-COURSE EXECUTION ACCURACY
SGT 2404.2 SGR 1795.5 SG3 1599.9
RRT .8924 RRF -.9952 RTF -.8943
SGB 3000.6 R23 -.2861 R13 -.9533
SG1 2925.9 SG2 665.6 THA 35.82

ORBIT DETERMINATION ACCURACY
ST 557.3 SR 87.5 SS 671.2
CRT -.2101 CRS .5237 CST .6577
LSA 798.0 MSA 361.3 SSA 36.6
EL1 557.6 EL2 85.5 ALF 178.07

LAUNCH DATE DEC 1 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 545.466 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.090 GAL 1.70 AZL 90.95 HCA 167.05 SMA 188.36 ECC .21886 INC .9505 V1 30.205
RP 229.47 LAP -.21 LOP 235.90 VP 21.263 GAP .96 AZP 89.07 TAL 9.51 TAP 176.57 RCA 147.14 APO 229.59 V2 23.968
RC 231.973 GL -9.95 GP 15.54 ZAL 66.67 ZAP 132.53 ETS 163.72 ZAE 161.89 ETE 111.69 ZAC 105.13 ETC 255.35 CLP 134.56

PLANETOCENTRIC CONIC

C3 10.103 VHL 3.179 DLA 6.78 RAL 134.67 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.828 DPA 11.05 RAP 196.58 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 54	2275.63	-21.00	45.39	347.36	109.44	15 25 50	1675.6	-18.16	37.86
90.00	4 31 31	4496.51	9.46	188.68	345.41	63.18	5 46 27	3896.5	5.78	181.92
100.00	16 12 29	2002.84	-21.87	24.98	347.02	110.90	16 45 52	1402.8	-18.83	17.50
100.00	5 49 37	4244.52	10.28	169.72	344.98	61.77	7 0 22	3644.5	6.42	163.05
110.00	17 28 7	1768.13	-24.17	5.95	345.96	114.94	17 57 33	1166.1	-20.61	358.62
110.00	6 50 28	4054.00	12.44	153.98	343.70	57.90	7 58 2	3454.0	8.11	147.55

DIFFERENTIAL CORRECTIONS
TDE .3123 TRA -.3617 TC3 3.3494 BAU .6178
RDE .0506 RRA .1628 RC3 3.1154 FAU .34079
FDE-1.2861 FRA-1.8447 FC-29.2024 BSP 10086
BDE .3164 BRA .3966 BC3 4.5743 FSP 5487

MID-COURSE EXECUTION ACCURACY
SGT 2298.2 SGR 2004.5 SG3 1642.1
RRT .8844 RRF -.9966 RTF -.8845
SGB 3049.5 R23 -.2676 R13 -.9600
SG1 2961.9 SG2 725.8 THA 40.59

ORBIT DETERMINATION ACCURACY
ST 599.8 SR 140.4 SS 855.8
CRT .4475 CRS .9185 CST .7364
LSA 990.4 MSA 360.8 SSA 28.0
EL1 603.2 EL2 124.8 ALF 6.25

LAUNCH DATE DEC 1 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 549.306 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.076 GAL 1.73 AZL 91.19 HCA 168.09 SMA 188.13 ECC .21795 INC 1.1923 V1 30.205
RP 229.09 LAP -.25 LOP 236.93 VP 21.289 GAP .62 AZP 88.83 TAL 9.68 TAP 177.77 RCA 147.13 APO 229.14 V2 24.009
RC 233.848 GL -12.43 GP 17.11 ZAL 66.54 ZAP 130.70 ETS 163.14 ZAE 159.79 ETE 114.52 ZAC 106.55 ETC 255.26 CLP 133.02

PLANETOCENTRIC CONIC

C3 10.217 VHL 3.196 DLA 4.49 RAL 133.63 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.787 DPA 12.68 RAP 196.81 ECC 1.1681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 10	2205.94	-19.36	40.93	345.94	111.08	15 37 56	1605.9	-16.32	33.58
90.00	4 10 2	4570.68	11.70	192.97	344.63	64.03	5 26 13	3970.7	8.12	186.13
100.00	16 24 37	1936.76	-20.20	20.78	345.58	112.51	16 56 54	1336.8	-16.98	13.47
100.00	5 29 16	4315.08	12.52	173.76	344.21	62.63	6 41 11	3715.1	8.75	166.99
110.00	17 37 42	1708.03	-22.46	2.31	344.48	116.47	18 6 10	1108.0	-18.72	355.17
110.00	6 32 40	4116.58	14.68	157.44	342.96	58.78	7 41 17	3516.6	10.44	150.91

DIFFERENTIAL CORRECTIONS
TDE .3409 TRA -.3604 TC3 3.1181 BAU .6348
RDE .1168 RRA .2070 RC3 3.4467 FAU .34682
FDE-1.6901 FRA-2.0574 FC-29.3892 BSP 10487
BDE .3604 BRA .4156 BC3 4.6478 FSP 5663

MID-COURSE EXECUTION ACCURACY
SGT 2183.2 SGR 2244.4 SG3 1675.0
RRT .8732 RRF -.9976 RTF -.8719
SGB 3131.1 R23 -.2423 R13 -.9678
SG1 3030.3 SG2 788.0 THA 45.91

ORBIT DETERMINATION ACCURACY
ST 644.0 SR 246.3 SS 1071.6
CRT .6946 CRS .9860 CST .7913
LSA 1222.6 MSA 358.6 SSA 21.4
EL1 668.0 EL2 170.8 ALF 15.95

LAUNCH DATE DEC 1 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 553.158 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.064 GAL 1.75 AZL 91.48 HCA 169.12 SMA 187.91 ECC .21711 INC 1.4780 V1 30.205
RP 228.70 LAP -.28 LOP 237.96 VP 21.315 GAP .29 AZP 88.55 TAL 9.83 TAP 178.95 RCA 147.12 APO 228.71 V2 24.049
RC 235.703 GL -15.33 GP 18.95 ZAL 66.54 ZAP 128.75 ETS 162.49 ZAE 157.40 ETE 116.69 ZAC 108.22 ETC 255.13 CLP 131.44

PLANETOCENTRIC CONIC

C3 10.408 VHL 3.226 DLA 1.79 RAL 132.51 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 3.757 DPA 14.56 RAP 197.13 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 51	2125.60	-17.31	35.93	344.53	112.76	15 52 17	1525.6	-14.08	28.74
90.00	3 45 24	4658.47	14.26	198.14	344.00	65.28	5 3 3	4058.5	10.81	191.17
100.00	16 39 2	1860.54	-18.15	16.05	344.15	114.17	17 10 2	1260.5	-14.73	8.93
100.00	5 5 55	4398.76	15.08	178.65	343.60	63.88	6 19 13	3798.8	11.45	171.74
110.00	17 49 11	1640.94	-20.36	358.23	343.00	118.07	18 16 32	1040.9	-16.45	351.29
110.00	6 12 14	4191.13	17.26	161.68	342.39	60.03	7 22 6	3591.1	13.15	154.98

DIFFERENTIAL CORRECTIONS
TDE .3773 TRA -.3562 TC3 2.8746 BAU .6648
RDE .2107 RRA .2672 RC3 3.8167 FAU .35216
FDE-2.2058 FRA-2.3214 FC-29.2935 BSP 10891
BDE .4322 BRA .4453 BC3 4.7781 FSP 5733

MID-COURSE EXECUTION ACCURACY
SGT 2071.2 SGR 2535.7 SG3 1705.4
RRT .8602 RRF -.9984 RTF -.8579
SGB 3274.1 R23 -.2086 R13 -.9763
SG1 3162.7 SG2 846.8 THA 51.66

ORBIT DETERMINATION ACCURACY
ST 698.8 SR 407.2 SS 1346.3
CRT .8008 CRS .9973 CST .8357
LSA 1529.5 MSA 356.2 SSA 16.1
EL1 778.5 EL2 218.9 ALF 27.36

LAUNCH DATE DEC 1 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 557.020 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.052 GAL 1.77 AZL 91.83 HCA 170.15 SMA 187.71 ECC .21631 INC 1.8264 V1 30.205
RP 228.31 LAP -.31 LOP 239.00 VP 21.344 GAP -.04 AZP 88.20 TAL 9.97 TAP 180.13 RCA 147.11 APO 228.31 V2 24.090
RC 237.537 GL -18.76 GP 21.11 ZAL 66.69 ZAP 126.66 ETS 161.78 ZAE 154.69 ETE 118.29 ZAC 110.20 ETC 254.96 CLP 129.79

PLANETOCENTRIC CONIC

C3 10.716 VHL 3.274 DLA -1.42 RAL 131.27 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 3.745 DPA 16.76 RAP 197.57 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 42	2031.97	-14.76	30.24	343.18	114.44	16 9 34	1432.0	-11.34	23.23
90.00	3 16 38	4763.95	17.16	204.53	343.61	67.13	4 36 2	4163.9	13.92	197.36
100.00	16 56 23	1771.71	-15.59	10.70	342.78	115.83	17 25 55	1171.7	-11.99	3.76
100.00	4 38 38	4499.44	18.00	184.69	343.23	65.73	5 53 38	3899.4	14.58	177.58
110.00	18 3 7	1562.82	-17.79	353.63	341.56	119.68	18 29 10	962.8	-13.71	346.90
110.00	5 48 24	4281.09	20.24	166.95	342.06	61.85	6 59 45	3681.1	16.32	160.02

DIFFERENTIAL CORRECTIONS
TDE .4152 TRA -.3567 TC3 2.5884 BAU .7054
RDE .3364 RRA .3412 RC3 4.1885 FAU .35335
FDE-2.7868 FRA-2.5767 FC-28.5464 BSP 11564
BDE .5344 BRA .4936 BC3 4.9237 FSP 5795

MID-COURSE EXECUTION ACCURACY
SGT 1946.8 SGR 2867.6 SG3 1713.8
RRT .8422 RRF -.9989 RTF -.8390
SGB 3466.0 R23 -.1719 R13 -.9840
SG1 3347.4 SG2 899.1 THA 57.62

ORBIT DETERMINATION ACCURACY
ST 752.2 SR 620.9 SS 1647.7
CRT .8532 CRS .9994 CST .8665
LSA 1881.7 MSA 353.6 SSA 12.2
EL1 940.3 EL2 259.1 ALF 38.63

LAUNCH DATE DEC 1 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 560.895 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.042 GAL 1.79 AZL 92.26 HCA 171.19 SMA 187.52 ECC .21555 INC 2.2564 V1 30.205
RP 227.92 LAP -.35 LOP 240.04 VP 21.373 GAP -.35 AZP 87.77 TAL 10.10 TAP 181.29 RCA 147.10 APO 227.94 V2 24.132
RC 239.350 GL -22.85 GP 23.69 ZAL 67.07 ZAP 124.39 ETS 160.99 ZAE 151.59 ETE 119.38 ZAC 112.55 ETC 254.73 CLP 128.08

PLANETOCENTRIC CONIC

C3 11.210 VHL 3.348 DLA -5.27 RAL 129.86 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 3.755 DPA 19.35 RAP 198.17 ECC 1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 52	1921.20	-11.54	23.70	341.98	116.04	16 30 53	1321.2	-7.95	16.86
90.00	2 42 12	4893.20	20.39	212.64	343.63	69.92	4 3 45	4293.2	17.47	205.18
100.00	17 17 43	1666.81	-12.38	4.56	341.55	117.42	17 45 30	1066.8	-8.61	357.80
100.00	4 6 1	4622.82	21.28	192.39	343.27	68.49	5 23 4	4022.8	18.17	184.98
110.00	18 20 16	1470.99	-14.62	348.40	340.25	121.25	18 44 47	871.0	-10.38	341.87
110.00	5 19 58	4391.41	23.63	173.72	342.16	64.55	6 33 9	3791.4	20.01	166.45

DIFFERENTIAL CORRECTIONS
TDE .4570 TRA -.3622 TC3 2.2624 BAU .7622
RDE .5150 RRA .4399 RC3 4.5548 FAU .35069
FDE-3.4731 FRA-2.8506 FC-27.0832 BSP 12474
BDE .6885 BRA .5698 BC3 5.0857 FSP 5758

MID-COURSE EXECUTION ACCURACY
SGT 1815.0 SGR 3263.6 SG3 1702.4
RRT .8170 RRF -.9993 RTF -.8130
SGB 3734.3 R23 -.1345 R13 -.9902
SG1 3612.6 SG2 945.5 THA 63.62

ORBIT DETERMINATION ACCURACY
ST 805.3 SR 914.6 SS 1994.0
CRT .8839 CRS .9999 CST .8886
LSA 2310.2 MSA 352.1 SSA 9.2
EL1 1183.4 EL2 291.1 ALF 49.11

LAUNCH DATE DEC 1 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 564.779 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.031	GAL	1.80	AZL	92.80	HCA	172.24	SMA	187.34	ECC	.21485	INC	2.8024
RP	227.53	LAP	-.38	LOP	241.09	VP	21.404	GAP	-.67	AZP	87.22	TAL	10.21	TAP	182.44	RCA	147.09	APO	227.59
RC	241.142	GL	-27.76	GP	26.79	ZAL	67.75	ZAP	121.89	ETS	160.13	ZAE	148.03	ETE	120.04	ZAC	115.40	ETC	254.40

V1 30.205 V2 24.173 CLP 126.29

PLANETOCENTRIC CONIC

C3	12.011	VHL	3.466	DLA	-9.91	RAL	128.20	RAD	6567.5	VEL	11.550	PTH	2.02	VHP	3.798	DPA	22.42	RAP	199.00

ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 22	1787.23	-7.43	16.00	341.12	117.40	16 58 9	1187.2	-3.70	9.31
90.00	1 59 27	5055.95	23.82	223.34	344.29	74.21	3 23 43	4455.9	21.42	215.48
100.00	17 44 49	1540.58	-8.33	357.38	340.64	118.81	18 10 30	940.6	-4.42	350.77
100.00	3 25 41	4777.83	24.79	202.56	343.97	72.74	4 45 19	4177.8	22.19	194.73
110.00	18 41 57	1361.67	-10.68	342.39	339.22	122.67	19 4 39	761.7	-6.30	336.04
110.00	4 45 3	4529.50	27.37	182.70	342.97	68.68	6 0 32	3929.5	24.23	174.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5037	TRA	-.3706	TC3	1.8992	BAU	.8394	SGT	1677.2	SGR	3736.4	SG3	1660.7	ST	854.2	SR	1313.7	SS	2370.2
RDE	.7726	RRA	.5754	RC3	4.8705	FAU	.34223	RRT	.7830	RRF	-.9995	RTF	-.7782	CRT	.9032	CRS	1.0000	CST	.9042
FDE	-4.2514	FRA	-3.1364	FC	-24.6683	BSP	13675	SGB	4095.6	R23	-.0998	R13	-.9945	LSA	2819.6	MSA	351.1	SSA	6.9
BDE	.9223	BRA	.6844	BC3	5.2277	FSP	5603	SG1	3976.5	SG2	980.2	THA	69.32	EL1	1535.2	EL2	313.8	ALF	58.08

LAUNCH DATE DEC 1 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 568.673 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.022	GAL	1.81	AZL	93.52	HCA	173.28	SMA	187.17	ECC	.21419	INC	3.5204
RP	227.14	LAP	-.41	LOP	242.13	VP	21.436	GAP	-.98	AZP	86.50	TAL	10.30	TAP	183.58	RCA	147.08	APO	227.26
RC	242.914	GL	-33.69	GP	30.56	ZAL	68.84	ZAP	119.11	ETS	159.21	ZAE	143.87	ETE	120.35	ZAC	118.87	ETC	253.92

V1 30.205 V2 24.214 CLP 124.40

PLANETOCENTRIC CONIC

C3	13.349	VHL	3.654	DLA	-15.50	RAL	126.18	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	3.894	DPA	26.11	RAP	200.17

ECC 1.2197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 27	1618.46	-2.05	6.51	340.98	118.25	17 35 26	1018.5	1.74	359.89
90.00	1 3 16	5269.93	26.96	238.20	345.96	81.01	2 31 6	4669.9	25.44	229.86
100.00	18 21 17	1383.45	-3.08	348.66	340.40	119.75	18 44 21	783.4	.90	342.14
100.00	2 33 7	4980.18	28.12	216.66	345.74	79.43	3 56 7	4380.2	26.38	208.29
110.00	19 10 36	1228.96	-5.72	335.31	338.77	123.76	19 31 5	629.0	-1.25	329.08
110.00	4 0 17	4707.43	31.15	195.16	344.95	75.16	5 18 44	4107.4	28.80	186.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5598	TRA	-.3830	TC3	1.5071	BAU	.9406	SGT	1540.1	SGR	4290.9	SG3	1571.3	ST	898.1	SR	1845.4	SS	2739.2
RDE	1.1504	RRA	.7626	RC3	5.0500	FAU	.32480	RRT	.7376	RRF	-.9997	RTF	-.7318	CRT	.9157	CRS	1.0000	CST	.9151
FDE	-5.0745	FRA	-3.3929	FC	-21.0640	BSP	15270	SGB	4559.0	R23	-.0712	R13	-.9971	LSA	3404.7	MSA	351.0	SSA	5.1
BDE	1.2794	BRA	.8533	BC3	5.2701	FSP	5315	SG1	4447.2	SG2	1003.4	THA	74.36	EL1	2025.8	EL2	328.8	ALF	65.28

LAUNCH DATE DEC 1 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 572.572 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.013	GAL	1.82	AZL	94.50	HCA	174.33	SMA	187.02	ECC	.21357	INC	4.5025
RP	226.75	LAP	-.44	LOP	243.19	VP	21.470	GAP	-1.28	AZP	85.52	TAL	10.38	TAP	184.71	RCA	147.08	APO	226.96
RC	244.666	GL	-40.83	GP	35.16	ZAL	70.48	ZAP	115.94	ETS	158.29	ZAE	138.99	ETE	120.43	ZAC	123.11	ETC	253.20

V1 30.205 V2 24.256 CLP 122.35

PLANETOCENTRIC CONIC

C3	15.707	VHL	3.963	DLA	-22.23	RAL	123.62	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	4.076	DPA	30.56	RAP	201.82

ECC 1.2585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 30	1381.04	5.58	353.24	342.52	117.81	18 34 31	781.0	9.26	346.49
90.00	23 35 51	5579.48	28.24	260.68	348.81	92.15	25 8 51	4979.5	28.24	252.01
100.00	19 16 49	1170.26	4.13	336.95	341.72	119.63	19 36 19	570.3	8.05	330.36
100.00	1 17 10	5265.49	29.89	237.62	348.85	90.28	2 44 55	4665.5	29.61	228.83
110.00	19 51 52	1060.37	.70	326.49	339.59	124.18	20 9 32	460.4	5.18	320.27
110.00	2 58 36	4948.15	33.93	213.35	348.68	85.55	4 21 4	4348.1	32.94	204.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6111	TRA	-.4181	TC3	1.0549	BAU	1.0751	SGT	1380.6	SGR	4969.7	SG3	1428.0	ST	905.2	SR	2553.9	SS	3060.0
RDE	1.7319	RRA	1.0440	RC3	5.0101	FAU	.29728	RRT	.6512	RRF	-.9997	RTF	-.6437	CRT	.9166	CRS	1.0000	CST	.9151
FDE	-5.8892	FRA	-3.6217	FC	-16.3852	BSP	17146	SGB	5157.9	R23	-.0481	R13	-.9986	LSA	4071.7	MSA	356.1	SSA	3.8
BDE	1.8365	BRA	1.1246	BC3	5.1199	FSP	4744	SG1	5054.0	SG2	1030.3	THA	79.30	EL1	2687.7	EL2	343.9	ALF	71.69

LAUNCH DATE DEC 1 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 576.482 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.005	GAL	1.83	AZL	95.94	HCA	175.38	SMA	186.88	ECC	.21299	INC	5.9387
RP	226.36	LAP	-.48	LOP	244.24	VP	21.504	GAP	-1.57	AZP	84.08	TAL	10.45	TAP	185.83	RCA	147.07	APO	226.68
RC	246.398	GL	-49.39	GP	40.80	ZAL	72.81	ZAP	112.28	ETS	157.52	ZAE	133.18	ETE	120.46	ZAC	128.28	ETC	252.10

V1 30.205 V2 24.297 CLP 120.06

PLANETOCENTRIC CONIC

C3	20.207	VHL	4.495	DLA	-30.23	RAL	120.17	RAD	6567.8	VEL	11.899	PTH	2.11	VHP	4.411	DPA	35.93	RAP	204.18

ECC 1.3326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.94	19 10 29	1182.94	20.82	346.17	349.41	112.43	19 30 12	582.9	23.68	338.51
101.06	22 9 19	606.72	20.84	303.75	349.41	112.42	22 19 26	6.7	23.69	296.10
78.94	19 10 29	1182.94	20.82	346.17	349.41	112.43	19 30 12	582.9	23.68	338.51
101.06	22 9 19	606.72	20.84	303.75	349.41	112.42	22 19 26	6.7	23.69	296.10
110.00	21 6 14	805.71	10.32	313.04	343.72	122.77	21 19 40	205.7	14.57	306.52
110.00	1 16 40	5319.99	32.15	242.02	353.35	102.30	2 45 20	4720.0	33.51	233.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6866	TRA	-.4570	TC3	.6399	BAU	1.2327	SGT	1245.6	SGR	5655.9	SG3	1180.1	ST	898.4	SR	3379.2	SS	3146.4
RDE	2.6021	RRA	1.4365	RC3	4.5180	FAU	.24995	RRT	.5409	RRF	-.9998	RTF	-.5310	CRT	.9144	CRS	1.0000	CST	.9122
FDE	-6.3508	FRA	-3.6090	FC	-10.7088	BSP	20248	SGB	5791.5	R23	-.0342	R13	-.9993	LSA	4690.0	MSA	360.2	SSA	2.9
BDE	2.6912	BRA	1.5074	BC3	4.5631	FSP	4118	SG1	5697.3	SG2	1040.0	THA	82.97	EL1	3478.7	EL2	353.2	ALF	76.19

LAUNCH DATE DEC 1 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 580.395 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.997	GAL	1.84	AZL	98.22	HCA	176.43	SMA	186.74	ECC	.21245	INC	8.2175
RP	225.97	LAP	-.51	LOP	245.30	VP	21.539	GAP	-1.86	AZP	81.80	TAL	10.52	TAP	186.94	RCA	147.07	APO	226.42
RC	248.110	GL	-59.49	GP	47.57	ZAL	75.90	ZAP	108.01	ETS	157.24	ZAE	126.33	ETE	120.86	ZAC	134.40	ETC	250.36

V1 30.205 V2 24.339 CLP 117.27

PLANETOCENTRIC CONIC

C3 29.940 VHL 5.472 DLA -39.50 RAL 115.12 RAD 6568.2 VEL 12.301 PTH 2.22 VHP 5.055 DPA 42.30 RAP 207.55 ECC 1.4927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.23	17 3 31	1605.12	23.24	20.53	353.70	122.88	17 30 16	1005.1	27.40	13.38
118.77	23 36 0	5665.55	23.26	265.18	353.71	122.87	25 10 26	5065.5	27.41	258.03
61.23	17 3 31	1605.12	23.24	20.53	353.70	122.88	17 30 16	1005.1	27.40	13.38
118.77	23 36 0	5665.55	23.26	265.18	353.71	122.87	25 10 26	5065.5	27.41	258.03
61.23	17 3 31	1605.12	23.24	20.53	353.70	122.88	17 30 16	1005.1	27.40	13.38
118.77	23 36 0	5665.55	23.26	265.18	353.71	122.87	25 10 26	5065.5	27.41	258.03

DIFFERENTIAL CORRECTIONS
TDE .7810 TRA -.5275 TC3 .2764 BAU 1.4836
RDE 4.0877 RRA 2.1644 RC3 3.6963 FAU .19222
FDE-6.2931 FRA-3.4615 FC3-5.5582 BSP 22206
BDE 4.1616 BRA 2.2278 BC3 3.7066 FSP 2879

MID-COURSE EXECUTION ACCURACY
SGT 1128.1 SGR 6581.0 SG3 874.7
RRT .3531 RRF -.9997 RTF -.3385
SGB 6677.0 R23 -.0254 R13 -.9995
SG1 6593.4 SG2 1053.5 THA 86.45

ORBIT DETERMINATION ACCURACY
ST 845.6 SR 4371.7 SS 2944.1
CRT .8960 CRS 1.0000 CST .8926
LSA 5324.9 MSA 373.8 SSA 2.3
EL1 4437.3 EL2 369.9 ALF 80.10

LAUNCH DATE DEC 1 1964 FLIGHT TIME 276.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 612.359 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.955	GAL	1.75	AZL	81.34	HCA	185.13	SMA	186.02	ECC	.20919	INC	8.6557
RP	222.85	LAP	-.77	LOP	253.91	VP	21.854	GAP	-3.95	AZP	98.62	TAL	10.13	TAP	195.26	RCA	147.11	APO	224.93
RC	261.100	GL	61.56	GP	-41.09	ZAL	76.88	ZAP	100.56	ETS	187.85	ZAE	125.63	ETE	215.13	ZAC	47.38	ETC	251.57

V1 30.205 V2 24.674 CLP 104.07

PLANETOCENTRIC CONIC

C3 31.788 VHL 5.638 DLA 72.00 RAL 183.14 RAD 6568.3 VEL 12.376 PTH 2.23 VHP 4.008 DPA -34.71 RAP 159.30 ECC 1.5231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
15.06	10 17 19	4363.04	-47.90	238.88	121.75	19.95	11 30 2	3763.0	-55.33	234.51
15.06	4 28 51	4725.03	-24.31	246.35	43.37	14.54	5 47 36	4125.0	-32.03	244.40
20.55	7 34 20	4532.86	-35.23	237.17	79.89	22.23	8 49 53	3932.9	-42.57	233.49
159.45	18 11 50	2767.88	-35.22	84.71	79.87	22.23	18 57 58	2167.9	-42.56	81.03
20.55	7 34 20	4532.86	-35.23	237.17	79.89	22.23	8 49 53	3932.9	-42.57	233.49
159.45	18 11 50	2767.88	-35.22	84.71	79.87	22.23	18 57 58	2167.9	-42.56	81.03

DIFFERENTIAL CORRECTIONS
TDE 2.0360 TRA .0940 TC3 -.8316 BAU 1.4336
RDE 3.7373 RRA 1.0541 RC3-3.2694 FAU .32679
FDE 9.8380 FRA 2.7285 FC3-8.9000 BSP 22457
BDE 4.2559 BRA 1.0583 BC3 3.3735 FSP 4975

MID-COURSE EXECUTION ACCURACY
SGT 2292.5 SGR 6327.2 SG3 1448.8
RRT .8539 RRF .9998 RTF .8550
SGB 6729.7 R23 .0523 R13 .9984
SG1 6632.7 SG2 1138.1 THA 72.27

ORBIT DETERMINATION ACCURACY
ST 2071.3 SR 3939.3 SS 3586.9
CRT .9753 CRS-1.0000 CST -.9762
LSA 5700.3 MSA 424.6 SSA 3.4
EL1 4432.0 EL2 407.0 ALF 62.60

LAUNCH DATE DEC 1 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 616.369 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.952	GAL	1.73	AZL	82.56	HCA	186.22	SMA	185.97	ECC	.20893	INC	7.4361
RP	222.47	LAP	-.80	LOP	255.01	VP	21.897	GAP	-4.19	AZP	97.39	TAL	10.04	TAP	196.26	RCA	147.11	APO	224.82
RC	262.633	GL	57.03	GP	-36.41	ZAL	75.52	ZAP	99.93	ETS	186.03	ZAE	127.02	ETE	210.59	ZAC	51.74	ETC	252.81

V1 30.205 V2 24.716 CLP 102.38

PLANETOCENTRIC CONIC

C3 25.815 VHL 5.081 DLA 68.73 RAL 173.64 RAD 6568.0 VEL 12.132 PTH 2.17 VHP 3.671 DPA -30.40 RAP 161.57 ECC 1.4248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.34	7 4 30	4470.89	-37.58	231.23	66.21	27.24	8 19 1	3870.9	-44.59	226.52
155.66	17 25 50	2725.93	-37.57	82.75	66.20	27.24	18 11 16	2125.9	-44.58	78.03
24.34	7 4 30	4470.89	-37.58	231.23	66.21	27.24	8 19 1	3870.9	-44.59	226.52
155.66	17 25 50	2725.93	-37.57	82.75	66.20	27.24	18 11 16	2125.9	-44.58	78.03
24.34	7 4 30	4470.89	-37.58	231.23	66.21	27.24	8 19 1	3870.9	-44.59	226.52
155.66	17 25 50	2725.93	-37.57	82.75	66.20	27.24	18 11 16	2125.9	-44.58	78.03

DIFFERENTIAL CORRECTIONS
TDE 1.9709 TRA .0213 TC3-1.1164 BAU 1.2760
RDE 3.3415 RRA .7980 RC3-3.5246 FAU .38259
FDE11.7054 FRA 2.7420 FC-12.8305 BSP 21126
BDE 3.8795 BRA .7983 BC3 3.6972 FSP 6150

MID-COURSE EXECUTION ACCURACY
SGT 2496.3 SGR 5760.1 SG3 1764.1
RRT .8765 RRF .9997 RTF .8769
SGB 6277.8 R23 .0700 R13 .9973
SG1 6176.9 SG2 1120.8 THA 68.46

ORBIT DETERMINATION ACCURACY
ST 2222.9 SR 3842.4 SS 4266.3
CRT .9827 CRS-1.0000 CST -.9833
LSA 6145.0 MSA 381.1 SSA 3.9
EL1 4424.7 EL2 357.8 ALF 60.17

LAUNCH DATE DEC 1 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 620.392 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.949	GAL	1.71	AZL	83.42	HCA	187.31	SMA	185.92	ECC	.20869	INC	6.5748
RP	222.08	LAP	-.83	LOP	256.10	VP	21.940	GAP	-4.42	AZP	96.52	TAL	9.94	TAP	197.25	RCA	147.12	APO	224.72
RC	264.145	GL	53.29	GP	-32.54	ZAL	74.48	ZAP	98.88	ETS	184.41	ZAE	127.47	ETE	206.33	ZAC	55.31	ETC	253.67

V1 30.205 V2 24.758 CLP 100.55

PLANETOCENTRIC CONIC

C3 22.129 VHL 4.704 DLA 65.72 RAL 167.78 RAD 6567.9 VEL 11.979 PTH 2.14 VHP 3.454 DPA -26.71 RAP 163.05 ECC 1.3642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.84	6 48 57	4422.03	-38.82	225.64	56.52	31.85	8 2 39	3822.0	-45.47	220.05
152.16	16 54 41	2699.34	-38.81	80.97	56.50	31.85	17 39 40	2099.3	-45.46	75.38
27.84	6 48 57	4422.03	-38.82	225.64	56.52	31.85	8 2 39	3822.0	-45.47	220.05
152.16	16 54 41	2699.34	-38.81	80.97	56.50	31.85	17 39 40	2099.3	-45.46	75.38
27.84	6 48 57	4422.03	-38.82	225.64	56.52	31.85	8 2 39	3822.0	-45.47	220.05
152.16	16 54 41	2699.34	-38.81	80.97	56.50	31.85	17 39 40	2099.3	-45.46	75.38

DIFFERENTIAL CORRECTIONS
TDE 1.9106 TRA -.0371 TC3-1.4618 BAU 1.1752
RDE 2.8527 RRA .6028 RC3-3.6938 FAU .43165
FDE12.4889 FRA 2.5715 FC-16.8874 BSP 19362
BDE 3.4334 BRA .6039 BC3 3.9723 FSP 6894

MID-COURSE EXECUTION ACCURACY
SGT 2705.4 SGR 5228.5 SG3 2011.2
RRT .8956 RRF .9997 RTF .8958
SGB 5887.0 R23 .0896 R13 .9957
SG1 5785.6 SG2 1087.5 THA 64.16

ORBIT DETERMINATION ACCURACY
ST 2327.7 SR 3517.2 SS 4592.0
CRT .9860 CRS-1.0000 CST -.9866
LSA 6224.9 MSA 355.8 SSA 4.5
EL1 4205.2 EL2 324.6 ALF 56.65

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LAUNCH DATE  DEC  1 1964                          FLIGHT TIME 282.00                                ARRIVAL DATE  SEP  9 1965

  HELIOCENTRIC CONIC                              DISTANCE 624.426                                   EARTH  TO  MARS
   RL  147.50 LAL   -.00 LOL  68.84 VL  32.947 GAL   1.69 AZL  84.06 HCA 188.41 SMA 185.88 ECC .20847 INC 5.9355 V1  30.205
   RP  221.70 LAP   -.87 LOP 257.20 VP  21.983 GAP  -4.65 AZP  95.87 TAL   9.82 TAP 198.22 RCA 147.13 APO 224.63 V2  24.799
   RC 265.639 GL   50.17 GP  -29.33 ZAL  73.68 ZAP  97.54 ETS 183.02 ZAE 127.21 ETE 202.52 ZAC  58.25 ETC 254.29 CLP  98.66
  PLANETOCENTRIC CONIC
   C3  19.685 VHL  4.435 DLA  63.06 RAL 163.92 RAD 6567.8 VEL 11.876 PTH   2.11 VHP  3.306 DPA -23.54 RAP 164.01 ECC 1.3236
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      30.97     6 40 51   4382.11     -39.38     220.60      49.28       35.88     7 53 53    3782.1     -45.68     214.31
     149.03    16 31 59   2682.67     -39.37      79.49      49.26       35.88    17 16 42    2082.7     -45.67      73.21
      30.97     6 40 51   4382.11     -39.38     220.60      49.28       35.88     7 53 53    3782.1     -45.68     214.31
     149.03    16 31 59   2682.67     -39.37      79.49      49.26       35.88    17 16 42    2082.7     -45.67      73.21
      30.97     6 40 51   4382.11     -39.38     220.60      49.28       35.88     7 53 53    3782.1     -45.68     214.31
     149.03    16 31 59   2682.67     -39.37      79.49      49.26       35.88    17 16 42    2082.7     -45.67      73.21
  DIFFERENTIAL CORRECTIONS                        MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE 1.8879 TRA -.0709 TC3-1.8311 BAU 1.0933     SGT 2937.4 SGR 4778.7 SG3 2212.4             ST  2440.4 SR  3186.4 SS  4767.4
   RDE 2.4442 RRA  .4032 RC3-3.7335 FAU .46731     RRT  .9120 RRF  .9996 RTF  .9119             CRT  .9880 CRS-1.0000 CST -.9886
   FDE12.8095 FRA 2.4513 FC-20.5724 BSP  18461     SGB 5609.3 R23  .1103 R13  .9935             LSA 6222.5 MSA  342.1 SSA    5.2
   BDE 3.0884 BRA  .4803 BC3 4.1584 FSP   7619     SG1 5511.2 SG2 1044.6 THA  59.51              EL1 4002.3 EL2  300.7 ALF  52.64

LAUNCH DATE  DEC  1 1964                          FLIGHT TIME 284.00                                ARRIVAL DATE  SEP 11 1965

  HELIOCENTRIC CONIC                              DISTANCE 628.470                                   EARTH  TO  MARS
   RL  147.50 LAL   -.00 LOL  68.84 VL  32.945 GAL   1.66 AZL  84.56 HCA 189.51 SMA 185.85 ECC .20827 INC 5.4412 V1  30.205
   RP  221.32 LAP   -.90 LOP 258.31 VP  22.027 GAP  -4.87 AZP  95.37 TAL   9.68 TAP 199.19 RCA 147.14 APO 224.55 V2  24.841
   RC 267.114 GL   47.54 GP  -26.64 ZAL  73.09 ZAP  96.02 ETS 181.84 ZAE 126.44 ETE 199.18 ZAC  60.68 ETC 254.76 CLP  96.73
  PLANETOCENTRIC CONIC
   C3  17.920 VHL  4.233 DLA  60.72 RAL 161.25 RAD 6567.7 VEL 11.803 PTH   2.09 VHP  3.202 DPA -20.81 RAP 164.61 ECC 1.2949
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      33.75     6 36 57   4348.52     -39.53     216.14      43.70       39.35     7 49 26    3748.5     -45.50     209.33
     146.25    16 14 35   2672.55     -39.52      78.32      43.69       39.35    16 59  7    2072.6     -45.49      71.51
      33.75     6 36 57   4348.52     -39.53     216.14      43.70       39.35     7 49 26    3748.5     -45.50     209.33
     146.25    16 14 35   2672.55     -39.52      78.32      43.69       39.35    16 59  7    2072.6     -45.49      71.51
      33.75     6 36 57   4348.52     -39.53     216.14      43.70       39.35     7 49 26    3748.5     -45.50     209.33
     146.25    16 14 35   2672.55     -39.52      78.32      43.69       39.35    16 59  7    2072.6     -45.49      71.51
  DIFFERENTIAL CORRECTIONS                        MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE 1.8827 TRA -.0973 TC3-2.2341 BAU 1.0382     SGT 3184.8 SGR 4381.8 SG3 2370.2             ST  2550.0 SR  2870.7 SS  4828.6
   RDE 2.1060 RRA  .3946 RC3-3.7131 FAU .49578     RRT  .9255 RRF  .9995 RTF  .9251             CRT  .9893 CRS-1.0000 CST -.9899
   FDE12.8116 FRA 2.3052 FC-23.9510 BSP  17770     SGB 5416.9 R23  .1308 R13  .9909             LSA 6160.3 MSA  332.1 SSA    5.9
   BDE 2.8248 BRA  .4064 BC3 4.3334 FSP   8160     SG1 5325.2 SG2  992.7 THA  54.66              EL1 3829.6 EL2  278.9 ALF  48.42

LAUNCH DATE  DEC  1 1964                          FLIGHT TIME 286.00                                ARRIVAL DATE  SEP 13 1965

  HELIOCENTRIC CONIC                              DISTANCE 632.524                                   EARTH  TO  MARS
   RL  147.50 LAL   -.00 LOL  68.84 VL  32.944 GAL   1.64 AZL  84.95 HCA 190.62 SMA 185.82 ECC .20810 INC 5.0478 V1  30.205
   RP  220.94 LAP   -.93 LOP 259.42 VP  22.072 GAP  -5.09 AZP  94.96 TAL   9.52 TAP 200.14 RCA 147.15 APO 224.49 V2  24.883
   RC 268.570 GL   45.28 GP  -24.35 ZAL  72.65 ZAP  94.36 ETS 180.83 ZAE 125.31 ETE 196.29 ZAC  62.71 ETC 255.14 CLP  94.79
  PLANETOCENTRIC CONIC
   C3  16.626 VHL  4.078 DLA  58.66 RAL 159.35 RAD 6567.7 VEL 11.748 PTH   2.07 VHP  3.127 DPA -18.43 RAP 164.95 ECC 1.2736
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      36.21     6 35 38   4319.54     -39.43     212.20      39.31       42.33     7 47 37    3719.5     -45.11     204.99
     143.79    16  0 43   2666.89     -39.42      77.43      39.30       42.32    16 45 10    2066.9     -45.10      70.22
      36.21     6 35 38   4319.54     -39.43     212.20      39.31       42.33     7 47 37    3719.5     -45.11     204.99
     143.79    16  0 43   2666.89     -39.42      77.43      39.30       42.32    16 45 10    2066.9     -45.10      70.22
      36.21     6 35 38   4319.54     -39.43     212.20      39.31       42.33     7 47 37    3719.5     -45.11     204.99
     143.79    16  0 43   2666.89     -39.42      77.43      39.30       42.32    16 45 10    2066.9     -45.10      70.22
  DIFFERENTIAL CORRECTIONS                        MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE 1.8935 TRA -.1154 TC3-2.6589 BAU 1.0017     SGT 3446.5 SGR 4033.9 SG3 2493.8             ST  2663.1 SR  2594.1 SS  4833.7
   RDE 1.8349 RRA  .3349 RC3-3.6388 FAU .51658     RRT  .9360 RRF  .9993 RTF  .9354             CRT  .9902 CRS-1.0000 CST -.9908
   FDE12.6619 FRA 2.2018 FC-26.8986 BSP  17458     SGB 5305.7 R23  .1497 R13  .9880             LSA 6089.3 MSA  327.0 SSA    6.6
   BDE 2.6367 BRA  .3542 BC3 4.5067 FSP   8630     SG1 5222.3 SG2  937.3 THA  49.79              EL1 3708.6 EL2  260.5 ALF  44.24

LAUNCH DATE  DEC  1 1964                          FLIGHT TIME 288.00                                ARRIVAL DATE  SEP 15 1965

  HELIOCENTRIC CONIC                              DISTANCE 636.588                                   EARTH  TO  MARS
   RL  147.50 LAL   -.00 LOL  68.84 VL  32.942 GAL   1.61 AZL  85.27 HCA 191.73 SMA 185.80 ECC .20794 INC 4.7265 V1  30.205
   RP  220.56 LAP   -.96 LOP 260.53 VP  22.117 GAP  -5.30 AZP  94.63 TAL   9.36 TAP 201.08 RCA 147.17 APO 224.44 V2  24.924
   RC 270.009 GL   43.34 GP  -22.40 ZAL  72.35 ZAP  92.63 ETS 179.97 ZAE 123.91 ETE 193.80 ZAC  64.43 ETC 255.44 CLP  92.84
  PLANETOCENTRIC CONIC
   C3  15.631 VHL  3.954 DLA  56.84 RAL 157.97 RAD 6567.6 VEL 11.705 PTH   2.06 VHP  3.072 DPA -16.33 RAP 165.11 ECC 1.2573
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      38.42     6 35 56   4294.06     -39.18     208.72      35.80       44.89     7 47 30    3694.1     -44.59     201.21
     141.58    15 49 23   2664.28     -39.17      76.77      35.79       44.88    16 33 47    2064.3     -44.58      69.27
      38.42     6 35 56   4294.06     -39.18     208.72      35.80       44.89     7 47 30    3694.1     -44.59     201.21
     141.58    15 49 23   2664.28     -39.17      76.77      35.79       44.88    16 33 47    2064.3     -44.58      69.27
      38.42     6 35 56   4294.06     -39.18     208.72      35.80       44.89     7 47 30    3694.1     -44.59     201.21
     141.58    15 49 23   2664.28     -39.17      76.77      35.79       44.88    16 33 47    2064.3     -44.58      69.27
  DIFFERENTIAL CORRECTIONS                        MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE 1.9103 TRA -.1312 TC3-3.1076 BAU  .9862     SGT 3718.0 SGR 3727.8 SG3 2590.8             ST  2771.4 SR  2344.0 SS  4781.1
   RDE 1.6088 RRA  .2861 RC3-3.5515 FAU .53440     RRT  .9446 RRF  .9990 RTF  .9438             CRT  .9909 CRS-1.0000 CST -.9916
   FDE12.3673 FRA 2.0748 FC-29.5972 BSP  17248     SGB 5285.0 R23  .1656 R13  .9852             LSA 5994.2 MSA  321.5 SSA    7.4
   BDE 2.4975 BRA  .3147 BC3 4.7192 FSP   8919     SG1 5191.5 SG2  876.4 THA  45.08              EL1 3621.7 EL2  241.6 ALF  40.18
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LAUNCH DATE DEC 1 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 640.661 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.942 GAL 1.57 AZL 85.54 HCA 192.84 SMA 185.79 ECC .20781 INC 4.4600 V1 30.205
RP 220.18 LAP -.99 LOP 261.64 VP 22.162 GAP -5.51 AZP 94.35 TAL 9.17 TAP 202.01 RCA 147.18 APO 224.40 V2 24.965
RC 271.430 GL 41.66 GP -20.70 ZAL 72.17 ZAP 90.84 ETS 179.24 ZAE 122.34 ETE 191.67 ZAC 65.90 ETC 255.70 CLP 90.90

PLANETOCENTRIC CONIC

C3 14.843 VHL 3.853 DLA 55.21 RAL 156.96 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 3.033 DPA -14.47 RAP 165.14 ECC 1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.40	6 37 23	4271.19	-38.85	205.61	32.96	47.10	7 48 34	3671.2	-44.02	197.88
139.60	15 39 55	2663.90	-38.83	76.31	32.94	47.09	16 24 18	2063.9	-44.01	68.58
40.40	6 37 23	4271.19	-38.85	205.61	32.96	47.10	7 48 34	3671.2	-44.02	197.88
139.60	15 39 55	2663.90	-38.83	76.31	32.94	47.09	16 24 18	2063.9	-44.01	68.58
40.40	6 37 23	4271.19	-38.85	205.61	32.96	47.10	7 48 34	3671.2	-44.02	197.88
139.60	15 39 55	2663.90	-38.83	76.31	32.94	47.09	16 24 18	2063.9	-44.01	68.58

DIFFERENTIAL CORRECTIONS
TDE 1.9404 TRA -.1364 TC3-3.5591 BAU .9803
RDE 1.4284 RRA .2557 RC3-3.4258 FAU .54496
FDE12.0587 FRA 2.0212 FC-31.7856 BSP 17483
BDE 2.4095 BRA .2898 BC3 4.9400 FSP 9238

MID-COURSE EXECUTION ACCURACY
SGT 3996.9 SGR 3453.2 SG3 2661.9
RRT .9515 RRF .9987 RTF .9505
SGB 5282.0 R23 .1780 R13 .9828
SG1 5218.9 SG2 813.8 THA 40.62

ORBIT DETERMINATION ACCURACY
ST 2888.9 SR 2135.1 SS 4721.9
CRT .9914 CRS-1.0000 CST -.9921
LSA 5924.5 MSA 318.6 SSA 8.2
EL1 3585.2 EL2 224.8 ALF 36.40

LAUNCH DATE DEC 1 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 644.744 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.941 GAL 1.54 AZL 85.77 HCA 193.96 SMA 185.78 ECC .20770 INC 4.2344 V1 30.205
RP 219.81 LAP -1.02 LOP 262.76 VP 22.207 GAP -5.71 AZP 94.11 TAL 8.97 TAP 202.93 RCA 147.19 APO 224.36 V2 25.006
RC 272.833 GL 40.18 GP -19.22 ZAL 72.08 ZAP 89.02 ETS 178.62 ZAE 120.63 ETE 189.84 ZAC 67.17 ETC 255.93 CLP 88.96

PLANETOCENTRIC CONIC

C3 14.202 VHL 3.769 DLA 53.76 RAL 156.24 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 3.006 DPA -12.81 RAP 165.07 ECC 1.2337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.19	6 39 36	4250.46	-38.46	202.83	30.64	49.02	7 50 26	3650.5	-43.42	194.93
137.81	15 31 55	2665.03	-38.45	76.00	30.63	49.02	16 16 20	2065.0	-43.41	68.10
42.19	6 39 36	4250.46	-38.46	202.83	30.64	49.02	7 50 26	3650.5	-43.42	194.93
137.81	15 31 55	2665.03	-38.45	76.00	30.63	49.02	16 16 20	2065.0	-43.41	68.10
42.19	6 39 36	4250.46	-38.46	202.83	30.64	49.02	7 50 26	3650.5	-43.42	194.93
137.81	15 31 55	2665.03	-38.45	76.00	30.63	49.02	16 16 20	2065.0	-43.41	68.10

DIFFERENTIAL CORRECTIONS
TDE 1.9720 TRA -.1401 TC3-4.0275 BAU .9881
RDE 1.2774 RRA .2313 RC3-3.2954 FAU .55277
FDE11.7022 FRA 1.9682 FC-33.6953 BSP 17826
BDE 2.3496 BRA .2704 BC3 5.2039 FSP 9456

MID-COURSE EXECUTION ACCURACY
SGT 4281.8 SGR 3208.5 SG3 2714.6
RRT .9571 RRF .9984 RTF .9560
SGB 5350.6 R23 .1863 R13 .9808
SG1 5297.5 SG2 751.9 THA 36.50

ORBIT DETERMINATION ACCURACY
ST 3001.5 SR 1951.7 SS 4641.5
CRT .9918 CRS-1.0000 CST -.9926
LSA 5853.4 MSA 316.0 SSA 9.1
EL1 3574.2 EL2 208.9 ALF 32.95

LAUNCH DATE DEC 1 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 648.834 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.941 GAL 1.50 AZL 85.96 HCA 195.08 SMA 185.78 ECC .20761 INC 4.0408 V1 30.205
RP 219.44 LAP -1.05 LOP 263.89 VP 22.253 GAP -5.91 AZP 93.90 TAL 8.75 TAP 203.84 RCA 147.21 APO 224.34 V2 25.047
RC 274.220 GL 38.87 GP -17.91 ZAL 72.07 ZAP 87.19 ETS 178.08 ZAE 118.84 ETE 188.27 ZAC 68.28 ETC 256.12 CLP 87.05

PLANETOCENTRIC CONIC

C3 13.671 VHL 3.697 DLA 52.44 RAL 155.73 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 2.988 DPA -11.31 RAP 164.93 ECC 1.2250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.82	6 42 26	4231.37	-38.05	200.30	28.75	50.72	7 52 58	3631.4	-42.82	192.27
136.18	15 25 4	2667.38	-38.04	75.81	28.74	50.71	16 9 31	2067.4	-42.81	67.78
43.82	6 42 26	4231.37	-38.05	200.30	28.75	50.72	7 52 58	3631.4	-42.82	192.27
136.18	15 25 4	2667.38	-38.04	75.81	28.74	50.71	16 9 31	2067.4	-42.81	67.78
43.82	6 42 26	4231.37	-38.05	200.30	28.75	50.72	7 52 58	3631.4	-42.82	192.27
136.18	15 25 4	2667.38	-38.04	75.81	28.74	50.71	16 9 31	2067.4	-42.81	67.78

DIFFERENTIAL CORRECTIONS
TDE 2.0037 TRA -.1427 TC3-4.5132 BAU 1.0066
RDE 1.1510 RRA .2140 RC3-3.1570 FAU .55714
FDE11.3260 FRA 1.9446 FC-35.2826 BSP 18284
BDE 2.3107 BRA .2572 BC3 5.5078 FSP 9627

MID-COURSE EXECUTION ACCURACY
SGT 4572.8 SGR 2987.9 SG3 2750.2
RRT .9611 RRF .9979 RTF .9603
SGB 5462.4 R23 .1913 R13 .9794
SG1 5417.9 SG2 696.2 THA 32.74

ORBIT DETERMINATION ACCURACY
ST 3108.5 SR 1792.5 SS 4551.4
CRT .9920 CRS-1.0000 CST -.9928
LSA 5787.1 MSA 316.6 SSA 9.9
EL1 3582.9 EL2 196.0 ALF 29.87

LAUNCH DATE DEC 1 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 652.937 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.941 GAL 1.46 AZL 86.13 HCA 196.21 SMA 185.78 ECC .20754 INC 3.8731 V1 30.205
RP 219.07 LAP -1.08 LOP 265.02 VP 22.299 GAP -6.11 AZP 93.72 TAL 8.53 TAP 204.74 RCA 147.22 APO 224.33 V2 25.088
RC 275.589 GL 37.72 GP -16.75 ZAL 72.13 ZAP 85.35 ETS 177.61 ZAE 116.98 ETE 186.92 ZAC 69.25 ETC 256.30 CLP 85.15

PLANETOCENTRIC CONIC

C3 13.222 VHL 3.636 DLA 51.24 RAL 155.40 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 2.978 DPA -9.94 RAP 164.74 ECC 1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.33	6 45 43	4213.62	-37.62	197.99	27.19	52.22	7 55 57	3613.6	-42.23	189.87
134.67	15 19 8	2670.61	-37.61	75.72	27.18	52.21	16 3 38	2070.6	-42.22	67.60
45.33	6 45 43	4213.62	-37.62	197.99	27.19	52.22	7 55 57	3613.6	-42.23	189.87
134.67	15 19 8	2670.61	-37.61	75.72	27.18	52.21	16 3 38	2070.6	-42.22	67.60
45.33	6 45 43	4213.62	-37.62	197.99	27.19	52.22	7 55 57	3613.6	-42.23	189.87
134.67	15 19 8	2670.61	-37.61	75.72	27.18	52.21	16 3 38	2070.6	-42.22	67.60

DIFFERENTIAL CORRECTIONS
TDE 2.0331 TRA -.1440 TC3-5.0092 BAU 1.0357
RDE 1.0363 RRA .1938 RC3-3.0396 FAU .56288
FDE10.8516 FRA 1.8527 FC-36.8555 BSP 18698
BDE 2.2820 BRA .2414 BC3 5.8593 FSP 9555

MID-COURSE EXECUTION ACCURACY
SGT 4864.6 SGR 2791.2 SG3 2776.3
RRT .9653 RRF .9973 RTF .9643
SGB 5608.5 R23 .1921 R13 .9786
SG1 5572.3 SG2 636.2 THA 29.40

ORBIT DETERMINATION ACCURACY
ST 3207.2 SR 1640.8 SS 4418.4
CRT .9924 CRS -.9999 CST -.9933
LSA 5692.5 MSA 310.2 SSA 11.0
EL1 3598.1 EL2 180.0 ALF 26.99

LAUNCH DATE DEC 1 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 657.046 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.942	GAL	1.42	AZL	86.27	HCA	197.34	SMA	185.79	ECC	.20748	INC	3.7262
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.345	GAP	-6.30	AZP	93.56	TAL	8.28	TAP	205.62	RCA	147.24	APO	224.33
RC	276.940	GL	36.68	GP	-15.71	ZAL	72.26	ZAP	83.53	ETS	177.21	ZAE	115.08	ETE	185.75	ZAC	70.11	ETC	256.46

V1	30.205	V2	25.128	CLP	83.27														

PLANETOCENTRIC CONIC

C3	12.836	VHL	3.583	DLA	50.14	RAL	155.22	RAD	6567.5	VEL	11.585	PTH	2.03	VHP	2.974	DPA	-8.70	RAP	164.52
ECC	1.2113																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.72	6 49 22	4197.00	-37.19	195.87	25.91	53.57	7 59 19	3597.0	-41.64	187.67
133.28	15 14 0	2674.47	-37.19	75.72	25.90	53.56	15 58 34	2074.5	-41.63	67.52
46.72	6 49 22	4197.00	-37.19	195.87	25.91	53.57	7 59 19	3597.0	-41.64	187.67
133.28	15 14 0	2674.47	-37.19	75.72	25.90	53.56	15 58 34	2074.5	-41.63	67.52
46.72	6 49 22	4197.00	-37.19	195.87	25.91	53.57	7 59 19	3597.0	-41.64	187.67
133.28	15 14 0	2674.47	-37.19	75.72	25.90	53.56	15 58 34	2074.5	-41.63	67.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0664	TRA	-.1393	TC3	-5.5069	BAU	1.0683	SGT	5158.7	SGR	2609.8	SG3	2786.5	ST	3308.3	SR	1515.9	SS	4305.9
RDE	.9432	RRA	.1830	RC3	-2.9031	FAU	.56317	RRT	.9682	RRF	.9965	RTF	.9673	CRT	.9925	CRS	-.9999	CST	-.9935
FDE	10.4320	FRA	1.8391	FC	-37.9820	BSP	19362	SGB	5781.2	R23	.1906	R13	.9782	LSA	5629.2	MSA	308.9	SSA	12.0
BDE	2.2715	BRA	.2300	BC3	6.2253	FSP	9585	SG1	5751.5	SG2	586.0	THA	26.39	EL1	3635.1	EL2	168.1	ALF	24.51

LAUNCH DATE DEC 1 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 661.164 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.942	GAL	1.38	AZL	86.40	HCA	198.48	SMA	185.80	ECC	.20745	INC	3.5964
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.392	GAP	-6.48	AZP	93.41	TAL	8.02	TAP	206.50	RCA	147.25	APO	224.34
RC	278.273	GL	35.75	GP	-14.77	ZAL	72.45	ZAP	81.71	ETS	176.87	ZAE	113.16	ETE	184.74	ZAC	70.88	ETC	256.61

V1	30.205	V2	25.168	CLP	81.43														

PLANETOCENTRIC CONIC

C3	12.501	VHL	3.536	DLA	49.12	RAL	155.15	RAD	6567.5	VEL	11.571	PTH	2.02	VHP	2.976	DPA	-7.56	RAP	164.28
ECC	1.2057																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.02	6 53 22	4181.18	-36.77	193.89	24.87	54.79	8 3 3	3581.2	-41.08	185.63
131.98	15 9 29	2678.96	-36.76	75.78	24.85	54.77	15 54 8	2079.0	-41.07	67.53
48.02	6 53 22	4181.18	-36.77	193.89	24.87	54.79	8 3 3	3581.2	-41.08	185.63
131.98	15 9 29	2678.96	-36.76	75.78	24.85	54.77	15 54 8	2079.0	-41.07	67.53
48.02	6 53 22	4181.18	-36.77	193.89	24.87	54.79	8 3 3	3581.2	-41.08	185.63
131.98	15 9 29	2678.96	-36.76	75.78	24.85	54.77	15 54 8	2079.0	-41.07	67.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0987	TRA	-.1318	TC3	-6.0099	BAU	1.1059	SGT	5452.8	SGR	2445.1	SG3	2787.0	ST	3404.7	SR	1406.1	SS	4191.4
RDE	.8632	RRA	.1750	RC3	-2.7690	FAU	.56167	RRT	.9704	RRF	.9956	RTF	.9698	CRT	.9926	CRS	-.9999	CST	-.9936
FDE	10.0126	FRA	1.8382	FC	-38.8971	BSP	20094	SGB	5975.9	R23	.1867	R13	.9781	LSA	5571.5	MSA	307.9	SSA	12.9
BDE	2.2692	BRA	.2190	BC3	6.6171	FSP	9571	SG1	5951.3	SG2	541.5	THA	23.72	EL1	3680.2	EL2	157.5	ALF	22.33

LAUNCH DATE DEC 1 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 665.290 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.943	GAL	1.33	AZL	86.52	HCA	199.62	SMA	185.82	ECC	.20744	INC	3.4808
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.438	GAP	-6.67	AZP	93.28	TAL	7.75	TAP	207.36	RCA	147.27	APO	224.36
RC	279.589	GL	34.91	GP	-13.92	ZAL	72.70	ZAP	79.92	ETS	176.56	ZAE	111.24	ETE	183.85	ZAC	71.57	ETC	256.74

V1	30.205	V2	25.208	CLP	79.61														

PLANETOCENTRIC CONIC

C3	12.206	VHL	3.494	DLA	48.17	RAL	155.19	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	2.982	DPA	-6.52	RAP	164.02
ECC	1.2009																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.25	6 57 38	4166.10	-36.35	192.03	24.02	55.89	8 7 4	3566.1	-40.53	183.73
130.75	15 5 32	2683.88	-36.34	75.91	24.01	55.88	15 50 16	2083.9	-40.52	67.61
49.25	6 57 38	4166.10	-36.35	192.03	24.02	55.89	8 7 4	3566.1	-40.53	183.73
130.75	15 5 32	2683.88	-36.34	75.91	24.01	55.88	15 50 16	2083.9	-40.52	67.61
49.25	6 57 38	4166.10	-36.35	192.03	24.02	55.89	8 7 4	3566.1	-40.53	183.73
130.75	15 5 32	2683.88	-36.34	75.91	24.01	55.88	15 50 16	2083.9	-40.52	67.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1308	TRA	-.1197	TC3	-6.5132	BAU	1.1464	SGT	5745.4	SGR	2292.4	SG3	2776.1	ST	3498.2	SR	1309.0	SS	4075.1
RDE	.7938	RRA	.1695	RC3	-2.6337	FAU	.55772	RRT	.9720	RRF	.9945	RTF	.9720	CRT	.9927	CRS	-.9999	CST	-.9937
FDE	9.5939	FRA	1.8557	FC	-39.5583	BSP	20909	SGB	6185.8	R23	.1806	R13	.9782	LSA	5519.3	MSA	307.3	SSA	13.9
BDE	2.2738	BRA	.2075	BC3	7.0255	FSP	9541	SG1	6165.4	SG2	502.2	THA	21.35	EL1	3732.2	EL2	148.1	ALF	20.41

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

HELIOCENTRIC CONIC DISTANCE 669.425 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.945	GAL	1.28	AZL	86.62	HCA	200.76	SMA	185.84	ECC	.20744	INC	3.3769
RP	217.62	LAP	-1.20	LOP	269.57	VP	22.485	GAP	-6.84	AZP	93.16	TAL	7.46	TAP	208.22	RCA	147.29	APO	224.39
RC	280.887	GL	34.15	GP	-13.14	ZAL	73.00	ZAP	78.15	ETS	176.30	ZAE	109.31	ETE	183.09	ZAC	72.20	ETC	256.87

V1	30.205	V2	25.248	CLP	77.83														

PLANETOCENTRIC CONIC

C3	11.943	VHL	3.456	DLA	47.29	RAL	155.32	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	2.993	DPA	-5.55	RAP	163.77
ECC	1.1966																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.40	7 2 9	4151.59	-35.93	190.28	23.34	56.90	8 11 21	3551.6	-39.99	181.95
129.60	15 2 3	2689.20	-35.92	76.08	23.33	56.89	15 46 52	2089.2	-39.98	67.75
50.40	7 2 9	4151.59	-35.93	190.28	23.34	56.90	8 11 21	3551.6	-39.99	181.95
129.60	15 2 3	2689.20	-35.92	76.08	23.33	56.89	15 46 52	2089.2	-39.98	67.75
50.40	7 2 9	4151.59	-35.93	190.28	23.34	56.90	8 11 21	3551.6	-39.99	181.95
129.60	15 2 3	2689.20	-35.92	76.08	23.33	56.89	15 46 52	2089.2	-39.98	67.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1587	TRA	-.1068	TC3	-7.0255	BAU	1.1909	SGT	6037.9	SGR	2152.3	SG3	2757.9	ST	3582.8	SR	1220.8	SS	3950.3
RDE	.7320	RRA	.1646	RC3	-2.5048	FAU	.55289	RRT	.9731	RRF	.9931	RTF	.9738	CRT	.9927	CRS	-.9999	CST	-.9937
FDE	9.1618	FRA	1.8680	FC	-40.0784	BSP	21687	SGB	6410.0	R23	.1727	R13	.9785	LSA	5462.3	MSA	306.5	SSA	14.9
BDE	2.2794	BRA	.1962	BC3	7.4587	FSP	9430	SG1	6392.9	SG2	468.4	THA	19.24	EL1	3782.5	EL2	139.5	ALF	18.71

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

HELIOCENTRIC CONIC DISTANCE 673.565 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.946 GAL 1.23 AZL 86.72 HCA 201.90 SMA 185.87 ECC .20746 INC 3.2832 V1 30.205
RP 217.27 LAP -1.22 LOP 270.71 VP 22.531 GAP -7.02 AZP 93.05 TAL 7.16 TAP 209.06 RCA 147.31 APO 224.42 V2 25.287
RC 282.167 GL 33.46 GP -12.43 ZAL 73.34 ZAP 76.41 ETS 176.08 ZAE 107.40 ETE 182.42 ZAC 72.77 ETC 256.98 CLP 76.08

PLANETOCENTRIC CONIC

C3 11.707 VHL 3.422 DLA 46.45 RAL 155.53 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 3.008 DPA -4.67 RAP 163.51 ECC 1.1927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.51	7 6 55	4137.53	-35.52	188.61	22.81	57.84	8 15 53	3537.5	-39.47	180.25
128.49	14 58 59	2694.88	-35.51	76.30	22.80	57.83	15 43 54	2094.9	-39.46	67.94
51.51	7 6 55	4137.53	-35.52	188.61	22.81	57.84	8 15 53	3537.5	-39.47	180.25
128.49	14 58 59	2694.88	-35.51	76.30	22.80	57.83	15 43 54	2094.9	-39.46	67.94
51.51	7 6 55	4137.53	-35.52	188.61	22.81	57.84	8 15 53	3537.5	-39.47	180.25
128.49	14 58 59	2694.88	-35.51	76.30	22.80	57.83	15 43 54	2094.9	-39.46	67.94

DIFFERENTIAL CORRECTIONS
TDE 2.1956 TRA -.0803 TC3-7.5103 BAU 1.2321
RDE .6839 RRA .1673 RC3-2.3598 FAU .54256
FDE 8.8275 FRA 1.9861 FC-40.1237 BSP 22778
BDE 2.2997 BRA .1856 BC3 7.8723 FSP 9489

MID-COURSE EXECUTION ACCURACY
SGT 6322.1 SGR 2021.0 SG3 2726.3
RRT .9729 RRF .9915 RTF .9751
SGB 6637.3 R23 .1647 R13 .9788
SG1 6622.2 SG2 446.5 THA 17.36

ORBIT DETERMINATION ACCURACY
ST 3680.4 SR 1152.7 SS 3866.7
CRT .9926 CRS -.9999 CST -.9935
LSA 5452.3 MSA 312.1 SSA 15.7
EL1 3854.4 EL2 133.9 ALF 17.29

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

HELIOCENTRIC CONIC DISTANCE 677.718 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.948 GAL 1.17 AZL 86.80 HCA 203.05 SMA 185.90 ECC .20750 INC 3.1981 V1 30.205
RP 216.91 LAP -1.25 LOP 271.86 VP 22.578 GAP -7.19 AZP 92.94 TAL 6.84 TAP 209.89 RCA 147.32 APO 224.47 V2 25.327
RC 283.431 GL 32.83 GP -11.78 ZAL 73.73 ZAP 74.70 ETS 175.88 ZAE 105.50 ETE 181.83 ZAC 73.29 ETC 257.09 CLP 74.37

PLANETOCENTRIC CONIC

C3 11.494 VHL 3.390 DLA 45.65 RAL 155.81 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 3.027 DPA -3.85 RAP 163.27 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.57	7 11 55	4123.77	-35.11	187.01	22.40	58.71	8 20 39	3523.8	-38.95	178.63
127.43	14 56 13	2700.98	-35.10	76.56	22.40	58.70	15 41 14	2101.0	-38.94	68.18
52.57	7 11 55	4123.77	-35.11	187.01	22.40	58.71	8 20 39	3523.8	-38.95	178.63
127.43	14 56 13	2700.98	-35.10	76.56	22.40	58.70	15 41 14	2101.0	-38.94	68.18
52.57	7 11 55	4123.77	-35.11	187.01	22.40	58.71	8 20 39	3523.8	-38.95	178.63
127.43	14 56 13	2700.98	-35.10	76.56	22.40	58.70	15 41 14	2101.0	-38.94	68.18

DIFFERENTIAL CORRECTIONS
TDE 2.2163 TRA -.0631 TC3-8.0291 BAU 1.2810
RDE .6336 RRA .1625 RC3-2.2448 FAU .53652
FDE 8.3706 FRA 1.9800 FC-40.4128 BSP 23531
BDE 2.3051 BRA .1743 BC3 8.3370 FSP 9271

MID-COURSE EXECUTION ACCURACY
SGT 6609.9 SGR 1902.0 SG3 2696.3
RRT .9734 RRF .9896 RTF .9765
SGB 6878.1 R23 .1535 R13 .9793
SG1 6865.3 SG2 419.8 THA 15.71

ORBIT DETERMINATION ACCURACY
ST 3749.4 SR 1078.2 SS 3725.2
CRT .9926 CRS -.9998 CST -.9935
LSA 5385.3 MSA 308.9 SSA 16.8
EL1 3899.3 EL2 125.9 ALF 15.95

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

HELIOCENTRIC CONIC DISTANCE 681.878 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.950 GAL 1.12 AZL 86.88 HCA 204.21 SMA 185.93 ECC .20756 INC 3.1204 V1 30.205
RP 216.57 LAP -1.28 LOP 273.02 VP 22.624 GAP -7.35 AZP 92.85 TAL 6.51 TAP 210.72 RCA 147.34 APO 224.52 V2 25.365
RC 284.679 GL 32.24 GP -11.18 ZAL 74.16 ZAP 73.03 ETS 175.71 ZAE 103.62 ETE 181.31 ZAC 73.77 ETC 257.19 CLP 72.69

PLANETOCENTRIC CONIC

C3 11.299 VHL 3.361 DLA 44.89 RAL 156.16 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.049 DPA -3.09 RAP 163.04 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.59	7 17 8	4110.30	-34.71	185.47	22.11	59.53	8 25 39	3510.3	-38.45	177.08
126.41	14 53 46	2707.37	-34.70	76.86	22.11	59.52	15 38 53	2107.4	-38.44	68.47
53.59	7 17 8	4110.30	-34.71	185.47	22.11	59.53	8 25 39	3510.3	-38.45	177.08
126.41	14 53 46	2707.37	-34.70	76.86	22.11	59.52	15 38 53	2107.4	-38.44	68.47
53.59	7 17 8	4110.30	-34.71	185.47	22.11	59.53	8 25 39	3510.3	-38.45	177.08
126.41	14 53 46	2707.37	-34.70	76.86	22.11	59.52	15 38 53	2107.4	-38.44	68.47

DIFFERENTIAL CORRECTIONS
TDE 2.2364 TRA -.0403 TC3-8.5426 BAU 1.3300
RDE .5905 RRA .1607 RC3-2.1297 FAU .52865
FDE 7.9469 FRA 2.0138 FC-40.5039 BSP 24346
BDE 2.3131 BRA .1657 BC3 8.8041 FSP 9082

MID-COURSE EXECUTION ACCURACY
SGT 6893.8 SGR 1792.3 SG3 2660.8
RRT .9730 RRF .9872 RTF .9776
SGB 7123.0 R23 .1421 R13 .9797
SG1 7111.7 SG2 401.1 THA 14.24

ORBIT DETERMINATION ACCURACY
ST 3816.0 SR 1014.0 SS 3595.3
CRT .9925 CRS -.9998 CST -.9934
LSA 5331.1 MSA 308.8 SSA 17.9
EL1 3946.6 EL2 119.6 ALF 14.79

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

HELIOCENTRIC CONIC DISTANCE 686.045 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.952 GAL 1.06 AZL 86.95 HCA 205.37 SMA 185.97 ECC .20764 INC 3.0492 V1 30.205
RP 216.22 LAP -1.31 LOP 274.17 VP 22.671 GAP -7.52 AZP 92.76 TAL 6.16 TAP 211.53 RCA 147.36 APO 224.58 V2 25.404
RC 285.910 GL 31.70 GP -10.63 ZAL 74.64 ZAP 71.38 ETS 175.56 ZAE 101.76 ETE 180.86 ZAC 74.21 ETC 257.28 CLP 71.05

PLANETOCENTRIC CONIC

C3 11.122 VHL 3.335 DLA 44.15 RAL 156.57 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.074 DPA -2.40 RAP 162.82 ECC 1.1830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.59	7 22 36	4096.95	-34.31	183.97	21.93	60.30	8 30 53	3497.0	-37.96	175.57
125.41	14 51 33	2714.17	-34.30	77.20	21.92	60.29	15 36 47	2114.2	-37.95	68.80
54.59	7 22 36	4096.95	-34.31	183.97	21.93	60.30	8 30 53	3497.0	-37.96	175.57
125.41	14 51 33	2714.17	-34.30	77.20	21.92	60.29	15 36 47	2114.2	-37.95	68.80
54.59	7 22 36	4096.95	-34.31	183.97	21.93	60.30	8 30 53	3497.0	-37.96	175.57
125.41	14 51 33	2714.17	-34.30	77.20	21.92	60.29	15 36 47	2114.2	-37.95	68.80

DIFFERENTIAL CORRECTIONS
TDE 2.2561 TRA -.0124 TC3-9.0480 BAU 1.3782
RDE .5532 RRA .1600 RC3-2.0144 FAU .51899
FDE 7.5488 FRA 2.0599 FC-40.3994 BSP 25225
BDE 2.3229 BRA .1605 BC3 9.2696 FSP 8917

MID-COURSE EXECUTION ACCURACY
SGT 7172.5 SGR 1689.7 SG3 2618.6
RRT .9720 RRF .9845 RTF .9786
SGB 7368.8 R23 .1298 R13 .9803
SG1 7358.7 SG2 386.7 THA 12.93

ORBIT DETERMINATION ACCURACY
ST 3880.3 SR 958.1 SS 3473.6
CRT .9925 CRS -.9998 CST -.9932
LSA 5286.4 MSA 308.8 SSA 18.9
EL1 3995.3 EL2 113.8 ALF 13.78

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

HELIOCENTRIC CONIC DISTANCE 690.220 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.955 GAL 1.00 AZL 87.02 HCA 206.53 SMA 186.01 ECC .20773 INC 2.9836 V1 30.205
RP 215.88 LAP -1.33 LOP 275.34 VP 22.717 GAP -7.67 AZP 92.67 TAL 5.80 TAP 212.33 RCA 147.37 APO 224.65 V2 25.442
RC 287.127 GL 31.21 GP -10.11 ZAL 75.15 ZAP 69.78 ETS 175.43 ZAE 99.94 ETE 180.46 ZAC 74.63 ETC 257.36 CLP 69.45

PLANETOCENTRIC CONIC

C3 10.958 VHL 3.310 DLA 43.44 RAL 157.03 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.102 DPA -1.75 RAP 162.63 ECC 1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.57	7 28 18	4083.67	-33.91	182.50	21.83	61.03	8 36 21	3483.7	-37.47	174.10
124.43	14 49 33	2721.37	-33.90	77.57	21.82	61.01	15 34 54	2121.4	-37.46	69.17
55.57	7 28 18	4083.67	-33.91	182.50	21.83	61.03	8 36 21	3483.7	-37.47	174.10
124.43	14 49 33	2721.37	-33.90	77.57	21.82	61.01	15 34 54	2121.4	-37.46	69.17
55.57	7 28 18	4083.67	-33.91	182.50	21.83	61.03	8 36 21	3483.7	-37.47	174.10
124.43	14 49 33	2721.37	-33.90	77.57	21.82	61.01	15 34 54	2121.4	-37.46	69.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.2722 TRA .0200 TC3-9.5490 BAU 1.4264 SGT 7445.6 SGR 1594.0 SG3 2571.6 ST 3937.3 SR 907.1 SS 3348.8
RDE .5194 RRA .1602 RC3-1.9026 FAU .50844 RRT .9704 RRF .9812 RTF .9794 CRT .9924 CRS -.9997 CST -.9929
FDE 7.1512 FRA 2.1173 FC-40.1687 BSP 26085 SGB 7614.3 R23 .1175 R13 .9807 LSA 5238.7 MSA 309.8 SSA 19.8
BDE 2.3308 BRA .1615 BC3 9.7367 FSP 8717 SG1 7605.0 SG2 376.6 THA 11.77 EL1 4039.0 EL2 108.6 ALF 12.89

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

HELIOCENTRIC CONIC DISTANCE 694.403 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.958 GAL .93 AZL 87.08 HCA 207.69 SMA 186.06 ECC .20784 INC 2.9229 V1 30.205
RP 215.54 LAP -1.36 LOP 276.50 VP 22.763 GAP -7.83 AZP 92.59 TAL 5.43 TAP 213.12 RCA 147.39 APO 224.73 V2 25.480
RC 288.329 GL 30.74 GP -9.63 ZAL 75.71 ZAP 68.21 ETS 175.32 ZAE 98.14 ETE 180.11 ZAC 75.01 ETC 257.43 CLP 67.88

PLANETOCENTRIC CONIC

C3 10.807 VHL 3.287 DLA 42.75 RAL 157.54 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 3.132 DPA -1.16 RAP 162.46 ECC 1.1779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.53	7 34 15	4070.33	-33.51	181.05	21.82	61.72	8 42 5	3470.3	-36.99	172.64
123.47	14 47 41	2729.04	-33.50	77.99	21.81	61.71	15 33 10	2129.0	-36.98	69.59
56.53	7 34 15	4070.33	-33.51	181.05	21.82	61.72	8 42 5	3470.3	-36.99	172.64
123.47	14 47 41	2729.04	-33.50	77.99	21.81	61.71	15 33 10	2129.0	-36.98	69.59
56.53	7 34 15	4070.33	-33.51	181.05	21.82	61.72	8 42 5	3470.3	-36.99	172.64
123.47	14 47 41	2729.04	-33.50	77.99	21.81	61.71	15 33 10	2129.0	-36.98	69.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.2860 TRA .0557 TC-10.0484 BAU 1.4749 SGT 7716.2 SGR 1506.5 SG3 2523.5 ST 3989.3 SR 862.1 SS 3229.1
RDE .4898 RRA .1605 RC3-1.7968 FAU .49772 RRT .9684 RRF .9774 RTF .9802 CRT .9924 CRS -.9997 CST -.9927
FDE 6.7731 FRA 2.1707 FC-39.8706 BSP 26959 SGB 7861.9 R23 .1046 R13 .9811 LSA 5195.0 MSA 310.1 SSA 20.8
BDE 2.3379 BRA .1699 BC310.2078 FSP 8531 SG1 7853.2 SG2 369.4 THA 10.73 EL1 4080.1 EL2 103.6 ALF 12.11

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

HELIOCENTRIC CONIC DISTANCE 698.593 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.961 GAL .87 AZL 87.13 HCA 208.86 SMA 186.11 ECC .20797 INC 2.8667 V1 30.205
RP 215.21 LAP -1.38 LOP 277.67 VP 22.809 GAP -7.98 AZP 92.51 TAL 5.04 TAP 213.90 RCA 147.40 APO 224.82 V2 25.517
RC 289.516 GL 30.31 GP -9.19 ZAL 76.30 ZAP 66.68 ETS 175.22 ZAE 96.38 ETE 179.80 ZAC 75.38 ETC 257.50 CLP 66.36

PLANETOCENTRIC CONIC

C3 10.668 VHL 3.266 DLA 42.07 RAL 158.11 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 3.165 DPA -.62 RAP 162.32 ECC 1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.48	7 40 27	4056.92	-33.11	179.62	21.88	62.39	8 48 4	3456.9	-36.50	171.21
122.52	14 45 59	2737.15	-33.09	78.45	21.87	62.38	15 31 36	2137.2	-36.50	70.05
57.48	7 40 27	4056.92	-33.11	179.62	21.88	62.39	8 48 4	3456.9	-36.50	171.21
122.52	14 45 59	2737.15	-33.09	78.45	21.87	62.38	15 31 36	2137.2	-36.50	70.05
57.48	7 40 27	4056.92	-33.11	179.62	21.88	62.39	8 48 4	3456.9	-36.50	171.21
122.52	14 45 59	2737.15	-33.09	78.45	21.87	62.38	15 31 36	2137.2	-36.50	70.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.2977 TRA .0964 TC-10.5358 BAU 1.5218 SGT 7979.0 SGR 1423.8 SG3 2469.6 ST 4036.5 SR 821.4 SS 3110.2
RDE .4633 RRA .1613 RC3-1.6917 FAU .48571 RRT .9655 RRF .9730 RTF .9808 CRT .9924 CRS -.9996 CST -.9923
FDE 6.4045 FRA 2.2317 FC-39.4172 BSP 27857 SGB 8105.0 R23 .0921 R13 .9816 LSA 5152.1 MSA 310.9 SSA 21.8
BDE 2.3439 BRA .1879 BC310.6708 FSP 8341 SG1 8096.8 SG2 365.4 THA 9.80 EL1 4118.0 EL2 99.0 ALF 11.42

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

HELIOCENTRIC CONIC DISTANCE 702.791 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.964 GAL .80 AZL 87.19 HCA 210.03 SMA 186.17 ECC .20812 INC 2.8143 V1 30.205
RP 214.88 LAP -1.41 LOP 278.84 VP 22.855 GAP -8.13 AZP 92.44 TAL 4.63 TAP 214.67 RCA 147.42 APO 224.91 V2 25.554
RC 290.691 GL 29.90 GP -8.78 ZAL 76.93 ZAP 65.19 ETS 175.14 ZAE 94.64 ETE 179.53 ZAC 75.72 ETC 257.56 CLP 64.88

PLANETOCENTRIC CONIC

C3 10.539 VHL 3.246 DLA 41.41 RAL 158.71 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.201 DPA -.11 RAP 162.20 ECC 1.1734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.42	7 46 55	4043.36	-32.70	178.19	22.01	63.03	8 54 18	3443.4	-36.02	169.78
121.58	14 44 22	2745.76	-32.69	78.95	22.01	63.02	15 30 8	2145.8	-36.01	70.55
58.42	7 46 55	4043.36	-32.70	178.19	22.01	63.03	8 54 18	3443.4	-36.02	169.78
121.58	14 44 22	2745.76	-32.69	78.95	22.01	63.02	15 30 8	2145.8	-36.01	70.55
58.42	7 46 55	4043.36	-32.70	178.19	22.01	63.03	8 54 18	3443.4	-36.02	169.78
121.58	14 44 22	2745.76	-32.69	78.95	22.01	63.02	15 30 8	2145.8	-36.01	70.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3054 TRA .1428 TC-11.0186 BAU 1.5685 SGT 8237.0 SGR 1347.8 SG3 2414.7 ST 4075.9 SR 784.7 SS 2991.9
RDE .4394 RRA .1633 RC3-1.5913 FAU .47346 RRT .9617 RRF .9678 RTF .9813 CRT .9924 CRS -.9995 CST -.9918
FDE 6.0445 FRA 2.3115 FC-38.8943 BSP 28731 SGB 8346.6 R23 .0812 R13 .9818 LSA 5106.9 MSA 313.8 SSA 22.7
BDE 2.3469 BRA .2169 BC311.1329 FSP 8141 SG1 8338.6 SG2 365.2 THA 8.96 EL1 4149.6 EL2 94.8 ALF 10.82

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

HELIOCENTRIC CONIC DISTANCE 706.996 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.967 GAL .73 AZL 87.23 HCA 211.21 SMA 186.22 ECC .20829 INC 2.7653 V1 30.205
RP 214.56 LAP -1.43 LOP 280.02 VP 22.900 GAP -8.27 AZP 92.37 TAL 4.22 TAP 215.43 RCA 147.43 APO 225.01 V2 25.590
RC 291.851 GL 29.52 GP -8.39 ZAL 77.60 ZAP 63.74 ETS 175.06 ZAE 92.95 ETE 179.28 ZAC 76.05 ETC 257.62 CLP 63.43

PLANETOCENTRIC CONIC

C3 10.419 VHL 3.228 DLA 40.75 RAL 159.37 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.238 DPA .35 RAP 162.11 ECC 1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.37	7 53 41	4029.48	-32.29	176.75	22.21	63.65	9 0 50	3429.5	-35.54	168.35
120.63	14 42 48	2755.03	-32.28	79.51	22.21	63.64	15 28 43	2155.0	-35.53	71.11
59.37	7 53 41	4029.48	-32.29	176.75	22.21	63.65	9 0 50	3429.5	-35.54	168.35
120.63	14 42 48	2755.03	-32.28	79.51	22.21	63.64	15 28 43	2155.0	-35.53	71.11
59.37	7 53 41	4029.48	-32.29	176.75	22.21	63.65	9 0 50	3429.5	-35.54	168.35
120.63	14 42 48	2755.03	-32.28	79.51	22.21	63.64	15 28 43	2155.0	-35.53	71.11

DIFFERENTIAL CORRECTIONS
TDE 2.3083 TRA .1906 TC-11.4969 BAU 1.6149
RDE .4175 RRA .1644 RC3-1.4944 FAU .46083
FDE 5.6857 FRA 2.3713 FC-38.2916 BSP 29559
BDE 2.3457 BRA .2517 BC311.5936 FSP 7926

MID-COURSE EXECUTION ACCURACY
SGT 8489.6 SGR 1276.1 SG3 2356.4
RRT .9571 RRF .9617 RTF .9817
SGB 8585.0 R23 .0700 R13 .9822
SG1 8577.2 SG2 365.8 THA 8.20

ORBIT DETERMINATION ACCURACY
ST 4105.6 SR 750.7 SS 2869.4
CRT .9925 CRS -.9994 CST -.9913
LSA 5055.0 MSA 315.1 SSA 23.6
EL1 4172.6 EL2 90.5 ALF 10.29

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

HELIOCENTRIC CONIC DISTANCE 711.208 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.971 GAL .65 AZL 87.28 HCA 212.39 SMA 186.28 ECC .20848 INC 2.7193 V1 30.205
RP 214.24 LAP -1.46 LOP 281.20 VP 22.945 GAP -8.42 AZP 92.30 TAL 3.79 TAP 216.17 RCA 147.45 APO 225.12 V2 25.626
RC 292.998 GL 29.16 GP -8.03 ZAL 78.31 ZAP 62.33 ETS 175.00 ZAE 91.28 ETE 179.07 ZAC 76.35 ETC 257.66 CLP 62.03

PLANETOCENTRIC CONIC

C3 10.308 VHL 3.211 DLA 40.10 RAL 160.06 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.278 DPA .77 RAP 162.04 ECC 1.1696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.33	8 0 45	4015.27	-31.88	175.30	22.48	64.26	9 7 40	3415.3	-35.05	166.91
119.67	14 41 16	2764.92	-31.87	80.11	22.47	64.24	15 27 21	2164.9	-35.04	71.72
60.33	8 0 45	4015.27	-31.88	175.30	22.48	64.26	9 7 40	3415.3	-35.05	166.91
119.67	14 41 16	2764.92	-31.87	80.11	22.47	64.24	15 27 21	2164.9	-35.04	71.72
60.33	8 0 45	4015.27	-31.88	175.30	22.48	64.26	9 7 40	3415.3	-35.05	166.91
119.67	14 41 16	2764.92	-31.87	80.11	22.47	64.24	15 27 21	2164.9	-35.04	71.72

DIFFERENTIAL CORRECTIONS
TDE 2.3088 TRA .2434 TC-11.9680 BAU 1.6606
RDE .3984 RRA .1660 RC3-1.4016 FAU .44808
FDE 5.3493 FRA 2.4389 FC-37.6324 BSP 30395
BDE 2.3429 BRA .2946 BC312.0498 FSP 7711

MID-COURSE EXECUTION ACCURACY
SGT 8738.3 SGR 1210.5 SG3 2298.0
RRT .9516 RRF .9547 RTF .9821
SGB 8821.7 R23 .0600 R13 .9825
SG1 8814.0 SG2 368.9 THA 7.52

ORBIT DETERMINATION ACCURACY
ST 4130.2 SR 720.8 SS 2754.0
CRT .9926 CRS -.9992 CST -.9907
LSA 5006.1 MSA 317.3 SSA 24.5
EL1 4191.7 EL2 86.4 ALF 9.83

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

HELIOCENTRIC CONIC DISTANCE 715.427 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.974 GAL .56 AZL 87.32 HCA 213.57 SMA 186.35 ECC .20868 INC 2.6762 V1 30.205
RP 213.93 LAP -1.48 LOP 282.38 VP 22.990 GAP -8.55 AZP 92.23 TAL 3.34 TAP 216.91 RCA 147.46 APO 225.23 V2 25.662
RC 294.131 GL 28.81 GP -7.69 ZAL 79.05 ZAP 60.95 ETS 174.95 ZAE 89.65 ETE 178.88 ZAC 76.65 ETC 257.70 CLP 60.66

PLANETOCENTRIC CONIC

C3 10.206 VHL 3.195 DLA 39.45 RAL 160.79 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 3.319 DPA 1.15 RAP 162.01 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.29	8 8 8	4000.62	-31.45	173.83	22.79	64.84	9 14 49	3400.6	-34.56	165.45
118.71	14 39 43	2775.56	-31.44	80.77	22.79	64.83	15 25 59	2175.6	-34.55	72.40
61.29	8 8 8	4000.62	-31.45	173.83	22.79	64.84	9 14 49	3400.6	-34.56	165.45
118.71	14 39 43	2775.56	-31.44	80.77	22.79	64.83	15 25 59	2175.6	-34.55	72.40
61.29	8 8 8	4000.62	-31.45	173.83	22.79	64.84	9 14 49	3400.6	-34.56	165.45
118.71	14 39 43	2775.56	-31.44	80.77	22.79	64.83	15 25 59	2175.6	-34.55	72.40

DIFFERENTIAL CORRECTIONS
TDE 2.3052 TRA .2998 TC-12.4300 BAU 1.7054
RDE .3808 RRA .1671 RC3-1.3133 FAU .43538
FDE 5.0168 FRA 2.4930 FC-36.9329 BSP 31198
BDE 2.3364 BRA .3432 BC312.4992 FSP 7485

MID-COURSE EXECUTION ACCURACY
SGT 8980.6 SGR 1149.4 SG3 2238.6
RRT .9453 RRF .9467 RTF .9826
SGB 9053.8 R23 .0497 R13 .9829
SG1 9046.2 SG2 372.2 THA 6.91

ORBIT DETERMINATION ACCURACY
ST 4146.4 SR 693.3 SS 2635.9
CRT .9928 CRS -.9989 CST -.9900
LSA 4951.8 MSA 317.9 SSA 25.4
EL1 4203.2 EL2 82.0 ALF 9.43

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

HELIOCENTRIC CONIC DISTANCE 719.653 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 32.978 GAL .50 AZL 87.36 HCA 214.76 SMA 186.41 ECC .20891 INC 2.6355 V1 30.205
RP 213.62 LAP -1.50 LOP 283.57 VP 23.035 GAP -8.69 AZP 92.17 TAL 2.88 TAP 217.64 RCA 147.47 APO 225.36 V2 25.697
RC 295.251 GL 28.48 GP -7.37 ZAL 79.83 ZAP 59.61 ETS 174.90 ZAE 88.05 ETE 178.71 ZAC 76.93 ETC 257.74 CLP 59.33

PLANETOCENTRIC CONIC

C3 10.111 VHL 3.180 DLA 38.80 RAL 161.56 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.363 DPA 1.50 RAP 162.00 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.28	8 15 52	3985.45	-31.02	172.33	23.17	65.42	9 22 17	3385.4	-34.06	163.96
117.72	14 38 8	2787.01	-31.01	81.50	23.16	65.41	15 24 35	2187.0	-34.05	73.13
62.28	8 15 52	3985.45	-31.02	172.33	23.17	65.42	9 22 17	3385.4	-34.06	163.96
117.72	14 38 8	2787.01	-31.01	81.50	23.16	65.41	15 24 35	2187.0	-34.05	73.13
62.28	8 15 52	3985.45	-31.02	172.33	23.17	65.42	9 22 17	3385.4	-34.06	163.96
117.72	14 38 8	2787.01	-31.01	81.50	23.16	65.41	15 24 35	2187.0	-34.05	73.13

DIFFERENTIAL CORRECTIONS
TDE 2.3004 TRA .3624 TC-12.8807 BAU 1.7491
RDE .3657 RRA .1691 RC3-1.2272 FAU .42230
FDE 4.7120 FRA 2.5643 FC-36.1572 BSP 32033
BDE 2.3293 BRA .3999 BC312.9390 FSP 7283

MID-COURSE EXECUTION ACCURACY
SGT 9218.8 SGR 1093.7 SG3 2178.9
RRT .9375 RRF .9375 RTF .9830
SGB 9283.4 R23 .0417 R13 .9832
SG1 9275.7 SG2 378.3 THA 6.36

ORBIT DETERMINATION ACCURACY
ST 4159.8 SR 669.7 SS 2528.3
CRT .9930 CRS -.9986 CST -.9892
LSA 4903.2 MSA 320.7 SSA 26.2
EL1 4212.7 EL2 77.8 ALF 9.09

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

HELIOCENTRIC CONIC DISTANCE 723.886 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.982	GAL	.42	AZL	87.40	HCA	215.95	SMA	186.48	ECC	.20915	INC	2.5971	V1	30.205
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.079	GAP	-8.82	AZP	92.10	TAL	2.41	TAP	218.35	RCA	147.48	APO	225.49	V2	25.731
RC	296.356	GL	28.17	GP	-7.07	ZAL	80.65	ZAP	58.31	ETS	174.86	ZAE	86.49	ETE	178.56	ZAC	77.20	ETC	257.76	CLP	58.04

PLANETOCENTRIC CONIC

C3	10.025	VHL	3.166	DLA	38.15	RAL	162.37	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	3.408	DPA	1.81	RAP	162.02	ECC	1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.28	8 24 0	3969.53	-30.59	170.78	23.59	65.98	9 30 10	3369.5	-33.55	162.42
116.72	14 36 25	2799.50	-30.57	82.30	23.59	65.97	15 23 5	2199.5	-33.54	73.95
63.28	8 24 0	3969.53	-30.59	170.78	23.59	65.98	9 30 10	3369.5	-33.55	162.42
116.72	14 36 25	2799.50	-30.57	82.30	23.59	65.97	15 23 5	2199.5	-33.54	73.95
63.28	8 24 0	3969.53	-30.59	170.78	23.59	65.98	9 30 10	3369.5	-33.55	162.42
116.72	14 36 25	2799.50	-30.57	82.30	23.59	65.97	15 23 5	2199.5	-33.54	73.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2888	TRA	.4292	TC-13.3224	BAU	1.7921	SGT	9449.9	SGR	1041.1	SG3	2117.7	ST	4160.1	SR	646.7	SS 2410.5
RDE	.3511	RRA	.1710	RC3-1.1446	FAU	.40922	RRT	.9285	RRF	.9271	RTF	.9832	CRT	.9934	CRS	-.9980	CST -.9881
FDE	4.3954	FRA	2.6310	FC-35.3405	BSP	32852	SGB	9507.0	R23	.0341	R13	.9833	LSA	4840.3	MSA	324.0	SSA 27.0
BDE	2.3155	BRA	.4620	BC313.3715	FSP	7087	SG1	9499.2	SG2	384.6	THA	5.85	EL1	4209.4	EL2	73.6	ALF 8.78

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

HELIOCENTRIC CONIC DISTANCE 728.125 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.986	GAL	.33	AZL	87.44	HCA	217.14	SMA	186.56	ECC	.20941	INC	2.5607	V1	30.205
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.123	GAP	-8.95	AZP	92.04	TAL	1.92	TAP	219.06	RCA	147.49	APO	225.62	V2	25.765
RC	297.448	GL	27.86	GP	-6.79	ZAL	81.50	ZAP	57.04	ETS	174.83	ZAE	84.95	ETE	178.43	ZAC	77.47	ETC	257.78	CLP	56.78

PLANETOCENTRIC CONIC

C3	9.946	VHL	3.154	DLA	37.50	RAL	163.21	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	3.455	DPA	2.09	RAP	162.08	ECC	1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.32	8 32 33	3952.85	-30.13	169.18	24.07	66.54	9 38 26	3352.8	-33.03	160.84
115.68	14 34 35	2813.03	-30.12	83.18	24.06	66.52	15 21 28	2213.0	-33.02	74.84
64.32	8 32 33	3952.85	-30.13	169.18	24.07	66.54	9 38 26	3352.8	-33.03	160.84
115.68	14 34 35	2813.03	-30.12	83.18	24.06	66.52	15 21 28	2213.0	-33.02	74.84
64.32	8 32 33	3952.85	-30.13	169.18	24.07	66.54	9 38 26	3352.8	-33.03	160.84
115.68	14 34 35	2813.03	-30.12	83.18	24.06	66.52	15 21 28	2213.0	-33.02	74.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2727	TRA	.4988	TC-13.7566	BAU	1.8346	SGT	9676.8	SGR	992.7	SG3	2057.0	ST	4151.4	SR	625.9	SS 2294.7
RDE	.3381	RRA	.1725	RC3-1.0660	FAU	.39642	RRT	.9183	RRF	.9152	RTF	.9834	CRT	.9937	CRS	-.9972	CST -.9870
FDE	4.0919	FRA	2.6866	FC-34.5067	BSP	33631	SGB	9727.6	R23	.0269	R13	.9836	LSA	4773.3	MSA	326.5	SSA 27.9
BDE	2.2978	BRA	.5277	BC313.7979	FSP	6881	SG1	9719.8	SG2	391.2	THA	5.39	EL1	4197.8	EL2	69.1	ALF 8.52

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

HELIOCENTRIC CONIC DISTANCE 732.371 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.991	GAL	.25	AZL	87.47	HCA	218.34	SMA	186.63	ECC	.20970	INC	2.5262	V1	30.205
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.166	GAP	-9.08	AZP	91.98	TAL	1.42	TAP	219.75	RCA	147.50	APO	225.77	V2	25.798
RC	298.526	GL	27.56	GP	-6.53	ZAL	82.39	ZAP	55.82	ETS	174.80	ZAE	83.46	ETE	178.32	ZAC	77.72	ETC	257.80	CLP	55.56

PLANETOCENTRIC CONIC

C3	9.874	VHL	3.142	DLA	36.84	RAL	164.08	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	3.503	DPA	2.35	RAP	162.16	ECC	1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.38	8 41 34	3935.17	-29.67	167.51	24.59	67.09	9 47 9	3335.2	-32.50	159.19
114.62	14 32 31	2827.85	-29.66	84.16	24.58	67.07	15 19 39	2227.9	-32.49	75.83
65.38	8 41 34	3935.17	-29.67	167.51	24.59	67.09	9 47 9	3335.2	-32.50	159.19
114.62	14 32 31	2827.85	-29.66	84.16	24.58	67.07	15 19 39	2227.9	-32.49	75.83
65.38	8 41 34	3935.17	-29.67	167.51	24.59	67.09	9 47 9	3335.2	-32.50	159.19
114.62	14 32 31	2827.85	-29.66	84.16	24.58	67.07	15 19 39	2227.9	-32.49	75.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2555	TRA	.5735	TC-14.1707	BAU	1.8753	SGT	9896.2	SGR	948.1	SG3	1995.2	ST	4139.8	SR	608.2	SS 2188.3
RDE	.3270	RRA	.1739	RC3 -.9891	FAU	.38328	RRT	.9066	RRF	.9019	RTF	.9838	CRT	.9943	CRS	-.9962	CST -.9858
FDE	3.8140	FRA	2.7376	FC-33.6037	BSP	34400	SGB	9941.6	R23	.0203	R13	.9839	LSA	4710.4	MSA	328.0	SSA 28.6
BDE	2.2791	BRA	.5993	BC314.2052	FSP	6656	SG1	9933.6	SG2	398.7	THA	4.97	EL1	4183.8	EL2	64.4	ALF 8.31

LAUNCH DATE DEC 1 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 736.620 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	32.995	GAL	.16	AZL	87.51	HCA	219.53	SMA	186.71	ECC	.21000	INC	2.4934	V1	30.205
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.209	GAP	-9.21	AZP	91.92	TAL	.90	TAP	220.43	RCA	147.50	APO	225.92	V2	25.831
RC	299.592	GL	27.28	GP	-6.28	ZAL	83.31	ZAP	54.62	ETS	174.78	ZAE	81.99	ETE	178.21	ZAC	77.97	ETC	257.81	CLP	54.38

PLANETOCENTRIC CONIC

C3	9.811	VHL	3.132	DLA	36.17	RAL	164.99	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	3.553	DPA	2.57	RAP	162.27	ECC	1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.49	8 51 5	3916.43	-29.20	165.78	25.16	67.63	9 56 21	3316.4	-31.96	157.47
113.51	14 30 14	2844.01	-29.19	85.23	25.15	67.62	15 17 38	2244.0	-31.95	76.92
66.49	8 51 5	3916.43	-29.20	165.78	25.16	67.63	9 56 21	3316.4	-31.96	157.47
113.51	14 30 14	2844.01	-29.19	85.23	25.15	67.62	15 17 38	2244.0	-31.95	76.92
66.49	8 51 5	3916.43	-29.20	165.78	25.16	67.63	9 56 21	3316.4	-31.96	157.47
113.51	14 30 14	2844.01	-29.19	85.23	25.15	67.62	15 17 38	2244.0	-31.95	76.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2477	TRA	.6703	TC-14.5126	BAU	1.9072	SGT10092.8	SGR	907.7	SG3	1927.5	ST	4145.8	SR	594.7	SS 2104.6	
RDE	.3182	RRA	.1779	RC3 -.9067	FAU	.36764	RRT	.8917	RRF	.8870	RTF	.9838	CRT	.9949	CRS	-.9947	CST -.9841
FDE	3.5789	FRA	2.8532	FC-32.4425	BSP	35493	SGB10133.5	R23	.0182	R13	.9838	LSA	4675.2	MSA	335.8	SSA 29.0	
BDE	2.2701	BRA	.6935	BC314.5409	FSP	6538	SG110125.2	SG2	409.4	THA	4.59	EL1	4187.8	EL2	59.6	ALF 8.12	

LAUNCH DATE DEC 1 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 740.879 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.000	GAL	.06	AZL	87.54	HCA	220.74	SMA	186.79	ECC	.21033	INC	2.4621	V1	30.205
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.252	GAP	-9.33	AZP	91.87	TAL	.37	TAP	221.11	RCA	147.50	APO	226.08	V2	25.863
RC	300.645	GL	26.99	GP	-6.05	ZAL	84.27	ZAP	53.46	ETS	174.76	ZAE	80.56	ETE	178.12	ZAC	78.21	ETC	257.81	CLP	53.22

PLANETOCENTRIC CONIC

C3	9.755	VHL	3.123	DLA	35.50	RAL	165.92	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.605	DPA	2.76	RAP	162.41	ECC	1.1605		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.64	9 1 11	3896.23	-28.71	163.94	25.77	68.17	10 6 7	3296.2	-31.40	155.65
112.36	14 27 35	2861.95	-28.70	86.43	25.76	68.15	15 15 16	2261.9	-31.40	78.15
67.64	9 1 11	3896.23	-28.71	163.94	25.77	68.17	10 6 7	3296.2	-31.40	155.65
112.36	14 27 35	2861.95	-28.70	86.43	25.76	68.15	15 15 16	2261.9	-31.40	78.15
67.64	9 1 11	3896.23	-28.71	163.94	25.77	68.17	10 6 7	3296.2	-31.40	155.65
112.36	14 27 35	2861.95	-28.70	86.43	25.76	68.15	15 15 16	2261.9	-31.40	78.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2142	TRA	.7461	TC	-14.9494	BAU	1.9527	SGT	10321.2	SGR	872.1	SG3	1878.2	ST	4102.8	SR	577.8	SS	1982.9
RDE	.3079	RRA	.1787	RC3	-.8464	FAU	.35806	RRT	.8786	RRF	.8711	RTF	.9840	CRT	.9954	CRS	-.9927	CST	-.9820
FDE	3.2879	FRA	2.8821	FC	-31.7780	BSP	35936	SGB	10357.9	R23	.0110	R13	.9840	LSA	4580.7	MSA	339.0	SSA	30.0
BDE	2.2355	BRA	.7672	BC	314.9733	FSP	6213	SG1	10349.6	SG2	415.4	THA	4.25	EL1	4142.9	EL2	54.9	ALF	7.98

LAUNCH DATE DEC 1 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 745.142 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.005	GAL	-.03	AZL	87.57	HCA	221.94	SMA	186.87	ECC	.21068	INC	2.4322	V1	30.205
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.294	GAP	-9.45	AZP	91.81	TAL	359.83	TAP	221.77	RCA	147.50	APO	226.24	V2	25.895
RC	301.687	GL	26.72	GP	-5.83	ZAL	85.26	ZAP	52.33	ETS	174.74	ZAE	79.16	ETE	178.04	ZAC	78.44	ETC	257.81	CLP	52.10

PLANETOCENTRIC CONIC

C3	9.706	VHL	3.116	DLA	34.81	RAL	166.88	RAD	6567.4	VEL	11.450	PTH	1.99	VHP	3.658	DPA	2.93	RAP	162.57	ECC	1.1597		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.85	9 11 56	3874.42	-28.20	161.99	26.42	68.70	10 16 31	3274.4	-30.84	153.72
111.15	14 24 30	2881.80	-28.19	87.78	26.42	68.68	15 12 31	2281.8	-30.83	79.51
68.85	9 11 56	3874.42	-28.20	161.99	26.42	68.70	10 16 31	3274.4	-30.84	153.72
111.15	14 24 30	2881.80	-28.19	87.78	26.42	68.68	15 12 31	2281.8	-30.83	79.51
68.85	9 11 56	3874.42	-28.20	161.99	26.42	68.70	10 16 31	3274.4	-30.84	153.72
111.15	14 24 30	2881.80	-28.19	87.78	26.42	68.68	15 12 31	2281.8	-30.83	79.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1916	TRA	.8440	TC	-15.3003	BAU	1.9880	SGT	10521.9	SGR	839.4	SG3	1812.7	ST	4080.3	SR	568.0	SS	1910.7
RDE	.3014	RRA	.1825	RC3	-.7700	FAU	.34284	RRT	.8584	RRF	.8533	RTF	.9839	CRT	.9960	CRS	-.9901	CST	-.9797
FDE	3.0844	FRA	2.9939	FC	-30.5789	BSP	36677	SGB	10555.3	R23	.0143	R13	.9839	LSA	4527.7	MSA	348.5	SSA	30.5
BDE	2.2123	BRA	.8635	BC	315.3197	FSP	6102	SG1	10546.6	SG2	429.6	THA	3.92	EL1	4119.3	EL2	50.4	ALF	7.89

LAUNCH DATE DEC 1 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 749.412 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.010	GAL	-.13	AZL	87.60	HCA	223.15	SMA	186.96	ECC	.21105	INC	2.4037	V1	30.205
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.335	GAP	-9.57	AZP	91.75	TAL	359.27	TAP	222.42	RCA	147.50	APO	226.42	V2	25.926
RC	302.717	GL	26.44	GP	-5.62	ZAL	86.29	ZAP	51.24	ETS	174.72	ZAE	77.78	ETE	177.97	ZAC	78.67	ETC	257.80	CLP	51.02

PLANETOCENTRIC CONIC

C3	9.666	VHL	3.109	DLA	34.11	RAL	167.87	RAD	6567.3	VEL	11.448	PTH	1.99	VHP	3.712	DPA	3.08	RAP	162.77	ECC	1.1591		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.13	9 23 27	3850.61	-27.68	159.90	27.12	69.23	10 27 38	3250.6	-30.25	151.65
109.87	14 20 52	2903.98	-27.67	89.29	27.11	69.21	15 9 16	2304.0	-30.24	81.04
70.13	9 23 27	3850.61	-27.68	159.90	27.12	69.23	10 27 38	3250.6	-30.25	151.65
109.87	14 20 52	2903.98	-27.67	89.29	27.11	69.21	15 9 16	2304.0	-30.24	81.04
110.00	14 38 32	2850.11	-28.92	85.60	27.63	70.93	15 26 2	2250.1	-31.25	77.17
110.00	14 4 57	2952.47	-26.45	92.53	26.57	67.51	14 54 10	2352.5	-29.26	84.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1504	TRA	.9301	TC	-15.6816	BAU	2.0286	SGT	10727.1	SGR	805.8	SG3	1752.2	ST	4021.9	SR	554.1	SS	1793.9
RDE	.2933	RRA	.1819	RC3	-.7070	FAU	.33119	RRT	.8406	RRF	.8325	RTF	.9846	CRT	.9967	CRS	-.9867	CST	-.9778
FDE	2.8199	FRA	2.9822	FC	-29.6628	BSP	37362	SGB	10757.4	R23	.0064	R13	.9846	LSA	4425.0	MSA	345.0	SSA	31.4
BDE	2.1703	BRA	.9477	BC	315.6975	FSP	5869	SG1	10748.5	SG2	435.6	THA	3.62	EL1	4059.6	EL2	44.9	ALF	7.82

LAUNCH DATE DEC 1 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 753.686 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.015	GAL	-.23	AZL	87.62	HCA	224.37	SMA	187.05	ECC	.21145	INC	2.3763	V1	30.205
RP	211.35	LAP	-1.66	LOP	293.18	VP	23.376	GAP	-9.69	AZP	91.70	TAL	358.69	TAP	223.06	RCA	147.50	APO	226.60	V2	25.956
RC	303.736	GL	26.17	GP	-5.42	ZAL	87.35	ZAP	50.17	ETS	174.71	ZAE	76.44	ETE	177.91	ZAC	78.89	ETC	257.79	CLP	49.96

PLANETOCENTRIC CONIC

C3	9.634	VHL	3.104	DLA	33.40	RAL	168.88	RAD	6567.3	VEL	11.447	PTH	1.99	VHP	3.768	DPA	3.20	RAP	162.99	ECC	1.1586		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.50	9 35 52	3824.33	-27.15	157.63	27.85	69.75	10 39 37	3224.3	-29.65	149.40
108.50	14 16 33	2928.95	-27.14	91.00	27.85	69.74	15 5 22	2328.9	-29.64	82.78
71.50	9 35 52	3824.33	-27.15	157.63	27.85	69.75	10 39 37	3224.3	-29.65	149.40
108.50	14 16 33	2928.95	-27.14	91.00	27.85	69.74	15 5 22	2328.9	-29.64	82.78
110.00	15 21 5	2731.18	-31.27	77.14	29.33	75.44	16 6 36	2131.2	-32.95	68.32
110.00	13 30 30	3070.10	-23.16	100.09	25.98	64.13	14 21 40	2470.1	-26.45	92.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1074	TRA	1.0289	TC	-16.0372	BAU	2.0673	SGT	10928.0	SGR	777.5	SG3	1698.3	ST	3960.7	SR	541.4	SS	1678.8
RDE	.2857	RRA	.1834	RC3	-.6483	FAU	.32037	RRT	.8216	RRF	.8109	RTF	.9846	CRT	.9972	CRS	-.9814	CST	-.9739
FDE	2.5569	FRA	3.0244	FC	-28.7888	BSP	38047	SGB	10955.7	R23	.0012	R13	.9846	LSA	4321.3	MSA	352.3	SSA	32.1
BDE	2.1266	BRA	1.0451	BC	316.0503	FSP	5671	SG1	10946.7	SG2	442.5	THA	3.35	EL1	3997.3	EL2	40.2	ALF	7.76

LAUNCH DATE DEC 1 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 757.966 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.020 GAL -.33 AZL 87.65 HCA 225.58 SMA 187.14 ECC .21187 INC 2.3500 V1 30.205
RP 211.08 LAP -1.68 LOP 294.40 VP 23.416 GAP -9.81 AZP 91.65 TAL 358.11 TAP 223.69 RCA 147.49 APO 226.79 V2 25.986
RC 304.746 GL 25.90 GP -5.23 ZAL 88.44 ZAP 49.14 ETS 174.70 ZAE 75.13 ETE 177.85 ZAC 79.11 ETC 257.78 CLP 48.93

PLANETOCENTRIC CONIC

C3 9.611 VHL 3.100 DLA 32.68 RAL 169.92 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 3.825 DPA 3.30 RAP 163.23 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.97	9 49 23	3794.95	-26.60	155.14	28.63	70.28	10 52 38	3195.0	-29.03	146.94
107.03	14 11 20	2957.37	-26.59	92.97	28.62	70.26	15 0 37	2357.4	-29.03	84.77
72.97	9 49 23	3794.95	-26.60	155.14	28.63	70.28	10 52 38	3195.0	-29.03	146.94
107.03	14 11 20	2957.37	-26.59	92.97	28.62	70.26	15 0 37	2357.4	-29.03	84.77
110.00	15 46 31	2664.15	-32.31	72.19	30.48	78.19	16 30 55	2064.1	-33.60	63.19
110.00	13 13 22	3136.17	-21.14	104.15	26.02	62.49	14 5 38	2536.2	-24.65	96.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0614 TRA 1.1312 TC-16.3617 BAU 2.1036 SGT11117.4 SGR 751.0 SG3 1639.4 ST 3893.9 SR 530.8 SS 1575.2
RDE .2795 RRA .1847 RC3 -.5874 FAU .30830 RRT .7989 RRF .7868 RTF .9846 CRT .9976 CRS -.9746 CST -.9696
FDE 2.3199 FRA 3.0612 FC-27.7713 BSP 38639 SGB11142.8 R23 -.0018 R13 .9846 LSA 4218.5 MSA 358.7 SSA 32.7
BDE 2.0802 BRA 1.1462 BC316.3722 FSP 5445 SG111133.6 SG2 451.0 THA 3.09 EL1 3929.7 EL2 36.3 ALF 7.74

LAUNCH DATE DEC 1 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 762.251 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.025 GAL -.44 AZL 87.68 HCA 226.80 SMA 187.23 ECC .21232 INC 2.3247 V1 30.205
RP 210.82 LAP -1.69 LOP 295.62 VP 23.456 GAP -9.92 AZP 91.59 TAL 357.51 TAP 224.31 RCA 147.48 APO 226.98 V2 26.015
RC 305.746 GL 25.62 GP -5.06 ZAL 89.57 ZAP 48.14 ETS 174.69 ZAE 73.84 ETE 177.80 ZAC 79.33 ETC 257.75 CLP 47.93

PLANETOCENTRIC CONIC

C3 9.596 VHL 3.098 DLA 31.94 RAL 170.98 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.884 DPA 3.37 RAP 163.50 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.57	10 4 15	3761.56	-26.03	152.36	29.44	70.80	11 6 56	3161.6	-28.40	144.19
105.43	14 4 56	2990.16	-26.01	95.25	29.44	70.79	14 54 46	2390.2	-28.39	87.07
74.57	10 4 15	3761.56	-26.03	152.36	29.44	70.80	11 6 56	3161.6	-28.40	144.19
105.43	14 4 56	2990.16	-26.01	95.25	29.44	70.79	14 54 46	2390.2	-28.39	87.07
110.00	16 7 28	2610.69	-32.99	68.16	31.49	80.48	16 50 59	2010.7	-33.95	59.06
110.00	13 0 53	3189.03	-19.45	107.31	26.27	61.32	13 54 2	2589.0	-23.12	100.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0119 TRA 1.2421 TC-16.6609 BAU 2.1385 SGT11301.6 SGR 727.1 SG3 1581.8 ST 3821.3 SR 521.2 SS 1473.7
RDE .2739 RRA .1862 RC3 -.5288 FAU .29641 RRT .7746 RRF .7610 RTF .9845 CRT .9978 CRS -.9652 CST -.9639
FDE 2.0889 FRA 3.1032 FC-26.7414 BSP 39319 SGB11325.0 R23 -.0046 R13 .9845 LSA 4112.1 MSA 367.5 SSA 33.3
BDE 2.0304 BRA 1.2560 BC316.6693 FSP 5271 SG111315.6 SG2 459.3 THA 2.86 EL1 3856.5 EL2 33.9 ALF 7.75

LAUNCH DATE DEC 1 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 766.540 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.031 GAL -.55 AZL 87.70 HCA 228.02 SMA 187.33 ECC .21279 INC 2.3003 V1 30.205
RP 210.58 LAP -1.71 LOP 296.84 VP 23.495 GAP -10.03 AZP 91.54 TAL 356.89 TAP 224.91 RCA 147.46 APO 227.19 V2 26.043
RC 306.737 GL 25.35 GP -4.89 ZAL 90.73 ZAP 47.16 ETS 174.68 ZAE 72.58 ETE 177.76 ZAC 79.54 ETC 257.73 CLP 46.96

PLANETOCENTRIC CONIC

C3 9.591 VHL 3.097 DLA 31.18 RAL 172.07 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.943 DPA 3.43 RAP 163.80 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.36	10 20 54	3722.74	-25.44	149.20	30.29	71.32	11 22 57	3122.7	-27.75	141.05
103.64	13 56 55	3028.76	-25.43	97.94	30.29	71.31	14 47 24	2428.8	-27.74	89.80
76.36	10 20 54	3722.74	-25.44	149.20	30.29	71.32	11 22 57	3122.7	-27.75	141.05
103.64	13 56 55	3028.76	-25.43	97.94	30.29	71.31	14 47 24	2428.8	-27.74	89.80
110.00	16 26 7	2564.29	-33.45	64.62	32.42	82.53	17 8 51	1964.3	-34.13	55.44
110.00	12 50 52	3235.20	-17.91	110.02	26.66	60.39	13 44 48	2635.2	-21.72	102.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9605 TRA 1.3562 TC-16.9530 BAU 2.1746 SGT11489.8 SGR 706.9 SG3 1529.4 ST 3745.6 SR 513.6 SS 1385.1
RDE .2697 RRA .1873 RC3 -.4754 FAU .28580 RRT .7498 RRF .7343 RTF .9848 CRT .9978 CRS -.9540 CST -.9584
FDE 1.8861 FRA 3.1299 FC-25.7984 BSP 39911 SGB11511.6 R23 -.0081 R13 .9848 LSA 4009.0 MSA 373.1 SSA 33.8
BDE 1.9790 BRA 1.3691 BC316.9597 FSP 5063 SG111502.1 SG2 467.2 THA 2.65 EL1 3780.5 EL2 34.1 ALF 7.79

LAUNCH DATE DEC 1 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 770.834 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.036 GAL -.66 AZL 87.72 HCA 229.24 SMA 187.42 ECC .21328 INC 2.2769 V1 30.205
RP 210.34 LAP -1.72 LOP 298.06 VP 23.534 GAP -10.14 AZP 91.49 TAL 356.26 TAP 225.51 RCA 147.45 APO 227.40 V2 26.071
RC 307.719 GL 25.07 GP -4.73 ZAL 91.92 ZAP 46.21 ETS 174.67 ZAE 71.34 ETE 177.72 ZAC 79.75 ETC 257.70 CLP 46.02

PLANETOCENTRIC CONIC

C3 9.595 VHL 3.098 DLA 30.42 RAL 173.17 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 4.004 DPA 3.46 RAP 164.12 ECC 1.1579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.41	10 40 5	3676.06	-24.83	145.47	31.18	71.84	11 41 21	3076.1	-27.08	137.35
101.59	13 46 32	3075.61	-24.82	101.24	31.17	71.83	14 37 48	2475.6	-27.07	93.12
78.41	10 40 5	3676.06	-24.83	145.47	31.18	71.84	11 41 21	3076.1	-27.08	137.35
101.59	13 46 32	3075.61	-24.82	101.24	31.17	71.83	14 37 48	2475.6	-27.07	93.12
110.00	16 43 19	2522.37	-33.78	61.39	33.33	84.42	17 25 21	1922.4	-34.18	52.17
110.00	12 42 29	3277.30	-16.48	112.44	27.16	59.62	13 37 6	2677.3	-20.39	105.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9050 TRA 1.4779 TC-17.2100 BAU 2.2083 SGT11667.9 SGR 688.4 SG3 1474.6 ST 3663.7 SR 506.8 SS 1299.5
RDE .2660 RRA .1886 RC3 -.4215 FAU .27452 RRT .7221 RRF .7056 RTF .9849 CRT .9972 CRS -.9387 CST -.9510
FDE 1.6884 FRA 3.1648 FC-24.7692 BSP 40534 SGB11688.2 R23 -.0099 R13 .9849 LSA 3901.4 MSA 382.0 SSA 34.3
BDE 1.9234 BRA 1.4899 BC317.2152 FSP 4881 SG111678.5 SG2 475.7 THA 2.44 EL1 3698.3 EL2 37.7 ALF 7.85

LAUNCH DATE DEC 1 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 775.132 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.042 GAL -.77 AZL 87.75 HCA 230.47 SMA 187.52 ECC .21381 INC 2.2541 V1 30.205
RP 210.10 LAP -1.74 LOP 299.29 VP 23.571 GAP -10.25 AZP 91.44 TAL 355.62 TAP 226.09 RCA 147.43 APO 227.61 V2 26.098
RC 308.691 GL 24.78 GP -4.58 ZAL 93.14 ZAP 45.29 ETS 174.66 ZAE 70.14 ETE 177.69 ZAC 79.96 ETC 257.67 CLP 45.11

PLANETOCENTRIC CONIC

C3 9.609 VHL 3.100 DLA 29.63 RAL 174.29 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 4.066 DPA 3.48 RAP 164.47 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.89	11 3 20	3616.50	-24.21	140.82	32.10	72.37	12 3 36	3016.5	-26.39	132.72
99.11	13 32 14	3135.77	-24.19	105.49	32.09	72.35	14 24 30	2535.8	-26.38	97.40
100.00	14 12 18	3007.65	-26.42	96.70	32.80	75.48	15 2 26	2407.7	-28.16	88.32
100.00	13 5 57	3219.84	-22.02	110.91	31.27	69.25	13 59 37	2619.8	-24.64	103.09
110.00	16 59 30	2483.58	-34.00	58.38	34.22	86.18	17 40 53	1883.6	-34.15	49.14
110.00	12 35 14	3316.68	-15.11	114.67	27.74	58.97	13 30 31	2716.7	-19.11	107.84

DIFFERENTIAL CORRECTIONS
TDE 1.8456 TRA 1.6035 TC-17.4460 BAU 2.2418
RDE .2630 RRA .1896 RC3 -.3707 FAU .26383
FDE 1.5015 FRA 3.1897 FC-23.7689 BSP 41175
BDE 1.8642 BRA 1.6147 BC317.4499 FSP 4711

MID-COURSE EXECUTION ACCURACY
SGT11842.8 SGR 672.0 SG3 1422.0
RRT .6934 RRF .6754 RTF .9850
SGB11861.9 R23 -.0121 R13 .9850
SG111852.0 SG2 483.8 THA 2.26

ORBIT DETERMINATION ACCURACY
ST 3576.1 SR 500.9 SS 1218.8
CRT .9959 CRS -.9195 CST -.9423
LSA 3790.9 MSA 390.7 SSA 34.7
EL1 3610.7 EL2 44.8 ALF 7.94

LAUNCH DATE DEC 1 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 779.434 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.047 GAL -.89 AZL 87.77 HCA 231.70 SMA 187.62 ECC .21436 INC 2.2322 V1 30.205
RP 209.88 LAP -1.75 LOP 300.52 VP 23.608 GAP -10.36 AZP 91.38 TAL 354.96 TAP 226.66 RCA 147.40 APO 227.84 V2 26.124
RC 309.654 GL 24.50 GP -4.44 ZAL 94.39 ZAP 44.39 ETS 174.66 ZAE 68.95 ETE 177.66 ZAC 80.17 ETC 257.63 CLP 44.22

PLANETOCENTRIC CONIC

C3 9.634 VHL 3.104 DLA 28.83 RAL 175.43 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.129 DPA 3.47 RAP 164.84 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.34	11 35 19	3528.79	-23.56	134.12	33.06	72.88	12 34 8	2928.8	-25.68	126.05
95.66	13 9 20	3224.50	-23.55	111.82	33.05	72.87	14 3 4	2624.5	-25.67	103.75
100.00	14 50 29	2899.46	-28.04	89.06	34.29	79.19	15 38 48	2299.5	-29.24	80.47
100.00	12 36 51	3329.06	-19.22	117.82	31.34	66.66	13 32 20	2729.1	-22.22	110.30
110.00	17 14 56	2447.14	-34.12	55.55	35.10	87.86	17 55 44	1847.1	-34.04	46.30
110.00	12 28 53	3354.14	-13.79	116.76	28.39	58.41	13 24 47	2754.1	-17.87	110.03

DIFFERENTIAL CORRECTIONS
TDE 1.7799 TRA 1.7345 TC-17.6622 BAU 2.2753
RDE .2603 RRA .1906 RC3 -.3221 FAU .25343
FDE 1.3163 FRA 3.2128 FC-22.7732 BSP 41744
BDE 1.7988 BRA 1.7449 BC317.6651 FSP 4533

MID-COURSE EXECUTION ACCURACY
SGT12015.4 SGR 657.4 SG3 1370.4
RRT .6633 RRF .6438 RTF .9850
SGB12033.4 R23 -.0142 R13 .9850
SG112023.4 SG2 491.7 THA 2.08

ORBIT DETERMINATION ACCURACY
ST 3479.2 SR 495.5 SS 1139.8
CRT .9937 CRS -.8938 CST -.9310
LSA 3672.4 MSA 402.0 SSA 35.1
EL1 3513.9 EL2 55.1 ALF 8.06

LAUNCH DATE DEC 1 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 783.739 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.053 GAL -1.01 AZL 87.79 HCA 232.93 SMA 187.72 ECC .21494 INC 2.2109 V1 30.205
RP 209.66 LAP -1.76 LOP 301.75 VP 23.644 GAP -10.47 AZP 91.33 TAL 354.29 TAP 227.22 RCA 147.37 APO 228.07 V2 26.149
RC 310.607 GL 24.20 GP -4.30 ZAL 95.67 ZAP 43.52 ETS 174.65 ZAE 67.79 ETE 177.63 ZAC 80.38 ETC 257.59 CLP 43.35

PLANETOCENTRIC CONIC

C3 9.670 VHL 3.110 DLA 28.01 RAL 176.58 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.193 DPA 3.45 RAP 165.23 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 14	3259.44	-25.22	114.88	34.73	76.69	13 57 34	2659.4	-26.81	106.57
90.00	11 50 37	3495.32	-20.60	130.61	33.23	70.14	12 48 52	2895.3	-23.13	122.84
100.00	15 17 2	2828.11	-28.84	83.91	35.50	81.78	16 4 10	2228.1	-29.68	75.21
100.00	12 19 30	3401.88	-17.20	122.28	31.75	65.17	13 16 12	2801.9	-20.40	114.95
110.00	17 29 49	2412.53	-34.18	52.84	35.98	89.46	18 10 1	1812.5	-33.88	43.61
110.00	12 23 13	3390.22	-12.49	118.76	29.12	57.92	13 19 43	2790.2	-16.64	112.10

DIFFERENTIAL CORRECTIONS
TDE 1.7104 TRA 1.8709 TC-17.8478 BAU 2.3077
RDE .2584 RRA .1914 RC3 -.2750 FAU .24309
FDE 1.1427 FRA 3.2322 FC-21.7625 BSP 42322
BDE 1.7298 BRA 1.8807 BC317.8499 FSP 4364

MID-COURSE EXECUTION ACCURACY
SGT12181.8 SGR 644.6 SG3 1319.2
RRT .6315 RRF .6109 RTF .9850
SGB12198.8 R23 -.0158 R13 .9850
SG112188.6 SG2 499.5 THA 1.92

ORBIT DETERMINATION ACCURACY
ST 3378.5 SR 491.0 SS 1068.2
CRT .9902 CRS -.8614 CST -.9176
LSA 3552.9 MSA 414.2 SSA 35.4
EL1 3413.3 EL2 68.0 ALF 8.19

LAUNCH DATE DEC 1 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 788.048 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.059 GAL -1.13 AZL 87.81 HCA 234.17 SMA 187.83 ECC .21556 INC 2.1903 V1 30.205
RP 209.44 LAP -1.78 LOP 302.99 VP 23.680 GAP -10.57 AZP 91.28 TAL 353.60 TAP 227.77 RCA 147.34 APO 228.32 V2 26.174
RC 311.551 GL 23.91 GP -4.18 ZAL 96.96 ZAP 42.67 ETS 174.64 ZAE 66.65 ETE 177.61 ZAC 80.58 ETC 257.55 CLP 42.51

PLANETOCENTRIC CONIC

C3 9.718 VHL 3.117 DLA 27.18 RAL 177.75 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.259 DPA 3.41 RAP 165.64 ECC 1.1599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 52	3148.89	-26.73	107.14	36.21	80.29	14 34 21	2548.9	-27.80	98.63
90.00	11 21 17	3607.82	-17.84	137.70	33.45	67.64	12 21 25	3007.8	-20.72	130.21
100.00	15 39 26	2769.89	-29.33	79.66	36.62	83.97	16 25 36	2169.9	-29.86	70.89
100.00	12 6 24	3462.05	-15.44	125.88	32.33	64.08	13 4 6	2862.1	-18.80	118.70
110.00	17 44 13	2379.41	-34.17	50.26	36.87	90.99	18 23 53	1779.4	-33.66	41.05
110.00	12 18 7	3425.29	-11.22	120.67	29.90	57.50	13 15 12	2825.3	-15.42	114.10

DIFFERENTIAL CORRECTIONS
TDE 1.6390 TRA 2.0149 TC-18.0041 BAU 2.3394
RDE .2572 RRA .1922 RC3 -.2303 FAU .23311
FDE .9819 FRA 3.2507 FC-20.7665 BSP 42907
BDE 1.6590 BRA 2.0240 BC318.0055 FSP 4200

MID-COURSE EXECUTION ACCURACY
SGT12345.5 SGR 633.9 SG3 1269.8
RRT .5992 RRF .5775 RTF .9851
SGB12361.7 R23 -.0172 R13 .9851
SG112351.3 SG2 507.2 THA 1.77

ORBIT DETERMINATION ACCURACY
ST 3278.2 SR 487.5 SS 1005.5
CRT .9850 CRS -.8218 CST -.9023
LSA 3436.8 MSA 427.4 SSA 35.6
EL1 3313.2 EL2 83.3 ALF 8.34

LAUNCH DATE DEC 1 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 792.360 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.065	GAL	-1.26	AZL	87.83	HCA	235.40	SMA	187.93	ECC	.21620	INC	2.1703	V1	30.205
RP	209.24	LAP	-1.79	LOP	304.22	VP	23.714	GAP	-10.68	AZP	91.23	TAL	352.90	TAP	228.31	RCA	147.30	APO	228.57	V2	26.198
RC	312.486	GL	23.60	GP	-4.05	ZAL	98.31	ZAP	41.85	ETS	174.63	ZAE	65.54	ETE	177.59	ZAC	80.79	ETC	257.50	CLP	41.69

PLANETOCENTRIC CONIC

C3	9.779	VHL	3.127	DLA	26.33	RAL	178.93	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	4.325	DPA	3.36	RAP	166.07	ECC	1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 7	3074.96	-27.47	101.85	37.45	82.84	15 0 22	2475.0	-28.18	93.26
90.00	11 3 27	3684.19	-15.80	142.38	33.98	66.19	12 4 51	3084.2	-18.89	135.07
100.00	15 59 33	2718.96	-29.64	75.90	37.69	85.93	16 44 52	2119.0	-29.89	67.11
100.00	11 55 43	3515.42	-13.83	129.02	33.01	63.23	12 54 18	2915.4	-17.31	121.96
110.00	17 58 15	2347.54	-34.11	47.77	37.76	92.46	18 37 23	1747.5	-33.39	38.60
110.00	12 13 30	3459.61	-9.95	122.53	30.74	57.13	13 11 9	2859.6	-14.22	116.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5614	TRA	2.1642	TC-18.1346	BAU	2.3709	SGT12505.7	SGR	624.6	SG3	1222.0	ST	3172.1	SR	484.5	SS	948.7
RDE	.2564	RRA	.1930	RC3 -.1878	FAU	.22349	RRT	.5661	RRF	.5433	RTF	.9851	CRT	.9775	CRS	-.7719	CST -.8837
FDE	.8259	FRA	3.2675	FC-19.7863	BSP	43460	SGB12521.3	R23	-.0185	R13	.9850	LSA	3316.6	MSA	443.2	SSA	35.7
BDE	1.5823	BRA	2.1728	BC318.1356	FSP	4042	SG112510.8	SG2	514.7	THA	1.62	EL1	3207.3	EL2	101.0	ALF	8.50

LAUNCH DATE DEC 1 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 796.675 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.071	GAL	-1.39	AZL	87.85	HCA	236.64	SMA	188.04	ECC	.21688	INC	2.1508	V1	30.205
RP	209.04	LAP	-1.80	LOP	305.46	VP	23.748	GAP	-10.78	AZP	91.18	TAL	352.19	TAP	228.83	RCA	147.26	APO	228.82	V2	26.221
RC	313.411	GL	23.29	GP	-3.94	ZAL	99.67	ZAP	41.05	ETS	174.62	ZAE	64.44	ETE	177.57	ZAC	80.99	ETC	257.46	CLP	40.89

PLANETOCENTRIC CONIC

C3	9.852	VHL	3.139	DLA	25.47	RAL	180.12	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.393	DPA	3.29	RAP	166.52	ECC	1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 10	3014.51	-27.91	97.48	38.60	84.98	15 22 25	2414.5	-28.31	88.84
90.00	10 49 54	3747.60	-14.02	146.19	34.65	65.15	11 52 22	3147.6	-17.26	139.01
100.00	16 18 9	2672.84	-29.81	72.48	38.74	87.72	17 2 42	2072.8	-29.81	63.68
100.00	11 46 36	3564.50	-12.31	131.87	33.78	62.54	12 46 1	2964.5	-15.89	124.91
110.00	18 11 58	2316.73	-33.99	45.37	38.67	93.87	18 50 35	1716.7	-33.08	36.25
110.00	12 9 17	3493.37	-8.70	124.34	31.64	56.81	13 7 30	2893.4	-13.01	117.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4808	TRA	2.3185	TC-18.2348	BAU	2.4018	SGT12661.6	SGR	616.7	SG3	1174.4	ST	3066.4	SR	482.4	SS	899.6
RDE	.2563	RRA	.1934	RC3 -.1470	FAU	.21397	RRT	.5320	RRF	.5083	RTF	.9851	CRT	.9672	CRS	-.7132	CST -.8633
FDE	.6805	FRA	3.2760	FC-18.8030	BSP	44008	SGB12676.6	R23	-.0197	R13	.9850	LSA	3198.9	MSA	459.3	SSA	35.8
BDE	1.5029	BRA	2.3265	BC318.2354	FSP	3889	SG112665.8	SG2	522.0	THA	1.49	EL1	3101.8	EL2	121.1	ALF	8.66

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

HELIOCENTRIC CONIC DISTANCE 800.992 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.078	GAL	-1.52	AZL	87.87	HCA	237.88	SMA	188.15	ECC	.21759	INC	2.1318	V1	30.205
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.781	GAP	-10.89	AZP	91.13	TAL	351.46	TAP	229.35	RCA	147.21	APO	229.09	V2	26.243
RC	314.329	GL	22.97	GP	-3.83	ZAL	101.05	ZAP	40.27	ETS	174.62	ZAE	63.37	ETE	177.56	ZAC	81.19	ETC	257.41	CLP	40.12

PLANETOCENTRIC CONIC

C3	9.939	VHL	3.153	DLA	24.59	RAL	181.32	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	4.462	DPA	3.20	RAP	166.99	ECC	1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 51	2961.66	-28.16	93.64	39.72	86.90	15 42 13	2361.7	-28.29	84.98
90.00	10 38 47	3803.94	-12.38	149.51	35.42	64.33	11 42 11	3203.9	-15.74	142.44
100.00	16 35 40	2630.19	-29.89	69.32	39.79	89.38	17 19 30	2030.2	-29.65	60.52
100.00	11 38 39	3610.64	-10.84	134.52	34.63	61.97	12 38 50	3010.6	-14.51	127.64
110.00	18 25 24	2286.87	-33.83	43.05	39.60	95.24	19 3 31	1686.9	-32.73	33.99
110.00	12 5 25	3526.72	-7.45	126.12	32.59	56.54	13 4 12	2926.7	-11.80	119.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3962	TRA	2.4788	TC-18.3056	BAU	2.4323	SGT12814.2	SGR	610.1	SG3	1128.2	ST	2961.1	SR	480.8	SS	857.9
RDE	.2567	RRA	.1937	RC3 -.1085	FAU	.20483	RRT	.4978	RRF	.4729	RTF	.9850	CRT	.9533	CRS	-.6433	CST -.8404
FDE	.5414	FRA	3.2807	FC-17.8419	BSP	44556	SGB12828.7	R23	-.0211	R13	.9850	LSA	3083.2	MSA	477.5	SSA	35.7
BDE	1.4196	BRA	2.4864	BC318.3059	FSP	3741	SG112817.8	SG2	529.0	THA	1.36	EL1	2996.5	EL2	143.5	ALF	8.82

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

HELIOCENTRIC CONIC DISTANCE 805.311 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.084	GAL	-1.66	AZL	87.89	HCA	239.13	SMA	188.26	ECC	.21834	INC	2.1133	V1	30.205
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.814	GAP	-10.99	AZP	91.08	TAL	350.72	TAP	229.85	RCA	147.16	APO	229.37	V2	26.264
RC	315.238	GL	22.64	GP	-3.72	ZAL	102.45	ZAP	39.51	ETS	174.61	ZAE	62.31	ETE	177.55	ZAC	81.39	ETC	257.36	CLP	39.36

PLANETOCENTRIC CONIC

C3	10.040	VHL	3.169	DLA	23.70	RAL	182.53	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.532	DPA	3.10	RAP	167.48	ECC	1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 59	2913.85	-28.29	90.15	40.83	88.64	16 0 33	2313.8	-28.18	81.48
90.00	10 29 17	3855.79	-10.84	152.54	36.28	63.68	11 33 33	3255.8	-14.29	145.56
100.00	16 52 22	2590.20	-29.88	66.34	40.83	90.95	17 35 32	1990.2	-29.43	57.57
100.00	11 31 36	3654.67	-9.42	137.01	35.54	61.50	12 32 30	3054.7	-13.16	130.22
110.00	18 38 35	2257.86	-33.63	40.81	40.54	96.55	19 16 13	1657.9	-32.35	31.81
110.00	12 1 51	3559.78	-6.21	127.87	33.58	56.32	13 1 11	2959.8	-10.59	121.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3081	TRA	2.6456	TC-18.3454	BAU	2.4625	SGT12963.6	SGR	604.7	SG3	1083.3	ST	2858.9	SR	479.9	SS	825.3
RDE	.2577	RRA	.1939	RC3 -.0720	FAU	.19591	RRT	.4633	RRF	.4375	RTF	.9850	CRT	.9349	CRS	-.5642	CST -.8168
FDE	.4116	FRA	3.2838	FC-16.8930	BSP	45083	SGB12977.7	R23	-.0222	R13	.9850	LSA	2972.6	MSA	497.3	SSA	35.6
BDE	1.3333	BRA	2.6527	BC318.3455	FSP	3596	SG112966.6	SG2	535.8	THA	1.24	EL1	2894.1	EL2	168.3	ALF	8.95

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

HELIOCENTRIC CONIC DISTANCE 809.631 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.090	GAL	-1.80	AZL	87.90	HCA	240.38	SMA	188.38	ECC	.21913	INC	2.0953
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.845	GAP	-11.10	AZP	91.04	TAL	349.96	TAP	230.34	RCA	147.10	APO	229.65
RC	316.140	GL	22.30	GP	-3.62	ZAL	103.87	ZAP	38.77	ETS	174.60	ZAE	61.28	ETE	177.54	ZAC	81.60	ETC	257.30

V1	30.205	V2	26.285	CLP	38.63														

PLANETOCENTRIC CONIC

C3	10.157	VHL	3.187	DLA	22.80	RAL	183.74	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	4.603	DPA	2.99	RAP	167.99
ECC	1.1672																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 59	2869.71	-28.32	86.92	41.93	90.26	16 17 49	2269.7	-27.98	78.27
90.00	10 20 58	3904.55	-9.35	155.35	37.21	63.15	11 26 3	3304.6	-12.88	148.45
100.00	17 8 24	2552.37	-29.80	63.53	41.89	92.42	17 50 56	1952.4	-29.15	54.79
100.00	11 25 14	3697.13	-8.04	139.40	36.51	61.11	12 26 51	3097.1	-11.83	132.67
110.00	18 51 34	2229.64	-33.38	38.64	41.51	97.81	19 28 43	1629.6	-31.95	29.71
110.00	11 58 34	3592.62	-4.97	129.60	34.63	56.14	12 58 27	2992.6	-9.38	123.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2157	TRA	2.8190	TC-18.3528	BAU	2.4921	SGT13108.9	SGR	600.5	SG3	1039.4	ST	2760.4	SR	479.5	SS	800.5
RDE	.2592	RRA	.1939	RC3 -.0374	FAU	.18722	RRT	.4288	RRF	.4021	RTF	.9849	CRT	.9108	CRS	-.4760	CST	-.7932
FDE	.2881	FRA	3.2832	FC-15.9579	BSP	45611	SGB13122.6	R23	-.0232	R13	.9849	LSA	2867.1	MSA	518.8	SSA	35.4		
BDE	1.2430	BRA	2.8256	BC318.3529	FSP	3455	SG113111.4	SG2	542.4	THA	1.13	EL1	2794.9	EL2	195.5	ALF	9.04		

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

HELIOCENTRIC CONIC DISTANCE 813.953 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.097	GAL	-1.94	AZL	87.92	HCA	241.62	SMA	188.49	ECC	.21995	INC	2.0777
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.876	GAP	-11.20	AZP	90.99	TAL	349.19	TAP	230.81	RCA	147.03	APO	229.95
RC	317.035	GL	21.95	GP	-3.53	ZAL	105.31	ZAP	38.05	ETS	174.59	ZAE	60.26	ETE	177.52	ZAC	81.80	ETC	257.25

V1	30.205	V2	26.304	CLP	37.91														

PLANETOCENTRIC CONIC

C3	10.290	VHL	3.208	DLA	21.88	RAL	184.96	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	4.676	DPA	2.86	RAP	168.52
ECC	1.1693																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 7	2828.41	-28.27	83.90	43.03	91.77	16 34 15	2228.4	-27.72	75.28
90.00	10 13 34	3951.07	-7.91	158.01	38.21	62.72	11 19 25	3351.1	-11.51	151.17
100.00	17 23 54	2516.33	-29.67	60.86	42.95	93.82	18 5 50	1916.3	-28.82	52.16
100.00	11 19 28	3738.38	-6.67	141.70	37.54	60.79	12 21 46	3138.4	-10.52	135.02
110.00	19 4 19	2202.15	-33.11	36.55	42.49	99.02	19 41 2	1602.1	-31.51	27.69
110.00	11 55 32	3625.33	-3.72	131.31	35.72	56.00	12 55 57	3025.3	-8.16	125.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1214	TRA	2.9987	TC-18.3272	BAU	2.5212	SGT13250.5	SGR	597.2	SG3	996.4	ST	2671.1	SR	479.8	SS	783.8		
RDE	.2612	RRA	.1937	RC3 -.0048	FAU	.17873	RRT	.3946	RRF	.3669	RTF	.9848	CRT	.8803	CRS	-.3829	CST	-.7722	
FDE	.1737	FRA	3.2789	FC-15.0377	BSP	46148	SGB13264.0	R23	-.0243	R13	.9847	LSA	2772.2	MSA	541.1	SSA	35.0		
BDE	1.1514	BRA	3.0050	BC318.3272	FSP	3321	SG113252.6	SG2	548.7	THA	1.02	EL1	2704.5	EL2	224.8	ALF	9.05		

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

HELIOCENTRIC CONIC DISTANCE 818.276 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.103	GAL	-2.09	AZL	87.94	HCA	242.87	SMA	188.60	ECC	.22081	INC	2.0604
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.905	GAP	-11.30	AZP	90.94	TAL	348.41	TAP	231.28	RCA	146.96	APO	230.25
RC	317.924	GL	21.60	GP	-3.43	ZAL	106.77	ZAP	37.35	ETS	174.58	ZAE	59.27	ETE	177.52	ZAC	82.00	ETC	257.19

V1	30.205	V2	26.323	CLP	37.22														

PLANETOCENTRIC CONIC

C3	10.440	VHL	3.231	DLA	20.95	RAL	186.18	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	4.749	DPA	2.72	RAP	169.06
ECC	1.1718																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 33	2789.42	-28.15	81.05	44.14	93.20	16 50 2	2189.4	-27.41	72.46
90.00	10 6 53	3995.89	-6.50	160.55	39.26	62.38	11 13 28	3395.9	-10.15	153.77
100.00	17 38 56	2481.85	-29.49	58.31	44.03	95.15	18 20 18	1881.8	-28.46	49.66
100.00	11 14 10	3778.70	-5.33	143.94	38.62	60.54	12 17 9	3178.7	-9.21	137.31
110.00	19 16 54	2175.36	-32.81	34.51	43.50	100.19	19 53 9	1575.4	-31.05	25.73
110.00	11 52 42	3657.95	-2.48	133.02	36.85	55.90	12 53 40	3058.0	-6.94	126.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0228	TRA	3.1858	TC-18.2722	BAU	2.5503	SGT13390.5	SGR	594.9	SG3	954.8	ST	2590.0	SR	480.6	SS	774.5		
RDE	.2638	RRA	.1933	RC3 .0257	FAU	.17052	RRT	.3606	RRF	.3322	RTF	.9846	CRT	.8420	CRS	-.2870	CST	-.7555	
FDE	.0666	FRA	3.2716	FC-14.1409	BSP	46672	SGB13403.7	R23	-.0252	R13	.9846	LSA	2687.0	MSA	563.9	SSA	34.6		
BDE	1.0562	BRA	3.1916	BC318.2722	FSP	3191	SG113392.2	SG2	554.8	THA	.92	EL1	2621.8	EL2	256.2	ALF	8.97		

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

HELIOCENTRIC CONIC DISTANCE 822.599 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.110	GAL	-2.24	AZL	87.96	HCA	244.13	SMA	188.72	ECC	.22172	INC	2.0435
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.934	GAP	-11.41	AZP	90.89	TAL	347.61	TAP	231.73	RCA	146.88	APO	230.56
RC	318.808	GL	21.24	GP	-3.35	ZAL	108.24	ZAP	36.67	ETS	174.56	ZAE	58.29	ETE	177.51	ZAC	82.21	ETC	257.13

V1	30.205	V2	26.341	CLP	36.54														

PLANETOCENTRIC CONIC

C3	10.608	VHL	3.257	DLA	20.02	RAL	187.41	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	4.824	DPA	2.57	RAP	169.62
ECC	1.1746																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 24	2752.37	-27.98	78.36	45.26	94.54	17 5 17	2152.4	-27.06	69.81
90.00	10 0 47	4039.41	-5.12	163.00	40.37	62.11	11 8 6	3439.4	-8.82	156.27
100.00	17 53 34	2448.73	-29.26	55.88	45.12	96.42	18 34 23	1848.7	-28.06	47.28
100.00	11 9 18	3818.28	-4.00	146.13	39.75	60.35	12 12 56	3218.3	-7.92	139.53
110.00	19 29 17	2149.25	-32.48	32.55	44.54	101.31	20 5 7	1549.3	-30.58	23.85
110.00	11 50 4	3690.53	-1.23	134.72	38.03	55.84	12 51 35	3090.5	-5.71	128.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9207	TRA	3.3787	TC-18.1847	BAU	2.5789	SGT13526.0	SGR	593.3	SG3	914.1	ST	2520.1	SR	482.0	SS	771.1		
RDE	.2670	RRA	.1927	RC3 .0542	FAU	.16256	RRT	.3271	RRF	.2977	RTF	.9844	CRT	.7951	CRS	-.1905	CST	-.7442	
FDE	-.0340	FRA	3.2597	FC-13.2670	BSP	47182	SGB13539.0	R23	-.0263	R13	.9844	LSA	2613.9	MSA	586.7	SSA	34.1		
BDE	.9586	BRA	3.3842	BC318.1848	FSP	3062	SG113527.4	SG2	560.6	THA	.82	EL1	2549.5	EL2	289.0	ALF	8.76		

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

HELIOCENTRIC CONIC DISTANCE 826.922 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.116 GAL -2.39 AZL 87.97 HCA 245.38 SMA 188.84 ECC .22266 INC 2.0270 V1 30.205
RP 207.86 LAP -1.84 LOP 314.21 VP 23.962 GAP -11.51 AZP 90.84 TAL 346.79 TAP 232.17 RCA 146.79 APO 230.89 V2 26.357
RC 319.685 GL 20.87 GP -3.26 ZAL 109.72 ZAP 36.01 ETS 174.55 ZAE 57.32 ETE 177.50 ZAC 82.41 ETC 257.08 CLP 35.88

PLANETOCENTRIC CONIC

C3 10.795 VHL 3.286 DLA 19.07 RAL 188.63 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 4.899 DPA 2.40 RAP 170.20 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 46	2717.00	-27.76	75.79	46.40	95.81	17 20 3	2117.0	-26.67	67.29
90.00	9 55 11	4081.90	-3.77	165.39	41.53	61.91	11 3 13	3481.9	-7.49	158.69
100.00	18 7 51	2416.85	-28.99	53.55	46.23	97.62	18 48 8	1816.9	-27.64	45.01
100.00	11 4 47	3857.28	-2.68	148.28	40.93	60.22	12 9 5	3257.3	-6.63	141.71
110.00	19 41 30	2123.81	-32.12	30.65	45.59	102.38	20 16 54	1523.8	-30.08	22.03
110.00	11 47 37	3723.08	.01	136.42	39.25	55.82	12 49 40	3123.1	-4.47	130.20

DIFFERENTIAL CORRECTIONS
TDE .8165 TRA 3.5792 TC-18.0639 BAU 2.6070
RDE .2707 RRA .1920 RC3 .0806 FAU .15480
FDE -.1264 FRA 3.2469 FC-12.4145 BSP 47702
BDE .8602 BRA 3.5843 BC318.0641 FSP 2940

MID-COURSE EXECUTION ACCURACY
SGT13658.0 SGR 592.5 SG3 874.7
RRT .2944 RRF .2643 RTF .9842
SGB13670.8 R23 -.0271 R13 .9842
SG113659.1 SG2 566.2 THA .73

ORBIT DETERMINATION ACCURACY
ST 2465.7 SR 483.9 SS 773.5
CRT .7394 CRS -.0978 CST -.7400
LSA 2557.5 MSA 608.5 SSA 33.6
EL1 2492.0 EL2 322.4 ALF 8.40

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

HELIOCENTRIC CONIC DISTANCE 831.245 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.123 GAL -2.55 AZL 87.99 HCA 246.64 SMA 188.96 ECC .22366 INC 2.0107 V1 30.205
RP 207.73 LAP -1.85 LOP 315.46 VP 23.988 GAP -11.62 AZP 90.80 TAL 345.96 TAP 232.60 RCA 146.70 APO 231.22 V2 26.373
RC 320.558 GL 20.49 GP -3.18 ZAL 111.21 ZAP 35.36 ETS 174.54 ZAE 56.38 ETE 177.49 ZAC 82.62 ETC 257.02 CLP 35.24

PLANETOCENTRIC CONIC

C3 11.002 VHL 3.317 DLA 18.12 RAL 189.85 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.976 DPA 2.23 RAP 170.79 ECC 1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 42	2683.12	-27.51	73.34	47.56	97.01	17 34 25	2083.1	-26.25	64.90
90.00	9 50 1	4123.57	-2.43	167.72	42.74	61.78	10 58 44	3523.6	-6.18	161.05
100.00	18 21 48	2386.12	-28.70	51.31	47.37	98.76	19 1 34	1786.1	-27.19	42.83
100.00	11 0 36	3895.80	-1.38	150.39	42.15	60.14	12 5 31	3295.8	-5.34	143.85
110.00	19 53 33	2099.04	-31.74	28.82	46.68	103.41	20 28 32	1499.0	-29.57	20.28
110.00	11 45 20	3755.64	1.26	138.12	40.51	55.84	12 47 55	3155.6	-3.23	131.91

DIFFERENTIAL CORRECTIONS
TDE .7091 TRA 3.7863 TC-17.9154 BAU 2.6352
RDE .2749 RRA .1910 RC3 .1052 FAU .14724
FDE -.2124 FRA 3.2295 FC-11.5863 BSP 48206
BDE .7605 BRA 3.7911 BC317.9157 FSP 2819

MID-COURSE EXECUTION ACCURACY
SGT13787.9 SGR 592.4 SG3 836.2
RRT .2621 RRF .2314 RTF .9839
SGB13800.6 R23 -.0279 R13 .9839
SG113788.8 SG2 571.6 THA .65

ORBIT DETERMINATION ACCURACY
ST 2426.8 SR 486.2 SS 779.7
CRT .6745 CRS -.0098 CST -.7426
LSA 2517.5 MSA 628.2 SSA 33.0
EL1 2449.3 EL2 355.6 ALF 7.8

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

HELIOCENTRIC CONIC DISTANCE 835.567 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.130 GAL -2.71 AZL 88.01 HCA 247.89 SMA 189.08 ECC .22469 INC 1.9947 V1 30.205
RP 207.60 LAP -1.85 LOP 316.72 VP 24.014 GAP -11.72 AZP 90.75 TAL 345.12 TAP 233.01 RCA 146.60 APO 231.57 V2 26.388
RC 321.425 GL 20.10 GP -3.11 ZAL 112.71 ZAP 34.73 ETS 174.53 ZAE 55.45 ETE 177.49 ZAC 82.82 ETC 256.96 CLP 34.61

PLANETOCENTRIC CONIC

C3 11.231 VHL 3.351 DLA 17.16 RAL 191.07 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 5.055 DPA 2.04 RAP 171.39 ECC 1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 15	2650.60	-27.21	71.01	48.73	98.14	17 48 25	2050.6	-25.81	62.62
90.00	9 45 12	4164.55	-1.11	170.00	43.99	61.70	10 54 37	3564.6	-4.88	163.36
100.00	18 35 28	2356.46	-28.37	49.17	48.52	99.84	19 14 44	1756.5	-26.72	40.75
100.00	10 56 41	3933.93	-.08	152.48	43.42	60.11	12 2 14	3333.9	-4.06	145.95
110.00	20 5 26	2074.93	-31.35	27.05	47.79	104.38	20 40 1	1474.9	-29.06	18.59
110.00	11 43 11	3788.22	2.50	139.82	41.81	55.90	12 46 19	3188.2	-1.99	133.61

DIFFERENTIAL CORRECTIONS
TDE .5994 TRA 4.0006 TC-17.7343 BAU 2.6628
RDE .2797 RRA .1897 RC3 .1276 FAU .13994
FDE -.2917 FRA 3.2074 FC-10.7871 BSP 48723
BDE .6615 BRA 4.0051 BC317.7347 FSP 2705

MID-COURSE EXECUTION ACCURACY
SGT13913.3 SGR 592.7 SG3 798.7
RRT .2308 RRF .1991 RTF .9836
SGB13925.9 R23 -.0290 R13 .9836
SG113914.0 SG2 576.6 THA .56

ORBIT DETERMINATION ACCURACY
ST 2406.1 SR 489.0 SS 788.5
CRT .6017 CRS .0722 CST -.7513
LSA 2496.7 MSA 644.9 SSA 32.2
EL1 2424.5 EL2 387.6 ALF 7.16

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

HELIOCENTRIC CONIC DISTANCE 839.888 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.137 GAL -2.88 AZL 88.02 HCA 249.15 SMA 189.20 ECC .22578 INC 1.9790 V1 30.205
RP 207.48 LAP -1.85 LOP 317.98 VP 24.039 GAP -11.83 AZP 90.70 TAL 344.27 TAP 233.42 RCA 146.49 APO 231.92 V2 26.402
RC 322.286 GL 19.71 GP -3.04 ZAL 114.21 ZAP 34.12 ETS 174.51 ZAE 54.53 ETE 177.48 ZAC 83.03 ETC 256.90 CLP 34.00

PLANETOCENTRIC CONIC

C3 11.482 VHL 3.388 DLA 16.20 RAL 192.29 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 5.134 DPA 1.84 RAP 172.01 ECC 1.1890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 27	2619.34	-26.89	68.78	49.93	99.22	18 2 6	2019.3	-25.34	60.45
90.00	9 40 43	4204.98	.20	172.26	45.29	61.68	10 50 48	3605.0	-3.59	165.62
100.00	18 48 51	2327.82	-28.02	47.11	49.70	100.87	19 27 38	1727.8	-26.23	38.76
100.00	10 53 0	3971.74	1.20	154.56	44.73	60.13	11 59 12	3371.7	-2.79	148.03
110.00	20 17 10	2051.49	-30.94	25.34	48.92	105.32	20 51 21	1451.5	-28.53	16.97
110.00	11 41 11	3820.83	3.74	141.52	43.15	56.00	12 44 52	3220.8	-.75	135.31

DIFFERENTIAL CORRECTIONS
TDE .4861 TRA 4.2218 TC-17.5261 BAU 2.6904
RDE .2851 RRA .1882 RC3 .1482 FAU .13279
FDE -.3652 FRA 3.1825 FC-10.0122 BSP 49209
BDE .5635 BRA 4.2259 BC317.5267 FSP 2591

MID-COURSE EXECUTION ACCURACY
SGT14035.9 SGR 593.5 SG3 762.2
RRT .2000 RRF .1676 RTF .9832
SGB14048.5 R23 -.0300 R13 .9832
SG114036.4 SG2 581.5 THA .49

ORBIT DETERMINATION ACCURACY
ST 2403.3 SR 492.2 SS 799.5
CRT .5215 CRS .1478 CST -.7650
LSA 2494.7 MSA 658.0 SSA 31.5
EL1 2417.4 EL2 417.5 ALF 6.28

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

HELIOCENTRIC CONIC DISTANCE 844.206 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.144 GAL -3.05 AZL 88.04 HCA 250.41 SMA 189.33 ECC .22692 INC 1.9636 V1 30.205
RP 207.36 LAP -1.85 LOP 319.24 VP 24.063 GAP -11.94 AZP 90.66 TAL 343.40 TAP 233.81 RCA 146.37 APO 232.29 V2 26.416
RC 323.141 GL 19.31 GP -2.97 ZAL 115.72 ZAP 33.52 ETS 174.50 ZAE 53.63 ETE 177.48 ZAC 83.23 ETC 256.84 CLP 33.40

PLANETOCENTRIC CONIC

C3 11.757 VHL 3.429 DLA 15.24 RAL 193.50 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 5.215 DPA 1.63 RAP 172.65 ECC 1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 19	2589.26	-26.55	66.64	51.15	100.23	18 15 28	1989.3	-24.86	58.38
90.00	9 36 32	4244.93	1.49	174.49	46.63	61.72	10 47 17	3644.9	-2.30	167.86
100.00	19 1 58	2300.16	-27.65	45.14	50.91	101.84	19 40 18	1700.2	-25.74	36.86
100.00	10 49 34	4009.27	2.47	156.62	46.09	60.20	11 56 23	3409.3	-1.51	150.10
110.00	20 28 43	2028.73	-30.52	23.70	50.08	106.20	21 2 32	1428.7	-28.00	15.42
110.00	11 39 18	3853.47	4.98	143.24	44.52	56.14	12 43 32	3253.5	.50	137.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3706 TRA 4.4505 TC-17.2930 BAU 2.7182 SGT14157.2 SGR 594.7 SG3 726.9 ST 2420.1 SR 495.7 SS 811.4
RDE .2909 RRA .1864 RC3 .1668 FAU .12590 RRT .1702 RRF .1369 RTF .9827 CRT .4367 CRS .2164 CST -.7822
FDE -.4324 FRA 3.1538 FC3-9.2710 BSP 49705 SGB14169.6 R23 -.0311 R13 .9827 LSA 2513.0 MSA 667.0 SSA 30.8
BDE .4712 BRA 4.4544 BC317.2938 FSP 2482 SG114157.5 SG2 586.0 THA .41 EL1 2430.1 EL2 444.1 ALF 5.29

LAUNCH DATE DEC 1 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 848.523 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.151 GAL -3.22 AZL 88.05 HCA 251.67 SMA 189.45 ECC .22811 INC 1.9483 V1 30.205
RP 207.26 LAP -1.85 LOP 320.50 VP 24.086 GAP -12.05 AZP 90.61 TAL 342.51 TAP 234.18 RCA 146.24 APO 232.67 V2 26.428
RC 323.990 GL 18.91 GP -2.90 ZAL 117.23 ZAP 32.94 ETS 174.48 ZAE 52.75 ETE 177.47 ZAC 83.44 ETC 256.78 CLP 32.82

PLANETOCENTRIC CONIC

C3 12.057 VHL 3.472 DLA 14.27 RAL 194.71 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 5.297 DPA 1.41 RAP 173.30 ECC 1.1984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 54	2560.30	-26.18	64.60	52.39	101.19	18 28 34	1960.3	-24.37	56.40
90.00	9 32 35	4284.49	2.76	176.70	48.02	61.81	10 44 0	3684.5	-1.03	170.07
100.00	19 14 50	2273.45	-27.26	43.25	52.13	102.77	19 52 44	1673.5	-25.23	35.04
100.00	10 46 20	4046.57	3.73	158.67	47.48	60.32	11 53 46	3446.6	-.25	152.14
110.00	20 40 7	2006.65	-30.09	22.13	51.27	107.04	21 13 33	1406.7	-27.46	13.92
110.00	11 37 33	3886.14	6.22	144.96	45.94	56.32	12 42 19	3286.1	1.75	138.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2538 TRA 4.6865 TC-17.0321 BAU 2.7455 SGT14274.1 SGR 596.3 SG3 692.3 ST 2455.9 SR 499.6 SS 823.2
RDE .2974 RRA .1844 RC3 .1837 FAU .11913 RRT .1412 RRF .1073 RTF .9822 CRT .3501 CRS .2774 CST -.8014
FDE -.4927 FRA 3.1223 FC3-8.5543 BSP 50193 SGB14286.5 R23 -.0320 R13 .9822 LSA 2550.9 MSA 671.4 SSA 30.1
BDE .3909 BRA 4.6901 BC317.0331 FSP 2375 SG114274.3 SG2 590.4 THA .34 EL1 2462.4 EL2 466.8 ALF 4.23

LAUNCH DATE DEC 1 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 852.836 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.158 GAL -3.40 AZL 88.07 HCA 252.94 SMA 189.58 ECC .22935 INC 1.9333 V1 30.205
RP 207.16 LAP -1.85 LOP 321.77 VP 24.108 GAP -12.16 AZP 90.57 TAL 341.61 TAP 234.55 RCA 146.10 APO 233.06 V2 26.439
RC 324.833 GL 18.50 GP -2.84 ZAL 118.73 ZAP 32.37 ETS 174.46 ZAE 51.87 ETE 177.47 ZAC 83.65 ETC 256.72 CLP 32.26

PLANETOCENTRIC CONIC

C3 12.383 VHL 3.519 DLA 13.31 RAL 195.91 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 5.380 DPA 1.18 RAP 173.96 ECC 1.2038

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 11	2532.42	-25.80	62.65	53.65	102.10	18 41 24	1932.4	-23.87	54.51
90.00	9 28 53	4323.70	4.02	178.89	49.45	61.95	10 40 56	3723.7	.24	172.25
100.00	19 27 29	2247.69	-26.86	41.44	53.38	103.64	20 4 56	1647.7	-24.72	33.29
100.00	10 43 16	4083.66	4.98	160.72	48.92	60.49	11 51 20	3483.7	1.01	154.18
110.00	20 51 21	1985.28	-29.65	20.62	52.49	107.84	21 24 26	1385.3	-26.93	12.49
110.00	11 35 54	3918.84	7.45	146.69	47.40	56.54	12 41 13	3318.8	3.00	140.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1328 TRA 4.9295 TC-16.7508 BAU 2.7734 SGT14389.3 SGR 598.2 SG3 658.9 ST 2508.7 SR 503.9 SS 834.6
RDE .3043 RRA .1821 RC3 .1986 FAU .11261 RRT .1129 RRF .0781 RTF .9816 CRT .2625 CRS .3331 CST -.8211
FDE -.5482 FRA 3.0861 FC3-7.8727 BSP 50673 SGB14401.8 R23 -.0331 R13 .9816 LSA 2606.1 MSA 672.0 SSA 29.3
BDE .3320 BRA 4.9328 BC316.7519 FSP 2272 SG114389.5 SG2 594.4 THA .27 EL1 2512.3 EL2 485.5 ALF 3.13

LAUNCH DATE DEC 1 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 857.146 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.165 GAL -3.58 AZL 88.08 HCA 254.20 SMA 189.70 ECC .23065 INC 1.9184 V1 30.205
RP 207.08 LAP -1.85 LOP 323.03 VP 24.129 GAP -12.27 AZP 90.52 TAL 340.70 TAP 234.90 RCA 145.95 APO 233.46 V2 26.449
RC 325.671 GL 18.09 GP -2.78 ZAL 120.24 ZAP 31.82 ETS 174.45 ZAE 51.02 ETE 177.46 ZAC 83.86 ETC 256.66 CLP 31.71

PLANETOCENTRIC CONIC

C3 12.738 VHL 3.569 DLA 12.34 RAL 197.11 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 5.464 DPA .94 RAP 174.63 ECC 1.2096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 13	2505.59	-25.40	60.79	54.94	102.95	18 53 59	1905.6	-23.37	52.71
90.00	9 25 23	4362.59	5.26	181.07	50.92	62.14	10 38 5	3762.6	1.49	174.42
100.00	19 39 53	2222.84	-26.45	39.71	54.66	104.46	20 16 56	1622.8	-24.20	31.63
100.00	10 40 23	4120.57	6.21	162.76	50.40	60.70	11 49 4	3520.6	2.26	156.20
110.00	21 2 25	1964.61	-29.21	19.17	53.73	108.60	21 35 9	1364.6	-26.40	11.12
110.00	11 34 21	3951.56	8.68	148.43	48.89	56.81	12 40 13	3351.6	4.25	142.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0105 TRA 5.1803 TC-16.4480 BAU 2.8013 SGT14502.3 SGR 600.3 SG3 626.5 ST 2578.1 SR 508.3 SS 844.7
RDE .3118 RRA .1795 RC3 .2117 FAU .10630 RRT .0856 RRF .0498 RTF .9809 CRT .1777 CRS .3829 CST -.8399
FDE -.5979 FRA 3.0465 FC3-7.2244 BSP 51128 SGB14514.8 R23 -.0344 R13 .9809 LSA 2677.7 MSA 669.3 SSA 28.6
BDE .3120 BRA 5.1834 BC316.4494 FSP 2169 SG114502.4 SG2 598.1 THA .20 EL1 2579.8 EL2 499.9 ALF 2.08

LAUNCH DATE DEC 1 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 861.451 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.172	GAL	-3.77	AZL	88.10	HCA	255.46	SMA	189.83	ECC	.23201	INC	1.9038
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.149	GAP	-12.39	AZP	90.48	TAL	339.77	TAP	235.24	RCA	145.79	APO	233.88
RC	326.503	GL	17.67	GP	-2.72	ZAL	121.74	ZAP	31.28	ETS	174.43	ZAE	50.17	ETE	177.46	ZAC	84.07	ETC	256.60

V1	30.205	V2	26.459	CLP	31.17														

PLANETOCENTRIC CONIC

C3	13.123	VHL	3.623	DLA	11.39	RAL	198.29	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	5.550	DPA	.69	RAP	175.32
ECC	1.2160																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 59	2479.77	-25.00	59.00	56.25	103.76	19 6 19	1879.8	-22.86	50.99
90.00	9 22 4	4401.21	6.49	183.25	52.42	62.38	10 35 25	3801.2	2.74	176.58
100.00	19 52 5	2198.91	-26.03	38.05	55.96	105.24	20 28 43	1598.9	-23.69	30.04
100.00	10 37 40	4157.31	7.43	164.81	51.91	60.96	11 46 57	3557.3	3.50	158.22
110.00	21 13 19	1944.68	-28.77	17.78	55.00	109.31	21 45 44	1344.7	-25.87	9.81
110.00	11 32 54	3984.30	9.89	150.19	50.42	57.11	12 39 19	3384.3	5.49	143.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1135	TRA	5.4383	TC-16.1249	BAU	2.8292	SGT14611.7	SGR	602.7	SG3	595.0	ST	2661.5	SR	513.1	SS	853.0		
RDE	.3199	RRA	.1766	RC3	.2232	FAU	.10015	RRT	.0590	RRF	.0224	RTF	.9801	CRT	.0970	CRS	.4273	CST	-.8574
FDE	-.6418	FRA	3.0033	FC3-6.6072	BSP	51589	SGB14624.1	R23	-.0356	R13	.9801	LSA	2762.8	MSA	663.8	SSA	27.8		
BDE	.3394	BRA	5.4411	BC316.1265	FSP	2071	SG114611.7	SG2	601.6	THA	.14	EL1	2662.0	EL2	510.6	ALF	1.11		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 865.752 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.179	GAL	-3.96	AZL	88.11	HCA	256.73	SMA	189.96	ECC	.23343	INC	1.8892
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.168	GAP	-12.51	AZP	90.43	TAL	338.83	TAP	235.56	RCA	145.62	APO	234.30
RC	327.330	GL	17.25	GP	-2.66	ZAL	123.23	ZAP	30.75	ETS	174.41	ZAE	49.34	ETE	177.45	ZAC	84.29	ETC	256.55

V1	30.205	V2	26.467	CLP	30.65														

PLANETOCENTRIC CONIC

C3	13.539	VHL	3.680	DLA	10.43	RAL	199.47	RAD	6567.5	VEL	11.616	PTH	2.04	VHP	5.638	DPA	.44	RAP	176.02
ECC	1.2228																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 31	2454.95	-24.58	57.30	57.59	104.52	19 18 26	1855.0	-22.35	49.34
90.00	9 18 55	4439.57	7.69	185.43	53.97	62.66	10 32 55	3839.6	3.97	178.72
100.00	20 4 3	2175.88	-25.61	36.47	57.28	105.97	20 40 19	1575.9	-23.17	28.52
100.00	10 35 5	4193.88	8.63	166.86	53.47	61.27	11 44 59	3593.9	4.73	160.24
110.00	21 24 4	1925.48	-28.33	16.46	56.29	109.98	21 56 9	1325.5	-25.35	8.56
110.00	11 31 33	4017.04	11.10	151.96	51.99	57.46	12 38 30	3417.0	6.73	145.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2407	TRA	5.7046	TC-15.7848	BAU	2.8574	SGT14719.3	SGR	605.2	SG3	564.5	ST	2757.6	SR	518.0	SS	859.8		
RDE	.3284	RRA	.1734	RC3	.2330	FAU	.09420	RRT	.0332	RRF	-.0045	RTF	.9792	CRT	.0208	CRS	.4677	CST	-.8730
FDE	-.6814	FRA	2.9564	FC3-6.0236	BSP	52026	SGB14731.7	R23	-.0371	R13	.9792	LSA	2860.1	MSA	656.5	SSA	27.1		
BDE	.4072	BRA	5.7072	BC315.7866	FSP	1975	SG114719.3	SG2	604.9	THA	.08	EL1	2757.6	EL2	517.9	ALF	.23		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 870.048 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.186	GAL	-4.16	AZL	88.13	HCA	258.00	SMA	190.09	ECC	.23491	INC	1.8749
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.186	GAP	-12.62	AZP	90.39	TAL	337.88	TAP	235.87	RCA	145.44	APO	234.75
RC	328.152	GL	16.83	GP	-2.61	ZAL	124.71	ZAP	30.24	ETS	174.39	ZAE	48.52	ETE	177.45	ZAC	84.50	ETC	256.49

V1	30.205	V2	26.474	CLP	30.14														

PLANETOCENTRIC CONIC

C3	13.988	VHL	3.740	DLA	9.49	RAL	200.64	RAD	6567.6	VEL	11.635	PTH	2.04	VHP	5.727	DPA	.17	RAP	176.73
ECC	1.2302																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 48	2431.12	-24.17	55.68	58.95	105.23	19 30 19	1831.1	-21.84	47.78
90.00	9 15 57	4477.69	8.88	187.60	55.56	63.00	10 30 34	3877.7	5.19	180.86
100.00	20 15 48	2153.75	-25.19	34.96	58.63	106.66	20 51 42	1553.8	-22.66	27.07
100.00	10 32 38	4230.30	9.82	168.91	55.06	61.62	11 43 8	3630.3	5.95	162.26
110.00	21 34 39	1907.03	-27.90	15.21	57.61	110.61	22 6 26	1307.0	-24.84	7.37
110.00	11 30 16	4049.78	12.29	153.74	53.59	57.85	12 37 46	3449.8	7.96	147.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3687	TRA	5.9783	TC-15.4297	BAU	2.8859	SGT14823.9	SGR	607.8	SG3	534.8	ST	2863.3	SR	523.1	SS	863.9		
RDE	.3375	RRA	.1698	RC3	.2412	FAU	.08839	RRT	.0083	RRF	-.0305	RTF	.9782	CRT	-.0491	CRS	.5037	CST	-.8867
FDE	-.7152	FRA	2.9057	FC3-5.4707	BSP	52469	SGB14836.4	R23	-.0386	R13	.9782	LSA	2966.2	MSA	647.8	SSA	26.4		
BDE	.4999	BRA	5.9807	BC315.4316	FSP	1881	SG114823.9	SG2	607.8	THA	.02	EL1	2863.5	EL2	522.5	ALF	179.47		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 874.337 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.194	GAL	-4.36	AZL	88.14	HCA	259.26	SMA	190.22	ECC	.23646	INC	1.8606
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.203	GAP	-12.75	AZP	90.35	TAL	336.91	TAP	236.17	RCA	145.24	APO	235.20
RC	328.970	GL	16.41	GP	-2.56	ZAL	126.18	ZAP	29.74	ETS	174.37	ZAE	47.72	ETE	177.44	ZAC	84.72	ETC	256.44

V1	30.205	V2	26.480	CLP	29.64														

PLANETOCENTRIC CONIC

C3	14.473	VHL	3.804	DLA	8.55	RAL	201.79	RAD	6567.6	VEL	11.656	PTH	2.05	VHP	5.817	DPA	-.10	RAP	177.45
ECC	1.2382																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 52	2408.26	-23.75	54.14	60.33	105.89	19 42 0	1808.3	-21.34	46.29
90.00	9 13 7	4515.59	10.04	189.78	57.18	63.38	10 28 22	3915.6	6.39	183.00
100.00	20 27 21	2132.52	-24.76	33.52	60.00	107.30	21 2 54	1532.5	-22.16	25.69
100.00	10 30 18	4266.57	10.98	170.97	56.69	62.02	11 41 25	3666.6	7.16	164.27
110.00	21 45 4	1889.34	-27.47	14.01	58.95	111.20	22 16 33	1289.3	-24.34	6.24
110.00	11 29 5	4082.51	13.47	155.55	55.23	58.28	12 37 7	3482.5	9.18	149.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4985	TRA	6.2601	TC-15.0636	BAU	2.9150	SGT14927.4	SGR	610.6	SG3	506.1	ST	2977.1	SR	528.4	SS	865.7		
RDE	.3472	RRA	.1659	RC3	.2479	FAU	.08279	RRT	-.0160	RRF	-.0560	RTF	.9770	CRT	-.1130	CRS	.5365	CST	-.8983
FDE	-.7446	FRA	2.8509	FC3-4.9525	BSP	52879	SGB14939.9	R23	.0403	R13	-.9770	LSA	3079.5	MSA	638.6	SSA	25.7		
BDE	.6075	BRA	6.2623	BC315.0657	FSP	1788	SG114927.4	SG2	610.5	THA	179.96	EL1	2977.7	EL2	524.9	ALF	178.81		

LAUNCH DATE DEC 1 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 878.619 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.201 GAL -4.56 AZL 88.15 HCA 260.53 SMA 190.36 ECC .23808 INC 1.8465 V1 30.205
RP 206.77 LAP -1.82 LOP 329.37 VP 24.218 GAP -12.87 AZP 90.30 TAL 335.93 TAP 236.46 RCA 145.04 APO 235.68 V2 26.486
RC 329.784 GL 15.99 GP -2.51 ZAL 127.65 ZAP 29.25 ETS 174.35 ZAE 46.93 ETE 177.43 ZAC 84.93 ETC 256.38 CLP 29.16

PLANETOCENTRIC CONIC

C3 14.995 VHL 3.872 DLA 7.62 RAL 202.94 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 5.909 DPA -.38 RAP 178.18 ECC 1.2468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 42	2386.36	-23.33	52.67	61.74	106.52	19 53 28	1786.4	-20.85	44.88
90.00	9 10 25	4553.27	11.18	191.96	58.84	63.81	10 26 18	3953.3	7.57	185.14
100.00	20 38 42	2112.19	-24.35	32.16	61.39	107.90	21 13 55	1512.2	-21.67	24.38
100.00	10 28 5	4302.68	12.13	173.04	58.35	62.47	11 39 48	3702.7	8.35	166.29
110.00	21 55 19	1872.42	-27.05	12.87	60.31	111.75	22 26 32	1272.4	-23.85	5.17
110.00	11 27 58	4115.21	14.63	157.37	56.91	58.76	12 36 33	3515.2	10.39	150.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6305 TRA 6.5504 TC-14.6847 BAU 2.9442 SGT15027.6 SGR 613.4 SG3 478.2 ST 3097.2 SR 533.7 SS 865.4
RDE .3573 RRA .1616 RC3 .2533 FAU .07732 RRT -.0395 RRF -.0809 RTF .9757 CRT -.1711 CRS .5665 CST -.9081
FDE -.7700 FRA 2.7927 FC3-4.4640 BSP 53290 SGB15040.1 R23 .0423 R13 -.9757 LSA 3198.4 MSA 629.2 SSA 25.0
BDE .7247 BRA 6.5524 BC314.6869 FSP 1698 SG115027.6 SG2 612.9 THA 179.91 EL1 3098.6 EL2 525.6 ALF 178.26

LAUNCH DATE DEC 1 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 882.894 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.208 GAL -4.77 AZL 88.17 HCA 261.80 SMA 190.49 ECC .23977 INC 1.8325 V1 30.205
RP 206.73 LAP -1.81 LOP 330.64 VP 24.233 GAP -13.00 AZP 90.26 TAL 334.93 TAP 236.73 RCA 144.82 APO 236.16 V2 26.490
RC 330.595 GL 15.56 GP -2.46 ZAL 129.09 ZAP 28.78 ETS 174.32 ZAE 46.14 ETE 177.42 ZAC 85.15 ETC 256.33 CLP 28.68

PLANETOCENTRIC CONIC

C3 15.556 VHL 3.944 DLA 6.71 RAL 204.07 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 6.002 DPA -.67 RAP 178.92 ECC 1.2560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 19	2365.41	-22.92	51.27	63.16	107.10	20 4 44	1765.4	-20.36	43.53
90.00	9 7 51	4590.73	12.30	194.14	60.54	64.29	10 24 21	3990.7	8.74	187.27
100.00	20 49 51	2092.74	-23.93	30.86	62.81	108.47	21 24 44	1492.7	-21.19	23.14
100.00	10 25 59	4338.64	13.25	175.12	60.06	62.96	11 38 18	3738.6	9.52	168.32
110.00	22 5 25	1856.28	-26.63	11.80	61.70	112.26	22 36 21	1256.3	-23.38	4.15
110.00	11 26 55	4147.87	15.77	159.21	58.62	59.27	12 36 3	3547.9	11.58	152.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7638 TRA 6.8483 TC-14.2997 BAU 2.9744 SGT15126.4 SGR 616.2 SG3 451.2 ST 3221.2 SR 539.1 SS 862.0
RDE .3680 RRA .1570 RC3 .2573 FAU .07204 RRT -.0624 RRF -.1052 RTF .9742 CRT -.2236 CRS .5936 CST -.9164
FDE -.7905 FRA 2.7302 FC3-4.0091 BSP 53681 SGB15139.0 R23 .0444 R13 -.9742 LSA 3320.5 MSA 619.7 SSA 24.4
BDE .8478 BRA 6.8501 BC314.3021 FSP 1610 SG115126.5 SG2 615.0 THA 179.85 EL1 3223.5 EL2 525.0 ALF 177.80

LAUNCH DATE DEC 1 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 887.161 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.216 GAL -4.99 AZL 88.18 HCA 263.07 SMA 190.62 ECC .24153 INC 1.8185 V1 30.205
RP 206.70 LAP -1.81 LOP 331.90 VP 24.247 GAP -13.13 AZP 90.22 TAL 333.92 TAP 236.99 RCA 144.58 APO 236.67 V2 26.493
RC 331.403 GL 15.14 GP -2.41 ZAL 130.53 ZAP 28.32 ETS 174.30 ZAE 45.38 ETE 177.42 ZAC 85.37 ETC 256.28 CLP 28.22

PLANETOCENTRIC CONIC

C3 16.159 VHL 4.020 DLA 5.80 RAL 205.19 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 6.098 DPA -.97 RAP 179.68 ECC 1.2659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 43	2345.41	-22.51	49.94	64.61	107.64	20 15 49	1745.4	-19.89	42.25
90.00	9 5 24	4627.99	13.39	196.34	62.28	64.81	10 22 32	4028.0	9.89	189.41
100.00	21 0 49	2074.18	-23.53	29.63	64.25	108.99	21 35 23	1474.2	-20.72	21.96
100.00	10 23 59	4374.45	14.35	177.21	61.80	63.49	11 36 54	3774.4	10.68	170.35
110.00	22 15 21	1840.92	-26.23	10.78	63.11	112.74	22 46 1	1240.9	-22.92	3.19
110.00	11 25 57	4180.47	16.90	161.06	60.37	59.83	12 35 37	3580.5	12.76	154.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8995 TRA 7.1538 TC-13.9101 BAU 3.0055 SGT15223.4 SGR 619.1 SG3 425.0 ST 3348.2 SR 544.5 SS 856.4
RDE .3792 RRA .1520 RC3 .2601 FAU .06691 RRT -.0848 RRF -.1291 RTF .9725 CRT -.2711 CRS .6188 CST -.9232
FDE -.8073 FRA 2.6642 FC3-3.5848 BSP 54032 SGB15236.0 R23 .0467 R13 -.9725 LSA 3444.9 MSA 610.3 SSA 23.8
BDE .9762 BRA 7.1555 BC313.9125 FSP 1524 SG115223.5 SG2 616.9 THA 179.80 EL1 3351.5 EL2 523.6 ALF 177.41

LAUNCH DATE DEC 1 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 891.418 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.223 GAL -5.21 AZL 88.20 HCA 264.34 SMA 190.76 ECC .24338 INC 1.8046 V1 30.205
RP 206.68 LAP -1.80 LOP 333.17 VP 24.259 GAP -13.26 AZP 90.18 TAL 332.90 TAP 237.24 RCA 144.33 APO 237.19 V2 26.495
RC 332.208 GL 14.72 GP -2.37 ZAL 131.95 ZAP 27.87 ETS 174.28 ZAE 44.62 ETE 177.41 ZAC 85.59 ETC 256.23 CLP 27.78

PLANETOCENTRIC CONIC

C3 16.806 VHL 4.100 DLA 4.91 RAL 206.30 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 6.194 DPA -1.27 RAP 180.44 ECC 1.2766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 55	2326.33	-22.11	48.69	66.08	108.15	20 26 41	1726.3	-19.43	41.04
90.00	9 3 3	4665.04	14.45	198.54	64.05	65.38	10 20 48	4065.0	11.01	191.55
100.00	21 11 34	2056.51	-23.13	28.47	65.71	109.48	21 45 51	1456.5	-20.26	20.85
100.00	10 22 5	4410.09	15.42	179.32	63.57	64.07	11 35 35	3810.1	11.81	172.39
110.00	22 25 7	1826.35	-25.85	9.83	64.54	113.19	22 55 33	1226.3	-22.48	2.29
110.00	11 25 2	4213.01	18.00	162.94	62.16	60.44	12 35 15	3613.0	13.93	156.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0352 TRA 7.4690 TC-13.5122 BAU 3.0365 SGT15316.9 SGR 622.0 SG3 399.6 ST 3476.1 SR 549.9 SS 847.7
RDE .3909 RRA .1467 RC3 .2618 FAU .06190 RRT -.1063 RRF -.1522 RTF .9705 CRT -.3132 CRS .6413 CST -.9289
FDE -.8190 FRA 2.5946 FC3-3.1885 BSP 54400 SGB15329.5 R23 .0491 R13 -.9705 LSA 3569.6 MSA 601.3 SSA 23.2
BDE 1.1066 BRA 7.4705 BC313.5148 FSP 1439 SG115317.0 SG2 618.5 THA 179.75 EL1 3480.5 EL2 521.6 ALF 177.10

LAUNCH DATE DEC 1 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 895.665 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.231 GAL -5.43 AZL 88.21 HCA 265.61 SMA 190.90 ECC .24530 INC 1.7908 V1 30.205
RP 206.67 LAP -1.79 LOP 334.44 VP 24.271 GAP -13.40 AZP 90.14 TAL 331.86 TAP 237.47 RCA 144.07 APO 237.72 V2 26.497
RC 333.009 GL 14.31 GP -2.33 ZAL 133.35 ZAP 27.43 ETS 174.26 ZAE 43.87 ETE 177.40 ZAC 85.81 ETC 256.19 CLP 27.34

PLANETOCENTRIC CONIC

C3 17.500 VHL 4.183 DLA 4.03 RAL 207.40 RAD 6567.7 VEL 11.785 PTH 2.08 VHP 6.293 DPA -1.58 RAP 181.21 ECC 1.2880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 55	2308.17	-21.72	47.50	67.57	108.62	20 37 23	1708.2	-18.98	39.90
90.00	9 0 49	4701.88	15.48	200.75	65.85	65.99	10 19 11	4101.9	12.11	193.70
100.00	21 22 8	2039.71	-22.74	27.37	67.19	109.94	21 56 8	1439.7	-19.82	19.79
100.00	10 20 16	4445.57	16.47	181.43	65.38	64.69	11 34 22	3845.6	12.92	174.43
110.00	22 34 43	1812.56	-25.47	8.93	65.99	113.60	23 4 55	1212.6	-22.06	1.44
110.00	11 24 11	4245.48	19.08	164.84	63.98	61.09	12 34 57	3645.5	15.08	158.01

DIFFERENTIAL CORRECTIONS
TDE-1.1733 TRA 7.7922 TC-13.1135 BAU 3.0687
RDE .4032 RRA .1409 RC3 .2624 FAU .05704
FDE -.8274 FRA 2.5207 FC3-2.8215 BSP 54723
BDE 1.2406 BRA 7.7935 BC313.1161 FSP 1357

MID-COURSE EXECUTION ACCURACY
SGT15408.5 SGR 624.9 SG3 375.0
RRT -.1274 RRF -.1750 RTF .9683
SGB15421.2 R23 .0519 R13 -.9683
SG115408.8 SG2 619.8 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 3604.5 SR 555.3 SS 836.6
CRT -.3514 CRS .6625 CST -.9335
LSA 3694.4 MSA 592.7 SSA 22.6
EL1 3609.9 EL2 519.1 ALF 176.84

LAUNCH DATE DEC 1 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 899.901 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.238 GAL -5.66 AZL 88.22 HCA 266.88 SMA 191.03 ECC .24730 INC 1.7770 V1 30.205
RP 206.67 LAP -1.77 LOP 335.71 VP 24.282 GAP -13.54 AZP 90.10 TAL 330.81 TAP 237.69 RCA 143.79 APO 238.28 V2 26.497
RC 333.807 GL 13.89 GP -2.29 ZAL 134.73 ZAP 27.00 ETS 174.23 ZAE 43.14 ETE 177.39 ZAC 86.04 ETC 256.14 CLP 26.91

PLANETOCENTRIC CONIC

C3 18.244 VHL 4.271 DLA 3.17 RAL 208.49 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 6.393 DPA -1.89 RAP 182.00 ECC 1.3002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 42	2290.91	-21.34	46.38	69.09	109.06	20 47 53	1690.9	-18.55	38.82
90.00	8 58 41	4738.51	16.48	202.97	67.69	66.65	10 17 39	4138.5	13.19	195.85
100.00	21 32 31	2023.78	-22.37	26.33	68.69	110.36	22 6 15	1423.8	-19.40	18.80
100.00	10 18 33	4480.88	17.48	183.56	67.23	65.36	11 33 13	3880.9	14.01	176.49
110.00	22 44 10	1799.56	-25.12	8.09	67.47	113.99	23 14 9	1199.6	-21.66	.64
110.00	11 23 24	4277.86	20.14	166.76	65.83	61.78	12 34 42	3677.9	16.21	159.84

DIFFERENTIAL CORRECTIONS
TDE-1.3134 TRA 8.1225 TC-12.7173 BAU 3.1024
RDE .4159 RRA .1347 RC3 .2622 FAU .05232
FDE -.8328 FRA 2.4428 FC3-2.4827 BSP 55003
BDE 1.3777 BRA 8.1236 BC312.7200 FSP 1275

MID-COURSE EXECUTION ACCURACY
SGT15498.6 SGR 627.8 SG3 351.1
RRT -.1481 RRF -.1976 RTF .9656
SGB15511.3 R23 .0550 R13 -.9656
SG115498.9 SG2 620.9 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 3731.9 SR 560.6 SS 823.3
CRT -.3859 CRS .6825 CST -.9371
LSA 3818.0 MSA 584.6 SSA 22.1
EL1 3738.3 EL2 516.3 ALF 176.62

LAUNCH DATE DEC 1 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 904.125 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.246 GAL -5.90 AZL 88.24 HCA 268.14 SMA 191.17 ECC .24940 INC 1.7633 V1 30.205
RP 206.68 LAP -1.76 LOP 336.98 VP 24.291 GAP -13.69 AZP 90.06 TAL 329.75 TAP 237.89 RCA 143.49 APO 238.85 V2 26.496
RC 334.601 GL 13.49 GP -2.25 ZAL 136.09 ZAP 26.59 ETS 174.21 ZAE 42.41 ETE 177.37 ZAC 86.26 ETC 256.10 CLP 26.50

PLANETOCENTRIC CONIC

C3 19.040 VHL 4.363 DLA 2.32 RAL 209.56 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 6.496 DPA -2.22 RAP 182.79 ECC 1.3133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 18	2274.56	-20.98	45.32	70.62	109.47	20 58 13	1674.6	-18.13	37.80
90.00	8 56 38	4774.93	17.45	205.21	69.56	67.34	10 16 13	4174.9	14.23	198.01
100.00	21 42 44	2008.70	-22.01	25.36	70.21	110.75	22 16 12	1408.7	-18.99	17.87
100.00	10 16 54	4516.02	18.46	185.71	69.11	66.07	11 32 10	3916.0	15.08	178.56
110.00	22 53 27	1787.35	-24.78	7.30	68.96	114.34	23 23 14	1187.3	-21.28	359.90
110.00	11 22 40	4310.14	21.16	168.70	67.73	62.51	12 34 30	3710.1	17.31	161.69

DIFFERENTIAL CORRECTIONS
TDE-1.4535 TRA 8.4641 TC-12.3192 BAU 3.1365
RDE .4291 RRA .1281 RC3 .2610 FAU .04773
FDE -.8339 FRA 2.3615 FC3-2.1702 BSP 55291
BDE 1.5155 BRA 8.4651 BC312.3220 FSP 1195

MID-COURSE EXECUTION ACCURACY
SGT15586.8 SGR 630.7 SG3 328.1
RRT -.1680 RRF -.2196 RTF .9626
SGB15599.6 R23 .0584 R13 -.9626
SG115587.2 SG2 621.7 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3857.7 SR 565.8 SS 807.2
CRT -.4165 CRS .7008 CST -.9398
LSA 3939.6 MSA 577.1 SSA 21.6
EL1 3865.0 EL2 513.4 ALF 176.44

LAUNCH DATE DEC 1 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 908.336 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.253 GAL -6.15 AZL 88.25 HCA 269.41 SMA 191.31 ECC .25158 INC 1.7495 V1 30.205
RP 206.69 LAP -1.75 LOP 338.25 VP 24.299 GAP -13.84 AZP 90.02 TAL 328.67 TAP 238.08 RCA 143.18 APO 239.44 V2 26.494
RC 335.390 GL 13.08 GP -2.21 ZAL 137.44 ZAP 26.19 ETS 174.18 ZAE 41.70 ETE 177.36 ZAC 86.49 ETC 256.06 CLP 26.10

PLANETOCENTRIC CONIC

C3 19.892 VHL 4.460 DLA 1.48 RAL 210.62 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 6.600 DPA -2.54 RAP 183.59 ECC 1.3274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 43	2259.08	-20.62	44.32	72.16	109.85	21 8 22	1659.1	-17.73	36.84
90.00	8 54 40	4811.14	18.39	207.45	71.47	68.08	10 14 51	4211.1	15.25	200.18
100.00	21 52 45	1994.48	-21.66	24.44	71.75	111.11	22 25 59	1394.5	-18.60	16.99
100.00	10 15 19	4550.97	19.42	187.87	71.02	66.82	11 31 10	3951.0	16.11	180.63
110.00	23 2 35	1775.91	-24.45	6.57	70.47	114.66	23 32 10	1175.9	-20.92	359.21
110.00	11 21 59	4342.30	22.16	170.66	69.65	63.28	12 34 21	3742.3	18.40	163.55

DIFFERENTIAL CORRECTIONS
TDE-1.5957 TRA 8.8131 TC-11.9242 BAU 3.1718
RDE .4428 RRA .1211 RC3 .2591 FAU .04325
FDE -.8318 FRA 2.2756 FC3-1.8825 BSP 55544
BDE 1.6560 BRA 8.8140 BC311.9271 FSP 1117

MID-COURSE EXECUTION ACCURACY
SGT15671.8 SGR 633.5 SG3 305.6
RRT -.1875 RRF -.2413 RTF .9591
SGB15684.6 R23 .0623 R13 -.9591
SG115672.3 SG2 622.2 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 3981.0 SR 570.8 SS 788.9
CRT -.4443 CRS .7183 CST -.9418
LSA 4058.5 MSA 569.9 SSA 21.1
EL1 3989.2 EL2 510.3 ALF 176.29

LAUNCH DATE DEC 1 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 912.533 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.261 GAL -6.40 AZL 88.26 HCA 270.68 SMA 191.45 ECC .25386 INC 1.7358 V1 30.205
RP 206.72 LAP -1.74 LOP 339.52 VP 24.307 GAP -13.99 AZP 89.98 TAL 327.58 TAP 238.26 RCA 142.85 APO 240.05 V2 26.491
RC 336.176 GL 12.68 GP -2.18 ZAL 138.76 ZAP 25.79 ETS 174.16 ZAE 40.99 ETE 177.35 ZAC 86.71 ETC 256.02 CLP 25.71

PLANETOCENTRIC CONIC

C3 20.802 VHL 4.561 DLA .67 RAL 211.67 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 6.706 DPA -2.88 RAP 184.41 ECC 1.3424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 56	2244.47	-20.28	43.38	73.73	110.19	21 18 21	1644.5	-17.35	35.94
90.00	8 52 48	4847.12	19.29	209.71	73.41	68.86	10 13 35	4247.1	16.24	202.36
100.00	22 2 36	1981.09	-21.33	23.59	73.30	111.45	22 35 37	1381.1	-18.23	16.17
100.00	10 13 50	4585.74	20.33	190.04	72.97	67.60	11 30 15	3985.7	17.12	182.72
110.00	23 11 33	1765.24	-24.15	5.89	71.99	114.96	23 40 58	1165.2	-20.58	358.57
110.00	11 21 22	4374.34	23.13	172.65	71.62	64.10	12 34 16	3774.3	19.45	165.44

DIFFERENTIAL CORRECTIONS
TDE-1.7386 TRA 9.1719 TC-11.5331 BAU 3.2082
RDE .4570 RRA .1137 RC3 .2565 FAU .03890
FDE -.8266 FRA 2.1862 FC3-1.6190 BSP 55783
BDE 1.7977 BRA 9.1726 BC311.5360 FSP 1041

MID-COURSE EXECUTION ACCURACY
SGT15755.1 SGR 636.2 SG3 284.0
RRT -.2065 RRF -.2627 RTF .9550
SGB15768.0 R23 .0667 R13 -.9550
SG115755.7 SG2 622.5 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 4101.2 SR 575.7 SS 768.5
CRT -.4692 CRS .7349 CST -.9431
LSA 4174.2 MSA 563.2 SSA 20.7
EL1 4110.2 EL2 507.3 ALF 176.17

LAUNCH DATE DEC 1 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 916.715 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.268 GAL -6.65 AZL 88.28 HCA 271.95 SMA 191.59 ECC .25624 INC 1.7221 V1 30.205
RP 206.75 LAP -1.72 LOP 340.79 VP 24.313 GAP -14.15 AZP 89.94 TAL 326.48 TAP 238.43 RCA 142.50 APO 240.68 V2 26.488
RC 336.957 GL 12.29 GP -2.14 ZAL 140.07 ZAP 25.41 ETS 174.13 ZAE 40.30 ETE 177.33 ZAC 86.94 ETC 255.99 CLP 25.33

PLANETOCENTRIC CONIC

C3 21.775 VHL 4.666 DLA -.13 RAL 212.70 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 6.814 DPA -3.22 RAP 185.23 ECC 1.3584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 59	2230.70	-19.96	42.50	75.31	110.52	21 28 10	1630.7	-16.99	35.09
90.00	8 51 0	4882.89	20.15	211.98	75.38	69.67	10 12 23	4282.9	17.20	204.54
100.00	22 12 16	1968.52	-21.02	22.79	74.87	111.76	22 45 4	1368.5	-17.88	15.40
100.00	10 12 24	4620.31	21.21	192.23	74.94	68.43	11 29 24	4020.3	18.10	184.83
110.00	23 20 22	1755.34	-23.86	5.27	73.54	115.23	23 49 38	1155.3	-20.26	357.97
110.00	11 20 47	4406.25	24.06	174.66	73.61	64.95	12 34 13	3806.3	20.49	167.34

DIFFERENTIAL CORRECTIONS
TDE-1.8834 TRA 9.5399 TC-11.1481 BAU 3.2462
RDE .4717 RRA .1058 RC3 .2533 FAU .03466
FDE -.8182 FRA 2.0927 FC3-1.3781 BSP 55972
BDE 1.9415 BRA 9.5405 BC311.1510 FSP 966

MID-COURSE EXECUTION ACCURACY
SGT15836.7 SGR 638.9 SG3 263.0
RRT -.2250 RRF -.2839 RTF .9501
SGB15849.6 R23 .0715 R13 -.9501
SG115837.4 SG2 622.5 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4218.2 SR 580.5 SS 745.9
CRT -.4919 CRS .7507 CST -.9439
LSA 4286.7 MSA 556.9 SSA 20.2
EL1 4228.0 EL2 504.2 ALF 176.07

LAUNCH DATE DEC 1 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 920.880 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.276 GAL -6.91 AZL 88.29 HCA 273.22 SMA 191.73 ECC .25871 INC 1.7084 V1 30.205
RP 206.79 LAP -1.71 LOP 342.06 VP 24.318 GAP -14.32 AZP 89.90 TAL 325.36 TAP 238.58 RCA 142.13 APO 241.34 V2 26.483
RC 337.733 GL 11.90 GP -2.11 ZAL 141.36 ZAP 25.04 ETS 174.11 ZAE 39.62 ETE 177.32 ZAC 87.17 ETC 255.96 CLP 24.96

PLANETOCENTRIC CONIC

C3 22.815 VHL 4.776 DLA -.91 RAL 213.72 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 6.925 DPA -3.56 RAP 186.06 ECC 1.3755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 51	2217.77	-19.65	41.68	76.91	110.81	21 37 49	1617.8	-16.64	34.30
90.00	8 49 17	4918.43	20.97	214.26	77.38	70.53	10 11 15	4318.4	18.13	206.74
100.00	22 21 46	1956.75	-20.72	22.04	76.46	112.04	22 54 23	1356.8	-17.55	14.68
100.00	10 11 3	4654.68	22.06	194.44	76.95	69.30	11 28 37	4054.7	19.04	186.94
110.00	23 29 2	1746.18	-23.60	4.69	75.09	115.48	23 58 9	1146.2	-19.97	357.43
110.00	11 20 16	4438.02	24.96	176.68	75.64	65.85	12 34 14	3838.0	21.49	169.26

DIFFERENTIAL CORRECTIONS
TDE-2.0294 TRA 9.9165 TC-10.7698 BAU 3.2858
RDE .4868 RRA .0975 RC3 .2496 FAU .03053
FDE -.8067 FRA 1.9950 FC3-1.1584 BSP 56128
BDE 2.0869 BRA 9.9170 BC310.7727 FSP 892

MID-COURSE EXECUTION ACCURACY
SGT15915.7 SGR 641.5 SG3 242.7
RRT -.2432 RRF -.3047 RTF .9443
SGB15928.6 R23 .0770 R13 -.9443
SG115916.4 SG2 622.2 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4331.2 SR 585.0 SS 721.2
CRT -.5124 CRS .7659 CST -.9440
LSA 4395.2 MSA 550.9 SSA 19.8
EL1 4341.7 EL2 501.2 ALF 175.99

LAUNCH DATE DEC 1 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 925.027 EARTH TO MARS

RL 147.50 LAL -.00 LOL 68.84 VL 33.284 GAL -7.18 AZL 88.31 HCA 274.49 SMA 191.87 ECC .26130 INC 1.6946 V1 30.205
RP 206.84 LAP -1.69 LOP 343.33 VP 24.323 GAP -14.49 AZP 89.87 TAL 324.23 TAP 238.72 RCA 141.74 APO 242.01 V2 26.477
RC 338.506 GL 11.52 GP -2.08 ZAL 142.62 ZAP 24.68 ETS 174.08 ZAE 38.95 ETE 177.30 ZAC 87.40 ETC 255.93 CLP 24.60

PLANETOCENTRIC CONIC

C3 23.925 VHL 4.891 DLA -1.68 RAL 214.73 RAD 6568.0 VEL 12.054 PTH 2.15 VHP 7.037 DPA -3.91 RAP 186.90 ECC 1.3937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 35	2205.65	-19.35	40.92	78.52	111.09	21 47 18	1605.6	-16.31	33.56
90.00	8 47 37	4953.74	21.76	216.55	79.40	71.42	10 10 11	4353.7	19.02	208.95
100.00	22 31 7	1945.77	-20.44	21.35	78.06	112.30	23 3 32	1345.8	-17.24	14.02
100.00	10 9 45	4688.85	22.86	196.66	78.99	70.20	11 27 54	4088.8	19.96	189.07
110.00	23 37 34	1737.76	-23.35	4.16	76.67	115.71	24 6 31	1137.8	-19.70	356.92
110.00	11 19 47	4469.63	25.83	178.73	77.70	66.79	12 34 17	3869.6	22.46	171.20

DIFFERENTIAL CORRECTIONS
TDE-2.1745 TRA10.3044 TC-10.3969 BAU 3.3264
RDE .5024 RRA .0887 RC3 .2454 FAU .02647
FDE -.7921 FRA 1.8937 FC3 -.9577 BSP 56298
BDE 2.2318 BRA10.3048 BC310.3998 FSP 821

MID-COURSE EXECUTION ACCURACY
SGT15992.3 SGR 644.0 SG3 223.0
RRT -.2607 RRF -.3250 RTF .9372
SGB16005.3 R23 .0831 R13 -.9373
SG115993.2 SG2 621.7 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 4439.0 SR 589.3 SS 694.6
CRT -.5306 CRS .7805 CST -.9434
LSA 4498.5 MSA 545.4 SSA 19.4
EL1 4450.2 EL2 498.3 ALF 175.92

LAUNCH DATE DEC 1 1964 FLIGHT TIME 426.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 929.155 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.292	GAL	-7.46	AZL	88.32	HCA	275.75	SMA	192.02	ECC	.26399	INC	1.6808
RP	206.90	LAP	-1.67	LOP	344.60	VP	24.326	GAP	-14.66	AZP	89.83	TAL	323.09	TAP	238.84	RCA	141.33	APO	242.71
RC	339.274	GL	11.14	GP	-2.05	ZAL	143.86	ZAP	24.33	ETS	174.06	ZAE	38.28	ETE	177.28	ZAC	87.63	ETC	255.91

V1	30.205	V2	26.470	CLP	24.25														

PLANETOCENTRIC CONIC

C3	25.109	VHL	5.011	DLA	-2.43	RAL	215.72	RAD	6568.0	VEL	12.103	PTH	2.17	VHP	7.152	DPA	-4.27	RAP	187.75
ECC	1.4132																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 4	2194.31	-19.07	40.20	80.15	111.34	21 56 39	1594.3	-16.00	32.87
90.00	8 46 3	4988.82	22.50	218.86	81.45	72.34	10 9 11	4388.8	19.87	211.17
100.00	22 40 17	1935.56	-20.17	20.70	79.68	112.54	23 12 33	1335.6	-16.94	13.40
100.00	10 8 31	4722.80	23.63	198.89	81.05	71.14	11 27 14	4122.8	20.84	191.21
110.00	23 45 56	1730.05	-23.12	3.68	78.25	115.91	24 14 46	1130.1	-19.45	356.47
110.00	11 19 21	4501.08	26.65	180.80	79.80	67.76	12 34 22	3901.1	23.40	173.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.3218	TRA	10.7011	TC	-10.0322	BAU	3.3686	SGT	16066.1	SGR	646.4	SG3	204.0	ST	4542.9	SR	593.4	SS	666.2
RDE	.5184	RRA	.0794	RC3	.2408	FAU	.02251	RRT	-.2779	RRF	-.3450	RTF	.9286	CRT	-.5474	CRS	.7949	CST	-.9422
FDE	-.7747	FRA	1.7881	FC3	-.7760	BSP	56397	SGB	16079.1	R23	.0901	R13	-.9286	LSA	4598.0	MSA	540.1	SSA	19.0
BDE	2.3790	BRA	10.7014	BC3	10.0351	FSP	751	SG1	16067.1	SG2	620.9	THA	179.36	EL1	4554.6	EL2	495.4	ALF	175.86

LAUNCH DATE DEC 1 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 933.263 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.299	GAL	-7.74	AZL	88.33	HCA	277.02	SMA	192.16	ECC	.26680	INC	1.6670
RP	206.97	LAP	-1.65	LOP	345.86	VP	24.328	GAP	-14.84	AZP	89.80	TAL	321.93	TAP	238.95	RCA	140.89	APO	243.43
RC	340.039	GL	10.77	GP	-2.02	ZAL	145.09	ZAP	23.99	ETS	174.03	ZAE	37.63	ETE	177.26	ZAC	87.86	ETC	255.88

V1	30.205	V2	26.462	CLP	23.91														

PLANETOCENTRIC CONIC

C3	26.373	VHL	5.135	DLA	-3.16	RAL	216.71	RAD	6568.1	VEL	12.155	PTH	2.18	VHP	7.270	DPA	-4.62	RAP	188.60
ECC	1.4340																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 26	2183.74	-18.81	39.54	81.79	111.57	22 5 50	1583.7	-15.71	32.23
90.00	8 44 32	5023.66	23.20	221.17	83.53	73.30	10 8 15	4423.7	20.69	213.40
100.00	22 49 19	1926.10	-19.92	20.11	81.31	112.76	23 21 25	1326.1	-16.67	12.83
100.00	10 7 20	4756.53	24.35	201.13	83.14	72.11	11 26 37	4156.5	21.68	193.36
110.00	23 54 10	1723.05	-22.91	3.24	79.85	116.09	24 22 53	1123.0	-19.22	356.05
110.00	11 18 58	4532.35	27.44	182.89	81.92	68.77	12 34 30	3932.3	24.31	175.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4710	TRA	11.1083	TC3	-9.6764	BAU	3.4127	SGT	16138.2	SGR	648.8	SG3	185.7	ST	4642.7	SR	597.2	SS	636.4
RDE	.5349	RRA	.0697	RC3	.2359	FAU	.01863	RRT	-.2948	RRF	-.3649	RTF	.9178	CRT	-.5627	CRS	.8093	CST	-.9403
FDE	-.7551	FRA	1.6784	FC3	-.6115	BSP	56466	SGB	16151.2	R23	.0983	R13	-.9179	LSA	4693.6	MSA	535.1	SSA	18.6
BDE	2.5282	BRA	11.1085	BC3	9.6793	FSP	683	SG1	16139.3	SG2	619.9	THA	179.32	EL1	4655.0	EL2	492.4	ALF	175.81

LAUNCH DATE DEC 1 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 937.348 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.307	GAL	-8.03	AZL	88.35	HCA	278.28	SMA	192.31	ECC	.26973	INC	1.6531
RP	207.04	LAP	-1.64	LOP	347.13	VP	24.329	GAP	-15.03	AZP	89.76	TAL	320.76	TAP	239.04	RCA	140.44	APO	244.18
RC	340.800	GL	10.41	GP	-1.99	ZAL	146.29	ZAP	23.66	ETS	174.01	ZAE	36.99	ETE	177.24	ZAC	88.10	ETC	255.87

V1	30.205	V2	26.453	CLP	23.58														

PLANETOCENTRIC CONIC

C3	27.721	VHL	5.265	DLA	-3.87	RAL	217.68	RAD	6568.1	VEL	12.210	PTH	2.19	VHP	7.390	DPA	-4.99	RAP	189.47
ECC	1.4562																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 39	2173.92	-18.56	38.92	83.44	111.78	22 14 53	1573.9	-15.44	31.64
90.00	8 43 4	5058.25	23.86	223.49	85.64	74.28	10 7 23	4458.3	21.47	215.63
100.00	22 58 11	1917.36	-19.69	19.56	82.95	112.95	23 30 8	1317.4	-16.42	12.30
100.00	10 6 14	4790.04	25.03	203.39	85.26	73.11	11 26 4	4190.0	22.48	195.52
110.00	0 6 12	1716.73	-22.72	2.85	81.46	116.25	0 34 49	1116.7	-19.01	355.68
110.00	11 18 38	4563.44	28.19	185.00	84.07	69.82	12 34 41	3963.4	25.18	177.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6190	TRA	11.5267	TC3	-9.3296	BAU	3.4586	SGT	16208.0	SGR	651.0	SG3	168.1	ST	4736.6	SR	600.8	SS	604.8
RDE	.5517	RRA	.0595	RC3	.2307	FAU	.01482	RRT	-.3111	RRF	-.3839	RTF	.9043	CRT	-.5763	CRS	.8234	CST	-.9375
FDE	-.7323	FRA	1.5645	FC3	-.4628	BSP	56532	SGB	16221.1	R23	.1075	R13	-.9043	LSA	4783.4	MSA	530.4	SSA	18.2
BDE	2.6765	BRA	11.5268	BC3	9.3324	FSP	617	SG1	16209.3	SG2	618.6	THA	179.28	EL1	4749.4	EL2	489.7	ALF	175.77

LAUNCH DATE DEC 1 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 941.410 EARTH TO MARS

RL	147.50	LAL	-.00	LOL	68.84	VL	33.315	GAL	-8.33	AZL	88.36	HCA	279.55	SMA	192.45	ECC	.27278	INC	1.6391
RP	207.13	LAP	-1.62	LOP	348.39	VP	24.329	GAP	-15.23	AZP	89.73	TAL	319.58	TAP	239.13	RCA	139.96	APO	244.95
RC	341.558	GL	10.06	GP	-1.96	ZAL	147.47	ZAP	23.34	ETS	173.98	ZAE	36.36	ETE	177.22	ZAC	88.33	ETC	255.85

V1	30.205	V2	26.444	CLP	23.26														

PLANETOCENTRIC CONIC

C3	29.158	VHL	5.400	DLA	-4.56	RAL	218.64	RAD	6568.2	VEL	12.269	PTH	2.21	VHP	7.512	DPA	-5.36	RAP	190.35
ECC	1.4799																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 42	2164.81	-18.33	38.35	85.10	111.97	22 23 47	1564.8	-15.19	31.09
90.00	8 41 41	5092.60	24.47	225.82	87.76	75.29	10 6 33	4492.6	22.21	217.88
100.00	23 6 54	1909.33	-19.48	19.06	84.60	113.13	23 38 43	1309.3	-16.18	11.82
100.00	10 5 10	4823.31	25.67	205.66	87.40	74.14	11 25 33	4223.3	23.25	197.69
110.00	0 14 9	1711.07	-22.55	2.50	83.08	116.40	0 42 40	1111.1	-18.82	355.35
110.00	11 18 20	4594.34	28.90	187.13	86.25	70.89	12 34 54	3994.3	26.02	179.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.7678	TRA	11.9560	TC3	-8.9910	BAU	3.5059	SGT	16274.9	SGR	653.0	SG3	151.2	ST	4825.7	SR	604.0	SS	572.0
RDE	.5690	RRA	.0488	RC3	.2253	FAU	.01108	RRT	-.3270	RRF	-.4022	RTF	.8868	CRT	-.5887	CRS	.8378	CST	-.9337
FDE	-.7071	FRA	1.4467	FC3	-.3288	BSP	56558	SGB	16288.0	R23	.1183	R13	-.8869	LSA	4868.5	MSA	525.9	SSA	17.9
BDE	2.8257	BRA	11.9561	BC3	8.9938	FSP	553	SG1	16276.3	SG2	617.1	THA	179.25	EL1	4838.9	EL2	486.9	ALF	175.74

LAUNCH DATE DEC 1 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 945.446 EARTH TO MARS

```
RL  147.50 LAL   -.00 LOL  68.84 VL  33.323 GAL  -8.64 AZL  88.37 HCA 280.81 SMA 192.60 ECC .27596 INC 1.6249 V1  30.205
RP  207.22 LAP  -1.60 LOP 349.66 VP  24.328 GAP -15.43 AZP  89.70 TAL 318.38 TAP 239.20 RCA 139.45 APO 245.75 V2  26.433
RC 342.314 GL    9.71 GP   -1.94 ZAL 148.64 ZAP  23.03 ETS 173.96 ZAE  35.74 ETE 177.19 ZAC  88.57 ETC 255.84 CLP  22.96
```

PLANETOCENTRIC CONIC

```
C3  30.690 VHL  5.540 DLA  -5.24 RAL 219.59 RAD 6568.2 VEL 12.331 PTH   2.22 VHP  7.638 DPA  -5.73 RAP 191.23 ECC 1.5051
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 36	2156.39	-18.12	37.83	86.78	112.14	22 32 32	1556.4	-14.95	30.58
90.00	8 40 21	5126.69	25.04	228.16	89.90	76.33	10 5 47	4526.7	22.91	220.13
100.00	23 15 28	1901.96	-19.28	18.61	86.26	113.29	23 47 10	1302.0	-15.97	11.38
100.00	10 4 10	4856.35	26.27	207.93	89.56	75.19	11 25 6	4256.3	23.98	199.88
110.00	0 21 59	1706.04	-22.40	2.19	84.71	116.52	0 50 25	1106.0	-18.65	355.05
110.00	11 18 4	4625.03	29.56	189.27	88.46	72.00	12 35 9	4025.0	26.82	181.16

DIFFERENTIAL CORRECTIONS

```
TDE-2.9191 TRA12.3954 TC3-8.6639 BAU 3.5559
RDE  .5867 RRA  .0375 RC3  .2198 FAU .00742
FDE -.6797 FRA 1.3243 FC3 -.2093 BSP  56536
BDE 2.9775 BRA12.3954 BC3 8.6667 FSP    489
```

MID-COURSE EXECUTION ACCURACY

```
SGT16340.0 SGR  655.0 SG3  135.0
RRT -.3427 RRF -.4197 RTF  .8641
SGB16353.1 R23  .1311 R13 -.8642
SG116341.6 SG2  615.3 THA 179.21
```

ORBIT DETERMINATION ACCURACY

```
ST  4910.6 SR   607.0 SS   537.9
CRT -.6002 CRS  .8525 CST -.9288
LSA 4949.7 MSA  521.5 SSA   17.6
EL1 4924.2 EL2  484.1 ALF 175.72
```

LAUNCH DATE DEC 2 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 21 1965

HELIOCENTRIC CONIC DISTANCE 384.393 EARTH TO MARS

```
RL  147.48 LAL   -.00 LOL  69.85 VL  36.083 GAL  -3.26 AZL  88.61 HCA 117.73 SMA 266.62 ECC .44974 INC 1.3905 V1  30.210
RP  245.33 LAP   1.23 LOP 187.59 VP  24.169 GAP  26.36 AZP  90.65 TAL 349.48 TAP 107.21 RCA 146.71 APO 386.54 V2  22.354
RC 122.260 GL    8.19 GP    1.33 ZAL 106.90 ZAP 176.54 ETS 156.13 ZAE 154.33 ETE 359.78 ZAC  89.95 ETC 256.08 CLP 176.80
```

PLANETOCENTRIC CONIC

```
C3  37.653 VHL  6.136 DLA   8.73 RAL 180.47 RAD 6568.5 VEL 12.610 PTH   2.29 VHP 11.958 DPA    .66 RAP 185.10 ECC 1.6197
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 28	2645.20	-27.16	70.62	56.13	98.33	18 15 33	2045.2	-25.73	62.25
90.00	7 45 32	4741.02	16.55	203.12	50.50	66.69	9 4 33	4141.0	13.26	196.00
100.00	18 57 3	2369.15	-28.51	50.08	55.89	99.38	19 36 32	1769.2	-26.92	41.64
100.00	9 2 37	4492.30	17.80	184.26	49.92	65.58	10 17 30	3892.3	14.36	177.16
110.00	20 14 59	2125.30	-32.14	30.76	55.09	102.32	20 50 24	1525.3	-30.11	22.14
110.00	10 1 11	4308.91	21.12	168.63	48.21	62.48	11 13 0	3708.9	17.27	161.62

DIFFERENTIAL CORRECTIONS

```
TDE  .6798 TRA-1.7667 TC3  .6496 BAU  .3275
RDE -.5875 RRA -.2620 RC3 -.0350 FAU .05328
FDE -.1944 FRA  .8629 FC3-1.2250 BSP   6368
BDE  .8985 BRA 1.7860 BC3  .6506 FSP    384
```

MID-COURSE EXECUTION ACCURACY

```
SGT 1955.4 SGR  603.4 SG3  148.6
RRT  .0259 RRF -.0362 RTF -.7952
SGB 2046.4 R23 -.0135 R13 -.7953
SG1 1955.5 SG2  603.1 THA    .51
```

ORBIT DETERMINATION ACCURACY

```
ST   808.8 SR   553.6 SS   318.1
CRT -.6947 CRS -.4780 CST  .9587
LSA  957.5 MSA  379.3 SSA   31.5
EL1  914.7 EL2  352.1 ALF 149.60
```

LAUNCH DATE DEC 2 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 385.625 EARTH TO MARS

```
RL  147.48 LAL   -.00 LOL  69.85 VL  35.936 GAL  -3.07 AZL  88.62 HCA 118.63 SMA 261.06 ECC .43774 INC 1.3773 V1  30.210
RP  245.12 LAP   1.21 LOP 188.49 VP  23.968 GAP  25.74 AZP  90.66 TAL 349.89 TAP 108.52 RCA 146.78 APO 375.34 V2  22.374
RC 124.216 GL    8.31 GP    1.37 ZAL 106.15 ZAP 176.06 ETS 158.37 ZAE 153.97 ETE    .02 ZAC  90.08 ETC 256.06 CLP 176.30
```

PLANETOCENTRIC CONIC

```
C3  35.594 VHL  5.966 DLA   9.14 RAL 179.82 RAD 6568.4 VEL 12.529 PTH   2.27 VHP 11.671 DPA    .53 RAP 185.49 ECC 1.5858
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 37	2644.37	-27.15	70.56	54.60	98.36	18 9 41	2044.4	-25.72	62.19
90.00	7 46 14	4713.41	15.80	201.45	48.89	66.19	9 4 47	4113.4	12.45	194.37
100.00	18 51 25	2367.61	-28.50	49.97	54.36	99.43	19 30 53	1767.6	-26.90	41.53
100.00	9 3 6	4465.41	17.04	182.63	48.30	65.06	10 17 32	3865.4	13.54	175.59
110.00	20 9 50	2122.20	-32.10	30.53	53.56	102.45	20 45 13	1522.2	-30.05	21.92
110.00	10 1 10	4283.58	20.32	167.10	46.57	61.90	11 12 34	3683.6	16.40	160.17

DIFFERENTIAL CORRECTIONS

```
TDE  .6695 TRA-1.7301 TC3  .7237 BAU  .3448
RDE -.5683 RRA -.2537 RC3 -.0354 FAU .05464
FDE -.1845 FRA  .8738 FC3-1.3291 BSP   6315
BDE  .8782 BRA 1.7486 BC3  .7246 FSP    415
```

MID-COURSE EXECUTION ACCURACY

```
SGT 1997.8 SGR  600.5 SG3  156.2
RRT  .0233 RRF -.0424 RTF -.8067
SGB 2086.1 R23 -.0218 R13 -.8067
SG1 1997.8 SG2  600.3 THA    .44
```

ORBIT DETERMINATION ACCURACY

```
ST   817.9 SR   550.8 SS   316.8
CRT -.6961 CRS -.4502 CST  .9493
LSA  962.6 MSA  380.9 SSA   31.7
EL1  921.5 EL2  351.0 ALF 150.12
```

LAUNCH DATE DEC 2 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 387.070 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.795	GAL	-2.89	AZL	88.64	HCA	119.53	SMA	255.98	ECC	.42632	INC	1.3639
RP	244.91	LAP	1.19	LOP	189.39	VP	23.777	GAP	25.12	AZP	90.67	TAL	350.32	TAP	109.85	RCA	146.85	APO	365.11
RC	126.220	GL	8.43	GP	1.41	ZAL	105.36	ZAP	175.57	ETS	160.12	ZAE	153.67	ETE	.26	ZAC	90.21	ETC	256.05

V1	30.210	V2	22.396	CLP	175.80														

PLANETOCENTRIC CONIC

C3	33.683	VHL	5.804	DLA	9.56	RAL	179.15	RAD	6568.3	VEL	12.452	PTH	2.25	VHP	11.392	DPA	.40	RAP	185.87
ECC	1.5543																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 34	2644.12	-27.15	70.55	53.07	98.37	18 3 38	2044.1	-25.71	62.17
90.00	7 46 55	4685.81	15.04	199.78	47.28	65.72	9 5 0	4085.8	11.63	192.76
100.00	18 45 37	2366.62	-28.48	49.90	52.83	99.47	19 25 3	1766.6	-26.88	41.46
100.00	9 3 33	4438.54	16.26	181.01	46.69	64.57	10 17 32	3838.5	12.70	174.03
110.00	20 4 33	2119.61	-32.06	30.34	52.03	102.56	20 39 52	1519.6	-30.00	21.73
110.00	10 1 6	4258.32	19.50	165.60	44.95	61.35	11 12 5	3658.3	15.53	158.73

DIFFERENTIAL CORRECTIONS

TDE	.6464	TRA	-1.7056	TC3	.7881	BAU	.3552
RDE	-.5495	RRA	-.2455	RC3	-.0353	FAU	.05632
FDE	-.1788	FRA	.8787	FC3	-1.4475	BSP	6574
BDE	.8484	BRA	1.7232	BC3	.7889	FSP	438

MID-COURSE EXECUTION ACCURACY

SGT	2039.5	SGR	596.9	SG3	164.6		
RRT	.0296	RRF	-.0454	RTF	-.8113		
SGB	2125.1	R23	-.0192	R13	-.8114		
SG1	2039.6	SG2	596.7	THA	.54		

ORBIT DETERMINATION ACCURACY

ST	818.8	SR	547.5	SS	316.4		
CRT	-.6881	CRS	-.4339	CST	.9468		
LSA	960.0	MSA	384.1	SSA	32.5		
EL1	919.2	EL2	353.9	ALF	150.50		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 388.707 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.661	GAL	-2.71	AZL	88.65	HCA	120.44	SMA	251.32	ECC	.41543	INC	1.3502
RP	244.68	LAP	1.16	LOP	190.30	VP	23.595	GAP	24.50	AZP	90.68	TAL	350.75	TAP	111.19	RCA	146.92	APO	355.73
RC	128.267	GL	8.55	GP	1.46	ZAL	104.56	ZAP	175.07	ETS	161.52	ZAE	153.41	ETE	.50	ZAC	90.33	ETC	256.03

V1	30.210	V2	22.418	CLP	175.29		

PLANETOCENTRIC CONIC

C3	31.908	VHL	5.649	DLA	9.99	RAL	178.45	RAD	6568.3	VEL	12.381	PTH	2.23	VHP	11.120	DPA	.27	RAP	186.25
ECC	1.5251																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 20	2644.47	-27.15	70.57	51.53	98.35	17 57 25	2044.5	-25.72	62.20
90.00	7 47 34	4658.18	14.26	198.13	45.67	65.27	9 5 12	4058.2	10.80	191.15
100.00	18 39 37	2366.20	-28.48	49.87	51.30	99.49	19 19 3	1766.2	-26.88	41.43
100.00	9 3 58	4411.69	15.47	179.41	45.08	64.10	10 17 30	3811.7	11.86	172.48
110.00	19 59 5	2117.54	-32.03	30.19	50.49	102.64	20 34 22	1517.5	-29.96	21.59
110.00	10 0 59	4233.11	18.67	164.11	43.33	60.83	11 11 33	3633.1	14.64	157.32

DIFFERENTIAL CORRECTIONS

TDE	.6245	TRA	-1.6786	TC3	.8590	BAU	.3667
RDE	-.5314	RRA	-.2375	RC3	-.0349	FAU	.05807
FDE	-.1717	FRA	.8836	FC3	-1.5754	BSP	6792
BDE	.8200	BRA	1.6954	BC3	.8597	FSP	463

MID-COURSE EXECUTION ACCURACY

SGT	2081.4	SGR	593.2	SG3	173.4		
RRT	.0351	RRF	-.0493	RTF	-.8167		
SGB	2164.2	R23	-.0181	R13	-.8168		
SG1	2081.5	SG2	592.8	THA	.62		

ORBIT DETERMINATION ACCURACY

ST	819.2	SR	544.0	SS	315.3		
CRT	-.6808	CRS	-.4138	CST	.9427		
LSA	956.8	MSA	387.1	SSA	33.3		
EL1	916.6	EL2	356.1	ALF	150.87		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 390.514 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.532	GAL	-2.54	AZL	88.66	HCA	121.34	SMA	247.04	ECC	.40505	INC	1.3363
RP	244.46	LAP	1.14	LOP	191.20	VP	23.422	GAP	23.89	AZP	90.70	TAL	351.19	TAP	112.53	RCA	146.98	APO	347.11
RC	130.354	GL	8.66	GP	1.50	ZAL	103.72	ZAP	174.57	ETS	162.66	ZAE	153.21	ETE	.74	ZAC	90.47	ETC	256.01

V1	30.210	V2	22.440	CLP	174.78		

PLANETOCENTRIC CONIC

C3	30.260	VHL	5.501	DLA	10.43	RAL	177.72	RAD	6568.2	VEL	12.314	PTH	2.22	VHP	10.856	DPA	.15	RAP	186.62
ECC	1.4980																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 55	2645.41	-27.16	70.64	49.99	98.32	17 51 0	2045.4	-25.73	62.26
90.00	7 48 11	4630.59	13.46	196.49	44.07	64.85	9 5 21	4030.6	9.96	189.56
100.00	18 33 26	2366.35	-28.48	49.88	49.76	99.48	19 12 52	1766.4	-26.88	41.45
100.00	9 4 20	4384.88	14.67	177.83	43.47	63.66	10 17 25	3784.9	11.01	170.94
110.00	19 53 27	2115.99	-32.00	30.07	48.96	102.71	20 28 43	1516.0	-29.92	21.48
110.00	10 0 49	4208.01	17.83	162.65	41.72	60.34	11 10 57	3608.0	13.75	155.92

DIFFERENTIAL CORRECTIONS

TDE	.6033	TRA	-1.6504	TC3	.9355	BAU	.3787
RDE	-.5139	RRA	-.2299	RC3	-.0342	FAU	.05984
FDE	-.1629	FRA	.8881	FC3	-1.7121	BSP	6984
BDE	.7925	BRA	1.6663	BC3	.9361	FSP	491

MID-COURSE EXECUTION ACCURACY

SGT	2123.4	SGR	589.3	SG3	182.5		
RRT	.0403	RRF	-.0541	RTF	-.8225		
SGB	2203.7	R23	-.0182	R13	-.8226		
SG1	2123.6	SG2	588.7	THA	.69		

ORBIT DETERMINATION ACCURACY

ST	819.0	SR	540.3	SS	313.3		
CRT	-.6737	CRS	-.3895	CST	.9369		
LSA	952.6	MSA	390.0	SSA	34.1		
EL1	913.5	EL2	357.9	ALF	151.22		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 392.476 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.410	GAL	-2.36	AZL	88.68	HCA	122.25	SMA	243.10	ECC	.39515	INC	1.3220
RP	244.23	LAP	1.12	LOP	192.11	VP	23.257	GAP	23.27	AZP	90.71	TAL	351.64	TAP	113.89	RCA	147.04	APO	339.15
RC	132.477	GL	8.76	GP	1.55	ZAL	102.86	ZAP	174.05	ETS	163.60	ZAE	153.05	ETE	.98	ZAC	90.60	ETC	256.00

V1	30.210	V2	22.463	CLP	174.26		

PLANETOCENTRIC CONIC

C3	28.730	VHL	5.360	DLA	10.87	RAL	176.97	RAD	6568.2	VEL	12.252	PTH	2.20	VHP	10.598	DPA	.03	RAP	186.99
ECC	1.4728																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 18	2646.95	-27.18	70.75	48.45	98.27	17 44 25	2046.9	-25.75	62.37
90.00	7 48 46	4603.06	12.66	194.87	42.48	64.46	9 5 29	4003.1	9.12	187.98
100.00	18 27 5	2367.07	-28.49	49.93	48.22	99.45	19 6 32	1767.1	-26.89	41.50
100.00	9 4 40	4358.17	13.85	176.26	41.88	63.24	10 17 18	3758.2	10.15	169.42
110.00	19 47 39	2114.95	-31.99	29.99	47.43	102.75	20 22 54	1515.0	-29.90	21.40
110.00	10 0 35	4183.05	16.99	161.21	40.12	59.88	11 10 19	3583.1	12.86	154.54

DIFFERENTIAL CORRECTIONS

TDE	.5828	TRA	-1.6203	TC3	1.0168	BAU	.3908
RDE	-.4971	RRA	-.2225	RC3	-.0331	FAU	.06171
FDE	-.1535	FRA	.8915	FC3	-1.8595	BSP	7149
BDE	.7660	BRA	1.6355	BC3	1.0174	FSP	521

MID-COURSE EXECUTION ACCURACY

SGT	2164.9	SGR	585.1	SG3	192.1		
RRT	.0453	RRF	-.0593	RTF	-.8283		
SGB	2242.6	R23	-.0188	R13	-.8284		
SG1	2165.1	SG2	584.4	THA	.76		

ORBIT DETERMINATION ACCURACY

ST	818.0	SR	536.4	SS	310.8		
CRT	-.6670	CRS	-.3630	CST	.9298		
LSA	947.6	MSA	392.7	SSA	34.9		
EL1	909.8	EL2	359.3	ALF	151.55		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 394.576 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.292	GAL	-2.20	AZL	88.69	HCA	123.16	SMA	239.45	ECC	.38571	INC	1.3074	V1	30.210
RP	243.99	LAP	1.09	LOP	193.02	VP	23.100	GAP	22.66	AZP	90.72	TAL	352.10	TAP	115.26	RCA	147.09	APO	331.81	V2	22.486
RC	134.631	GL	8.86	GP	1.60	ZAL	101.98	ZAP	173.53	ETS	164.38	ZAE	152.94	ETE	1.22	ZAC	90.73	ETC	255.98	CLP	173.73

PLANETOCENTRIC CONIC

C3	27.309	VHL	5.226	DLA	11.31	RAL	176.19	RAD	6568.1	VEL	12.194	PTH	2.19	VHP	10.347	DPA	-.08	RAP	187.36	ECC	1.4494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 31	2649.06	-27.20	70.90	46.91	98.20	17 37 40	2049.1	-25.78	62.52
90.00	7 49 19	4575.66	11.85	193.26	40.90	64.09	9 5 34	3975.7	8.27	186.41
100.00	18 20 34	2368.34	-28.50	50.02	46.68	99.41	19 0 2	1768.3	-26.91	41.58
100.00	9 4 57	4331.61	13.03	174.71	40.29	62.86	10 17 9	3731.6	9.29	167.92
110.00	19 41 42	2114.43	-31.98	29.95	45.89	102.77	20 16 57	1514.4	-29.89	21.37
110.00	10 0 18	4158.29	16.14	159.80	38.53	59.45	11 9 36	3558.3	11.96	153.18

DIFFERENTIAL CORRECTIONS

TDE	.5614	TRA	-1.5900	TC3	1.1029	BAU	.4028
RDE	-.4810	RRA	-.2153	RC3	-.0316	FAU	.06367
FDE	-.1422	FRA	.8944	FC3	-2.0183	BSP	7321
BDE	.7392	BRA	1.6045	BC3	1.1034	FSP	553

MID-COURSE EXECUTION ACCURACY

SGT	2206.4	SGR	580.7	SG3	202.1		
RRT	.0511	RRF	-.0655	RTF	-.8340		
SGB	2281.5	R23	-.0197	R13	-.8341		
SG1	2206.6	SG2	579.8	THA	.83		

ORBIT DETERMINATION ACCURACY

ST	815.1	SR	532.3	SS	307.5		
CRT	-.6594	CRS	-.3310	CST	.9207		
LSA	940.5	MSA	395.7	SSA	35.7		
EL1	904.2	EL2	360.8	ALF	151.83		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 396.803 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.179	GAL	-2.03	AZL	88.71	HCA	124.07	SMA	236.07	ECC	.37671	INC	1.2925	V1	30.210
RP	243.75	LAP	1.07	LOP	193.93	VP	22.952	GAP	22.06	AZP	90.72	TAL	352.57	TAP	116.64	RCA	147.14	APO	325.01	V2	22.510
RC	136.814	GL	8.95	GP	1.65	ZAL	101.07	ZAP	173.00	ETS	165.04	ZAE	152.87	ETE	1.46	ZAC	90.86	ETC	255.97	CLP	173.20

PLANETOCENTRIC CONIC

C3	25.990	VHL	5.098	DLA	11.76	RAL	175.38	RAD	6568.1	VEL	12.139	PTH	2.18	VHP	10.102	DPA	-.19	RAP	187.73	ECC	1.4277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 35	2651.73	-27.23	71.09	45.37	98.10	17 30 46	2051.7	-25.82	62.70
90.00	7 49 49	4548.42	11.04	191.67	39.32	63.76	9 5 37	3948.4	7.42	184.86
100.00	18 13 53	2370.15	-28.52	50.15	45.15	99.34	18 53 23	1770.1	-26.94	41.71
100.00	9 5 11	4305.24	12.21	173.19	38.72	62.50	10 16 57	3705.2	8.43	166.44
110.00	19 35 37	2114.40	-31.98	29.95	44.37	102.77	20 10 52	1514.4	-29.89	21.36
110.00	9 59 57	4133.75	15.28	158.41	36.95	59.04	11 8 51	3533.8	11.07	151.84

DIFFERENTIAL CORRECTIONS

TDE	.5405	TRA	-1.5593	TC3	1.1936	BAU	.4148
RDE	-.4654	RRA	-.2084	RC3	-.0296	FAU	.06572
FDE	-.1306	FRA	.8960	FC3	-2.1892	BSP	7478
BDE	.7133	BRA	1.5732	BC3	1.1939	FSP	586

MID-COURSE EXECUTION ACCURACY

SGT	2248.2	SGR	576.0	SG3	212.7		
RRT	.0570	RRF	-.0719	RTF	-.8395		
SGB	2320.8	R23	-.0208	R13	-.8396		
SG1	2248.4	SG2	575.0	THA	.90		

ORBIT DETERMINATION ACCURACY

ST	811.7	SR	528.0	SS	303.9		
CRT	-.6517	CRS	-.2974	CST	.9105		
LSA	932.6	MSA	398.6	SSA	36.5		
EL1	898.1	EL2	362.0	ALF	152.11		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 399.145 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	35.072	GAL	-1.87	AZL	88.72	HCA	124.99	SMA	232.94	ECC	.36814	INC	1.2773	V1	30.210
RP	243.50	LAP	1.05	LOP	194.85	VP	22.811	GAP	21.45	AZP	90.73	TAL	353.05	TAP	118.03	RCA	147.19	APO	318.70	V2	22.535
RC	139.022	GL	9.03	GP	1.71	ZAL	100.15	ZAP	172.46	ETS	165.61	ZAE	152.85	ETE	1.72	ZAC	91.00	ETC	255.95	CLP	172.65

PLANETOCENTRIC CONIC

C3	24.765	VHL	4.976	DLA	12.21	RAL	174.55	RAD	6568.0	VEL	12.089	PTH	2.16	VHP	9.864	DPA	-.29	RAP	188.09	ECC	1.4076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 29	2654.94	-27.26	71.32	43.84	97.99	17 23 44	2054.9	-25.87	62.93
90.00	7 50 16	4521.40	10.22	190.11	37.76	63.45	9 5 38	3921.4	6.57	183.33
100.00	18 7 4	2372.47	-28.55	50.32	43.61	99.26	18 46 36	1772.5	-26.98	41.87
100.00	9 5 22	4279.10	11.38	171.69	37.15	62.17	10 16 41	3679.1	7.57	164.97
110.00	19 29 24	2114.84	-31.99	29.99	42.84	102.75	20 4 39	1514.8	-29.90	21.39
110.00	9 59 31	4109.50	14.43	157.05	35.38	58.67	11 8 1	3509.5	10.17	150.53

DIFFERENTIAL CORRECTIONS

TDE	.5188	TRA	-1.5281	TC3	1.2886	BAU	.4267
RDE	-.4505	RRA	-.2018	RC3	-.0270	FAU	.06789
FDE	-.1174	FRA	.8968	FC3	-2.3731	BSP	7647
BDE	.6871	BRA	1.5414	BC3	1.2889	FSP	622

MID-COURSE EXECUTION ACCURACY

SGT	2289.5	SGR	571.2	SG3	223.9		
RRT	.0638	RRF	-.0794	RTF	-.8448		
SGB	2359.7	R23	-.0219	R13	-.8449		
SG1	2289.8	SG2	569.9	THA	.97		

ORBIT DETERMINATION ACCURACY

ST	806.2	SR	523.6	SS	299.8		
CRT	-.6429	CRS	-.2582	CST	.8978		
LSA	922.5	MSA	401.8	SSA	37.4		
EL1	890.0	EL2	363.3	ALF	152.35		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 401.591 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	34.969	GAL	-1.71	AZL	88.74	HCA	125.90	SMA	230.03	ECC	.35996	INC	1.2616	V1	30.210
RP	243.25	LAP	1.02	LOP	195.76	VP	22.677	GAP	20.85	AZP	90.74	TAL	353.53	TAP	119.43	RCA	147.23	APO	312.84	V2	22.560
RC	141.251	GL	9.11	GP	1.77	ZAL	99.20	ZAP	171.91	ETS	166.09	ZAE	152.87	ETE	1.97	ZAC	91.14	ETC	255.94	CLP	172.10

PLANETOCENTRIC CONIC

C3	23.629	VHL	4.861	DLA	12.65	RAL	173.69	RAD	6568.0	VEL	12.042	PTH	2.15	VHP	9.632	DPA	-.39	RAP	188.44	ECC	1.3889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 14	2658.66	-27.29	71.59	42.30	97.86	17 16 33	2058.7	-25.92	63.19
90.00	7 50 40	4494.64	9.40	188.57	36.21	63.17	9 5 35	3894.6	5.73	181.82
100.00	18 0 6	2375.29	-28.58	50.53	42.09	99.15	18 39 42	1775.3	-27.02	42.07
100.00	9 5 29	4253.48	10.56	170.21	35.60	61.87	10 16 23	3653.5	6.71	163.53
110.00	19 23 3	2115.74	-32.00	30.05	41.32	102.72	19 58 19	1515.7	-29.92	21.46
110.00	9 59 2	4085.56	13.58	155.72	33.82	58.32	11 7 7	3485.6	9.29	149.24

DIFFERENTIAL CORRECTIONS

TDE	.4978	TRA	-1.4958	TC3	1.3873	BAU	.4383
RDE	-.4362	RRA	-.1953	RC3	-.0238	FAU	.07015
FDE	-.1037	FRA	.8958	FC3	-2.5704	BSP	7804
BDE	.6619	BRA	1.5085	BC3	1.3876	FSP	659

MID-COURSE EXECUTION ACCURACY

SGT	2330.0	SGR	566.1	SG3	235.5		
RRT	.0708	RRF	-.0872	RTF	-.8498		
SGB	2397.8	R23	-.0233	R13	-.8500		
SG1	2330.3	SG2	564.6	THA	1.05		

ORBIT DETERMINATION ACCURACY

ST	799.9	SR	519.0	SS	295.3		
CRT	-.6343	CRS	-.2167	CST	.8833		
LSA	911.6	MSA	404.8	SSA	38.3		
EL1	881.2	EL2	364.2	ALF	152.56		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 404.133 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.871 GAL -1.56 AZL 88.75 HCA 126.82 SMA 227.33 ECC .35216 INC 1.2456 V1 30.210
RP 243.00 LAP 1.00 LOP 196.68 VP 22.550 GAP 20.25 AZP 90.75 TAL 354.02 TAP 120.84 RCA 147.27 APO 307.38 V2 22.585
RC 143.499 GL 9.18 GP 1.83 ZAL 98.23 ZAP 171.35 ETS 166.50 ZAE 152.94 ETE 2.24 ZAC 91.27 ETC 255.93 CLP 171.55

PLANETOCENTRIC CONIC

C3 22.575 VHL 4.751 DLA 13.10 RAL 172.81 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 9.405 DPA -.49 RAP 188.80 ECC 1.3715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 52	2662.87	-27.33	71.89	40.78	97.72	17 9 15	2062.9	-25.98	63.48
90.00	7 51 1	4468.19	8.58	187.06	34.67	62.91	9 5 29	3868.2	4.88	180.33
100.00	17 53 2	2378.56	-28.62	50.76	40.56	99.03	18 32 40	1778.6	-27.07	42.30
100.00	9 5 33	4227.73	9.73	168.76	34.06	61.60	10 16 0	3627.7	5.86	162.11
110.00	19 16 36	2117.06	-32.02	30.15	39.81	102.66	19 51 53	1517.1	-29.95	21.55
110.00	9 58 28	4062.00	12.73	154.41	32.28	58.00	11 6 10	3462.0	8.41	147.98

DIFFERENTIAL CORRECTIONS
TDE .4761 TRA-1.4630 TC3 1.4913 BAU .4501
RDE -.4224 RRA -.1891 RC3 -.0200 FAU .07253
FDE -.0883 FRA .8934 FC3-2.7815 BSP 7955
BDE .6365 BRA 1.4752 BC3 1.4914 FSP 698

MID-COURSE EXECUTION ACCURACY
SGT 2370.5 SGR 560.9 SG3 247.7
RRT .0787 RRF -.0960 RTF -.8549
SGB 2435.9 R23 -.0249 R13 -.8550
SG1 2370.9 SG2 559.1 THA 1.13

ORBIT DETERMINATION ACCURACY
ST 791.7 SR 514.2 SS 290.4
CRT -.6247 CRS -.1687 CST .8653
LSA 898.6 MSA 408.1 SSA 39.3
EL1 870.6 EL2 365.1 ALF 152.73

LAUNCH DATE DEC 2 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 406.762 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.777 GAL -1.41 AZL 88.77 HCA 127.74 SMA 224.80 ECC .34472 INC 1.2291 V1 30.210
RP 242.74 LAP .97 LOP 197.60 VP 22.431 GAP 19.66 AZP 90.75 TAL 354.51 TAP 122.25 RCA 147.31 APO 302.30 V2 22.611
RC 145.763 GL 9.23 GP 1.89 ZAL 97.25 ZAP 170.78 ETS 166.86 ZAE 153.04 ETE 2.52 ZAC 91.41 ETC 255.92 CLP 170.98

PLANETOCENTRIC CONIC

C3 21.597 VHL 4.647 DLA 13.55 RAL 171.91 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 9.184 DPA -.57 RAP 189.14 ECC 1.3554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 23	2667.51	-27.37	72.22	39.25	97.55	17 1 51	2067.5	-26.04	63.81
90.00	7 51 17	4442.10	7.77	185.57	33.14	62.69	9 5 20	3842.1	4.05	178.87
100.00	17 45 50	2382.26	-28.65	51.03	39.04	98.90	18 25 33	1782.3	-27.13	42.56
100.00	9 5 32	4202.59	8.92	167.35	32.53	61.35	10 15 34	3602.6	5.02	160.72
110.00	19 10 3	2118.77	-32.05	30.28	38.30	102.59	19 45 22	1518.8	-29.98	21.67
110.00	9 57 48	4038.84	11.89	153.15	30.75	57.71	11 5 7	3438.8	7.55	146.75

DIFFERENTIAL CORRECTIONS
TDE .4543 TRA-1.4310 TC3 1.5997 BAU .4619
RDE -.4092 RRA -.1830 RC3 -.0154 FAU .07506
FDE -.0722 FRA .8908 FC3-3.0088 BSP 8106
BDE .6114 BRA 1.4427 BC3 1.5998 FSP 740

MID-COURSE EXECUTION ACCURACY
SGT 2412.0 SGR 555.6 SG3 260.7
RRT .0876 RRF -.1058 RTF -.8599
SGB 2475.2 R23 -.0264 R13 -.8600
SG1 2412.5 SG2 553.3 THA 1.22

ORBIT DETERMINATION ACCURACY
ST 782.4 SR 509.3 SS 285.9
CRT -.6141 CRS -.1163 CST .8447
LSA 884.3 MSA 411.8 SSA 40.3
EL1 858.7 EL2 366.2 ALF 152.89

LAUNCH DATE DEC 2 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 409.473 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.686 GAL -1.26 AZL 88.79 HCA 128.66 SMA 222.44 ECC .33763 INC 1.2122 V1 30.210
RP 242.47 LAP .95 LOP 198.52 VP 22.317 GAP 19.07 AZP 90.76 TAL 355.01 TAP 123.67 RCA 147.34 APO 297.55 V2 22.638
RC 148.041 GL 9.28 GP 1.96 ZAL 96.24 ZAP 170.21 ETS 167.17 ZAE 153.19 ETE 2.81 ZAC 91.55 ETC 255.91 CLP 170.40

PLANETOCENTRIC CONIC

C3 20.689 VHL 4.549 DLA 13.99 RAL 170.98 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 8.968 DPA -.66 RAP 189.48 ECC 1.3405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 47	2672.59	-27.42	72.59	37.73	97.38	16 54 20	2072.6	-26.11	64.16
90.00	7 51 30	4416.38	6.97	184.11	31.63	62.48	9 5 6	3816.4	3.23	177.43
100.00	17 38 32	2386.37	-28.70	51.33	37.53	98.75	18 18 19	1786.4	-27.19	42.85
100.00	9 5 26	4177.83	8.11	165.96	31.01	61.13	10 15 4	3577.8	4.19	159.35
110.00	19 3 24	2120.87	-32.08	30.43	36.79	102.50	19 38 44	1520.9	-30.02	21.82
110.00	9 57 4	4016.11	11.06	151.91	29.23	57.45	11 4 0	3416.1	6.69	145.54

DIFFERENTIAL CORRECTIONS
TDE .4451 TRA-1.3851 TC3 1.7317 BAU .4790
RDE -.3968 RRA -.1774 RC3 -.0104 FAU .07752
FDE -.0527 FRA .8879 FC3-3.2439 BSP 7986
BDE .5963 BRA 1.3964 BC3 1.7317 FSP 790

MID-COURSE EXECUTION ACCURACY
SGT 2455.5 SGR 550.4 SG3 273.8
RRT .0880 RRF -.1172 RTF -.8686
SGB 2516.4 R23 -.0369 R13 -.8688
SG1 2456.0 SG2 548.1 THA 1.19

ORBIT DETERMINATION ACCURACY
ST 779.5 SR 504.5 SS 281.3
CRT -.6178 CRS -.0509 CST .8054
LSA 877.1 MSA 412.8 SSA 40.6
EL1 855.2 EL2 361.6 ALF 153.00

LAUNCH DATE DEC 2 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 412.256 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.600 GAL -1.12 AZL 88.81 HCA 129.58 SMA 220.24 ECC .33088 INC 1.1948 V1 30.210
RP 242.20 LAP .92 LOP 199.44 VP 22.211 GAP 18.49 AZP 90.76 TAL 355.51 TAP 125.09 RCA 147.37 APO 293.11 V2 22.664
RC 150.330 GL 9.32 GP 2.03 ZAL 95.23 ZAP 169.62 ETS 167.44 ZAE 153.37 ETE 3.11 ZAC 91.70 ETC 255.90 CLP 169.82

PLANETOCENTRIC CONIC

C3 19.849 VHL 4.455 DLA 14.43 RAL 170.04 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 8.758 DPA -.73 RAP 189.82 ECC 1.3267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 8	2677.98	-27.46	72.97	36.23	97.19	16 46 46	2078.0	-26.18	64.54
90.00	7 51 37	4391.21	6.17	182.69	30.13	62.31	9 4 49	3791.2	2.42	176.02
100.00	17 31 12	2390.78	-28.74	51.65	36.03	98.58	18 11 2	1790.8	-27.26	43.16
100.00	9 5 15	4153.64	7.31	164.60	29.51	60.93	10 14 29	3553.6	3.38	158.02
110.00	18 56 42	2123.24	-32.11	30.61	35.30	102.40	19 32 5	1523.2	-30.07	21.99
110.00	9 56 14	3993.94	10.25	150.71	27.73	57.21	11 2 48	3393.9	5.85	144.37

DIFFERENTIAL CORRECTIONS
TDE .4161 TRA-1.3588 TC3 1.8353 BAU .4870
RDE -.3846 RRA -.1716 RC3 -.0038 FAU .08040
FDE -.0349 FRA .8803 FC3-3.5069 BSP 8275
BDE .5666 BRA 1.3696 BC3 1.8354 FSP 833

MID-COURSE EXECUTION ACCURACY
SGT 2493.3 SGR 544.6 SG3 288.3
RRT .1038 RRF -.1285 RTF -.8707
SGB 2552.1 R23 -.0338 R13 -.8709
SG1 2494.0 SG2 541.5 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 762.8 SR 499.3 SS 276.8
CRT -.5978 CRS .0096 CST .7831
LSA 854.9 MSA 418.4 SSA 42.1
EL1 835.1 EL2 365.5 ALF 153.07

LAUNCH DATE DEC 2 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 415.108 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	34.518	GAL	-.98	AZL	88.82	HCA	130.51	SMA	218.18	ECC	.32444	INC	1.1769
RP	241.93	LAP	.89	LOP	200.37	VP	22.110	GAP	17.91	AZP	90.76	TAL	356.02	TAP	126.52	RCA	147.39	APO	288.96
RC	152.629	GL	9.34	GP	2.10	ZAL	94.21	ZAP	169.02	ETS	167.67	ZAE	153.60	ETE	3.43	ZAC	91.84	ETC	255.89

V1 30.210 V2 22.692 CLP 169.22

PLANETOCENTRIC CONIC

C3 19.069 VHL 4.367 DLA 14.86 RAL 169.08 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 8.553 DPA -.80 RAP 190.15 ECC 1.3138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 25	2683.67	-27.51	73.38	34.73	96.99	16 39 9	2083.7	-26.26	64.94
90.00	7 51 40	4366.54	5.39	181.30	28.65	62.16	9 4 26	3766.5	1.62	174.64
100.00	17 23 47	2395.48	-28.79	51.99	34.53	98.41	18 3 43	1795.5	-27.33	43.49
100.00	9 4 59	4129.97	6.52	163.28	28.03	60.76	10 13 49	3530.0	2.58	156.72
110.00	18 49 57	2125.90	-32.15	30.81	33.82	102.29	19 25 23	1525.9	-30.12	22.18
110.00	9 55 19	3972.31	9.45	149.54	26.25	56.99	11 1 31	3372.3	5.03	143.23

DIFFERENTIAL CORRECTIONS

TDE	.3917	TRA	-1.3283	TC3	1.9432	BAU	.4954
RDE	-.3729	RRA	-.1661	RC3	.0036	FAU	.08329
FDE	-.0167	FRA	.8710	FC3	-3.7815	BSP	8508
BDE	.5408	BRA	1.3386	BC3	1.9432	FSP	880

MID-COURSE EXECUTION ACCURACY

SGT	2528.9	SGR	538.7	SG3	303.1		
RRT	.1177	RRF	-.1408	RTF	-.8734		
SGB	2585.6	R23	-.0335	R13	-.8736		
SG1	2529.7	SG2	534.8	THA	1.50		

ORBIT DETERMINATION ACCURACY

ST	747.9	SR	493.9	SS	272.6		
CRT	-.5817	CRS	.0727	CST	.7546		
LSA	834.9	MSA	422.8	SSA	43.4		
EL1	817.4	EL2	367.6	ALF	153.14		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 418.024 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	34.439	GAL	-.84	AZL	88.84	HCA	131.43	SMA	216.25	ECC	.31830	INC	1.1584
RP	241.65	LAP	.87	LOP	201.29	VP	22.016	GAP	17.33	AZP	90.77	TAL	356.52	TAP	127.96	RCA	147.41	APO	285.08
RC	154.936	GL	9.35	GP	2.18	ZAL	93.17	ZAP	168.41	ETS	167.87	ZAE	153.85	ETE	3.76	ZAC	91.99	ETC	255.88

V1 30.210 V2 22.720 CLP 168.61

PLANETOCENTRIC CONIC

C3 18.347 VHL 4.283 DLA 15.28 RAL 168.10 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 8.353 DPA -.86 RAP 190.47 ECC 1.3019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 40	2689.61	-27.56	73.81	33.23	96.78	16 31 30	2089.6	-26.33	65.36
90.00	7 51 36	4342.45	4.62	179.94	27.18	62.03	9 3 59	3742.5	.84	173.30
100.00	17 16 21	2400.41	-28.84	52.35	33.04	98.23	17 56 21	1800.4	-27.40	43.84
100.00	9 4 37	4106.89	5.75	162.00	26.56	60.62	10 13 3	3506.9	1.80	155.45
110.00	18 43 9	2128.79	-32.19	31.02	32.34	102.17	19 18 38	1528.8	-30.18	22.38
110.00	9 54 17	3951.28	8.66	148.42	24.77	56.80	11 0 8	3351.3	4.24	142.13

DIFFERENTIAL CORRECTIONS

TDE	.3671	TRA	-1.2970	TC3	2.0602	BAU	.5053
RDE	-.3618	RRA	-.1608	RC3	.0121	FAU	.08639
FDE	.0048	FRA	.8620	FC3	-4.0766	BSP	8692
BDE	.5154	BRA	1.3070	BC3	2.0602	FSP	930

MID-COURSE EXECUTION ACCURACY

SGT	2567.2	SGR	532.9	SG3	318.9		
RRT	.1326	RRF	-.1554	RTF	-.8769		
SGB	2622.0	R23	-.0342	R13	-.8772		
SG1	2568.3	SG2	528.0	THA	1.65		

ORBIT DETERMINATION ACCURACY

ST	731.5	SR	488.6	SS	269.6		
CRT	-.5640	CRS	.1485	CST	.7167		
LSA	813.0	MSA	428.4	SSA	44.7		
EL1	798.2	EL2	369.7	ALF	153.16		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 420.998 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	34.364	GAL	-.71	AZL	88.86	HCA	132.36	SMA	214.43	ECC	.31245	INC	1.1394
RP	241.36	LAP	.84	LOP	202.22	VP	21.927	GAP	16.76	AZP	90.77	TAL	357.03	TAP	129.40	RCA	147.43	APO	281.43
RC	157.250	GL	9.35	GP	2.26	ZAL	92.13	ZAP	167.79	ETS	168.04	ZAE	154.15	ETE	4.12	ZAC	92.14	ETC	255.87

V1 30.210 V2 22.748 CLP 168.00

PLANETOCENTRIC CONIC

C3 17.678 VHL 4.204 DLA 15.68 RAL 167.10 RAD 6567.7 VEL 11.792 PTH 2.09 VHP 8.157 DPA -.92 RAP 190.79 ECC 1.2909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 53	2695.73	-27.61	74.25	31.75	96.56	16 23 49	2095.7	-26.41	65.79
90.00	7 51 26	4319.00	3.87	178.63	25.72	61.93	9 3 25	3719.0	.09	171.99
100.00	17 8 53	2405.52	-28.89	52.72	31.57	98.04	17 48 58	1805.5	-27.47	44.20
100.00	9 4 8	4084.44	5.00	160.76	25.10	60.49	10 12 12	3484.4	1.04	154.22
110.00	18 36 21	2131.85	-32.24	31.25	30.88	102.04	19 11 53	1531.8	-30.24	22.60
110.00	9 53 9	3930.88	7.90	147.33	23.32	56.63	10 58 40	3330.9	3.46	141.06

DIFFERENTIAL CORRECTIONS

TDE	.3458	TRA	-1.2641	TC3	2.1795	BAU	.5151
RDE	-.3512	RRA	-.1556	RC3	.0217	FAU	.08961
FDE	.0254	FRA	.8510	FC3	-4.3884	BSP	8844
BDE	.4929	BRA	1.2736	BC3	2.1796	FSP	984

MID-COURSE EXECUTION ACCURACY

SGT	2604.3	SGR	527.1	SG3	335.4		
RRT	.1471	RRF	-.1706	RTF	-.8805		
SGB	2657.1	R23	-.0361	R13	-.8808		
SG1	2605.5	SG2	521.1	THA	1.78		

ORBIT DETERMINATION ACCURACY

ST	716.4	SR	483.1	SS	267.5		
CRT	-.5491	CRS	.2209	CST	.6758		
LSA	792.9	MSA	432.8	SSA	46.0		
EL1	780.6	EL2	370.5	ALF	153.19		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 424.027 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	34.292	GAL	-.58	AZL	88.88	HCA	133.30	SMA	212.73	ECC	.30688	INC	1.1198
RP	241.08	LAP	.82	LOP	203.16	VP	21.844	GAP	16.20	AZP	90.77	TAL	357.54	TAP	130.84	RCA	147.45	APO	278.02
RC	159.568	GL	9.34	GP	2.35	ZAL	91.08	ZAP	167.15	ETS	168.18	ZAE	154.48	ETE	4.50	ZAC	92.29	ETC	255.86

V1 30.210 V2 22.777 CLP 167.37

PLANETOCENTRIC CONIC

C3 17.058 VHL 4.130 DLA 16.08 RAL 166.09 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 7.967 DPA -.96 RAP 191.10 ECC 1.2807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 7	2701.96	-27.66	74.70	30.28	96.34	16 16 9	2102.0	-26.49	66.23
90.00	7 51 9	4296.25	3.14	177.35	24.28	61.84	9 2 45	3696.3	-.65	170.72
100.00	17 1 25	2410.74	-28.94	53.10	30.10	97.84	17 41 36	1810.7	-27.55	44.57
100.00	9 3 32	4062.70	4.27	159.56	23.66	60.39	10 11 15	3462.7	.30	153.03
110.00	18 29 32	2135.03	-32.28	31.49	29.42	101.91	19 5 7	1535.0	-30.30	22.83
110.00	9 51 54	3911.18	7.16	146.28	21.87	56.49	10 57 5	3311.2	2.71	140.03

DIFFERENTIAL CORRECTIONS

TDE	.3246	TRA	-1.2297	TC3	2.3021	BAU	.5251
RDE	-.3410	RRA	-.1506	RC3	.0325	FAU	.09298
FDE	.0484	FRA	.8366	FC3	-4.7192	BSP	8994
BDE	.4708	BRA	1.2389	BC3	2.3024	FSP	1042

MID-COURSE EXECUTION ACCURACY

SGT	2640.3	SGR	521.3	SG3	352.6		
RRT	.1627	RRF	-.1876	RTF	-.8841		
SGB	2691.3	R23	-.0385	R13	-.8843		
SG1	2641.7	SG2	514.1	THA	1.91		

ORBIT DETERMINATION ACCURACY

ST	699.8	SR	477.6	SS	266.1		
CRT	-.5334	CRS	.3007	CST	.6261		
LSA	771.3	MSA	437.6	SSA	47.3		
EL1	761.6	EL2	371.2	ALF	153.14		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 427.106 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.223 GAL -.45 AZL 88.90 HCA 134.23 SMA 211.13 ECC .30157 INC 1.0995 V1 30.210
RP 240.79 LAP .79 LOP 204.09 VP 21.766 GAP 15.64 AZP 90.77 TAL 358.05 TAP 132.28 RCA 147.46 APO 274.80 V2 22.806
RC 161.890 GL 9.31 GP 2.44 ZAL 90.03 ZAP 166.51 ETS 168.30 ZAE 154.84 ETE 4.91 ZAC 92.44 ETC 255.86 CLP 166.73

PLANETOCENTRIC CONIC

C3 16.484 VHL 4.060 DLA 16.47 RAL 165.07 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 7.781 DPA -1.00 RAP 191.41 ECC 1.2713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 23	2708.22	-27.70	75.16	28.82	96.12	16 8 31	2108.2	-26.56	66.67
90.00	7 50 45	4274.27	2.43	176.12	22.86	61.78	9 1 59	3674.3	-1.36	169.50
100.00	16 54 0	2416.00	-28.99	53.48	28.64	97.65	17 34 16	1816.0	-27.62	44.95
100.00	9 2 49	4041.73	3.57	158.40	22.23	60.30	10 10 10	3441.7	-.41	151.88
110.00	18 22 46	2138.27	-32.33	31.73	27.98	101.77	18 58 24	1538.3	-30.37	23.06
110.00	9 50 32	3892.22	6.45	145.28	20.45	56.36	10 55 24	3292.2	1.98	139.04

DIFFERENTIAL CORRECTIONS
TDE .3055 TRA-1.1972 TC3 2.4255 BAU .5346
RDE -.3313 RRA -.1457 RC3 .0448 FAU .09654
FDE .0714 FRA .8223 FC3-5.0702 BSP 9121
BDE .4507 BRA 1.2060 BC3 2.4259 FSP 1100

MID-COURSE EXECUTION ACCURACY
SGT 2677.4 SGR 515.6 SG3 370.9
RRT .1795 RRF -.2062 RTF -.8873
SGB 2726.6 R23 -.0417 R13 -.8876
SG1 2679.1 SG2 507.0 THA 2.05

ORBIT DETERMINATION ACCURACY
ST 684.7 SR 471.9 SS 266.5
CRT -.5185 CRS .3772 CST .5737
LSA 751.3 MSA 442.3 SSA 48.7
EL1 744.0 EL2 371.3 ALF 153.14

LAUNCH DATE DEC 2 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 430.233 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.157 GAL -.33 AZL 88.92 HCA 135.17 SMA 209.63 ECC .29652 INC 1.0785 V1 30.210
RP 240.49 LAP .76 LOP 205.02 VP 21.694 GAP 15.08 AZP 90.76 TAL 358.56 TAP 133.73 RCA 147.47 APO 271.79 V2 22.836
RC 164.213 GL 9.26 GP 2.54 ZAL 88.97 ZAP 165.85 ETS 168.41 ZAE 155.24 ETE 5.34 ZAC 92.60 ETC 255.85 CLP 166.07

PLANETOCENTRIC CONIC

C3 15.953 VHL 3.994 DLA 16.83 RAL 164.04 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 7.599 DPA -1.03 RAP 191.71 ECC 1.2625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 42	2714.45	-27.75	75.61	27.37	95.90	16 0 56	2114.4	-26.64	67.11
90.00	7 50 12	4253.05	1.75	174.94	21.45	61.73	9 1 5	3653.1	-2.04	168.32
100.00	16 46 37	2421.22	-29.03	53.87	27.20	97.45	17 26 59	1821.2	-27.70	45.32
100.00	9 1 57	4021.57	2.89	157.29	20.82	60.23	10 8 59	3421.6	-1.10	150.77
110.00	18 16 1	2141.51	-32.37	31.97	26.54	101.64	18 51 43	1541.5	-30.43	23.29
110.00	9 49 2	3874.04	5.76	144.32	19.04	56.25	10 53 36	3274.0	1.29	138.09

DIFFERENTIAL CORRECTIONS
TDE .2816 TRA-1.1636 TC3 2.5474 BAU .5434
RDE -.3221 RRA -.1410 RC3 .0585 FAU .10022
FDE .0984 FRA .8055 FC3-5.4390 BSP 9299
BDE .4278 BRA 1.1722 BC3 2.5481 FSP 1167

MID-COURSE EXECUTION ACCURACY
SGT 2710.3 SGR 510.2 SG3 389.8
RRT .2002 RRF -.2273 RTF -.8906
SGB 2757.9 R23 -.0436 R13 -.8909
SG1 2712.3 SG2 499.5 THA 2.23

ORBIT DETERMINATION ACCURACY
ST 663.8 SR 466.3 SS 269.2
CRT -.4955 CRS .4620 CST .5161
LSA 725.3 MSA 449.5 SSA 50.1
EL1 720.2 EL2 373.3 ALF 153.02

LAUNCH DATE DEC 2 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 433.404 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.093 GAL -.21 AZL 88.94 HCA 136.10 SMA 208.21 ECC .29170 INC 1.0566 V1 30.210
RP 240.19 LAP .73 LOP 205.96 VP 21.626 GAP 14.54 AZP 90.76 TAL 359.07 TAP 135.18 RCA 147.48 APO 268.95 V2 22.866
RC 166.536 GL 9.20 GP 2.64 ZAL 87.92 ZAP 165.17 ETS 168.49 ZAE 155.67 ETE 5.81 ZAC 92.76 ETC 255.84 CLP 165.40

PLANETOCENTRIC CONIC

C3 15.461 VHL 3.932 DLA 17.18 RAL 163.00 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 7.422 DPA -1.05 RAP 191.99 ECC 1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 6	2720.56	-27.79	76.05	25.93	95.68	15 53 26	2120.6	-26.71	67.55
90.00	7 49 29	4232.83	1.10	173.81	20.06	61.70	9 0 2	3632.8	-2.69	167.18
100.00	16 39 20	2426.35	-29.08	54.24	25.76	97.26	17 19 46	1826.3	-27.77	45.68
100.00	9 0 56	4002.28	2.23	156.23	19.43	60.18	10 7 39	3402.3	-1.75	149.71
110.00	18 9 21	2144.70	-32.41	32.21	25.12	101.50	18 45 6	1544.7	-30.49	23.52
110.00	9 47 25	3856.69	5.11	143.40	17.64	56.15	10 51 41	3256.7	.63	137.18

DIFFERENTIAL CORRECTIONS
TDE .2699 TRA-1.1192 TC3 2.6626 BAU .5506
RDE -.3132 RRA -.1362 RC3 .0735 FAU .10392
FDE .1202 FRA .7787 FC3-5.8191 BSP 9369
BDE .4134 BRA 1.1275 BC3 2.6636 FSP 1236

MID-COURSE EXECUTION ACCURACY
SGT 2730.0 SGR 504.7 SG3 408.8
RRT .2149 RRF -.2476 RTF -.8935
SGB 2776.3 R23 -.0503 R13 -.8939
SG1 2732.2 SG2 492.5 THA 2.35

ORBIT DETERMINATION ACCURACY
ST 648.8 SR 460.6 SS 269.4
CRT -.4935 CRS .5290 CST .4485
LSA 707.8 MSA 449.3 SSA 51.5
EL1 705.1 EL2 368.6 ALF 152.65

LAUNCH DATE DEC 2 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 436.616 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 34.033 GAL -.09 AZL 88.97 HCA 137.04 SMA 206.88 ECC .28712 INC 1.0342 V1 30.210
RP 239.88 LAP .70 LOP 206.90 VP 21.563 GAP 13.99 AZP 90.76 TAL 359.58 TAP 136.62 RCA 147.48 APO 266.28 V2 22.897
RC 168.857 GL 9.12 GP 2.75 ZAL 86.87 ZAP 164.48 ETS 168.56 ZAE 156.13 ETE 6.32 ZAC 92.93 ETC 255.84 CLP 164.72

PLANETOCENTRIC CONIC

C3 15.006 VHL 3.874 DLA 17.52 RAL 161.95 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 7.248 DPA -1.05 RAP 192.28 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 37	2726.43	-27.83	76.47	24.51	95.47	15 46 4	2126.4	-26.78	67.96
90.00	7 48 37	4213.55	.48	172.74	18.69	61.69	8 58 51	3613.5	-3.31	166.10
100.00	16 32 9	2431.26	-29.12	54.60	24.34	97.07	17 12 40	1831.3	-27.83	46.03
100.00	8 59 46	3983.95	1.61	155.23	18.05	60.15	10 6 10	3383.9	-2.37	148.71
110.00	18 2 46	2147.74	-32.45	32.44	23.71	101.37	18 38 34	1547.7	-30.55	23.74
110.00	9 45 39	3840.24	4.48	142.54	16.27	56.08	10 49 39	3240.2	-.00	136.33

DIFFERENTIAL CORRECTIONS
TDE .2334 TRA-1.0986 TC3 2.7824 BAU .5585
RDE -.3049 RRA -.1317 RC3 .0906 FAU .10805
FDE .1581 FRA .7648 FC3-6.2336 BSP 9815
BDE .3840 BRA 1.1065 BC3 2.7838 FSP 1325

MID-COURSE EXECUTION ACCURACY
SGT 2769.4 SGR 500.1 SG3 430.2
RRT .2483 RRF -.2759 RTF -.8958
SGB 2814.2 R23 -.0480 R13 -.8962
SG1 2772.3 SG2 483.9 THA 2.65

ORBIT DETERMINATION ACCURACY
ST 620.2 SR 455.1 SS 281.7
CRT -.4401 CRS .6233 CST .3962
LSA 671.2 MSA 466.8 SSA 53.0
EL1 669.8 EL2 378.5 ALF 152.77

LAUNCH DATE DEC 2 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 439.868 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.975	GAL	.02	AZL	88.99	HCA	137.99	SMA	205.62	ECC	.28275	INC	1.0106	V1	30.210
RP	239.58	LAP	.68	LOP	207.85	VP	21.505	GAP	13.46	AZP	90.75	TAL	.08	TAP	138.07	RCA	147.48	APO	263.76	V2	22.928
RC	171.174	GL	9.03	GP	2.87	ZAL	85.82	ZAP	163.78	ETS	168.61	ZAE	156.63	ETE	6.88	ZAC	93.09	ETC	255.83	CLP	164.03

PLANETOCENTRIC CONIC

C3	14.586	VHL	3.819	DLA	17.83	RAL	160.90	RAD	6567.6	VEL	11.661	PTH	2.05	VHP	7.079	DPA	-1.05	RAP	192.55	ECC	1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 17	2732.02	-27.86	76.88	23.10	95.27	15 38 49	2132.0	-26.84	68.36
90.00	7 47 34	4195.28	-.11	171.72	17.33	61.68	8 57 29	3595.3	-3.90	165.08
100.00	16 25 6	2435.92	-29.16	54.94	22.94	96.90	17 5 42	1835.9	-27.90	46.36
100.00	8 58 26	3966.61	1.02	154.27	16.69	60.12	10 4 33	3366.6	-2.96	147.75
110.00	17 56 18	2150.59	-32.49	32.65	22.32	101.25	18 32 9	1550.6	-30.60	23.94
110.00	9 43 43	3824.71	3.89	141.73	14.91	56.01	10 47 28	3224.7	-.60	135.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2110	TRA	-1.2583	TC3	2.9834	BAU	.5822	SGT	3037.3	SGR	498.9	SG3	461.2	ST	677.3	SR	450.1	SS	337.3
RDE	-.2971	RRA	-.1318	RC3	.1101	FAU	.11302	RRT	.3051	RRF	-.3255	RTF	-.8939	CRT	-.3407	CRS	.6409	CST	.4797
FDE	.1963	FRA	.9312	FC3	-6.7084	BSP	8611	SGB	3078.0	R23	-.0482	R13	-.8943	LSA	714.1	MSA	512.4	SSA	51.6
BDE	.3644	BRA	1.2652	BC3	2.9855	FSP	1295	SG1	3041.2	SG2	474.5	THA	2.94	EL1	704.0	EL2	407.2	ALF	160.48

LAUNCH DATE DEC 2 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 443.154 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.920	GAL	.13	AZL	89.01	HCA	138.93	SMA	204.43	ECC	.27860	INC	.9862	V1	30.210
RP	239.26	LAP	.65	LOP	208.79	VP	21.452	GAP	12.93	AZP	90.74	TAL	.58	TAP	139.51	RCA	147.48	APO	261.39	V2	22.959
RC	173.485	GL	8.91	GP	2.99	ZAL	84.78	ZAP	163.06	ETS	168.64	ZAE	157.16	ETE	7.48	ZAC	93.26	ETC	255.83	CLP	163.32

PLANETOCENTRIC CONIC

C3	14.197	VHL	3.768	DLA	18.11	RAL	159.85	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	6.914	DPA	-1.03	RAP	192.81	ECC	1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 46 7	2737.23	-27.89	77.26	21.70	95.08	15 31 45	2137.2	-26.90	68.73
90.00	7 46 19	4178.11	-.67	170.76	15.99	61.69	8 55 57	3578.1	-4.45	164.12
100.00	16 18 13	2440.24	-29.19	55.26	21.55	96.74	16 58 53	1840.2	-27.95	46.67
100.00	8 56 54	3950.33	.47	153.38	15.35	60.11	10 2 45	3350.3	-3.51	146.86
110.00	17 49 58	2153.20	-32.53	32.85	20.94	101.14	18 25 51	1553.2	-30.65	24.13
110.00	9 41 39	3810.13	3.34	140.96	13.56	55.96	10 45 9	3210.1	-1.15	134.76

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2235	TRA	-1.0117	TC3	3.0862	BAU	.5863	SGT	2853.9	SGR	491.0	SG3	478.5	ST	596.8	SR	442.9	SS	283.9
RDE	-.2887	RRA	-.1226	RC3	.1318	FAU	.11784	RRT	.2851	RRF	-.3262	RTF	-.9055	CRT	-.4554	CRS	.7083	CST	.2650
FDE	.1929	FRA	.7015	FC3	-7.1860	BSP	9514	SGB	2895.8	R23	-.0635	R13	-.9061	LSA	648.6	MSA	457.2	SSA	56.4
BDE	.3650	BRA	1.0191	BC3	3.0890	FSP	1439	SG1	2857.4	SG2	470.0	THA	2.89	EL1	648.6	EL2	362.8	ALF	151.81

LAUNCH DATE DEC 2 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 446.475 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.868	GAL	.23	AZL	89.04	HCA	139.88	SMA	203.31	ECC	.27465	INC	.9608	V1	30.210
RP	238.95	LAP	.62	LOP	209.74	VP	21.403	GAP	12.40	AZP	90.73	TAL	1.08	TAP	140.96	RCA	147.47	APO	259.16	V2	22.991
RC	175.790	GL	8.78	GP	3.12	ZAL	83.76	ZAP	162.32	ETS	168.66	ZAE	157.71	ETE	8.15	ZAC	93.44	ETC	255.82	CLP	162.59

PLANETOCENTRIC CONIC

C3	13.837	VHL	3.720	DLA	18.38	RAL	158.79	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	6.754	DPA	-1.01	RAP	193.07	ECC	1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 11	2741.92	-27.92	77.60	20.32	94.91	15 24 53	2141.9	-26.95	69.07
90.00	7 44 51	4162.13	-1.18	169.87	14.66	61.71	8 54 13	3562.1	-4.96	163.22
100.00	16 11 32	2444.10	-29.22	55.54	20.17	96.59	16 52 16	1844.1	-28.00	46.95
100.00	8 55 11	3935.18	-.04	152.55	14.03	60.11	10 0 46	3335.2	-4.02	146.02
110.00	17 43 48	2155.45	-32.56	33.02	19.57	101.04	18 19 43	1555.5	-30.69	24.29
110.00	9 39 25	3796.60	2.82	140.25	12.24	55.92	10 42 41	3196.6	-1.67	134.05

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1899	TRA	-.9819	TC3	3.1605	BAU	.5853	SGT	2855.5	SGR	487.7	SG3	500.1	ST	564.9	SR	437.4	SS	299.5
RDE	-.2815	RRA	-.1181	RC3	.1539	FAU	.12191	RRT	.3216	RRF	-.3589	RTF	-.9055	CRT	-.4010	CRS	.7782	CST	.2168
FDE	.2327	FRA	.6687	FC3	-7.6277	BSP	9743	SGB	2896.9	R23	-.0632	R13	-.9061	LSA	611.8	MSA	471.7	SSA	58.1
BDE	.3395	BRA	.9890	BC3	3.1642	FSP	1527	SG1	2860.0	SG2	461.0	THA	3.23	EL1	610.8	EL2	370.6	ALF	151.41

LAUNCH DATE DEC 2 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 449.829 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.817	GAL	.33	AZL	89.07	HCA	140.83	SMA	202.26	ECC	.27089	INC	.9343	V1	30.210
RP	238.63	LAP	.59	LOP	210.69	VP	21.358	GAP	11.88	AZP	90.72	TAL	1.57	TAP	142.40	RCA	147.47	APO	257.05	V2	23.024
RC	178.086	GL	8.63	GP	3.26	ZAL	82.74	ZAP	161.57	ETS	168.67	ZAE	158.30	ETE	8.89	ZAC	93.62	ETC	255.82	CLP	161.85

PLANETOCENTRIC CONIC

C3	13.505	VHL	3.675	DLA	18.62	RAL	157.74	RAD	6567.5	VEL	11.614	PTH	2.04	VHP	6.596	DPA	-.97	RAP	193.31	ECC	1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 28	2746.04	-27.95	77.90	18.96	94.77	15 18 15	2146.0	-26.99	69.36
90.00	7 43 10	4147.38	-1.66	169.05	13.35	61.73	8 52 17	3547.4	-5.43	162.39
100.00	16 5 4	2447.44	-29.25	55.78	18.81	96.46	16 45 52	1847.4	-28.05	47.19
100.00	8 53 15	3921.22	-.52	151.79	12.72	60.11	9 58 36	3321.2	-4.49	145.25
110.00	17 37 48	2157.31	-32.58	33.16	18.21	100.97	18 13 46	1557.3	-30.73	24.43
110.00	9 37 0	3784.11	2.34	139.60	10.93	55.89	10 40 5	3184.1	-2.15	133.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1779	TRA	-.9470	TC3	3.2735	BAU	.5919	SGT	2879.8	SGR	485.0	SG3	525.7	ST	548.2	SR	431.3	SS	307.1
RDE	-.2743	RRA	-.1137	RC3	.1794	FAU	.12694	RRT	.3509	RRF	-.3914	RTF	-.9077	CRT	-.3893	CRS	.8152	CST	.1632
FDE	.2568	FRA	.6340	FC3	-8.1374	BSP	9858	SGB	2920.3	R23	-.0692	R13	-.9084	LSA	596.3	MSA	470.9	SSA	59.9
BDE	.3269	BRA	.9538	BC3	3.2784	FSP	1614	SG1	2884.9	SG2	453.3	THA	3.47	EL1	593.1	EL2	367.2	ALF	150.94

LAUNCH DATE DEC 2 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 453.213 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.769	GAL	.43	AZL	89.09	HCA	141.79	SMA	201.26	ECC	.26731	INC	.9066
RP	238.31	LAP	.56	LOP	211.64	VP	21.317	GAP	11.37	AZP	90.71	TAL	2.05	TAP	143.84	RCA	147.46	APO	255.06
RC	180.373	GL	8.46	GP	3.41	ZAL	81.73	ZAP	160.79	ETS	168.67	ZAE	158.91	ETE	9.70	ZAC	93.81	ETC	255.81

V1 30.210 V2 23.056 CLP 161.09

PLANETOCENTRIC CONIC

C3	13.198	VHL	3.633	DLA	18.83	RAL	156.69	RAD	6567.5	VEL	11.601	PTH	2.03	VHP	6.443	DPA	-.91	RAP	193.55

ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 2	2749.48	-27.97	78.15	17.61	94.64	15 11 52	2149.5	-27.03	69.60
90.00	7 41 13	4133.96	-2.09	168.30	12.06	61.75	8 50 7	3534.0	-5.85	161.64
100.00	15 58 52	2450.17	-29.27	55.99	17.46	96.36	16 39 42	1850.2	-28.08	47.38
100.00	8 51 5	3908.50	-.95	151.09	11.42	60.12	9 56 14	3308.5	-4.92	144.55
110.00	17 32 1	2158.70	-32.60	33.26	16.87	100.91	18 8 0	1558.7	-30.75	24.53
110.00	9 34 25	3772.73	1.91	139.01	9.64	55.86	10 37 18	3172.7	-2.58	132.80

DIFFERENTIAL CORRECTIONS

TDE	.1636	TRA	-.9186	TC3	3.3812	BAU	.5977		
RDE	-.2674	RRA	-.1095	RC3	.2072	FAU	.13213		
FDE	.2840	FRA	.6034	FC3	-8.6677	BSP	9975		
BDE	.3135	BRA	.9251	BC3	3.3875	FSP	1706		

MID-COURSE EXECUTION ACCURACY

SGT	2905.9	SGR	483.6	SG3	552.4		
RRT	.3845	RRF	-.4272	RTF	-.9094		
SGB	2945.9	R23	-.0748	R13	-.9102		
SG1	2912.0	SG2	445.4	THA	3.75		

ORBIT DETERMINATION ACCURACY

ST	531.8	SR	425.3	SS	318.5		
CRT	-.3684	CRS	.8477	CST	.1213		
LSA	581.2	MSA	472.8	SSA	61.6		
EL1	574.0	EL2	366.3	ALF	150.72		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 456.626 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.723	GAL	.53	AZL	89.12	HCA	142.74	SMA	200.31	ECC	.26391	INC	.8777
RP	237.98	LAP	.53	LOP	212.60	VP	21.280	GAP	10.87	AZP	90.70	TAL	2.53	TAP	145.27	RCA	147.45	APO	253.18
RC	182.651	GL	8.26	GP	3.57	ZAL	80.74	ZAP	160.00	ETS	168.65	ZAE	159.55	ETE	10.60	ZAC	94.00	ETC	255.80

V1 30.210 V2 23.089 CLP 160.31

PLANETOCENTRIC CONIC

C3	12.914	VHL	3.594	DLA	19.01	RAL	155.64	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	6.293	DPA	-.84	RAP	193.78

ECC 1.2125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 55	2752.14	-27.98	78.34	16.27	94.55	15 5 47	2152.1	-27.06	69.79
90.00	7 39 1	4121.92	-2.48	167.62	10.79	61.78	8 47 43	3521.9	-6.23	160.96
100.00	15 52 55	2452.20	-29.28	56.13	16.13	96.28	16 33 48	1852.2	-28.11	47.53
100.00	8 48 41	3897.09	-1.33	150.46	10.15	60.13	9 53 39	3297.1	-5.30	143.92
110.00	17 26 28	2159.56	-32.61	33.32	15.55	100.87	18 2 27	1559.6	-30.77	24.59
110.00	9 31 39	3762.50	1.52	138.47	8.37	55.85	10 34 21	3162.5	-2.97	132.27

DIFFERENTIAL CORRECTIONS

TDE	.1499	TRA	-.8821	TC3	3.4858	BAU	.6032		
RDE	-.2609	RRA	-.1050	RC3	.2377	FAU	.13756		
FDE	.3124	FRA	.5605	FC3	-9.2217	BSP	10065		
BDE	.3009	BRA	.8884	BC3	3.4939	FSP	1805		

MID-COURSE EXECUTION ACCURACY

SGT	2923.5	SGR	483.3	SG3	580.0		
RRT	.4190	RRF	-.4645	RTF	-.9116		
SGB	2963.2	R23	-.0812	R13	-.9125		
SG1	2930.7	SG2	437.7	THA	4.05		

ORBIT DETERMINATION ACCURACY

ST	511.8	SR	419.3	SS	329.9		
CRT	-.3510	CRS	.8776	CST	.0722		
LSA	568.1	MSA	468.9	SSA	63.4		
EL1	552.9	EL2	363.5	ALF	149.87		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 460.067 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.679	GAL	.62	AZL	89.15	HCA	143.70	SMA	199.42	ECC	.26067	INC	.8473
RP	237.65	LAP	.50	LOP	213.56	VP	21.246	GAP	10.37	AZP	90.68	TAL	3.00	TAP	146.70	RCA	147.44	APO	251.41
RC	184.919	GL	8.05	GP	3.73	ZAL	79.77	ZAP	159.19	ETS	168.62	ZAE	160.22	ETE	11.62	ZAC	94.20	ETC	255.80

V1 30.210 V2 23.123 CLP 159.51

PLANETOCENTRIC CONIC

C3	12.652	VHL	3.557	DLA	19.16	RAL	154.61	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	6.147	DPA	-.75	RAP	193.99

ECC 1.2082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 7	2753.92	-27.99	78.47	14.96	94.48	15 0 1	2153.9	-27.07	69.92
90.00	7 36 32	4111.34	-2.82	167.03	9.53	61.81	8 45 3	3511.3	-6.57	160.36
100.00	15 47 17	2453.45	-29.29	56.23	14.82	96.24	16 28 11	1853.4	-28.12	47.62
100.00	8 46 2	3887.04	-1.67	149.91	8.89	60.15	9 50 49	3287.0	-5.63	143.36
110.00	17 21 9	2159.81	-32.61	33.34	14.24	100.86	17 57 9	1559.8	-30.77	24.61
110.00	9 28 40	3753.45	1.17	138.00	7.11	55.83	10 31 14	3153.4	-3.32	131.80

DIFFERENTIAL CORRECTIONS

TDE	.1417	TRA	-.8463	TC3	3.6039	BAU	.6113		
RDE	-.2545	RRA	-.1005	RC3	.2714	FAU	.14343		
FDE	.3385	FRA	.5170	FC3	-9.8151	BSP	9966		
BDE	.2913	BRA	.8523	BC3	3.6141	FSP	1895		

MID-COURSE EXECUTION ACCURACY

SGT	2950.9	SGR	484.6	SG3	609.9		
RRT	.4538	RRF	-.5037	RTF	-.9145		
SGB	2990.4	R23	-.0894	R13	-.9155		
SG1	2959.3	SG2	430.6	THA	4.35		

ORBIT DETERMINATION ACCURACY

ST	495.5	SR	413.3	SS	340.6		
CRT	-.3461	CRS	.8996	CST	.0194		
LSA	563.0	MSA	459.5	SSA	65.2		
EL1	536.9	EL2	357.8	ALF	148.89		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 463.533 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.637	GAL	.71	AZL	89.18	HCA	144.66	SMA	198.58	ECC	.25760	INC	.8156
RP	237.31	LAP	.47	LOP	214.52	VP	21.217	GAP	9.88	AZP	90.67	TAL	3.46	TAP	148.12	RCA	147.43	APO	249.73
RC	187.176	GL	7.81	GP	3.91	ZAL	78.81	ZAP	158.35	ETS	168.58	ZAE	160.91	ETE	12.76	ZAC	94.40	ETC	255.79

V1 30.210 V2 23.157 CLP 158.69

PLANETOCENTRIC CONIC

C3	12.409	VHL	3.523	DLA	19.28	RAL	153.58	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	6.005	DPA	-.65	RAP	194.20

ECC 1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 42	2754.67	-27.99	78.52	13.66	94.45	14 54 37	2154.7	-27.08	69.98
90.00	7 33 44	4102.33	-3.11	166.53	8.28	61.84	8 42 7	3502.3	-6.85	159.85
100.00	15 42 1	2453.78	-29.30	56.25	13.52	96.22	16 22 55	1853.8	-28.13	47.64
100.00	8 43 7	3878.46	-1.97	149.44	7.65	60.17	9 47 45	3278.5	-5.92	142.88
110.00	17 16 7	2159.34	-32.61	33.31	12.94	100.88	17 52 7	1559.3	-30.76	24.57
110.00	9 25 30	3745.66	.87	137.60	5.88	55.83	10 27 55	3145.7	-3.62	131.39

DIFFERENTIAL CORRECTIONS

TDE	.1227	TRA	-.8203	TC3	3.6776	BAU	.6122		
RDE	-.2485	RRA	-.0961	RC3	.3079	FAU	.14932		
FDE	.3683	FRA	.4721	FC3	-10.4177	BSP	10222		
BDE	.2772	BRA	.8259	BC3	3.6904	FSP	2008		

MID-COURSE EXECUTION ACCURACY

SGT	2958.2	SGR	487.7	SG3	640.1		
RRT	.4959	RRF	-.5450	RTF	-.9147		
SGB	2998.1	R23	-.0944	R13	-.9159		
SG1	2968.3	SG2	422.1	THA	4.77		

ORBIT DETERMINATION ACCURACY

ST	475.1	SR	407.3	SS	354.5		
CRT	-.3056	CRS	.9187	CST	.0032		
LSA	553.4	MSA	454.5	SSA	67.2		
EL1	511.9	EL2	359.9	ALF	148.42		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 467.024 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.597	GAL	.79	AZL	89.22	HCA	145.63	SMA	197.78	ECC	.25468	INC	.7820	V1	30.210
RP	236.98	LAP	.44	LOP	215.48	VP	21.191	GAP	9.39	AZP	90.65	TAL	3.91	TAP	149.54	RCA	147.41	APO	248.15	V2	23.191
RC	189.421	GL	7.55	GP	4.11	ZAL	77.88	ZAP	157.49	ETS	168.52	ZAE	161.62	ETE	14.04	ZAC	94.62	ETC	255.79	CLP	157.85

PLANETOCENTRIC CONIC

C3	12.185	VHL	3.491	DLA	19.37	RAL	152.56	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	5.866	DPA	-.53	RAP	194.39	ECC	1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 41	2754.37	-27.99	78.50	12.38	94.47	14 49 35	2154.4	-27.08	69.95
90.00	7 30 38	4094.91	-3.35	166.11	7.06	61.87	8 38 53	3494.9	-7.09	159.43
100.00	15 37 5	2453.16	-29.29	56.20	12.24	96.25	16 17 59	1853.2	-28.12	47.60
100.00	8 39 54	3871.35	-2.21	149.05	6.43	60.18	9 44 26	3271.3	-6.16	142.49
110.00	17 11 23	2158.14	-32.59	33.22	11.66	100.93	17 47 21	1558.1	-30.74	24.49
110.00	9 22 6	3739.13	.62	137.26	4.66	55.82	10 24 25	3139.1	-3.86	131.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1129	TRA	-.7875	TC3	3.7670	BAU	.6163	SGT	2971.2	SGR	492.8	SG3	672.5	ST	457.7	SR	401.1	SS	364.7
RDE	-.2426	RRA	-.0914	RC3	.3482	FAU	.15568	RRT	.5349	RRF	-.5866	RTF	-.9163	CRT	-.2920	CRS	.9320	CST	-.0342
FDE	.3930	FRA	.4196	FC-11.0605		BSP	10278	SGB	3011.8	R23	-.1026	R13	-.9176	LSA	552.0	MSA	440.3	SSA	69.4
BDE	.2676	BRA	.7928	BC3	3.7831	FSP	2118	SG1	2983.1	SG2	414.7	THA	5.17	EL1	494.0	EL2	355.4	ALF	147.21

LAUNCH DATE DEC 2 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 470.538 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.559	GAL	.88	AZL	89.25	HCA	146.59	SMA	197.03	ECC	.25191	INC	.7465	V1	30.210
RP	236.64	LAP	.41	LOP	216.45	VP	21.168	GAP	8.92	AZP	90.62	TAL	4.36	TAP	150.95	RCA	147.39	APO	246.66	V2	23.226
RC	191.655	GL	7.26	GP	4.31	ZAL	76.96	ZAP	156.62	ETS	168.46	ZAE	162.35	ETE	15.50	ZAC	94.84	ETC	255.78	CLP	156.99

PLANETOCENTRIC CONIC

C3	11.978	VHL	3.461	DLA	19.42	RAL	151.55	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	5.731	DPA	-.38	RAP	194.57	ECC	1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 5	2752.88	-27.98	78.39	11.11	94.52	14 44 58	2152.9	-27.06	69.85
90.00	7 27 11	4089.17	-3.53	165.79	5.85	61.89	8 35 20	3489.2	-7.27	159.10
100.00	15 32 33	2451.48	-29.28	56.08	10.97	96.31	16 13 25	1851.5	-28.10	47.48
100.00	8 36 24	3865.80	-2.39	148.74	5.22	60.19	9 40 50	3265.8	-6.34	142.18
110.00	17 6 58	2156.11	-32.57	33.06	10.39	101.02	17 42 54	1556.1	-30.70	24.34
110.00	9 18 29	3733.93	.43	136.98	3.46	55.82	10 20 43	3133.9	-4.06	130.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1051	TRA	-.7555	TC3	3.8486	BAU	.6195	SGT	2980.9	SGR	500.4	SG3	706.1	ST	441.5	SR	394.7	SS	373.3
RDE	-.2368	RRA	-.0865	RC3	.3921	FAU	.16229	RRT	.5741	RRF	-.6284	RTF	-.9176	CRT	-.2835	CRS	.9414	CST	-.0723
FDE	.4152	FRA	.3629	FC-11.7292		BSP	10298	SGB	3022.6	R23	-.1118	R13	-.9191	LSA	551.9	MSA	424.6	SSA	71.7
BDE	.2590	BRA	.7605	BC3	3.8685	FSP	2229	SG1	2995.0	SG2	407.8	THA	5.61	EL1	478.0	EL2	349.6	ALF	145.82

LAUNCH DATE DEC 2 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 474.075 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.522	GAL	.96	AZL	89.29	HCA	147.56	SMA	196.31	ECC	.24928	INC	.7093	V1	30.210
RP	236.29	LAP	.38	LOP	217.42	VP	21.149	GAP	8.44	AZP	90.60	TAL	4.79	TAP	152.35	RCA	147.38	APO	245.25	V2	23.261
RC	193.877	GL	6.94	GP	4.53	ZAL	76.07	ZAP	155.71	ETS	168.38	ZAE	163.09	ETE	17.17	ZAC	95.08	ETC	255.78	CLP	156.11

PLANETOCENTRIC CONIC

C3	11.787	VHL	3.433	DLA	19.44	RAL	150.56	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	5.599	DPA	-.22	RAP	194.74	ECC	1.1940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 57	2750.11	-27.97	78.19	9.86	94.62	14 40 47	2150.1	-27.03	69.65
90.00	7 23 22	4085.18	-3.66	165.57	4.65	61.90	8 31 27	3485.2	-7.39	158.88
100.00	15 28 26	2448.66	-29.26	55.87	9.72	96.42	16 9 15	1848.7	-28.06	47.27
100.00	8 32 34	3861.86	-2.53	148.53	4.03	60.20	9 36 56	3261.9	-6.47	141.96
110.00	17 2 53	2153.19	-32.53	32.85	9.13	101.14	17 38 46	1553.2	-30.65	24.13
110.00	9 14 37	3730.09	.28	136.78	2.27	55.82	10 16 47	3130.1	-4.21	130.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1002	TRA	-.7239	TC3	3.9322	BAU	.6235	SGT	2993.2	SGR	510.8	SG3	741.7	ST	426.8	SR	388.2	SS	380.6
RDE	-.2311	RRA	-.0816	RC3	.4402	FAU	.16927	RRT	.6126	RRF	-.6700	RTF	-.9191	CRT	-.2841	CRS	.9475	CST	-.1153
FDE	.4352	FRA	.3034	FC-12.4323		BSP	10316	SGB	3036.5	R23	-.1223	R13	-.9209	LSA	552.8	MSA	408.1	SSA	74.1
BDE	.2518	BRA	.7285	BC3	3.9568	FSP	2352	SG1	3009.8	SG2	401.5	THA	6.08	EL1	464.8	EL2	341.7	ALF	144.26

LAUNCH DATE DEC 2 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 477.633 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.487	GAL	1.03	AZL	89.33	HCA	148.53	SMA	195.64	ECC	.24678	INC	.6702	V1	30.210
RP	235.94	LAP	.35	LOP	218.39	VP	21.133	GAP	7.98	AZP	90.57	TAL	5.22	TAP	153.75	RCA	147.36	APO	243.92	V2	23.297
RC	196.086	GL	6.60	GP	4.77	ZAL	75.20	ZAP	154.78	ETS	168.29	ZAE	163.85	ETE	19.09	ZAC	95.32	ETC	255.77	CLP	155.21

PLANETOCENTRIC CONIC

C3	11.610	VHL	3.407	DLA	19.41	RAL	149.57	RAD	6567.4	VEL	11.532	PTH	2.01	VHP	5.471	DPA	-.03	RAP	194.90	ECC	1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 19	2745.94	-27.95	77.89	8.63	94.77	14 37 5	2145.9	-26.99	69.35
90.00	7 19 11	4083.02	-3.73	165.45	3.48	61.91	8 27 14	3483.0	-7.46	158.75
100.00	15 24 46	2444.58	-29.23	55.57	8.48	96.57	16 5 31	1844.6	-28.01	46.98
100.00	8 28 25	3859.62	-2.60	148.40	2.85	60.21	9 32 45	3259.6	-6.55	141.84
110.00	16 59 9	2149.28	-32.48	32.55	7.89	101.31	17 34 58	1549.3	-30.58	23.85
110.00	9 10 31	3727.68	.19	136.66	1.11	55.82	10 12 39	3127.7	-4.30	130.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0920	TRA	-.6957	TC3	3.9867	BAU	.6235	SGT	2990.7	SGR	524.4	SG3	777.8	ST	411.2	SR	381.7	SS	389.1
RDE	-.2256	RRA	-.0765	RC3	.4922	FAU	.17631	RRT	.6514	RRF	-.7106	RTF	-.9195	CRT	-.2719	CRS	.9519	CST	-.1448
FDE	.4564	FRA	.2403	FC-13.1463		BSP	10405	SGB	3036.3	R23	-.1331	R13	-.9216	LSA	553.0	MSA	393.1	SSA	76.4
BDE	.2437	BRA	.6999	BC3	4.0170	FSP	2484	SG1	3010.4	SG2	395.2	THA	6.63	EL1	449.0	EL2	336.3	ALF	142.66

LAUNCH DATE DEC 2 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 481.212 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.454 GAL 1.10 AZL 89.37 HCA 149.51 SMA 195.00 ECC .24440 INC .6283 V1 30.210
RP 235.59 LAP .32 LOP 219.36 VP 21.120 GAP 7.52 AZP 90.54 TAL 5.63 TAP 155.14 RCA 147.34 APO 242.66 V2 23.333
RC 198.280 GL 6.22 GP 5.02 ZAL 74.35 ZAP 153.83 ETS 168.19 ZAE 164.62 ETE 21.30 ZAC 95.58 ETC 255.77 CLP 154.28

PLANETOCENTRIC CONIC

C3 11.447 VHL 3.383 DLA 19.35 RAL 148.61 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 5.345 DPA .18 RAP 195.05 ECC 1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 10	2740.30	-27.91	77.48	7.41	94.97	14 33 51	2140.3	-26.93	68.95
90.00	7 14 36	4082.76	-3.74	165.43	2.31	61.91	8 22 39	3482.8	-7.47	158.74
100.00	15 21 33	2439.18	-29.18	55.18	7.26	96.78	16 2 13	1839.2	-27.94	46.60
100.00	8 23 55	3859.11	-2.62	148.38	1.69	60.21	9 28 14	3259.1	-6.57	141.81
110.00	16 55 48	2144.32	-32.41	32.18	6.66	101.52	17 31 32	1544.3	-30.48	23.49
110.00	9 6 9	3726.74	.15	136.61	359.96	55.82	10 8 16	3126.7	-4.34	130.40

DIFFERENTIAL CORRECTIONS
TDE .0875 TRA -.6664 TC3 4.0501 BAU .6255
RDE -.2201 RRA -.0710 RC3 .5498 FAU .18394
FDE .4724 FRA .1713 FC-13.9114 BSP 10433
BDE .2369 BRA .6702 BC3 4.0873 FSP 2619

MID-COURSE EXECUTION ACCURACY
SGT 2993.9 SGR 541.8 SG3 816.7
RRT .6884 RRF -.7496 RTF -.9204
SGB 3042.6 R23 -.1448 R13 -.9229
SG1 3017.5 SG2 389.9 THA 7.22

ORBIT DETERMINATION ACCURACY
ST 396.8 SR 374.9 SS 394.2
CRT -.2728 CRS .9530 CST -.1837
LSA 552.4 MSA 376.8 SSA 79.2
EL1 436.4 EL2 327.9 ALF 140.89

LAUNCH DATE DEC 2 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 484.810 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.422 GAL 1.17 AZL 89.42 HCA 150.49 SMA 194.39 ECC .24215 INC .5839 V1 30.210
RP 235.24 LAP .29 LOP 220.34 VP 21.110 GAP 7.07 AZP 90.51 TAL 6.03 TAP 156.52 RCA 147.32 APO 241.47 V2 23.369
RC 200.460 GL 5.82 GP 5.30 ZAL 73.53 ZAP 152.84 ETS 168.07 ZAE 165.38 ETE 23.88 ZAC 95.86 ETC 255.76 CLP 153.33

PLANETOCENTRIC CONIC

C3 11.296 VHL 3.361 DLA 19.24 RAL 147.65 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 5.224 DPA .42 RAP 195.18 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 34	2733.09	-27.87	76.96	6.20	95.23	14 31 7	2133.1	-26.85	68.44
90.00	7 9 37	4084.46	-3.68	165.53	1.16	61.90	8 17 41	3484.5	-7.41	158.84
100.00	15 18 50	2432.36	-29.13	54.68	6.05	97.03	15 59 22	1832.4	-27.85	46.11
100.00	8 19 2	3860.42	-2.58	148.45	.55	60.21	9 23 23	3260.4	-6.52	141.88
110.00	16 52 51	2138.23	-32.32	31.73	5.43	101.78	17 28 29	1538.2	-30.37	23.06
110.00	9 1 31	3727.32	.17	136.64	358.83	55.82	10 3 38	3127.3	-4.31	130.43

DIFFERENTIAL CORRECTIONS
TDE .0852 TRA -.6373 TC3 4.0982 BAU .6258
RDE -.2146 RRA -.0652 RC3 .6123 FAU .19174
FDE .4839 FRA .0959 FC-14.6951 BSP 10425
BDE .2309 BRA .6406 BC3 4.1437 FSP 2756

MID-COURSE EXECUTION ACCURACY
SGT 2989.0 SGR 563.1 SG3 856.6
RRT .7225 RRF -.7860 RTF -.9210
SGB 3041.6 R23 -.1580 R13 -.9239
SG1 3017.0 SG2 385.7 THA 7.88

ORBIT DETERMINATION ACCURACY
ST 383.5 SR 367.7 SS 396.3
CRT -.2831 CRS .9516 CST -.2298
LSA 550.6 MSA 359.8 SSA 82.4
EL1 426.1 EL2 317.5 ALF 139.23

LAUNCH DATE DEC 2 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 488.427 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.392 GAL 1.24 AZL 89.46 HCA 151.47 SMA 193.82 ECC .24002 INC .5367 V1 30.210
RP 234.89 LAP .26 LOP 221.32 VP 21.102 GAP 6.63 AZP 90.47 TAL 6.42 TAP 157.89 RCA 147.30 APO 240.34 V2 23.405
RC 202.623 GL 5.37 GP 5.59 ZAL 72.74 ZAP 151.83 ETS 167.95 ZAE 166.14 ETE 26.88 ZAC 96.15 ETC 255.75 CLP 152.35

PLANETOCENTRIC CONIC

C3 11.156 VHL 3.340 DLA 19.08 RAL 146.72 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 5.106 DPA .69 RAP 195.31 ECC 1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 32	2724.21	-27.81	76.31	5.01	95.55	14 28 56	2124.2	-26.75	67.81
90.00	7 4 11	4088.20	-3.56	165.74	.03	61.89	8 12 19	3488.2	-7.30	159.05
100.00	15 16 37	2424.02	-29.06	54.07	4.85	97.35	15 57 1	1824.0	-27.74	45.52
100.00	8 13 47	3863.62	-2.47	148.62	359.42	60.20	9 18 10	3263.6	-6.42	142.06
110.00	16 50 18	2130.91	-32.22	31.18	4.22	102.08	17 25 49	1530.9	-30.22	22.54
110.00	8 56 35	3729.50	.26	136.75	357.72	55.82	9 58 45	3129.5	-4.23	130.54

DIFFERENTIAL CORRECTIONS
TDE .0847 TRA -.6098 TC3 4.1385 BAU .6256
RDE -.2090 RRA -.0590 RC3 .6810 FAU .19993
FDE .4902 FRA .0160 FC-15.5144 BSP 10449
BDE .2255 BRA .6126 BC3 4.1942 FSP 2906

MID-COURSE EXECUTION ACCURACY
SGT 2981.5 SGR 589.0 SG3 898.4
RRT .7540 RRF -.8195 RTF -.9213
SGB 3039.1 R23 -.1723 R13 -.9248
SG1 3015.0 SG2 382.6 THA 8.61

ORBIT DETERMINATION ACCURACY
ST 371.8 SR 360.2 SS 395.5
CRT -.3009 CRS .9475 CST -.2806
LSA 547.1 MSA 343.0 SSA 86.1
EL1 417.8 EL2 305.7 ALF 138.01

LAUNCH DATE DEC 2 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 492.063 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.364 GAL 1.31 AZL 89.51 HCA 152.45 SMA 193.28 ECC .23799 INC .4862 V1 30.210
RP 234.53 LAP .22 LOP 222.31 VP 21.098 GAP 6.19 AZP 90.43 TAL 6.80 TAP 159.25 RCA 147.28 APO 239.28 V2 23.442
RC 204.770 GL 4.89 GP 5.91 ZAL 71.97 ZAP 150.79 ETS 167.81 ZAE 166.87 ETE 30.39 ZAC 96.45 ETC 255.74 CLP 151.34

PLANETOCENTRIC CONIC

C3 11.027 VHL 3.321 DLA 18.88 RAL 145.80 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 4.991 DPA 1.00 RAP 195.42 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 4	2713.55	-27.74	75.54	3.83	95.93	14 27 17	2113.6	-26.63	67.05
90.00	6 58 18	4094.07	-3.38	166.07	358.91	61.87	8 6 32	3494.1	-7.11	159.38
100.00	15 14 56	2414.07	-28.97	53.34	3.66	97.72	15 55 10	1814.1	-27.60	44.81
100.00	8 8 7	3868.78	-2.29	148.91	358.31	60.19	9 12 36	3268.8	-6.24	142.35
110.00	16 48 12	2122.29	-32.10	30.54	3.01	102.44	17 23 34	1522.3	-30.05	21.92
110.00	8 51 21	3733.33	.40	136.95	356.62	55.82	9 53 34	3133.3	-4.08	130.74

DIFFERENTIAL CORRECTIONS
TDE .0853 TRA -.5820 TC3 4.1707 BAU .6249
RDE -.2033 RRA -.0523 RC3 .7563 FAU .20846
FDE .4916 FRA -.0719 FC-16.3660 BSP 10410
BDE .2205 BRA .5843 BC3 4.2387 FSP 3054

MID-COURSE EXECUTION ACCURACY
SGT 2969.9 SGR 620.0 SG3 942.0
RRT .7825 RRF -.8498 RTF -.9216
SGB 3034.0 R23 -.1871 R13 -.9258
SG1 3010.0 SG2 380.9 THA 9.43

ORBIT DETERMINATION ACCURACY
ST 360.4 SR 352.3 SS 392.2
CRT -.3249 CRS .9404 CST -.3362
LSA 542.1 MSA 325.2 SSA 90.4
EL1 410.3 EL2 292.6 ALF 137.02

LAUNCH DATE DEC 2 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 495.715 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.336	GAL	1.37	AZL	89.57	HCA	153.44	SMA	192.77	ECC	.23607	INC	.4320	V1	30.210
RP	234.17	LAP	.19	LOP	223.29	VP	21.096	GAP	5.76	AZP	90.39	TAL	7.16	TAP	160.60	RCA	147.26	APO	238.27	V2	23.479
RC	206.900	GL	4.36	GP	6.26	ZAL	71.24	ZAP	149.71	ETS	167.66	ZAE	167.57	ETE	34.50	ZAC	96.78	ETC	255.73	CLP	150.30

PLANETOCENTRIC CONIC

C3	10.908	VHL	3.303	DLA	18.62	RAL	144.89	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	4.879	DPA	1.33	RAP	195.52	ECC	1.1795		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 12	2701.01	-27.65	74.63	2.65	96.37	14 26 13	2101.0	-26.48	66.16
90.00	6 51 57	4102.15	-3.12	166.52	357.80	61.84	8 0 19	3502.2	-6.86	159.84
100.00	15 13 48	2402.40	-28.86	52.49	2.48	98.15	15 53 51	1802.4	-27.43	43.98
100.00	8 2 2	3875.99	-2.05	149.30	357.21	60.17	9 6 38	3276.0	-6.00	142.75
110.00	16 46 33	2112.26	-31.95	29.79	1.81	102.86	17 21 45	1512.3	-29.85	21.21
110.00	8 45 47	3738.90	.62	137.24	355.54	55.82	9 48 6	3138.9	-3.87	131.03

DIFFERENTIAL CORRECTIONS

TDE	.0881	TRA	-.5559	TC3	4.1912	BAU	.6233
RDE	-.1973	RRA	-.0451	RC3	.8389	FAU	.21731
FDE	.4855	FRA	-.1646	FC-	17.2471	BSP	10375
BDE	.2161	BRA	.5577	BC3	4.2743	FSP	3211

MID-COURSE EXECUTION ACCURACY

SGT	2953.5	SGR	656.5	SG3	987.4		
RRT	.8074	RRF	-.8765	RTF	-.9216		
SGB	3025.6	R23	-.2030	R13	-.9265		
SG1	3001.5	SG2	381.1	THA	10.34		

ORBIT DETERMINATION ACCURACY

ST	351.3	SR	343.6	SS	385.1
CRT	-.3592	CRS	.9296	CST	-.3985
LSA	535.2	MSA	307.0	SSA	95.6
EL1	405.2	EL2	278.0	ALF	136.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 499.385 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.310	GAL	1.42	AZL	89.63	HCA	154.43	SMA	192.28	ECC	.23425	INC	.3741	V1	30.210		
RP	233.80	LAP	.16	LOP	224.28	VP	21.097	GAP	5.34	AZP	90.34	TAL	7.52	TAP	161.94	RCA	147.24	APO	237.32	V2	23.517		
RC	209.011	GL	3.79	GP	6.64	ZAL	70.53	ZAP	148.60	ETS	167.49	ZAE	168.20	ETE	39.29	ZAC	97.14	ETC	255.72	CLP	149.24		

PLANETOCENTRIC CONIC

C3	10.798	VHL	3.286	DLA	18.30	RAL	144.00	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	4.771	DPA	1.71	RAP	195.61	ECC	1.1777		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 58	2686.48	-27.53	73.59	1.49	96.89	14 25 45	2086.5	-26.29	65.14
90.00	6 45 5	4112.54	-2.78	167.10	356.70	61.81	7 53 38	3512.5	-6.53	160.43
100.00	15 13 15	2388.90	-28.72	51.51	1.30	98.65	15 53 4	1788.9	-27.23	43.03
100.00	7 55 29	3885.36	-1.73	149.82	356.12	60.15	9 0 15	3285.4	-5.69	143.27
110.00	16 45 22	2100.71	-31.77	28.94	.62	103.34	17 20 22	1500.7	-29.61	20.40
110.00	8 39 52	3746.32	.90	137.63	354.47	55.83	9 42 18	3146.3	-3.59	131.42

DIFFERENTIAL CORRECTIONS

TDE	.0914	TRA	-.5330	TC3	4.2011	BAU	.6211
RDE	-.1912	RRA	-.0374	RC3	.9295	FAU	.22647
FDE	.4741	FRA	-.2595	FC-	18.1568	BSP	10355
BDE	.2119	BRA	.5343	BC3	4.3027	FSP	3380

MID-COURSE EXECUTION ACCURACY

SGT	2933.7	SGR	699.3	SG3	1034.3		
RRT	.8290	RRF	-.8998	RTF	-.9211		
SGB	3015.9	R23	-.2197	R13	-.9271		
SG1	2991.4	SG2	383.5	THA	11.37		

ORBIT DETERMINATION ACCURACY

ST	344.2	SR	334.5	SS	376.0
CRT	-.3957	CRS	.9151	CST	-.4589
LSA	527.0	MSA	289.4	SSA	101.5
EL1	401.1	EL2	263.6	ALF	137.07

LAUNCH DATE DEC 2 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 503.071 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.285	GAL	1.48	AZL	89.69	HCA	155.42	SMA	191.82	ECC	.23253	INC	.3104	V1	30.210		
RP	233.44	LAP	.13	LOP	225.28	VP	21.100	GAP	4.92	AZP	90.28	TAL	7.85	TAP	163.28	RCA	147.22	APO	236.43	V2	23.555		
RC	211.104	GL	3.17	GP	7.05	ZAL	69.85	ZAP	147.45	ETS	167.31	ZAE	168.74	ETE	44.86	ZAC	97.52	ETC	255.71	CLP	148.14		

PLANETOCENTRIC CONIC

C3	10.697	VHL	3.271	DLA	17.93	RAL	143.13	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.667	DPA	2.13	RAP	195.68	ECC	1.1761		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 23	2669.84	-27.39	72.39	.32	97.47	14 25 52	2069.8	-26.07	63.97
90.00	6 37 42	4125.36	-2.37	167.82	355.62	61.77	7 46 28	3525.4	-6.13	161.15
100.00	15 13 18	2373.43	-28.56	50.39	.13	99.22	15 52 51	1773.4	-26.99	41.94
100.00	7 48 28	3897.00	-1.34	150.46	355.05	60.13	8 53 25	3297.0	-5.30	143.91
110.00	16 44 41	2087.51	-31.56	27.97	359.42	103.88	17 19 28	1487.5	-29.33	19.47
110.00	8 33 34	3755.68	1.26	138.12	353.42	55.84	9 36 10	3155.7	-3.23	131.91

DIFFERENTIAL CORRECTIONS

TDE	.0988	TRA	-.5080	TC3	4.1953	BAU	.6178
RDE	-.1842	RRA	-.0286	RC3	1.0290	FAU	.23589
FDE	.4471	FRA	-.3690	FC-	19.0907	BSP	10295
BDE	.2091	BRA	.5088	BC3	4.3196	FSP	3546

MID-COURSE EXECUTION ACCURACY

SGT	2904.5	SGR	748.3	SG3	1082.7		
RRT	.8468	RRF	-.9195	RTF	-.9204		
SGB	2999.3	R23	-.2366	R13	-.9277		
SG1	2974.0	SG2	388.7	THA	12.52		

ORBIT DETERMINATION ACCURACY

ST	339.8	SR	323.8	SS	359.6
CRT	-.4524	CRS	.8905	CST	-.5343
LSA	515.8	MSA	267.3	SSA	110.1
EL1	400.2	EL2	245.1	ALF	138.05

LAUNCH DATE DEC 2 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 506.772 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.262	GAL	1.53	AZL	89.76	HCA	156.42	SMA	191.39	ECC	.23090	INC	.2436	V1	30.210		
RP	233.07	LAP	.10	LOP	226.27	VP	21.105	GAP	4.51	AZP	90.22	TAL	8.18	TAP	164.60	RCA	147.20	APO	235.58	V2	23.593		
RC	213.179	GL	2.48	GP	7.51	ZAL	69.20	ZAP	146.27	ETS	167.11	ZAE	169.17	ETE	51.21	ZAC	97.93	ETC	255.70	CLP	147.02		

PLANETOCENTRIC CONIC

C3	10.605	VHL	3.257	DLA	17.48	RAL	142.27	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	4.566	DPA	2.59	RAP	195.75	ECC	1.1745		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 28	2650.93	-27.22	71.03	359.16	98.13	14 26 38	2050.9	-25.81	62.65
90.00	6 29 45	4140.74	-1.87	168.68	354.55	61.74	7 38 46	3540.7	-5.64	162.02
100.00	15 13 57	2355.87	-28.36	49.12	358.95	99.86	15 53 13	1755.9	-26.71	40.71
100.00	7 40 56	3911.04	-.86	151.23	353.99	60.12	8 46 7	3311.0	-4.83	144.69
110.00	16 44 31	2072.54	-31.31	26.87	358.22	104.48	17 19 3	1472.5	-29.00	18.43
110.00	8 26 52	3767.13	1.69	138.72	352.39	55.85	9 29 39	3167.1	-2.80	132.51

DIFFERENTIAL CORRECTIONS

TDE	.1066	TRA	-.4858	TC3	4.1810	BAU	.6144
RDE	-.1769	RRA	-.0191	RC3	1.1384	FAU	.24559
FDE	.4141	FRA	-.4805	FC-	20.0486	BSP	10231
BDE	.2066	BRA	.4861	BC3	4.3332	FSP	3726

MID-COURSE EXECUTION ACCURACY

SGT	2872.9	SGR	804.9	SG3	1132.5		
RRT	.8615	RRF	-.9361	RTF	-.9195		
SGB	2983.5	R23	-.2530	R13	-.9284		
SG1	2957.0	SG2	397.0	THA	13.83		

ORBIT DETERMINATION ACCURACY

ST	337.8	SR	312.3	SS	342.8
CRT	-.5093	CRS	.8576	CST	-.6000
LSA	504.5	MSA	245.2	SSA	120.2
EL1	400.2	EL2	226.8	ALF	139.39

LAUNCH DATE DEC 2 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 510.489 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.239 GAL 1.58 AZL 89.83 HCA 157.42 SMA 190.98 ECC .22935 INC .1684 V1 30.210
RP 232.70 LAP .07 LOP 227.27 VP 21.113 GAP 4.11 AZP 90.16 TAL 8.49 TAP 165.91 RCA 147.18 APO 234.78 V2 23.631
RC 215.236 GL 1.74 GP 8.00 ZAL 68.58 ZAP 145.05 ETS 166.89 ZAE 169.43 ETE 58.30 ZAC 98.37 ETC 255.68 CLP 145.86

PLANETOCENTRIC CONIC

C3 10.521 VHL 3.244 DLA 16.96 RAL 141.42 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 4.469 DPA 3.11 RAP 195.81 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 14	2629.61	-27.00	69.51	357.99	98.87	14 28 4	2029.6	-25.50	61.16
90.00	6 21 12	4158.84	-1.29	169.69	353.49	61.71	7 30 31	3558.8	-5.06	163.04
100.00	15 15 17	2336.03	-28.12	47.70	357.77	100.58	15 54 13	1736.0	-26.38	39.33
100.00	7 32 51	3927.65	-.30	152.14	352.94	60.11	8 38 19	3327.6	-4.27	145.61
110.00	16 44 54	2055.63	-31.01	25.64	357.01	105.15	17 19 9	1455.6	-28.62	17.26
110.00	8 19 43	3780.81	2.22	139.43	351.37	55.88	9 22 44	3180.8	-2.27	133.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1162 TRA -.4644 TC3 4.1515 BAU .6102 SGT 2833.9 SGR 869.7 SG3 1184.0 ST 338.9 SR 299.0 SS 322.3
RDE -.1687 RRA -.0084 RC3 1.2593 FAU .25558 RRT .8733 RRF -.9499 RTF -.9182 CRT -.5724 CRS .8055 CST -.6558
FDE .3658 FRA -.6026 FC-21.0305 BSP 10166 SGB 2964.3 R23 -.2687 R13 -.9291 LSA 491.4 MSA 220.5 SSA 134.1
BDE .2048 BRA .4645 BC3 4.3383 FSP 3907 SG1 2936.0 SG2 409.0 THA 15.31 EL1 401.9 EL2 206.8 ALF 141.20

LAUNCH DATE DEC 2 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 514.220 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.218 GAL 1.63 AZL 89.91 HCA 158.42 SMA 190.59 ECC .22789 INC .0839 V1 30.210
RP 232.32 LAP .03 LOP 228.27 VP 21.123 GAP 3.71 AZP 90.08 TAL 8.79 TAP 167.21 RCA 147.16 APO 234.03 V2 23.670
RC 217.275 GL .91 GP 8.54 ZAL 68.00 ZAP 143.78 ETS 166.66 ZAE 169.51 ETE 65.95 ZAC 98.86 ETC 255.66 CLP 144.67

PLANETOCENTRIC CONIC

C3 10.446 VHL 3.232 DLA 16.36 RAL 140.58 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.376 DPA 3.68 RAP 195.86 ECC 1.1719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 45	2605.67	-26.74	67.81	356.82	99.68	14 30 11	2005.7	-25.13	59.51
90.00	6 12 0	4179.87	-.61	170.86	352.45	61.69	7 21 40	3579.9	-4.39	164.22
100.00	15 17 17	2313.73	-27.83	46.10	356.59	101.37	15 55 51	1713.7	-25.98	37.79
100.00	7 24 10	3947.03	.36	153.20	351.91	60.11	8 29 57	3347.0	-3.62	146.67
110.00	16 45 51	2036.59	-30.67	24.27	355.80	105.90	17 19 48	1436.6	-28.18	15.95
110.00	8 12 4	3796.94	2.83	140.27	350.36	55.92	9 15 21	3196.9	-1.66	134.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1291 TRA -.4444 TC3 4.1103 BAU .6061 SGT 2790.2 SGR 943.8 SG3 1237.3 ST 345.5 SR 283.1 SS 299.4
RDE -.1590 RRA .0037 RC3 1.3934 FAU .26592 RRT .8821 RRF -.9611 RTF -.9164 CRT -.6423 CRS .7190 CST -.6834
FDE .2979 FRA -.7340 FC-22.0397 BSP 10108 SGB 2945.5 R23 -.2831 R13 -.9299 LSA 477.7 MSA 193.3 SSA 153.6
BDE .2048 BRA .4444 BC3 4.3401 FSP 4095 SG1 2914.6 SG2 425.6 THA 16.99 EL1 406.9 EL2 184.3 ALF 143.67

LAUNCH DATE DEC 2 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 517.966 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.198 GAL 1.67 AZL 90.00 HCA 159.43 SMA 190.23 ECC .22651 INC .0000 V1 30.210
RP 231.95 LAP .00 LOP 229.28 VP 21.135 GAP 3.32 AZP 90.00 TAL 9.07 TAP 168.49 RCA 147.14 APO 233.32 V2 23.709
RC 219.295 GL .01 GP 9.14 ZAL 67.45 ZAP 142.47 ETS 166.40 ZAE 169.35 ETE 73.86 ZAC 99.40 ETC 255.64 CLP 143.44

PLANETOCENTRIC CONIC

C3 10.379 VHL 3.222 DLA 15.66 RAL 139.75 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 4.286 DPA 4.31 RAP 195.91 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 2	2578.90	-26.42	65.91	355.63	100.58	14 33 1	1978.9	-24.69	57.67
90.00	6 2 6	4204.06	.17	172.21	351.41	61.68	7 12 10	3604.1	-3.62	165.57
100.00	15 20 0	2288.75	-27.49	44.33	355.39	102.24	15 58 9	1688.8	-25.52	36.08
100.00	7 14 49	3969.43	1.12	154.43	350.88	60.13	8 20 58	3369.4	-2.86	147.91
110.00	16 47 26	2015.21	-30.26	22.74	354.58	106.72	17 21 1	1415.2	-27.67	14.50
110.00	8 3 53	3815.74	3.55	141.26	349.37	55.98	9 7 28	3215.7	-.94	135.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1428 TRA -.4267 TC3 4.0537 BAU .6017 SGT 2740.0 SGR 1027.5 SG3 1290.6 ST 355.7 SR 265.3 SS 281.9
RDE -.1481 RRA .0170 RC3 1.5406 FAU .27623 RRT .8884 RRF -.9701 RTF -.9141 CRT -.7078 CRS .5921 CST -.6539
FDE .2173 FRA -.8691 FC-23.0411 BSP 10042 SGB 2926.3 R23 -.2954 R13 -.9310 LSA 465.3 MSA 184.0 SSA 161.1
BDE .2057 BRA .4270 BC3 4.3366 FSP 4293 SG1 2892.0 SG2 446.9 THA 18.89 EL1 413.4 EL2 161.2 ALF 146.40

LAUNCH DATE DEC 2 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 521.725 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.179 GAL 1.71 AZL 90.10 HCA 160.43 SMA 189.88 ECC .22520 INC .0959 V1 30.210
RP 231.57 LAP -.03 LOP 230.29 VP 21.149 GAP 2.94 AZP 89.91 TAL 9.34 TAP 169.77 RCA 147.12 APO 232.64 V2 23.748
RC 221.297 GL -1.00 GP 9.80 ZAL 66.93 ZAP 141.11 ETS 166.12 ZAE 168.94 ETE 81.69 ZAC 99.99 ETC 255.62 CLP 142.17

PLANETOCENTRIC CONIC

C3 10.322 VHL 3.213 DLA 14.86 RAL 138.93 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 4.201 DPA 5.02 RAP 195.96 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 8	2549.02	-26.03	63.81	354.44	101.56	14 36 37	1949.0	-24.17	55.63
90.00	5 51 25	4231.72	1.06	173.75	350.39	61.70	7 1 57	3631.7	-2.73	167.12
100.00	15 23 30	2260.82	-27.07	42.36	354.18	103.20	16 1 11	1660.8	-24.98	34.18
100.00	7 4 44	3995.16	1.99	155.84	349.88	60.17	8 11 19	3395.2	-1.99	149.32
110.00	16 49 40	1991.23	-29.78	21.04	353.33	107.62	17 22 51	1391.2	-27.08	12.89
110.00	7 55 4	3837.51	4.38	142.40	348.39	56.06	8 59 1	3237.5	-.11	136.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1600 TRA -.4096 TC3 3.9836 BAU .5979 SGT 2684.2 SGR 1122.9 SG3 1345.3 ST 372.4 SR 243.4 SS 274.1
RDE -.1348 RRA .0324 RC3 1.7044 FAU .28679 RRT .8924 RRF -.9772 RTF -.9113 CRT -.7739 CRS .3923 CST -.5249
FDE .1090 FRA-1.0177 FC-24.0538 BSP 9936 SGB 2909.6 R23 -.3048 R13 -.9325 LSA 454.4 MSA 220.7 SSA 133.4
BDE .2092 BRA .4109 BC3 4.3329 FSP 4482 SG1 2870.7 SG2 473.7 THA 21.07 EL1 423.7 EL2 135.5 ALF 149.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 525.498 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.161 GAL 1.75 AZL 90.20 HCA 161.45 SMA 189.56 ECC .22396 INC .2039 V1 30.210
RP 231.20 LAP -.06 LOP 231.30 VP 21.165 GAP 2.57 AZP 89.81 TAL 9.59 TAP 171.03 RCA 147.10 APO 232.01 V2 23.788
RC 223.281 GL -2.11 GP 10.54 ZAL 66.46 ZAP 139.70 ETS 165.82 ZAE 168.28 ETE 89.06 ZAC 100.64 ETC 255.59 CLP 140.87

PLANETOCENTRIC CONIC

C3 10.276 VHL 3.206 DLA 13.94 RAL 138.10 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.120 DPA 5.81 RAP 196.00 ECC 1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 7	2515.70	-25.55	61.49	353.22	102.63	14 41 3	1915.7	-23.56	53.39
90.00	5 39 52	4263.25	2.08	175.51	349.39	61.75	6 50 55	3663.3	-1.71	168.88
100.00	15 27 50	2229.60	-26.56	40.18	352.95	104.24	16 4 59	1629.6	-24.34	32.08
100.00	6 53 50	4024.58	2.99	157.46	348.89	60.24	8 0 55	3424.6	-1.00	150.94
110.00	16 52 36	1964.34	-29.21	19.15	352.07	108.61	17 25 20	1364.3	-26.39	11.10
110.00	7 45 33	3862.61	5.33	143.72	347.43	56.19	8 49 56	3262.6	.85	137.49

DIFFERENTIAL CORRECTIONS
TDE .1780 TRA -.3941 TC3 3.8960 BAU .5947
RDE -.1190 RRA .0501 RC3 1.8860 FAU .29738
FDE -.0227 FRA-1.1767 FC-25.0531 BSP 9858
BDE .2142 BRA .3973 BC3 4.3285 FSP 4677

MID-COURSE EXECUTION ACCURACY
SGT 2620.6 SGR 1231.2 SG3 1400.4
RRT .8944 RRF -.9829 RTF -.9079
SGB 2895.4 R23 -.3107 R13 -.9347
SG1 2850.8 SG2 506.2 THA 23.58

ORBIT DETERMINATION ACCURACY
ST 392.8 SR 217.6 SS 288.4
CRT -.8308 CRS .1521 CST -.2907
LSA 446.6 MSA 271.9 SSA 106.5
EL1 435.5 EL2 109.2 ALF 153.50

LAUNCH DATE DEC 2 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 529.284 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.144 GAL 1.79 AZL 90.32 HCA 162.46 SMA 189.25 ECC .22279 INC .3240 V1 30.210
RP 230.82 LAP -.10 LOP 232.32 VP 21.183 GAP 2.20 AZP 89.69 TAL 9.83 TAP 172.29 RCA 147.09 APO 231.41 V2 23.827
RC 225.247 GL -3.36 GP 11.36 ZAL 66.03 ZAP 138.23 ETS 165.49 ZAE 167.36 ETE 95.72 ZAC 101.37 ETC 255.56 CLP 139.53

PLANETOCENTRIC CONIC

C3 10.243 VHL 3.200 DLA 12.88 RAL 137.28 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.044 DPA 6.69 RAP 196.06 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 2	2478.53	-24.98	58.92	351.98	103.80	14 46 21	1878.5	-22.83	50.90
90.00	5 27 20	4299.12	3.23	177.51	348.40	61.85	6 39 0	3699.1	-.56	170.88
100.00	15 33 3	2194.70	-25.96	37.76	351.70	105.37	16 9 38	1594.7	-23.59	29.76
100.00	6 42 1	4058.19	4.12	159.31	347.91	60.37	7 49 39	3458.2	.14	152.78
110.00	16 56 19	1934.17	-28.53	17.06	350.79	109.68	17 28 33	1334.2	-25.59	9.12
110.00	7 35 15	3891.49	6.42	145.24	346.49	56.35	8 40 6	3291.5	1.96	139.00

DIFFERENTIAL CORRECTIONS
TDE .1979 TRA -.3818 TC3 3.7906 BAU .5926
RDE -.0997 RRA .0702 RC3 2.0875 FAU .30789
FDE -.1843 FRA-1.3430 FC-26.0221 BSP 9834
BDE .2216 BRA .3882 BC3 4.3274 FSP 4880

MID-COURSE EXECUTION ACCURACY
SGT 2550.4 SGR 1354.2 SG3 1455.1
RRT .8942 RRF -.9872 RTF -.9034
SGB 2887.6 R23 -.3129 R13 -.9375
SG1 2835.7 SG2 545.2 THA 26.45

ORBIT DETERMINATION ACCURACY
ST 418.5 SR 186.9 SS 332.6
CRT -.8751 CRS -.0573 CST -.0059
LSA 450.5 MSA 332.7 SSA 83.3
EL1 450.5 EL2 84.0 ALF 157.84

LAUNCH DATE DEC 2 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 533.083 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.127 GAL 1.82 AZL 90.46 HCA 163.48 SMA 188.96 ECC .22169 INC .4601 V1 30.210
RP 230.43 LAP -.13 LOP 233.33 VP 21.202 GAP 1.84 AZP 89.56 TAL 10.05 TAP 173.53 RCA 147.07 APO 230.85 V2 23.867
RC 227.193 GL -4.76 GP 12.28 ZAL 65.64 ZAP 136.71 ETS 165.14 ZAE 166.19 ETE 101.54 ZAC 102.19 ETC 255.52 CLP 138.15

PLANETOCENTRIC CONIC

C3 10.226 VHL 3.198 DLA 11.66 RAL 136.44 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.973 DPA 7.67 RAP 196.12 ECC 1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 1	2437.03	-24.27	56.08	350.72	105.05	14 52 38	1837.0	-21.97	48.17
90.00	5 13 42	4339.95	4.54	179.80	347.44	62.02	6 26 2	3740.0	.76	173.16
100.00	15 39 16	2155.63	-25.22	35.09	350.42	106.60	16 15 11	1555.6	-22.71	27.19
100.00	6 29 8	4096.58	5.41	161.43	346.96	60.56	7 37 24	3496.6	1.45	154.89
110.00	17 0 52	1900.26	-27.73	14.75	349.47	110.83	17 32 33	1300.3	-24.65	6.94
110.00	7 24 0	3924.71	7.67	147.00	345.57	56.59	8 29 25	3324.7	3.22	140.74

DIFFERENTIAL CORRECTIONS
TDE .2206 TRA -.3703 TC3 3.6646 BAU .5922
RDE -.0756 RRA .0939 RC3 2.3098 FAU .31799
FDE -.3813 FRA-1.5212 FC-26.9214 BSP 9808
BDE .2332 BRA .3820 BC3 4.3319 FSP 5079

MID-COURSE EXECUTION ACCURACY
SGT 2471.5 SGR 1493.4 SG3 1508.1
RRT .8921 RRF -.9906 RTF -.8980
SGB 2887.7 R23 -.3100 R13 -.9414
SG1 2826.7 SG2 590.1 THA 29.75

ORBIT DETERMINATION ACCURACY
ST 450.0 SR 151.5 SS 410.6
CRT -.8930 CRS -.1469 CST .2540
LSA 499.3 MSA 375.1 SSA 64.0
EL1 470.3 EL2 65.3 ALF 162.93

LAUNCH DATE DEC 2 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 536.897 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.112 GAL 1.85 AZL 90.61 HCA 164.50 SMA 188.69 ECC .22065 INC .6117 V1 30.210
RP 230.05 LAP -.16 LOP 234.36 VP 21.224 GAP 1.48 AZP 89.41 TAL 10.26 TAP 174.76 RCA 147.05 APO 230.32 V2 23.907
RC 229.120 GL -6.35 GP 13.32 ZAL 65.31 ZAP 135.12 ETS 164.74 ZAE 164.78 ETE 106.47 ZAC 103.11 ETC 255.47 CLP 136.73

PLANETOCENTRIC CONIC

C3 10.229 VHL 3.198 DLA 10.26 RAL 135.58 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.908 DPA 8.78 RAP 196.20 ECC 1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 8	2390.59	-23.41	52.95	349.43	106.40	14 59 58	1790.6	-20.94	45.15
90.00	4 58 44	4386.53	6.02	182.42	346.51	62.28	6 11 51	3786.5	2.27	175.76
100.00	15 46 34	2111.82	-24.34	32.13	349.12	107.91	16 21 46	1511.8	-21.66	24.36
100.00	6 14 59	4140.52	6.87	163.87	346.04	60.84	7 24 0	3540.5	2.93	157.30
110.00	17 6 22	1862.10	-26.78	12.19	348.13	112.08	17 37 24	1262.1	-23.55	4.52
110.00	7 11 41	3963.01	9.10	149.04	344.69	56.91	8 17 44	3363.0	4.68	142.74

DIFFERENTIAL CORRECTIONS
TDE .2567 TRA -.3489 TC3 3.5699 BAU .6016
RDE -.0420 RRA .1250 RC3 2.5699 FAU .32945
FDE -.6547 FRA-1.7480 FC-27.8820 BSP 9522
BDE .2601 BRA .3706 BC3 4.3987 FSP 5187

MID-COURSE EXECUTION ACCURACY
SGT 2414.4 SGR 1661.3 SG3 1568.6
RRT .8912 RRF -.9932 RTF -.8953
SGB 2930.8 R23 -.2962 R13 -.9483
SG1 2860.9 SG2 635.9 THA 33.38

ORBIT DETERMINATION ACCURACY
ST 502.4 SR 113.0 SS 541.6
CRT -.7795 CRS .0184 CST .4889
LSA 639.9 MSA 383.2 SSA 46.7
EL1 510.3 EL2 69.7 ALF 169.87

LAUNCH DATE DEC 2 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 540.719 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.098 GAL 1.88 AZL 90.79 HCA 165.53 SMA 188.43 ECC .21967 INC .7857 V1 30.210
RP 229.67 LAP -.20 LOP 235.38 VP 21.247 GAP 1.13 AZP 89.24 TAL 10.45 TAP 175.98 RCA 147.04 APO 229.83 V2 23.948
RC 231.027 GL -8.15 GP 14.50 ZAL 65.05 ZAP 133.45 ETS 164.32 ZAE 163.14 ETE 110.55 ZAC 104.17 ETC 255.41 CLP 135.27

PLANETOCENTRIC CONIC

C3 10.259 VHL 3.203 DLA 8.64 RAL 134.70 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.850 DPA 10.03 RAP 196.31 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 36	2338.33	-22.37	49.48	348.11	107.83	15 8 34	1738.3	-19.72	41.80
90.00	4 42 15	4439.94	7.70	185.45	345.62	62.67	5 56 15	3839.9	3.98	178.75
100.00	15 55 9	2062.44	-23.26	28.86	347.78	109.32	16 29 31	1462.4	-20.42	21.22
100.00	5 59 23	4191.06	8.54	166.70	345.17	61.24	7 9 14	3591.1	4.64	160.08
110.00	17 12 57	1818.92	-25.65	9.34	346.76	113.41	17 43 16	1218.9	-22.26	1.83
110.00	6 58 4	4007.34	10.74	151.43	343.85	57.35	8 4 51	3407.3	6.36	145.08

DIFFERENTIAL CORRECTIONS
TDE .2779 TRA -.3467 TC3 3.3820 BAU .6058
RDE -.0035 RRA .1578 RC3 2.8409 FAU .33819
FDE -.9348 FRA-1.9449 FC-28.5399 BSP 9733
BDE .2780 BRA .3810 BC3 4.4169 FSP 5387

MID-COURSE EXECUTION ACCURACY
SGT 2309.6 SGR 1842.1 SG3 1615.1
RRT .8838 RRF -.9951 RTF -.8855
SGB 2954.3 R23 -.2836 R13 -.9539
SG1 2871.8 SG2 693.1 THA 37.76

ORBIT DETERMINATION ACCURACY
ST 535.6 SR 101.8 SS 682.6
CRT -.2882 CRS .5258 CST .6081
LSA 785.4 MSA 380.8 SSA 36.6
EL1 536.4 EL2 97.3 ALF 176.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 544.554 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.084 GAL 1.90 AZL 90.99 HCA 166.56 SMA 188.19 ECC .21874 INC .9864 V1 30.210
RP 229.28 LAP -.23 LOP 236.41 VP 21.271 GAP .79 AZP 89.04 TAL 10.62 TAP 177.18 RCA 147.03 APO 229.36 V2 23.988
RC 232.913 GL -10.21 GP 15.85 ZAL 64.86 ZAP 131.71 ETS 163.85 ZAE 161.26 ETE 113.87 ZAC 105.37 ETC 255.34 CLP 133.76

PLANETOCENTRIC CONIC

C3 10.324 VHL 3.213 DLA 6.76 RAL 133.78 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 3.800 DPA 11.44 RAP 196.46 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 37	2279.31	-21.09	45.62	346.77	109.35	15 18 36	1679.3	-18.25	38.09
90.00	4 23 54	4501.51	9.61	188.97	344.80	63.24	5 38 55	3901.5	5.94	182.21
100.00	16 5 10	2006.56	-21.96	25.22	346.43	110.81	16 38 37	1406.6	-18.93	17.73
100.00	5 42 1	4249.49	10.44	170.00	344.36	61.83	6 52 50	3649.5	6.59	163.32
110.00	17 20 47	1769.92	-24.28	6.19	345.37	114.83	17 50 17	1169.9	-20.73	358.85
110.00	6 42 53	4058.90	12.62	154.24	343.07	57.96	7 50 32	3458.9	8.30	147.81

DIFFERENTIAL CORRECTIONS
TDE .3035 TRA -.3442 TC3 3.1824 BAU .6173
RDE .0473 RRA .1982 RC3 3.1422 FAU .34633
FDE-1.2785 FRA-2.1626 FC-29.0411 BSP 9945
BDE .3072 BRA .3972 BC3 4.4723 FSP 5547

MID-COURSE EXECUTION ACCURACY
SGT 2204.0 SGR 2052.2 SG3 1658.7
RRT .8745 RRF -.9965 RTF -.8745
SGB 3011.5 R23 -.2626 R13 -.9613
SG1 2916.0 SG2 752.3 THA 42.67

ORBIT DETERMINATION ACCURACY
ST 575.4 SR 148.9 SS 860.3
CRT .3446 CRS .8980 CST .6978
LSA 975.3 MSA 376.0 SSA 28.3
EL1 577.8 EL2 139.2 ALF 5.41

LAUNCH DATE DEC 2 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 548.401 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.071 GAL 1.92 AZL 91.22 HCA 167.59 SMA 187.97 ECC .21787 INC 1.2209 V1 30.210
RP 228.89 LAP -.26 LOP 237.44 VP 21.297 GAP .45 AZP 88.81 TAL 10.79 TAP 178.37 RCA 147.01 APO 228.92 V2 24.029
RC 234.778 GL -12.60 GP 17.39 ZAL 64.77 ZAP 129.87 ETS 163.33 ZAE 159.14 ETE 116.50 ZAC 106.76 ETC 255.25 CLP 132.20

PLANETOCENTRIC CONIC

C3 10.440 VHL 3.231 DLA 4.55 RAL 132.80 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 3.759 DPA 13.06 RAP 196.67 ECC 1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 27	2212.23	-19.51	41.33	345.42	110.94	15 30 19	1612.2	-16.49	33.96
90.00	4 3 15	4573.11	11.78	193.11	344.07	64.06	5 19 28	3973.1	8.19	186.26
100.00	16 16 56	1942.96	-20.37	21.17	345.06	112.37	16 49 19	1343.0	-17.16	13.85
100.00	5 22 27	4317.61	12.60	173.90	343.65	62.67	6 34 25	3717.6	8.84	167.13
110.00	17 30 5	1714.02	-22.64	2.68	343.95	116.32	17 58 39	1114.0	-18.92	355.52
110.00	6 25 48	4119.32	14.77	157.60	342.39	58.82	7 34 27	3519.3	10.54	151.06

DIFFERENTIAL CORRECTIONS
TDE .3322 TRA -.3433 TC3 2.9581 BAU .6364
RDE .1144 RRA .2478 RC3 3.4694 FAU .35293
FDE-1.6895 FRA-2.3954 FC-29.2654 BSP 10277
BDE .3514 BRA .4234 BC3 4.5592 FSP 5688

MID-COURSE EXECUTION ACCURACY
SGT 2091.4 SGR 2293.9 SG3 1694.9
RRT .8621 RRF -.9975 RTF -.8608
SGB 3104.2 R23 -.2342 R13 -.9696
SG1 2996.4 SG2 811.3 THA 48.06

ORBIT DETERMINATION ACCURACY
ST 619.6 SR 251.3 SS 1073.8
CRT .6366 CRS .9807 CST .7631
LSA 1209.1 MSA 371.1 SSA 21.8
EL1 641.9 EL2 187.1 ALF 15.86

LAUNCH DATE DEC 2 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 552.260 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.059 GAL 1.94 AZL 91.50 HCA 168.62 SMA 187.76 ECC .21705 INC 1.4987 V1 30.210
RP 228.51 LAP -.30 LOP 238.48 VP 21.325 GAP .12 AZP 88.53 TAL 10.93 TAP 179.55 RCA 147.00 APO 228.51 V2 24.070
RC 236.623 GL -15.37 GP 19.19 ZAL 64.79 ZAP 127.92 ETS 162.77 ZAE 156.77 ETE 118.53 ZAC 108.38 ETC 255.12 CLP 130.59

PLANETOCENTRIC CONIC

C3 10.630 VHL 3.260 DLA 1.97 RAL 131.75 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.730 DPA 14.91 RAP 196.95 ECC 1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 33	2135.36	-17.57	36.53	344.08	112.57	15 44 9	1535.4	-14.36	29.32
90.00	3 39 44	4657.26	14.23	198.07	343.48	65.26	4 57 21	4057.3	10.77	191.10
100.00	16 30 49	1870.03	-18.41	16.63	343.70	113.97	17 1 59	1270.0	-15.02	9.49
100.00	5 0 9	4397.82	15.05	178.59	343.08	63.87	6 13 27	3797.8	11.42	171.68
110.00	17 41 10	1649.84	-20.65	358.77	342.55	117.87	18 8 40	1049.8	-16.76	351.80
110.00	6 6 18	4190.78	17.25	161.66	341.86	60.02	7 16 9	3590.8	13.14	154.96

DIFFERENTIAL CORRECTIONS
TDE .3629 TRA -.3455 TC3 2.7081 BAU .6651
RDE .2034 RRA .3086 RC3 3.8175 FAU .35731
FDE-2.1691 FRA-2.6347 FC-29.1008 BSP 10748
BDE .4161 BRA .4632 BC3 4.6805 FSP 5794

MID-COURSE EXECUTION ACCURACY
SGT 1973.4 SGR 2572.7 SG3 1719.5
RRT .8458 RRF -.9983 RTF -.8435
SGB 3242.3 R23 -.2003 R13 -.9780
SG1 3124.3 SG2 866.9 THA 53.80

ORBIT DETERMINATION ACCURACY
ST 665.4 SR 399.9 SS 1320.5
CRT .7603 CRS .9959 CST .8099
LSA 1487.2 MSA 366.6 SSA 16.8
EL1 740.4 EL2 233.4 ALF 27.52

LAUNCH DATE DEC 2 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 556.129 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.048 GAL 1.96 AZL 91.83 HCA 169.66 SMA 187.56 ECC .21628 INC 1.8322 V1 30.210
RP 228.12 LAP -.33 LOP 239.52 VP 21.354 GAP -.20 AZP 88.20 TAL 11.06 TAP 180.72 RCA 146.99 APO 228.12 V2 24.111
RC 238.446 GL -18.63 GP 21.28 ZAL 64.98 ZAP 125.84 ETS 162.15 ZAE 154.09 ETE 120.04 ZAC 110.29 ETC 254.96 CLP 128.93

PLANETOCENTRIC CONIC

C3 10.928 VHL 3.306 DLA -1.08 RAL 130.58 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 3.718 DPA 17.05 RAP 197.35 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 32	2046.38	-15.16	31.10	342.79	114.20	16 0 39	1446.4	-11.77	24.07
90.00	3 12 27	4757.52	16.99	204.13	343.13	67.00	4 31 45	4157.5	13.74	196.97
100.00	16 47 23	1785.62	-16.00	11.53	342.39	115.59	17 17 8	1185.6	-12.42	4.56
100.00	4 34 18	4493.52	17.84	184.33	342.74	65.61	5 49 12	3893.5	14.40	177.23
110.00	17 54 28	1575.61	-18.22	354.37	341.18	119.43	18 20 44	975.6	-14.17	347.61
110.00	5 43 42	4276.29	20.09	166.67	341.56	61.74	6 54 58	3676.3	16.15	159.75

DIFFERENTIAL CORRECTIONS
TDE .3959 TRA -.3512 TC3 2.4245 BAU .7056
RDE .3249 RRA .3858 RC3 4.1768 FAU .35867
FDE-2.7333 FRA-2.8871 FC-28.4151 BSP 11438
BDE .5121 BRA .5217 BC3 4.8295 FSP 5854

MID-COURSE EXECUTION ACCURACY
SGT 1846.9 SGR 2896.5 SG3 1728.9
RRT .8236 RRF -.9988 RTF -.8204
SGB 3435.2 R23 -.1632 R13 -.9854
SG1 3310.7 SG2 916.5 THA 59.73

ORBIT DETERMINATION ACCURACY
ST 711.7 SR 603.5 SS 1606.5
CRT .8236 CRS .9991 CST .8438
LSA 1822.0 MSA 362.8 SSA 12.9
EL1 892.3 EL2 273.0 ALF 39.31

LAUNCH DATE DEC 2 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 560.008 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.038 GAL 1.98 AZL 92.24 HCA 170.70 SMA 187.37 ECC .21555 INC 2.2400 V1 30.210
RP 227.73 LAP -.36 LOP 240.56 VP 21.384 GAP -.52 AZP 87.79 TAL 11.18 TAP 181.88 RCA 146.98 APO 227.76 V2 24.152
RC 240.248 GL -22.48 GP 23.75 ZAL 65.38 ZAP 123.60 ETS 161.47 ZAE 151.07 ETE 121.08 ZAC 112.54 ETC 254.74 CLP 127.20

PLANETOCENTRIC CONIC

C3 11.394 VHL 3.376 DLA -4.71 RAL 129.27 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 3.726 DPA 19.55 RAP 197.89 ECC 1.1875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 23	1942.01	-12.16	24.91	341.64	115.77	16 20 45	1342.0	-8.59	18.05
90.00	2 40 7	4879.14	20.06	211.74	343.13	69.59	4 1 26	4279.1	17.10	204.31
100.00	17 7 31	1686.76	-13.01	5.71	341.21	117.15	17 35 37	1086.8	-9.26	358.92
100.00	4 3 41	4609.62	20.95	191.55	342.77	68.17	5 20 30	4009.6	17.80	184.17
110.00	18 10 40	1489.01	-15.26	349.41	339.92	120.97	18 35 29	889.0	-11.04	342.85
110.00	5 17 0	4380.13	23.30	173.01	341.65	64.25	6 30 0	3780.1	19.64	165.78

DIFFERENTIAL CORRECTIONS
TDE .4318 TRA -.3600 TC3 2.1150 BAU .7625
RDE .4953 RRA .4878 RC3 4.5371 FAU .35673
FDE-3.3972 FRA-3.1604 FC-27.1038 BSP 12290
BDE .6571 BRA .6063 BC3 5.0058 FSP 5803

MID-COURSE EXECUTION ACCURACY
SGT 1718.1 SGR 3283.2 SG3 1721.6
RRT .7943 RRF -.9992 RTF -.7902
SGB 3705.6 R23 -.1261 R13 -.9912
SG1 3579.7 SG2 957.4 THA 65.57

ORBIT DETERMINATION ACCURACY
ST 756.9 SR 881.6 SS 1935.9
CRT .8606 CRS .9998 CST .8685
LSA 2229.0 MSA 360.0 SSA 9.8
EL1 1121.8 EL2 303.0 ALF 50.04

LAUNCH DATE DEC 2 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 563.901 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.028 GAL 1.99 AZL 92.75 HCA 171.75 SMA 187.20 ECC .21487 INC 2.7523 V1 30.210
RP 227.34 LAP -.39 LOP 241.61 VP 21.415 GAP -.83 AZP 87.28 TAL 11.28 TAP 183.03 RCA 146.98 APO 227.42 V2 24.193
RC 242.030 GL -27.07 GP 26.70 ZAL 66.06 ZAP 121.17 ETS 160.74 ZAE 147.64 ETE 121.74 ZAC 115.24 ETC 254.43 CLP 125.40

PLANETOCENTRIC CONIC

C3 12.133 VHL 3.483 DLA -9.05 RAL 127.74 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 3.765 DPA 22.49 RAP 198.65 ECC 1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 45	1817.23	-8.37	17.71	340.78	117.15	16 46 2	1217.2	-4.66	10.99
90.00	2 0 32	5030.23	23.33	221.61	343.71	73.48	3 24 22	4430.2	20.84	213.82
100.00	17 32 40	1569.07	-9.26	358.98	340.30	118.55	17 58 49	969.1	-5.38	352.35
100.00	3 26 18	4753.63	24.29	200.94	343.38	72.02	4 45 31	4153.6	21.61	193.17
110.00	18 30 51	1386.89	-11.60	343.76	338.90	122.38	18 53 58	786.9	-7.25	337.37
110.00	4 44 36	4508.57	26.85	181.30	342.35	68.00	5 59 45	3908.6	23.62	173.62

DIFFERENTIAL CORRECTIONS
TDE .4825 TRA -.3611 TC3 1.8120 BAU .8434
RDE .7424 RRA .6303 RC3 4.8734 FAU .35057
FDE-4.1749 FRA-3.4672 FC-25.0140 BSP 13189
BDE .8854 BRA .7264 BC3 5.1993 FSP 5585

MID-COURSE EXECUTION ACCURACY
SGT 1607.8 SGR 3757.7 SG3 1693.5
RRT .7652 RRF -.9995 RTF -.7607
SGB 4087.2 R23 -.0928 R13 -.9952
SG1 3967.9 SG2 980.2 THA 70.64

ORBIT DETERMINATION ACCURACY
ST 814.8 SR 1265.3 SS 2310.2
CRT .8887 CRS 1.0000 CST .8913
LSA 2734.0 MSA 356.9 SSA 7.4
EL1 1470.2 EL2 321.4 ALF 58.54

LAUNCH DATE DEC 2 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 567.798 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.018 GAL 2.00 AZL 93.41 HCA 172.79 SMA 187.04 ECC .21423 INC 3.4138 V1 30.210
RP 226.95 LAP -.43 LOP 242.66 VP 21.448 GAP -1.13 AZP 86.61 TAL 11.36 TAP 184.16 RCA 146.97 APO 227.11 V2 24.235
RC 243.792 GL -32.56 GP 30.23 ZAL 67.14 ZAP 118.49 ETS 159.97 ZAE 143.69 ETE 122.06 ZAC 118.48 ETC 254.00 CLP 123.52

PLANETOCENTRIC CONIC

C3 13.334 VHL 3.652 DLA -14.25 RAL 125.90 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.850 DPA 25.97 RAP 199.70 ECC 1.2194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 1	1662.79	-3.48	8.99	340.50	118.12	17 19 43	1062.8	.31	2.36
90.00	1 9 39	5225.10	26.45	235.02	345.18	79.49	2 36 44	4625.1	24.73	226.77
100.00	18 5 46	1424.82	-4.48	350.94	339.95	119.59	18 29 31	824.8	-.51	344.41
100.00	2 38 34	4938.30	27.56	213.67	344.93	77.95	4 0 53	4338.3	25.63	205.41
110.00	18 57 1	1264.29	-7.06	337.18	338.36	123.53	19 18 5	664.3	-2.60	330.92
110.00	4 3 48	4671.60	30.50	192.58	344.08	73.75	5 21 40	4071.6	27.97	184.29

DIFFERENTIAL CORRECTIONS
TDE .5108 TRA -.3943 TC3 1.3973 BAU .9345
RDE 1.0805 RRA .8063 RC3 5.0525 FAU .33318
FDE-4.9265 FRA-3.6733 FC-21.6322 BSP 14960
BDE 1.1951 BRA .8975 BC3 5.2422 FSP 5387

MID-COURSE EXECUTION ACCURACY
SGT 1446.0 SGR 4265.4 SG3 1604.1
RRT .6957 RRF -.9996 RTF -.6899
SGB 4503.8 R23 -.0651 R13 -.9975
SG1 4389.3 SG2 1009.4 THA 75.97

ORBIT DETERMINATION ACCURACY
ST 824.6 SR 1743.5 SS 2643.7
CRT .8953 CRS 1.0000 CST .8955
LSA 3252.8 MSA 357.4 SSA 5.6
EL1 1898.9 EL2 337.2 ALF 66.26

LAUNCH DATE DEC 2 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 571.705 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.010 GAL 2.01 AZL 94.30 HCA 173.84 SMA 186.89 ECC .21364 INC 4.3030 V1 30.210
RP 226.56 LAP -.46 LOP 243.71 VP 21.482 GAP -1.43 AZP 85.72 TAL 11.44 TAP 185.28 RCA 146.96 APO 226.82 V2 24.277
RC 245.534 GL -39.14 GP 34.51 ZAL 68.72 ZAP 115.50 ETS 159.22 ZAE 139.12 ETE 122.16 ZAC 122.41 ETC 253.36 CLP 121.50

PLANETOCENTRIC CONIC

C3 15.377 VHL 3.921 DLA -20.46 RAL 123.61 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 4.008 DPA 30.12 RAP 201.18 ECC 1.2531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 33	1455.98	3.18	357.45	341.51	118.15	18 9 49	856.0	6.93	350.76
90.00	23 53 51	5494.96	28.30	254.50	347.77	89.05	25 25 26	4895.0	27.87	245.86
100.00	18 53 30	1236.66	1.89	340.61	340.80	119.84	19 14 7	636.7	5.85	334.06
100.00	1 32 31	5189.51	29.78	231.98	347.72	87.31	2 59 0	4589.5	29.09	223.24
110.00	19 33 14	1112.16	-1.28	329.19	338.82	124.16	19 51 46	512.2	3.21	322.95
110.00	3 9 17	4886.77	33.50	208.60	347.34	82.77	4 30 43	4286.8	32.14	199.64

DIFFERENTIAL CORRECTIONS
TDE .5510 TRA -.4285 TC3 .9957 BAU 1.0550
RDE 1.5843 RRA 1.0586 RC3 5.0342 FAU .30590
FDE-5.6665 FRA-3.8349 FC-17.2221 BSP 16992
BDE 1.6774 BRA 1.1420 BC3 5.1317 FSP 4966

MID-COURSE EXECUTION ACCURACY
SGT 1305.6 SGR 4865.4 SG3 1463.1
RRT .6051 RRF -.9997 RTF -.5978
SGB 5037.6 R23 -.0442 R13 -.9988
SG1 4932.1 SG2 1025.5 THA 80.36

ORBIT DETERMINATION ACCURACY
ST 830.0 SR 2370.2 SS 2937.1
CRT .8983 CRS 1.0000 CST .8971
LSA 3847.7 MSA 359.0 SSA 4.2
EL1 2487.2 EL2 347.6 ALF 72.18

LAUNCH DATE DEC 2 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 575.619 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.002 GAL 2.01 AZL 95.56 HCA 174.89 SMA 186.75 ECC .21308 INC 5.5606 V1 30.210
RP 226.17 LAP -.49 LOP 244.77 VP 21.517 GAP -1.72 AZP 84.46 TAL 11.50 TAP 186.39 RCA 146.96 APO 226.55 V2 24.318
RC 247.256 GL -46.99 GP 39.68 ZAL 70.95 ZAP 112.11 ETS 158.57 ZAE 133.76 ETE 122.17 ZAC 127.15 ETC 252.39 CLP 119.28

PLANETOCENTRIC CONIC

C3 19.099 VHL 4.370 DLA -27.83 RAL 120.58 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 4.292 DPA 35.07 RAP 203.28 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 39	1030.99	16.05	332.87	346.78	113.64	20 8 50	431.0	19.12	325.53
90.00	21 23 38	731.91	23.16	313.84	349.55	106.76	21 35 50	131.9	25.24	305.78
100.00	20 26 2	919.86	12.33	322.88	344.94	117.45	20 41 21	319.9	15.91	315.92
100.00	23 31 57	5606.31	27.16	262.48	350.72	103.00	25 5 23	5006.3	28.67	254.00
110.00	20 31 44	901.94	6.73	318.18	341.60	123.59	20 46 46	301.9	11.10	311.82
110.00	1 46 40	5197.00	33.55	232.71	352.03	96.96	3 13 17	4597.0	34.15	223.52

DIFFERENTIAL CORRECTIONS
TDE .5947 TRA -.4813 TC3 .5989 BAU 1.2067
RDE 2.3479 RRA 1.4271 RC3 4.6879 FAU .26487
FDE-6.2156 FRA-3.8647 FC-12.0065 BSP 19596
BDE 2.4220 BRA 1.5061 BC3 4.7260 FSP 4322

MID-COURSE EXECUTION ACCURACY
SGT 1179.5 SGR 5544.5 SG3 1250.2
RRT .4642 RRF -.9998 RTF -.4547
SGB 5668.5 R23 -.0297 R13 -.9994
SG1 5572.4 SG2 1039.5 THA 84.16

ORBIT DETERMINATION ACCURACY
ST 808.7 SR 3145.4 SS 3090.6
CRT .8909 CRS 1.0000 CST .8888
LSA 4468.4 MSA 364.2 SSA 3.3
EL1 3227.9 EL2 357.9 ALF 76.93

LAUNCH DATE DEC 2 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 579.540 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.995 GAL 2.02 AZL 97.47 HCA 175.94 SMA 186.63 ECC .21256 INC 7.4727 V1 30.210
RP 225.78 LAP -.53 LOP 245.83 VP 21.553 GAP -2.01 AZP 82.54 TAL 11.55 TAP 187.49 RCA 146.96 APO 226.30 V2 24.360
RC 248.959 GL -56.24 GP 45.86 ZAL 73.92 ZAP 108.24 ETS 158.28 ZAE 127.51 ETE 122.39 ZAC 132.76 ETC 250.91 CLP 116.71

PLANETOCENTRIC CONIC

C3 26.614 VHL 5.159 DLA -36.39 RAL 116.32 RAD 6568.1 VEL 12.165 PTH 2.18 VHP 4.813 DPA 40.90 RAP 206.25 ECC 1.4380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.13	17 28 57	1504.35	22.59	11.82	351.94	119.32	17 54 2	904.3	26.31	4.46
113.87	23 12 18	5707.58	22.60	268.20	351.95	119.31	24 47 25	5107.6	26.32	260.84
66.13	17 28 57	1504.35	22.59	11.82	351.94	119.32	17 54 2	904.3	26.31	4.46
113.87	23 12 18	5707.58	22.60	268.20	351.95	119.31	24 47 25	5107.6	26.32	260.84
66.13	17 28 57	1504.35	22.59	11.82	351.94	119.32	17 54 2	904.3	26.31	4.46
113.87	23 12 18	5707.58	22.60	268.20	351.95	119.31	24 47 25	5107.6	26.32	260.84

DIFFERENTIAL CORRECTIONS
TDE .6562 TRA -.5538 TC3 .2675 BAU 1.4352
RDE 3.6006 RRA 2.0634 RC3 4.0248 FAU .21329
FDE-6.3719 FRA-3.7672 FC3-6.9381 BSP 21252
BDE 3.6599 BRA 2.1365 BC3 4.0337 FSP 3166

MID-COURSE EXECUTION ACCURACY
SGT 1091.4 SGR 6429.7 SG3 978.8
RRT .2686 RRF -.9998 RTF -.2557
SGB 6521.6 R23 -.0210 R13 -.9996
SG1 6436.5 SG2 1050.1 THA 87.32

ORBIT DETERMINATION ACCURACY
ST 764.0 SR 4091.0 SS 3014.7
CRT .8701 CRS 1.0000 CST .8669
LSA 5125.2 MSA 375.2 SSA 2.5
EL1 4145.1 EL2 371.7 ALF 80.69

LAUNCH DATE DEC 2 1964 FLIGHT TIME 276.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 611.558 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.955 GAL 1.91 AZL 80.29 HCA 184.67 SMA 185.94 ECC .20940 INC 9.7116 V1 30.210
RP 222.66 LAP -.79 LOP 254.46 VP 21.871 GAP -4.07 AZP 99.68 TAL 11.08 TAP 195.75 RCA 147.00 APO 224.88 V2 24.695
RC 261.869 GL 64.60 GP -44.73 ZAL 77.15 ZAP 99.08 ETS 187.54 ZAE 122.65 ETE 215.72 ZAC 43.76 ETC 250.44 CLP 102.83

PLANETOCENTRIC CONIC

C3 37.830 VHL 6.151 DLA 74.17 RAL 190.99 RAD 6568.5 VEL 12.617 PTH 2.29 VHP 4.318 DPA -37.56 RAP 156.45 ECC 1.6226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
15.13	10 4 48	4460.18	-41.62	241.41	122.53	17.90	11 19 8	3860.2	-49.18	238.07
15.13	5 36 25	4715.50	-24.92	246.15	61.06	14.67	6 55 1	4115.5	-32.64	244.17
18.05	7 56 34	4582.33	-32.88	240.96	90.45	18.95	9 12 56	3982.3	-40.40	237.98
161.95	18 44 24	2806.25	-32.87	85.96	90.43	18.95	19 31 10	2206.3	-40.39	82.98
18.05	7 56 34	4582.33	-32.88	240.96	90.45	18.95	9 12 56	3982.3	-40.40	237.98
161.95	18 44 24	2806.25	-32.87	85.96	90.43	18.95	19 31 10	2206.3	-40.39	82.98

DIFFERENTIAL CORRECTIONS
TDE 2.3164 TRA .2035 TC3 -.8153 BAU 1.5846
RDE 3.9439 RRA 1.2409 RC3-3.0253 FAU .28399
FDE 8.1976 FRA 2.5403 FC3-6.4991 BSP 24009
BDE 4.5739 BRA 1.2575 BC3 3.1333 FSP 4171

MID-COURSE EXECUTION ACCURACY
SGT 2479.0 SGR 6731.1 SG3 1214.2
RRT .8753 RRF .9998 RTF .8762
SGB 7173.1 R23 .0510 R13 .9985
SG1 7082.0 SG2 1139.3 THA 71.64

ORBIT DETERMINATION ACCURACY
ST 2168.1 SR 3889.3 SS 3010.9
CRT .9720 CRS-1.0000 CST -.9731
LSA 5355.1 MSA 464.8 SSA 3.1
EL1 4430.3 EL2 447.3 ALF 61.23

LAUNCH DATE DEC 2 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 615.571 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.952	GAL	1.90	AZL	81.81	HCA	185.76	SMA	185.89	ECC	.20915	INC	8.1903
RP	222.28	LAP	-.82	LOP	255.55	VP	21.914	GAP	-4.31	AZP	98.15	TAL	10.99	TAP	196.75	RCA	147.01	APO	224.77
RC	263.392	GL	59.64	GP	-39.64	ZAL	75.55	ZAP	98.62	ETS	185.79	ZAE	124.44	ETE	211.36	ZAC	48.51	ETC	252.03

V1	30.210	V2	24.737	CLP	101.23														

PLANETOCENTRIC CONIC

C3	29.568	VHL	5.438	DLA	70.93	RAL	178.15	RAD	6568.2	VEL	12.286	PTH	2.21	VHP	3.872	DPA	-32.99	RAP	159.23
ECC	1.4866																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
21.79	7 13 7	4511.64	-36.11	235.26	73.56	23.86	8 28 18	3911.6	-43.35	231.24
158.21	17 45 24	2752.76	-36.10	84.09	73.54	23.85	18 31 17	2152.8	-43.34	80.07
21.79	7 13 7	4511.64	-36.11	235.26	73.56	23.86	8 28 18	3911.6	-43.35	231.24
158.21	17 45 24	2752.76	-36.10	84.09	73.54	23.85	18 31 17	2152.8	-43.34	80.07
21.79	7 13 7	4511.64	-36.11	235.26	73.56	23.86	8 28 18	3911.6	-43.35	231.24
158.21	17 45 24	2752.76	-36.10	84.09	73.54	23.85	18 31 17	2152.8	-43.34	80.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2647	TRA	.0846	TC3	-1.1094	BAU	1.4156	SGT	2687.8	SGR	6126.6	SG3	1548.4	ST	2388.0	SR	4035.3	SS	3902.6
RDE	3.7393	RRA	.8933	RC3	-3.4050	FAU	.34967	RRT	.8900	RRF	.9998	RTF	.8900	CRT	.9835	CRS	-1.0000	CST	-.9840
FDE	10.8167	FRA	2.5438	FC	-10.2382	BSP	22072	SGB	6690.2	R23	.0693	R13	.9974	LSA	6087.6	MSA	395.4	SSA	3.8
BDE	4.3716	BRA	.8973	BC3	3.5812	FSP	5288	SG1	6592.5	SG2	1139.0	THA	67.98	EL1	4674.0	EL2	373.2	ALF	59.59

LAUNCH DATE DEC 2 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 619.596 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.950	GAL	1.87	AZL	82.85	HCA	186.85	SMA	185.85	ECC	.20892	INC	7.1488
RP	221.89	LAP	-.85	LOP	256.65	VP	21.957	GAP	-4.54	AZP	97.10	TAL	10.88	TAP	197.73	RCA	147.02	APO	224.68
RC	264.895	GL	55.56	GP	-35.39	ZAL	74.29	ZAP	97.69	ETS	184.17	ZAE	125.23	ETE	207.14	ZAC	52.45	ETC	253.11

V1	30.210	V2	24.779	CLP	99.45														

PLANETOCENTRIC CONIC

C3	24.694	VHL	4.969	DLA	67.79	RAL	170.57	RAD	6568.0	VEL	12.086	PTH	2.16	VHP	3.594	DPA	-29.01	RAP	161.08
ECC	1.4064																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.43	6 50 44	4456.67	-37.95	229.56	62.02	28.64	8 5 1	3856.7	-44.85	224.58
154.57	17 7 17	2718.25	-37.94	82.25	62.00	28.64	17 52 35	2118.3	-44.84	77.27
25.43	6 50 44	4456.67	-37.95	229.56	62.02	28.64	8 5 1	3856.7	-44.85	224.58
154.57	17 7 17	2718.25	-37.94	82.25	62.00	28.64	17 52 35	2118.3	-44.84	77.27
25.43	6 50 44	4456.67	-37.95	229.56	62.02	28.64	8 5 1	3856.7	-44.85	224.58
154.57	17 7 17	2718.25	-37.94	82.25	62.00	28.64	17 52 35	2118.3	-44.84	77.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1941	TRA	.0149	TC3	-1.4430	BAU	1.2822	SGT	2908.4	SGR	5596.3	SG3	1829.9	ST	2530.2	SR	3815.7	SS	4413.4
RDE	3.2636	RRA	.6810	RC3	-3.6059	FAU	.40010	RRT	.9065	RRF	.9997	RTF	.9062	CRT	.9874	CRS	-1.0000	CST	-.9879
FDE	12.1638	FRA	2.4866	FC	-14.0271	BSP	20912	SGB	6306.9	R23	.0871	R13	.9959	LSA	6348.8	MSA	364.3	SSA	4.4
BDE	3.9326	BRA	.6812	BC3	3.8839	FSP	6315	SG1	6209.0	SG2	1107.0	THA	63.88	EL1	4566.1	EL2	334.9	ALF	56.58

LAUNCH DATE DEC 2 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 623.634 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.947	GAL	1.85	AZL	83.61	HCA	187.95	SMA	185.81	ECC	.20871	INC	6.3903
RP	221.51	LAP	-.88	LOP	257.76	VP	22.001	GAP	-4.77	AZP	96.33	TAL	10.75	TAP	198.70	RCA	147.03	APO	224.59
RC	266.379	GL	52.16	GP	-31.83	ZAL	73.33	ZAP	96.43	ETS	182.75	ZAE	125.23	ETE	203.27	ZAC	55.71	ETC	253.88

V1	30.210	V2	24.820	CLP	97.58														

PLANETOCENTRIC CONIC

C3	21.544	VHL	4.642	DLA	64.95	RAL	165.74	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	3.409	DPA	-25.57	RAP	162.31
ECC	1.3546																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.74	6 38 57	4412.38	-38.91	224.28	53.60	32.96	7 52 29	3812.4	-45.46	218.50
151.26	16 40 33	2696.05	-38.90	80.63	53.58	32.95	17 25 29	2096.1	-45.46	74.85
28.74	6 38 57	4412.38	-38.91	224.28	53.60	32.96	7 52 29	3812.4	-45.46	218.50
151.26	16 40 33	2696.05	-38.90	80.63	53.58	32.95	17 25 29	2096.1	-45.46	74.85
28.74	6 38 57	4412.38	-38.91	224.28	53.60	32.96	7 52 29	3812.4	-45.46	218.50
151.26	16 40 33	2696.05	-38.90	80.63	53.58	32.95	17 25 29	2096.1	-45.46	74.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1387	TRA	-.0389	TC3	-1.8219	BAU	1.1910	SGT	3137.4	SGR	5111.3	SG3	2054.1	ST	2640.7	SR	3478.9	SS	4668.5
RDE	2.7920	RRA	.5283	RC3	-3.7121	FAU	.44190	RRT	.9199	RRF	.9996	RTF	.9195	CRT	.9893	CRS	-1.0000	CST	-.9898
FDE	12.7280	FRA	2.3420	FC	-17.7577	BSP	19733	SGB	5997.4	R23	.1062	R13	.9940	LSA	6383.7	MSA	346.4	SSA	4.9
BDE	3.5170	BRA	.5297	BC3	4.1351	FSP	7069	SG1	5902.0	SG2	1065.3	THA	59.45	EL1	4356.7	EL2	307.9	ALF	52.88

LAUNCH DATE DEC 2 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 627.682 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.946	GAL	1.82	AZL	84.19	HCA	189.05	SMA	185.79	ECC	.20852	INC	5.8139
RP	221.13	LAP	-.91	LOP	258.86	VP	22.045	GAP	-4.99	AZP	95.74	TAL	10.61	TAP	199.66	RCA	147.05	APO	224.53
RC	267.844	GL	49.28	GP	-28.85	ZAL	72.60	ZAP	94.96	ETS	181.54	ZAE	124.67	ETE	199.84	ZAC	58.42	ETC	254.46

V1	30.210	V2	24.862	CLP	95.67														

PLANETOCENTRIC CONIC

C3	19.368	VHL	4.401	DLA	62.44	RAL	162.48	RAD	6567.8	VEL	11.864	PTH	2.10	VHP	3.281	DPA	-22.59	RAP	163.11
ECC	1.3187																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.70	6 32 56	4375.54	-39.32	219.54	47.19	36.73	7 45 51	3775.5	-45.54	213.13
148.30	16 20 34	2682.01	-39.31	79.29	47.18	36.72	17 5 16	2082.0	-45.53	72.88
31.70	6 32 56	4375.54	-39.32	219.54	47.19	36.73	7 45 51	3775.5	-45.54	213.13
148.30	16 20 34	2682.01	-39.31	79.29	47.18	36.72	17 5 16	2082.0	-45.53	72.88
31.70	6 32 56	4375.54	-39.32	219.54	47.19	36.73	7 45 51	3775.5	-45.54	213.13
148.30	16 20 34	2682.01	-39.31	79.29	47.18	36.72	17 5 16	2082.0	-45.53	72.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1165	TRA	-.0715	TC3	-2.2173	BAU	1.1217	SGT	3382.6	SGR	4686.2	SG3	2233.2	ST	2756.8	SR	3149.4	SS	4797.3
RDE	2.4019	RRA	.4283	RC3	-3.7215	FAU	.47302	RRT	.9316	RRF	.9995	RTF	.9308	CRT	.9906	CRS	-1.0000	CST	-.9911
FDE	12.9126	FRA	2.2224	FC	-21.1441	BSP	19144	SGB	5779.5	R23	.1253	R13	.9916	LSA	6357.7	MSA	334.2	SSA	5.6
BDE	3.2013	BRA	.4342	BC3	4.3320	FSP	7751	SG1	5690.0	SG2	1012.9	THA	54.80	EL1	4175.8	EL2	284.7	ALF	48.84

LAUNCH DATE DEC 2 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 631.741 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.944 GAL 1.80 AZL 84.64 HCA 190.16 SMA 185.76 ECC .20835 INC 5.3601 V1 30.210
RP 220.75 LAP -.94 LOP 259.97 VP 22.090 GAP -5.20 AZP 95.28 TAL 10.44 TAP 200.61 RCA 147.06 APO 224.47 V2 24.903
RC 269.292 GL 46.84 GP -26.32 ZAL 72.05 ZAP 93.35 ETS 180.51 ZAE 123.70 ETE 196.86 ZAC 60.70 ETC 254.90 CLP 93.74

PLANETOCENTRIC CONIC

C3 17.786 VHL 4.217 DLA 60.22 RAL 160.20 RAD 6567.7 VEL 11.797 PTH 2.09 VHP 3.190 DPA -20.00 RAP 163.62 ECC 1.2927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.34	6 30 17	4344.09	-39.39	215.33	42.19	39.98	7 42 41	3744.1	-45.30	208.44
145.66	16 4 58	2673.47	-39.38	78.23	42.17	39.98	16 49 31	2073.5	-45.29	71.35
34.34	6 30 17	4344.09	-39.39	215.33	42.19	39.98	7 42 41	3744.1	-45.30	208.44
145.66	16 4 58	2673.47	-39.38	78.23	42.17	39.98	16 49 31	2073.5	-45.29	71.35
34.34	6 30 17	4344.09	-39.39	215.33	42.19	39.98	7 42 41	3744.1	-45.30	208.44
145.66	16 4 58	2673.47	-39.38	78.23	42.17	39.98	16 49 31	2073.5	-45.29	71.35

DIFFERENTIAL CORRECTIONS
TDE 2.1059 TRA -.1012 TC3-2.6478 BAU 1.0787
RDE 2.0777 RRA .3527 RC3-3.6837 FAU .49803
FDE12.8230 FRA 2.0817 FC-24.2423 BSP 18636
BDE 2.9583 BRA .3670 BC3 4.5366 FSP 8235

MID-COURSE EXECUTION ACCURACY
SGT 3640.1 SGR 4307.3 SG3 2372.5
RRT .9406 RRF .9994 RTF .9398
SGB 5639.4 R23 .1434 R13 .9890
SG1 5557.5 SG2 957.6 THA 50.10

ORBIT DETERMINATION ACCURACY
ST 2863.0 SR 2839.1 SS 4827.4
CRT .9914 CRS-1.0000 CST -.9919
LSA 6281.2 MSA 326.9 SSA 6.3
EL1 4023.3 EL2 264.9 ALF 44.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 635.810 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.944 GAL 1.76 AZL 85.01 HCA 191.27 SMA 185.75 ECC .20821 INC 4.9937 V1 30.210
RP 220.37 LAP -.97 LOP 261.09 VP 22.135 GAP -5.42 AZP 94.90 TAL 10.27 TAP 201.54 RCA 147.07 APO 224.42 V2 24.945
RC 270.721 GL 44.73 GP -24.15 ZAL 71.66 ZAP 91.64 ETS 179.63 ZAE 122.42 ETE 194.28 ZAC 62.63 ETC 255.26 CLP 91.80

PLANETOCENTRIC CONIC

C3 16.589 VHL 4.073 DLA 58.26 RAL 158.55 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 3.125 DPA -17.72 RAP 163.91 ECC 1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.69	6 29 46	4316.63	-39.26	211.59	38.20	42.79	7 41 43	3716.6	-44.89	204.34
143.31	15 52 22	2668.76	-39.25	77.42	38.19	42.78	16 36 51	2068.8	-44.88	70.18
36.69	6 29 46	4316.63	-39.26	211.59	38.20	42.79	7 41 43	3716.6	-44.89	204.34
143.31	15 52 22	2668.76	-39.25	77.42	38.19	42.78	16 36 51	2068.8	-44.88	70.18
36.69	6 29 46	4316.63	-39.26	211.59	38.20	42.79	7 41 43	3716.6	-44.89	204.34
143.31	15 52 22	2668.76	-39.25	77.42	38.19	42.78	16 36 51	2068.8	-44.88	70.18

DIFFERENTIAL CORRECTIONS
TDE 2.1107 TRA -.1219 TC3-3.0925 BAU 1.0538
RDE 1.8136 RRA .2981 RC3-3.6074 FAU .51708
FDE12.5884 FRA 1.9587 FC-26.9856 BSP 18421
BDE 2.7828 BRA .3221 BC3 4.7515 FSP 8601

MID-COURSE EXECUTION ACCURACY
SGT 3907.5 SGR 3972.3 SG3 2480.5
RRT .9482 RRF .9992 RTF .9471
SGB 5572.1 R23 .1591 R13 .9864
SG1 5499.5 SG2 896.7 THA 45.50

ORBIT DETERMINATION ACCURACY
ST 2971.8 SR 2564.0 SS 4803.0
CRT .9920 CRS-1.0000 CST -.9926
LSA 6194.5 MSA 320.6 SSA 7.1
EL1 3917.3 EL2 245.7 ALF 40.75

LAUNCH DATE DEC 2 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 639.888 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.943 GAL 1.73 AZL 85.31 HCA 192.39 SMA 185.74 ECC .20808 INC 4.6914 V1 30.210
RP 220.00 LAP -1.01 LOP 262.20 VP 22.181 GAP -5.62 AZP 94.58 TAL 10.07 TAP 202.46 RCA 147.09 APO 224.38 V2 24.986
RC 272.134 GL 42.90 GP -22.27 ZAL 71.40 ZAP 89.88 ETS 178.88 ZAE 120.94 ETE 192.06 ZAC 64.28 ETC 255.56 CLP 89.87

PLANETOCENTRIC CONIC

C3 15.653 VHL 3.956 DLA 56.52 RAL 157.36 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 3.078 DPA -15.71 RAP 164.04 ECC 1.2576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.81	6 30 40	4292.21	-39.00	208.26	35.00	45.22	7 42 12	3692.2	-44.37	200.73
141.19	15 41 59	2666.75	-38.98	76.83	34.98	45.21	16 26 26	2066.7	-44.36	69.31
38.81	6 30 40	4292.21	-39.00	208.26	35.00	45.22	7 42 12	3692.2	-44.37	200.73
141.19	15 41 59	2666.75	-38.98	76.83	34.98	45.21	16 26 26	2066.7	-44.36	69.31
38.81	6 30 40	4292.21	-39.00	208.26	35.00	45.22	7 42 12	3692.2	-44.37	200.73
141.19	15 41 59	2666.75	-38.98	76.83	34.98	45.21	16 26 26	2066.7	-44.36	69.31

DIFFERENTIAL CORRECTIONS
TDE 2.1243 TRA -.1375 TC3-3.5536 BAU 1.0440
RDE 1.5986 RRA .2589 RC3-3.5019 FAU .53068
FDE12.2784 FRA 1.8629 FC-29.3512 BSP 18464
BDE 2.6586 BRA .2932 BC3 4.9891 FSP 8902

MID-COURSE EXECUTION ACCURACY
SGT 4183.4 SGR 3674.2 SG3 2562.3
RRT .9543 RRF .9989 RTF .9531
SGB 5567.9 R23 .1715 R13 .9841
SG1 5505.0 SG2 834.4 THA 41.12

ORBIT DETERMINATION ACCURACY
ST 3079.5 SR 2325.5 SS 4748.6
CRT .9924 CRS-1.0000 CST -.9930
LSA 6110.7 MSA 316.6 SSA 7.9
EL1 3852.2 EL2 228.6 ALF 37.00

LAUNCH DATE DEC 2 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 643.975 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.943 GAL 1.69 AZL 85.56 HCA 193.51 SMA 185.73 ECC .20797 INC 4.4374 V1 30.210
RP 219.62 LAP -1.04 LOP 263.33 VP 22.226 GAP -5.82 AZP 94.32 TAL 9.87 TAP 203.38 RCA 147.10 APO 224.36 V2 25.027
RC 273.529 GL 41.30 GP -20.64 ZAL 71.24 ZAP 88.08 ETS 178.24 ZAE 119.31 ETE 190.16 ZAC 65.70 ETC 255.82 CLP 87.95

PLANETOCENTRIC CONIC

C3 14.901 VHL 3.860 DLA 54.95 RAL 156.51 RAD 6567.6 VEL 11.674 PTH 2.05 VHP 3.045 DPA -13.91 RAP 164.06 ECC 1.2452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.72	6 32 31	4270.19	-38.66	205.27	32.39	47.34	7 43 42	3670.2	-43.81	197.54
139.28	15 33 17	2666.65	-38.65	76.40	32.37	47.33	16 17 43	2066.7	-43.80	68.67
40.72	6 32 31	4270.19	-38.66	205.27	32.39	47.34	7 43 42	3670.2	-43.81	197.54
139.28	15 33 17	2666.65	-38.65	76.40	32.37	47.33	16 17 43	2066.7	-43.80	68.67
40.72	6 32 31	4270.19	-38.66	205.27	32.39	47.34	7 43 42	3670.2	-43.81	197.54
139.28	15 33 17	2666.65	-38.65	76.40	32.37	47.33	16 17 43	2066.7	-43.80	68.67

DIFFERENTIAL CORRECTIONS
TDE 2.1418 TRA -.1502 TC3-4.0295 BAU 1.0491
RDE 1.4172 RRA .2269 RC3-3.3905 FAU .54168
FDE11.8846 FRA 1.7611 FC-31.4705 BSP 18610
BDE 2.5682 BRA .2721 BC3 5.2661 FSP 9064

MID-COURSE EXECUTION ACCURACY
SGT 4464.8 SGR 3408.9 SG3 2623.8
RRT .9594 RRF .9986 RTF .9580
SGB 5617.4 R23 .1805 R13 .9821
SG1 5564.1 SG2 771.3 THA 37.05

ORBIT DETERMINATION ACCURACY
ST 3182.5 SR 2112.2 SS 4659.3
CRT .9928 CRS-1.0000 CST -.9935
LSA 6016.8 MSA 311.8 SSA 8.8
EL1 3813.8 EL2 211.5 ALF 33.50

LAUNCH DATE DEC 2 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 648.070 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.943	GAL	1.66	AZL	85.78	HCA	194.64	SMA	185.73	ECC	.20788	INC	4.2211	V1	30.210
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.272	GAP	-6.02	AZP	94.08	TAL	9.64	TAP	204.28	RCA	147.12	APO	224.34	V2	25.067
RC	274.906	GL	39.89	GP	-19.20	ZAL	71.18	ZAP	86.27	ETS	177.69	ZAE	117.57	ETE	188.52	ZAC	66.94	ETC	256.04	CLP	86.05

PLANETOCENTRIC CONIC

C3	14.283	VHL	3.779	DLA	53.54	RAL	155.90	RAD	6567.6	VEL	11.648	PTH	2.04	VHP	3.024	DPA	-12.30	RAP	164.01	ECC	1.2351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.46	6 35 8	4249.98	-38.28	202.57	30.25	49.20	7 45 58	3650.0	-43.22	194.68
137.54	15 25 52	2668.02	-38.27	76.12	30.24	49.19	16 10 20	2068.0	-43.21	68.23
42.46	6 35 8	4249.98	-38.28	202.57	30.25	49.20	7 45 58	3650.0	-43.22	194.68
137.54	15 25 52	2668.02	-38.27	76.12	30.24	49.19	16 10 20	2068.0	-43.21	68.23
42.46	6 35 8	4249.98	-38.28	202.57	30.25	49.20	7 45 58	3650.0	-43.22	194.68
137.54	15 25 52	2668.02	-38.27	76.12	30.24	49.19	16 10 20	2068.0	-43.21	68.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1682	TRA	-.1549	TC3	-4.5078	BAU	1.0607	SGT	4750.8	SGR	3168.0	SG3	2663.9	ST	3290.8	SR	1938.9	SS	4586.3
RDE	1.2735	RRA	.2111	RC3	-3.2457	FAU	.54555	RRT	.9629	RRF	.9982	RTF	.9617	CRT	.9929	CRS	-1.0000	CST	-.9936
FDE	11.5355	FRA	1.7578	FC	-33.0671	BSP	19123	SGB	5710.2	R23	.1866	R13	.9806	LSA	5960.2	MSA	313.7	SSA	9.6
BDE	2.5145	BRA	.2618	BC3	5.5547	FSP	9318	SG1	5665.0	SG2	716.7	THA	33.31	EL1	3814.2	EL2	199.7	ALF	30.42

LAUNCH DATE DEC 2 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 652.177 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.943	GAL	1.61	AZL	85.97	HCA	195.76	SMA	185.74	ECC	.20782	INC	4.0345	V1	30.210
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.319	GAP	-6.21	AZP	93.88	TAL	9.40	TAP	205.17	RCA	147.14	APO	224.34	V2	25.108
RC	276.266	GL	38.64	GP	-17.92	ZAL	71.20	ZAP	84.45	ETS	177.22	ZAE	115.76	ETE	187.11	ZAC	68.03	ETC	256.23	CLP	84.17

PLANETOCENTRIC CONIC

C3	13.766	VHL	3.710	DLA	52.26	RAL	155.49	RAD	6567.5	VEL	11.625	PTH	2.04	VHP	3.011	DPA	-10.84	RAP	163.89	ECC	1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.05	6 38 15	4231.33	-37.87	200.11	28.50	50.84	7 48 46	3631.3	-42.63	192.10
135.95	15 19 29	2670.45	-37.86	75.96	28.48	50.83	16 4 0	2070.4	-42.62	67.94
44.05	6 38 15	4231.33	-37.87	200.11	28.50	50.84	7 48 46	3631.3	-42.63	192.10
135.95	15 19 29	2670.45	-37.86	75.96	28.48	50.83	16 4 0	2070.4	-42.62	67.94
44.05	6 38 15	4231.33	-37.87	200.11	28.50	50.84	7 48 46	3631.3	-42.63	192.10
135.95	15 19 29	2670.45	-37.86	75.96	28.48	50.83	16 4 0	2070.4	-42.62	67.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1897	TRA	-.1615	TC3	-5.0051	BAU	1.0862	SGT	5039.2	SGR	2953.5	SG3	2693.4	ST	3385.5	SR	1770.2	SS	4458.1
RDE	1.1416	RRA	.1890	RC3	-3.1281	FAU	.55163	RRT	.9667	RRF	.9976	RTF	.9653	CRT	.9931	CRS	-1.0000	CST	-.9939
FDE	11.0571	FRA	1.6592	FC	-34.6927	BSP	19486	SGB	5841.0	R23	.1886	R13	.9796	LSA	5863.0	MSA	307.2	SSA	10.6
BDE	2.4694	BRA	.2486	BC3	5.9022	FSP	9288	SG1	5804.0	SG2	656.1	THA	29.96	EL1	3816.0	EL2	183.6	ALF	27.51

LAUNCH DATE DEC 2 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 656.291 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.944	GAL	1.57	AZL	86.13	HCA	196.90	SMA	185.75	ECC	.20777	INC	3.8718	V1	30.210
RP	218.52	LAP	-1.12	LOP	266.72	VP	22.365	GAP	-6.40	AZP	93.71	TAL	9.15	TAP	206.05	RCA	147.16	APO	224.34	V2	25.148
RC	277.609	GL	37.53	GP	-16.77	ZAL	71.30	ZAP	82.64	ETS	176.82	ZAE	113.91	ETE	185.89	ZAC	68.99	ETC	256.41	CLP	82.31

PLANETOCENTRIC CONIC

C3	13.324	VHL	3.650	DLA	51.08	RAL	155.25	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	3.005	DPA	-9.51	RAP	163.73	ECC	1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.53	6 41 48	4213.89	-37.45	197.85	27.05	52.31	7 52 1	3613.9	-42.05	189.74
134.47	15 13 59	2673.69	-37.44	75.88	27.04	52.30	15 58 33	2073.7	-42.04	67.77
45.53	6 41 48	4213.89	-37.45	197.85	27.05	52.31	7 52 1	3613.9	-42.05	189.74
134.47	15 13 59	2673.69	-37.44	75.88	27.04	52.30	15 58 33	2073.7	-42.04	67.77
45.53	6 41 48	4213.89	-37.45	197.85	27.05	52.31	7 52 1	3613.9	-42.05	189.74
134.47	15 13 59	2673.69	-37.44	75.88	27.04	52.30	15 58 33	2073.7	-42.04	67.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2165	TRA	-.1609	TC3	-5.5003	BAU	1.1155	SGT	5328.2	SGR	2757.9	SG3	2707.9	ST	3483.2	SR	1629.9	SS	4345.5
RDE	1.0341	RRA	.1770	RC3	-2.9933	FAU	.55279	RRT	.9694	RRF	.9970	RTF	.9681	CRT	.9932	CRS	-.9999	CST	-.9941
FDE	10.6227	FRA	1.6354	FC	-35.9171	BSP	20102	SGB	5999.6	R23	.1884	R13	.9790	LSA	5794.8	MSA	305.3	SSA	11.6
BDE	2.4458	BRA	.2392	BC3	6.2621	FSP	9318	SG1	5969.1	SG2	604.7	THA	26.94	EL1	3841.9	EL2	171.4	ALF	24.98

LAUNCH DATE DEC 2 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 660.414 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.945	GAL	1.52	AZL	86.27	HCA	198.03	SMA	185.77	ECC	.20773	INC	3.7283	V1	30.210
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.411	GAP	-6.58	AZP	93.55	TAL	8.88	TAP	206.92	RCA	147.18	APO	224.36	V2	25.188
RC	278.933	GL	36.53	GP	-15.75	ZAL	71.46	ZAP	80.85	ETS	176.47	ZAE	112.03	ETE	184.84	ZAC	69.85	ETC	256.57	CLP	80.49

PLANETOCENTRIC CONIC

C3	12.943	VHL	3.598	DLA	50.00	RAL	155.14	RAD	6567.5	VEL	11.590	PTH	2.03	VHP	3.005	DPA	-8.31	RAP	163.54	ECC	1.2130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.90	6 45 43	4197.37	-37.04	195.76	25.87	53.63	7 55 41	3597.4	-41.48	187.57
133.10	15 9 10	2677.64	-37.02	75.89	25.86	53.62	15 53 48	2077.6	-41.47	67.71
46.90	6 45 43	4197.37	-37.04	195.76	25.87	53.63	7 55 41	3597.4	-41.48	187.57
133.10	15 9 10	2677.64	-37.02	75.89	25.86	53.62	15 53 48	2077.6	-41.47	67.71
46.90	6 45 43	4197.37	-37.04	195.76	25.87	53.63	7 55 41	3597.4	-41.48	187.57
133.10	15 9 10	2677.64	-37.02	75.89	25.86	53.62	15 53 48	2077.6	-41.47	67.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2412	TRA	-.1589	TC3	-6.0065	BAU	1.1509	SGT	5619.0	SGR	2578.6	SG3	2710.1	ST	3573.6	SR	1506.1	SS	4227.2
RDE	.9416	RRA	.1679	RC3	-2.8574	FAU	.55160	RRT	.9714	RRF	.9962	RTF	.9704	CRT	.9933	CRS	-.9999	CST	-.9942
FDE	10.1814	FRA	1.6217	FC	-36.8968	BSP	20744	SGB	6182.4	R23	.1856	R13	.9788	LSA	5728.5	MSA	304.2	SSA	12.6
BDE	2.4309	BRA	.2311	BC3	6.6516	FSP	9301	SG1	6157.1	SG2	558.8	THA	24.24	EL1	3874.7	EL2	160.9	ALF	22.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 664.545 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.946	GAL	1.48	AZL	86.40	HCA	199.17	SMA	185.79	ECC	.20772	INC	3.6012
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.458	GAP	-6.76	AZP	93.40	TAL	8.60	TAP	207.78	RCA	147.19	APO	224.38
RC	280.240	GL	35.63	GP	-14.82	ZAL	71.68	ZAP	79.07	ETS	176.17	ZAE	110.14	ETE	183.92	ZAC	70.62	ETC	256.71

V1	30.210	V2	25.228	CLP	78.69														

PLANETOCENTRIC CONIC

C3	12.608	VHL	3.551	DLA	48.99	RAL	155.14	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	3.011	DPA	-7.20	RAP	163.34

ECC	1.2075	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		48.19	6 49 56	4181.70	-36.62	193.80	24.91	54.83	7 59 38	3581.7	-40.92	185.56							
		131.81	15 4 58	2682.09	-36.60	75.96	24.90	54.82	15 49 41	2082.1	-40.91	67.72							
		48.19	6 49 56	4181.70	-36.62	193.80	24.91	54.83	7 59 38	3581.7	-40.92	185.56							
		131.81	15 4 58	2682.09	-36.60	75.96	24.90	54.82	15 49 41	2082.1	-40.91	67.72							
		48.19	6 49 56	4181.70	-36.62	193.80	24.91	54.83	7 59 38	3581.7	-40.92	185.56							
		131.81	15 4 58	2682.09	-36.60	75.96	24.90	54.82	15 49 41	2082.1	-40.91	67.72							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2685	TRA	-.1503	TC3	-6.5064	BAU	1.1888	SGT	5906.4	SGR	2414.6	SG3	2702.2	ST	3664.7	SR	1398.0	SS	4110.8
RDE	.8625	RRA	.1624	RC3	-2.7210	FAU	.54812	RRT	.9729	RRF	.9952	RTF	.9723	CRT	.9933	CRS	-.9999	CST	-.9942
FDE	9.7507	FRA	1.6369	FC	-37.6362	BSP	21522	SGB	6380.9	R23	.1810	R13	.9787	LSA	5673.7	MSA	303.6	SSA	13.5
BDE	2.4269	BRA	.2213	BC3	7.0525	FSP	9268	SG1	6359.8	SG2	518.5	THA	21.84	EL1	3919.4	EL2	151.5	ALF	20.78

LAUNCH DATE DEC 2 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 668.685 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.947	GAL	1.43	AZL	86.51	HCA	200.32	SMA	185.81	ECC	.20772	INC	3.4874
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.504	GAP	-6.94	AZP	93.27	TAL	8.30	TAP	208.62	RCA	147.21	APO	224.41
RC	281.529	GL	34.82	GP	-13.97	ZAL	71.95	ZAP	77.32	ETS	175.91	ZAE	108.25	ETE	183.13	ZAC	71.32	ETC	256.84

V1	30.210	V2	25.268	CLP	76.93														

PLANETOCENTRIC CONIC

C3	12.312	VHL	3.509	DLA	48.05	RAL	155.24	RAD	6567.5	VEL	11.563	PTH	2.02	VHP	3.022	DPA	-6.19	RAP	163.13

ECC	1.2026	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		49.40	6 54 26	4166.64	-36.20	191.96	24.13	55.93	8 3 53	3566.6	-40.37	183.67							
		130.60	15 1 17	2687.02	-36.19	76.09	24.12	55.92	15 46 4	2087.0	-40.36	67.80							
		49.40	6 54 26	4166.64	-36.20	191.96	24.13	55.93	8 3 53	3566.6	-40.37	183.67							
		130.60	15 1 17	2687.02	-36.19	76.09	24.12	55.92	15 46 4	2087.0	-40.36	67.80							
		49.40	6 54 26	4166.64	-36.20	191.96	24.13	55.93	8 3 53	3566.6	-40.37	183.67							
		130.60	15 1 17	2687.02	-36.19	76.09	24.12	55.92	15 46 4	2087.0	-40.36	67.80							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2947	TRA	-.1383	TC3	-7.0090	BAU	1.2297	SGT	6192.6	SGR	2263.9	SG3	2685.4	ST	3751.3	SR	1302.5	SS	3993.9
RDE	.7938	RRA	.1584	RC3	-2.5867	FAU	.54291	RRT	.9740	RRF	.9940	RTF	.9740	CRT	.9932	CRS	-.9999	CST	-.9942
FDE	9.3258	FRA	1.6583	FC	-38.1757	BSP	22344	SGB	6593.4	R23	.1742	R13	.9789	LSA	5623.8	MSA	302.7	SSA	14.5
BDE	2.4281	BRA	.2102	BC3	7.4711	FSP	9205	SG1	6575.7	SG2	482.7	THA	19.71	EL1	3968.4	EL2	142.8	ALF	19.05

LAUNCH DATE DEC 2 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 672.830 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.949	GAL	1.37	AZL	86.62	HCA	201.47	SMA	185.84	ECC	.20774	INC	3.3849
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.551	GAP	-7.11	AZP	93.15	TAL	7.99	TAP	209.46	RCA	147.23	APO	224.45
RC	282.801	GL	34.08	GP	-13.20	ZAL	72.28	ZAP	75.60	ETS	175.68	ZAE	106.37	ETE	182.43	ZAC	71.95	ETC	256.96

V1	30.210	V2	25.307	CLP	75.20														

PLANETOCENTRIC CONIC

C3	12.047	VHL	3.471	DLA	47.17	RAL	155.43	RAD	6567.5	VEL	11.551	PTH	2.02	VHP	3.036	DPA	-5.25	RAP	162.93

ECC	1.1983	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		50.56	6 59 12	4152.08	-35.78	190.21	23.51	56.94	8 8 24	3552.1	-39.84	181.89							
		129.44	14 58 2	2692.36	-35.77	76.27	23.51	56.92	15 42 54	2092.4	-39.83	67.95							
		50.56	6 59 12	4152.08	-35.78	190.21	23.51	56.94	8 8 24	3552.1	-39.84	181.89							
		129.44	14 58 2	2692.36	-35.77	76.27	23.51	56.92	15 42 54	2092.4	-39.83	67.95							
		50.56	6 59 12	4152.08	-35.78	190.21	23.51	56.94	8 8 24	3552.1	-39.84	181.89							
		129.44	14 58 2	2692.36	-35.77	76.27	23.51	56.92	15 42 54	2092.4	-39.83	67.95							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3260	TRA	-.1158	TC3	-7.4933	BAU	1.2692	SGT	6471.4	SGR	2122.3	SG3	2655.4	ST	3843.9	SR	1223.8	SS	3899.3
RDE	.7373	RRA	.1608	RC3	-2.4406	FAU	.53323	RRT	.9739	RRF	.9925	RTF	.9751	CRT	.9931	CRS	-.9999	CST	-.9940
FDE	8.9570	FRA	1.7618	FC	-38.3205	BSP	23390	SGB	6810.5	R23	.1674	R13	.9790	LSA	5602.0	MSA	307.7	SSA	15.3
BDE	2.4401	BRA	.1981	BC3	7.8807	FSP	9254	SG1	6795.1	SG2	458.4	THA	17.80	EL1	4031.7	EL2	137.1	ALF	17.57

LAUNCH DATE DEC 2 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 676.988 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.951	GAL	1.32	AZL	86.71	HCA	202.62	SMA	185.88	ECC	.20779	INC	3.2920
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.598	GAP	-7.28	AZP	93.04	TAL	7.67	TAP	210.29	RCA	147.25	APO	224.50
RC	284.057	GL	33.40	GP	-12.50	ZAL	72.65	ZAP	73.91	ETS	175.49	ZAE	104.50	ETE	181.82	ZAC	72.53	ETC	257.07

V1	30.210	V2	25.346	CLP	73.51														

PLANETOCENTRIC CONIC

C3	11.808	VHL	3.436	DLA	46.33	RAL	155.69	RAD	6567.5	VEL	11.541	PTH	2.01	VHP	3.055	DPA	-4.40	RAP	162.73

ECC	1.1943	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		51.66	7 4 12	4137.88	-35.38	188.54	23.04	57.87	8 13 10	3537.9	-39.32	180.19							
		128.34	14 55 7	2698.14	-35.36	76.49	23.03	57.86	15 40 5	2098.1	-39.31	68.15							
		51.66	7 4 12	4137.88	-35.38	188.54	23.04	57.87	8 13 10	3537.9	-39.32	180.19							
		128.34	14 55 7	2698.14	-35.36	76.49	23.03	57.86	15 40 5	2098.1	-39.31	68.15							
		51.66	7 4 12	4137.88	-35.38	188.54	23.04	57.87	8 13 10	3537.9	-39.32	180.19							
		128.34	14 55 7	2698.14	-35.36	76.49	23.03	57.86	15 40 5	2098.1	-39.31	68.15							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3421	TRA	-.1024	TC3	-8.0127	BAU	1.3170	SGT	6755.4	SGR	1995.6	SG3	2627.6	ST	3909.3	SR	1142.4	SS	3759.9
RDE	.6812	RRA	.1564	RC3	-2.3234	FAU	.52737	RRT	.9743	RRF	.9907	RTF	.9764	CRT	.9930	CRS	-.9999	CST	-.9940
FDE	8.4956	FRA	1.7619	FC	-38.6661	BSP	24088	SGB	7044.0	R23	.1576	R13	.9794	LSA	5534.5	MSA	305.5	SSA	16.4
BDE	2.4391	BRA	.1869	BC3	8.3428	FSP	9042	SG1	7030.7	SG2	431.5	THA	16.12	EL1	4070.7	EL2	129.5	ALF	16.20

LAUNCH DATE DEC 2 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 681.153 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.953	GAL	1.26	AZL	86.79	HCA	203.77	SMA	185.91	ECC	.20784	INC	3.2075	V1	30.210
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.644	GAP	-7.44	AZP	92.94	TAL	7.33	TAP	211.10	RCA	147.27	APO	224.55	V2	25.385
RC	285.296	GL	32.78	GP	-11.85	ZAL	73.07	ZAP	72.25	ETS	175.32	ZAE	102.65	ETE	181.29	ZAC	73.06	ETC	257.17	CLP	71.85

PLANETOCENTRIC CONIC

C3	11.591	VHL	3.405	DLA	45.53	RAL	156.03	RAD	6567.4	VEL	11.532	PTH	2.01	VHP	3.077	DPA	-3.61	RAP	162.54	ECC	1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.73	7 9 25	4124.03	-34.97	186.93	22.68	58.75	8 18 9	3524.0	-38.81	178.57
127.27	14 52 33	2704.23	-34.96	76.76	22.67	58.73	15 37 37	2104.2	-38.80	68.39
52.73	7 9 25	4124.03	-34.97	186.93	22.68	58.75	8 18 9	3524.0	-38.81	178.57
127.27	14 52 33	2704.23	-34.96	76.76	22.67	58.73	15 37 37	2104.2	-38.80	68.39
52.73	7 9 25	4124.03	-34.97	186.93	22.68	58.75	8 18 9	3524.0	-38.81	178.57
127.27	14 52 33	2704.23	-34.96	76.76	22.67	58.73	15 37 37	2104.2	-38.80	68.39

DIFFERENTIAL CORRECTIONS

TDE	2.3607	TRA	-.0808	TC3-8.5171	BAU 1.3632
RDE	.6334	RRA	.1548	RC3-2.2033	FAU .51909
FDE	8.0719	FRA	1.7946	FC-38.7717	BSP 24919
BDE	2.4442	BRA	.1746	BC3 8.7974	FSP 8874

MID-COURSE EXECUTION ACCURACY

SGT	7032.3	SGR	1877.5	SG3	2592.1		
RRT	.9742	RRF	.9886	RTF	.9775		
SGB	7278.7	R23	.1467	R13	.9798		
SG1	7267.1	SG2	409.9	THA	14.63		

ORBIT DETERMINATION ACCURACY

ST	3977.1	SR	1072.7	SS	3633.7
CRT	.9929	CRS	-.9998	CST	-.9939
LSA	5484.4	MSA	304.3	SSA	17.4
EL1	4117.4	EL2	122.8	ALF	15.01

LAUNCH DATE DEC 2 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 685.325 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.956	GAL	1.20	AZL	86.87	HCA	204.93	SMA	185.96	ECC	.20792	INC	3.1300	V1	30.210
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.691	GAP	-7.60	AZP	92.84	TAL	6.97	TAP	211.91	RCA	147.29	APO	224.62	V2	25.423
RC	286.520	GL	32.21	GP	-11.25	ZAL	73.53	ZAP	70.63	ETS	175.18	ZAE	100.82	ETE	180.82	ZAC	73.56	ETC	257.27	CLP	70.24

PLANETOCENTRIC CONIC

C3	11.393	VHL	3.375	DLA	44.76	RAL	156.42	RAD	6567.4	VEL	11.523	PTH	2.01	VHP	3.102	DPA	-2.88	RAP	162.37	ECC	1.1875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.76	7 14 53	4110.33	-34.56	185.37	22.43	59.57	8 23 24	3510.3	-38.30	176.99
126.24	14 50 14	2710.75	-34.55	77.06	22.43	59.56	15 35 25	2110.7	-38.30	68.69
53.76	7 14 53	4110.33	-34.56	185.37	22.43	59.57	8 23 24	3510.3	-38.30	176.99
126.24	14 50 14	2710.75	-34.55	77.06	22.43	59.56	15 35 25	2110.7	-38.30	68.69
53.76	7 14 53	4110.33	-34.56	185.37	22.43	59.57	8 23 24	3510.3	-38.30	176.99
126.24	14 50 14	2710.75	-34.55	77.06	22.43	59.56	15 35 25	2110.7	-38.30	68.69

DIFFERENTIAL CORRECTIONS

TDE	2.3756	TRA	-.0568	TC3-9.0256	BAU 1.4110
RDE	.5910	RRA	.1540	RC3-2.0882	FAU .51019
FDE	7.6563	FRA	1.8342	FC-38.7694	BSP 25738
BDE	2.4481	BRA	.1641	BC3 9.2640	FSP 8698

MID-COURSE EXECUTION ACCURACY

SGT	7307.8	SGR	1768.9	SG3	2553.0		
RRT	.9735	RRF	.9862	RTF	.9784		
SGB	7518.8	R23	.1350	R13	.9802		
SG1	7508.5	SG2	393.6	THA	13.30		

ORBIT DETERMINATION ACCURACY

ST	4037.0	SR	1010.1	SS	3507.2
CRT	.9928	CRS	-.9998	CST	-.9938
LSA	5433.8	MSA	303.9	SSA	18.5
EL1	4159.8	EL2	117.0	ALF	13.96

LAUNCH DATE DEC 2 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 689.505 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.958	GAL	1.14	AZL	86.94	HCA	206.10	SMA	186.00	ECC	.20801	INC	3.0589	V1	30.210
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.737	GAP	-7.76	AZP	92.75	TAL	6.61	TAP	212.70	RCA	147.31	APO	224.69	V2	25.461
RC	287.729	GL	31.68	GP	-10.69	ZAL	74.04	ZAP	69.05	ETS	175.05	ZAE	99.02	ETE	180.41	ZAC	74.02	ETC	257.35	CLP	68.66

PLANETOCENTRIC CONIC

C3	11.210	VHL	3.348	DLA	44.02	RAL	156.87	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	3.130	DPA	-2.21	RAP	162.21	ECC	1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.77	7 20 36	4096.71	-34.16	183.85	22.29	60.35	8 28 53	3496.7	-37.81	175.46
125.23	14 48 8	2717.70	-34.15	77.41	22.28	60.33	15 33 26	2117.7	-37.80	69.03
54.77	7 20 36	4096.71	-34.16	183.85	22.29	60.35	8 28 53	3496.7	-37.81	175.46
125.23	14 48 8	2717.70	-34.15	77.41	22.28	60.33	15 33 26	2117.7	-37.80	69.03
54.77	7 20 36	4096.71	-34.16	183.85	22.29	60.35	8 28 53	3496.7	-37.81	175.46
125.23	14 48 8	2717.70	-34.15	77.41	22.28	60.33	15 33 26	2117.7	-37.80	69.03

DIFFERENTIAL CORRECTIONS

TDE	2.3890	TRA	-.0270	TC3-9.5249	BAU 1.4579
RDE	.5535	RRA	.1546	RC3-1.9737	FAU .49976
FDE	7.2537	FRA	1.8936	FC-38.5943	BSP 26579
BDE	2.4522	BRA	.1570	BC3 9.7273	FSP 8513

MID-COURSE EXECUTION ACCURACY

SGT	7576.2	SGR	1667.1	SG3	2507.6		
RRT	.9721	RRF	.9832	RTF	.9791		
SGB	7757.5	R23	.1235	R13	.9805		
SG1	7748.0	SG2	382.3	THA	12.10		

ORBIT DETERMINATION ACCURACY

ST	4092.6	SR	954.3	SS	3383.0
CRT	.9927	CRS	-.9998	CST	-.9935
LSA	5386.2	MSA	305.0	SSA	19.5
EL1	4200.9	EL2	112.0	ALF	13.04

LAUNCH DATE DEC 2 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 693.693 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	32.961	GAL	1.07	AZL	87.01	HCA	207.26	SMA	186.05	ECC	.20812	INC	2.9933	V1	30.210
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.783	GAP	-7.91	AZP	92.66	TAL	6.22	TAP	213.48	RCA	147.33	APO	224.77	V2	25.498
RC	288.924	GL	31.19	GP	-10.18	ZAL	74.58	ZAP	67.50	ETS	174.95	ZAE	97.25	ETE	180.05	ZAC	74.44	ETC	257.43	CLP	67.12

PLANETOCENTRIC CONIC

C3	11.043	VHL	3.323	DLA	43.30	RAL	157.38	RAD	6567.4	VEL	11.508	PTH	2.00	VHP	3.160	DPA	-1.59	RAP	162.08	ECC	1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.76	7 26 34	4083.13	-33.76	182.35	22.23	61.08	8 34 37	3483.1	-37.32	173.96
124.24	14 46 14	2725.06	-33.74	77.80	22.22	61.07	15 31 39	2125.1	-37.30	69.41
55.76	7 26 34	4083.13	-33.76	182.35	22.23	61.08	8 34 37	3483.1	-37.32	173.96
124.24	14 46 14	2725.06	-33.74	77.80	22.22	61.07	15 31 39	2125.1	-37.30	69.41
55.76	7 26 34	4083.13	-33.76	182.35	22.23	61.08	8 34 37	3483.1	-37.32	173.96
124.24	14 46 14	2725.06	-33.74	77.80	22.22	61.07	15 31 39	2125.1	-37.30	69.41

DIFFERENTIAL CORRECTIONS

TDE	2.4008	TRA	.0077	TC-10.0171	BAU 1.5042
RDE	.5203	RRA	.1557	RC3-1.8632	FAU .48867
FDE	6.8673	FRA	1.9556	FC-38.3118	BSP 27459
BDE	2.4565	BRA	.1559	BC310.1889	FSP 8335

MID-COURSE EXECUTION ACCURACY

SGT	7839.4	SGR	1573.0	SG3	2459.0		
RRT	.9702	RRF	.9798	RTF	.9798		
SGB	7995.7	R23	.1112	R13	.9809		
SG1	7986.9	SG2	373.9	THA	11.04		

ORBIT DETERMINATION ACCURACY

ST	4144.2	SR	904.7	SS	3262.2
CRT	.9926	CRS	-.9997	CST	-.9932
LSA	5342.4	MSA	305.6	SSA	20.4
EL1	4240.5	EL2	107.1	ALF	12.23

LAUNCH DATE DEC 2 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 697.888 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.964 GAL 1.00 AZL 87.07 HCA 208.43 SMA 186.10 ECC .20825 INC 2.9324 V1 30.210
RP 215.05 LAP -1.40 LOP 278.26 VP 22.829 GAP -8.06 AZP 92.58 TAL 5.83 TAP 214.26 RCA 147.35 APO 224.86 V2 25.535
RC 290.105 GL 30.73 GP -9.70 ZAL 75.17 ZAP 65.99 ETS 174.85 ZAE 95.51 ETE 179.73 ZAC 74.84 ETC 257.49 CLP 65.62

PLANETOCENTRIC CONIC

C3 10.887 VHL 3.300 DLA 42.60 RAL 157.94 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 3.194 DPA -1.03 RAP 161.97 ECC 1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.74	7 32 46	4069.49	-33.35	180.88	22.25	61.79	8 40 36	3469.5	-36.82	172.48
123.26	14 44 29	2732.89	-33.34	78.23	22.25	61.78	15 30 1	2132.9	-36.81	69.84
56.74	7 32 46	4069.49	-33.35	180.88	22.25	61.79	8 40 36	3469.5	-36.82	172.48
123.26	14 44 29	2732.89	-33.34	78.23	22.25	61.78	15 30 1	2132.9	-36.81	69.84
56.74	7 32 46	4069.49	-33.35	180.88	22.25	61.79	8 40 36	3469.5	-36.82	172.48
123.26	14 44 29	2732.89	-33.34	78.23	22.25	61.78	15 30 1	2132.9	-36.81	69.84

DIFFERENTIAL CORRECTIONS
TDE 2.4089 TRA .0457 TC-10.5085 BAU 1.5508
RDE .4905 RRA .1570 RC3-1.7574 FAU .47721
FDE 6.4883 FRA 2.0196 FC-37.9469 BSP 28300
BDE 2.4583 BRA .1635 BC310.6544 FSP 8141

MID-COURSE EXECUTION ACCURACY
SGT 8099.3 SGR 1485.8 SG3 2408.0
RRT .9677 RRF .9757 RTF .9804
SGB 8234.4 R23 .0992 R13 .9812
SG1 8226.2 SG2 368.8 THA 10.09

ORBIT DETERMINATION ACCURACY
ST 4188.2 SR 859.7 SS 3140.6
CRT .9925 CRS -.9997 CST -.9929
LSA 5296.1 MSA 306.7 SSA 21.4
EL1 4274.3 EL2 102.7 ALF 11.52

LAUNCH DATE DEC 2 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 702.090 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.968 GAL .93 AZL 87.12 HCA 209.61 SMA 186.16 ECC .20839 INC 2.8758 V1 30.210
RP 214.72 LAP -1.42 LOP 279.43 VP 22.875 GAP -8.21 AZP 92.50 TAL 5.41 TAP 215.02 RCA 147.37 APO 224.96 V2 25.572
RC 291.272 GL 30.30 GP -9.26 ZAL 75.80 ZAP 64.52 ETS 174.78 ZAE 93.80 ETE 179.45 ZAC 75.22 ETC 257.55 CLP 64.16

PLANETOCENTRIC CONIC

C3 10.743 VHL 3.278 DLA 41.91 RAL 158.55 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 3.229 DPA -.51 RAP 161.89 ECC 1.1768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.71	7 39 14	4055.73	-32.94	179.41	22.35	62.47	8 46 50	3455.7	-36.33	171.02
122.29	14 42 51	2741.21	-32.93	78.71	22.35	62.45	15 28 32	2141.2	-36.33	70.31
57.71	7 39 14	4055.73	-32.94	179.41	22.35	62.47	8 46 50	3455.7	-36.33	171.02
122.29	14 42 51	2741.21	-32.93	78.71	22.35	62.45	15 28 32	2141.2	-36.33	70.31
57.71	7 39 14	4055.73	-32.94	179.41	22.35	62.47	8 46 50	3455.7	-36.33	171.02
122.29	14 42 51	2741.21	-32.93	78.71	22.35	62.45	15 28 32	2141.2	-36.33	70.31

DIFFERENTIAL CORRECTIONS
TDE 2.4134 TRA .0880 TC-10.9899 BAU 1.5962
RDE .4637 RRA .1586 RC3-1.6539 FAU .46493
FDE 6.1186 FRA 2.0869 FC-37.4659 BSP 29132
BDE 2.4575 BRA .1814 BC311.1136 FSP 7936

MID-COURSE EXECUTION ACCURACY
SGT 8351.2 SGR 1404.1 SG3 2352.9
RRT .9644 RRF .9709 RTF .9809
SGB 8468.4 R23 .0876 R13 .9815
SG1 8460.4 SG2 366.7 THA 9.23

ORBIT DETERMINATION ACCURACY
ST 4224.6 SR 819.0 SS 3019.2
CRT .9925 CRS -.9996 CST -.9925
LSA 5247.7 MSA 308.2 SSA 22.3
EL1 4302.2 EL2 98.4 ALF 10.90

LAUNCH DATE DEC 2 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 706.300 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.971 GAL .86 AZL 87.18 HCA 210.78 SMA 186.22 ECC .20856 INC 2.8229 V1 30.210
RP 214.40 LAP -1.44 LOP 280.61 VP 22.920 GAP -8.35 AZP 92.43 TAL 4.99 TAP 215.77 RCA 147.38 APO 225.06 V2 25.608
RC 292.426 GL 29.90 GP -8.85 ZAL 76.46 ZAP 63.09 ETS 174.71 ZAE 92.12 ETE 179.20 ZAC 75.58 ETC 257.61 CLP 62.74

PLANETOCENTRIC CONIC

C3 10.610 VHL 3.257 DLA 41.23 RAL 159.20 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 3.267 DPA -.03 RAP 161.83 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.68	7 46 1	4041.67	-32.53	177.94	22.52	63.12	8 53 22	3441.7	-35.84	169.55
121.32	14 41 16	2750.18	-32.52	79.23	22.51	63.11	15 27 6	2150.2	-35.83	70.84
58.68	7 46 1	4041.67	-32.53	177.94	22.52	63.12	8 53 22	3441.7	-35.84	169.55
121.32	14 41 16	2750.18	-32.52	79.23	22.51	63.11	15 27 6	2150.2	-35.83	70.84
58.68	7 46 1	4041.67	-32.53	177.94	22.52	63.12	8 53 22	3441.7	-35.84	169.55
121.32	14 41 16	2750.18	-32.52	79.23	22.51	63.11	15 27 6	2150.2	-35.83	70.84

DIFFERENTIAL CORRECTIONS
TDE 2.4143 TRA .1348 TC-11.4705 BAU 1.6419
RDE .4396 RRA .1605 RC3-1.5566 FAU .45291
FDE 5.7577 FRA 2.1575 FC-36.9566 BSP 29962
BDE 2.4539 BRA .2096 BC311.5756 FSP 7735

MID-COURSE EXECUTION ACCURACY
SGT 8600.7 SGR 1329.3 SG3 2298.4
RRT .9603 RRF .9654 RTF .9812
SGB 8702.8 R23 .0767 R13 .9817
SG1 8695.1 SG2 366.7 THA 8.46

ORBIT DETERMINATION ACCURACY
ST 4253.7 SR 782.0 SS 2897.6
CRT .9924 CRS -.9995 CST -.9919
LSA 5196.6 MSA 310.2 SSA 23.3
EL1 4323.9 EL2 94.4 ALF 10.34

LAUNCH DATE DEC 2 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 710.517 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.975 GAL .79 AZL 87.23 HCA 211.96 SMA 186.28 ECC .20874 INC 2.7735 V1 30.210
RP 214.08 LAP -1.47 LOP 281.79 VP 22.965 GAP -8.49 AZP 92.35 TAL 4.55 TAP 216.51 RCA 147.40 APO 225.17 V2 25.644
RC 293.566 GL 29.52 GP -8.46 ZAL 77.16 ZAP 61.70 ETS 174.65 ZAE 90.48 ETE 178.98 ZAC 75.92 ETC 257.65 CLP 61.36

PLANETOCENTRIC CONIC

C3 10.486 VHL 3.238 DLA 40.56 RAL 159.89 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.307 DPA .40 RAP 161.80 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.65	7 53 4	4027.33	-32.11	176.46	22.75	63.76	9 0 12	3427.3	-35.35	168.08
120.35	14 39 44	2759.76	-32.10	79.81	22.74	63.74	15 25 44	2159.8	-35.34	71.43
59.65	7 53 4	4027.33	-32.11	176.46	22.75	63.76	9 0 12	3427.3	-35.35	168.08
120.35	14 39 44	2759.76	-32.10	79.81	22.74	63.74	15 25 44	2159.8	-35.34	71.43
59.65	7 53 4	4027.33	-32.11	176.46	22.75	63.76	9 0 12	3427.3	-35.35	168.08
120.35	14 39 44	2759.76	-32.10	79.81	22.74	63.74	15 25 44	2159.8	-35.34	71.43

DIFFERENTIAL CORRECTIONS
TDE 2.4139 TRA .1857 TC-11.9370 BAU 1.6859
RDE .4186 RRA .1622 RC3-1.4599 FAU .43986
FDE 5.4236 FRA 2.2223 FC-36.3158 BSP 30787
BDE 2.4499 BRA .2466 BC312.0259 FSP 7530

MID-COURSE EXECUTION ACCURACY
SGT 8842.8 SGR 1259.0 SG3 2239.8
RRT .9553 RRF .9590 RTF .9817
SGB 8932.0 R23 .0659 R13 .9821
SG1 8924.4 SG2 368.8 THA 7.76

ORBIT DETERMINATION ACCURACY
ST 4279.4 SR 749.8 SS 2784.6
CRT .9925 CRS -.9994 CST -.9914
LSA 5150.9 MSA 311.2 SSA 24.1
EL1 4343.6 EL2 90.2 ALF 9.87

LAUNCH DATE DEC 2 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 714.741 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.979 GAL .71 AZL 87.27 HCA 213.15 SMA 186.35 ECC .20894 INC 2.7270 V1 30.210
RP 213.77 LAP -1.49 LOP 282.97 VP 23.010 GAP -8.63 AZP 92.28 TAL 4.10 TAP 217.25 RCA 147.42 APO 225.29 V2 25.679
RC 294.693 GL 29.16 GP -8.10 ZAL 77.91 ZAP 60.34 ETS 174.60 ZAE 88.87 ETE 178.78 ZAC 76.24 ETC 257.69 CLP 60.01

PLANETOCENTRIC CONIC

C3 10.371 VHL 3.220 DLA 39.90 RAL 160.62 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.348 DPA .80 RAP 161.79 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.63	8 0 28	4012.55	-31.69	174.96	23.04	64.37	9 7 21	3412.5	-34.85	166.59
119.37	14 38 11	2770.10	-31.68	80.44	23.04	64.36	15 24 22	2170.1	-34.84	72.07
60.63	8 0 28	4012.55	-31.69	174.96	23.04	64.37	9 7 21	3412.5	-34.85	166.59
119.37	14 38 11	2770.10	-31.68	80.44	23.04	64.36	15 24 22	2170.1	-34.84	72.07
60.63	8 0 28	4012.55	-31.69	174.96	23.04	64.37	9 7 21	3412.5	-34.85	166.59
119.37	14 38 11	2770.10	-31.68	80.44	23.04	64.36	15 24 22	2170.1	-34.84	72.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.4081 TRA .2411 TC-12.4052 BAU 1.7305 SGT 9083.4 SGR 1195.2 SG3 2183.9 ST 4294.4 SR 719.4 SS 2665.1
RDE .3989 RRA .1643 RC3-1.3709 FAU .42771 RRT .9495 RRF .9517 RTF .9820 CRT .9926 CRS -.9992 CST -.9907
FDE 5.0848 FRA 2.2920 FC-35.7038 BSP 31584 SGB 9161.7 R23 .0562 R13 .9823 LSA 5095.4 MSA 313.5 SSA 25.1
BDE 2.4409 BRA .2918 BC312.4807 FSP 7317 SG1 9154.2 SG2 372.0 THA 7.13 EL1 4353.4 EL2 86.3 ALF 9.44

LAUNCH DATE DEC 2 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 718.971 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.983 GAL .63 AZL 87.32 HCA 214.34 SMA 186.42 ECC .20916 INC 2.6834 V1 30.210
RP 213.46 LAP -1.51 LOP 284.16 VP 23.055 GAP -8.76 AZP 92.22 TAL 3.63 TAP 217.97 RCA 147.43 APO 225.41 V2 25.714
RC 295.805 GL 28.81 GP -7.76 ZAL 78.68 ZAP 59.02 ETS 174.56 ZAE 87.29 ETE 178.61 ZAC 76.55 ETC 257.72 CLP 58.70

PLANETOCENTRIC CONIC

C3 10.265 VHL 3.204 DLA 39.23 RAL 161.40 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.392 DPA 1.15 RAP 161.82 ECC 1.1689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.63	8 8 11	3997.30	-31.26	173.44	23.39	64.97	9 14 49	3397.3	-34.34	165.07
118.37	14 36 38	2781.20	-31.25	81.14	23.39	64.96	15 22 59	2181.2	-34.33	72.77
61.63	8 8 11	3997.30	-31.26	173.44	23.39	64.97	9 14 49	3397.3	-34.34	165.07
118.37	14 36 38	2781.20	-31.25	81.14	23.39	64.96	15 22 59	2181.2	-34.33	72.77
61.63	8 8 11	3997.30	-31.26	173.44	23.39	64.97	9 14 49	3397.3	-34.34	165.07
118.37	14 36 38	2781.20	-31.25	81.14	23.39	64.96	15 22 59	2181.2	-34.33	72.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3997 TRA .3021 TC-12.8569 BAU 1.7731 SGT 9315.3 SGR 1135.4 SG3 2124.8 ST 4303.6 SR 692.5 SS 2550.6
RDE .3816 RRA .1667 RC3-1.2825 FAU .41471 RRT .9424 RRF .9432 RTF .9823 CRT .9927 CRS -.9989 CST -.9899
FDE 4.7646 FRA 2.3676 FC-34.9768 BSP 32392 SGB 9384.2 R23 .0479 R13 .9825 LSA 5040.3 MSA 316.7 SSA 25.9
BDE 2.4298 BRA .3451 BC312.9207 FSP 7116 SG1 9376.6 SG2 377.4 THA 6.56 EL1 4358.2 EL2 82.4 ALF 9.08

LAUNCH DATE DEC 2 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 723.209 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.987 GAL .54 AZL 87.36 HCA 215.53 SMA 186.49 ECC .20940 INC 2.6421 V1 30.210
RP 213.16 LAP -1.53 LOP 285.35 VP 23.099 GAP -8.89 AZP 92.15 TAL 3.15 TAP 218.68 RCA 147.44 APO 225.54 V2 25.748
RC 296.904 GL 28.48 GP -7.44 ZAL 79.50 ZAP 57.74 ETS 174.53 ZAE 85.75 ETE 178.46 ZAC 76.84 ETC 257.75 CLP 57.43

PLANETOCENTRIC CONIC

C3 10.167 VHL 3.189 DLA 38.57 RAL 162.21 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.437 DPA 1.48 RAP 161.87 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.64	8 16 18	3981.40	-30.82	171.88	23.80	65.56	9 22 39	3381.4	-33.83	163.52
117.36	14 34 59	2793.26	-30.80	81.91	23.79	65.55	15 21 32	2193.3	-33.82	73.55
62.64	8 16 18	3981.40	-30.82	171.88	23.80	65.56	9 22 39	3381.4	-33.83	163.52
117.36	14 34 59	2793.26	-30.80	81.91	23.79	65.55	15 21 32	2193.3	-33.82	73.55
62.64	8 16 18	3981.40	-30.82	171.88	23.80	65.56	9 22 39	3381.4	-33.83	163.52
117.36	14 34 59	2793.26	-30.80	81.91	23.79	65.55	15 21 32	2193.3	-33.82	73.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3864 TRA .3644 TC-13.3033 BAU 1.8155 SGT 9542.6 SGR 1079.3 SG3 2064.8 ST 4303.0 SR 667.7 SS 2434.0
RDE .3657 RRA .1680 RC3-1.1983 FAU .40190 RRT .9344 RRF .9335 RTF .9827 CRT .9930 CRS -.9985 CST -.9891
FDE 4.4507 FRA 2.4169 FC-34.2230 BSP 33131 SGB 9603.5 R23 .0387 R13 .9828 LSA 4978.4 MSA 317.0 SSA 26.8
BDE 2.4142 BRA .4012 BC313.3571 FSP 6890 SG1 9595.8 SG2 382.3 THA 6.04 EL1 4353.8 EL2 78.0 ALF 8.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 727.453 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.991 GAL .46 AZL 87.40 HCA 216.72 SMA 186.57 ECC .20966 INC 2.6032 V1 30.210
RP 212.87 LAP -1.56 LOP 286.55 VP 23.143 GAP -9.02 AZP 92.09 TAL 2.65 TAP 219.37 RCA 147.45 APO 225.68 V2 25.782
RC 297.989 GL 28.16 GP -7.15 ZAL 80.35 ZAP 56.49 ETS 174.50 ZAE 84.24 ETE 178.33 ZAC 77.12 ETC 257.77 CLP 56.20

PLANETOCENTRIC CONIC

C3 10.077 VHL 3.174 DLA 37.90 RAL 163.05 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 3.484 DPA 1.77 RAP 161.95 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.69	8 24 49	3964.73	-30.36	170.27	24.25	66.14	9 30 53	3364.7	-33.31	161.93
116.31	14 33 12	2806.37	-30.35	82.75	24.25	66.13	15 19 59	2206.4	-33.30	74.41
63.69	8 24 49	3964.73	-30.36	170.27	24.25	66.14	9 30 53	3364.7	-33.31	161.93
116.31	14 33 12	2806.37	-30.35	82.75	24.25	66.13	15 19 59	2206.4	-33.30	74.41
63.69	8 24 49	3964.73	-30.36	170.27	24.25	66.14	9 30 53	3364.7	-33.31	161.93
116.31	14 33 12	2806.37	-30.35	82.75	24.25	66.13	15 19 59	2206.4	-33.30	74.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3714 TRA .4364 TC-13.7325 BAU 1.8562 SGT 9763.7 SGR 1028.5 SG3 2005.5 ST 4298.6 SR 645.6 SS 2321.8
RDE .3515 RRA .1708 RC3-1.1166 FAU .38894 RRT .9248 RRF .9226 RTF .9828 CRT .9933 CRS -.9979 CST -.9878
FDE 4.1510 FRA 2.4973 FC-33.4144 BSP 33915 SGB 9817.7 R23 .0323 R13 .9829 LSA 4917.4 MSA 321.7 SSA 27.6
BDE 2.3973 BRA .4687 BC313.7778 FSP 6677 SG1 9810.0 SG2 389.5 THA 5.57 EL1 4346.2 EL2 74.0 ALF 8.49

LAUNCH DATE DEC 2 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 731.703 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 32.996 GAL .37 AZL 87.43 HCA 217.92 SMA 186.65 ECC .20994 INC 2.5662 V1 30.210
RP 212.57 LAP -1.58 LOP 287.75 VP 23.186 GAP -9.15 AZP 92.02 TAL 2.14 TAP 220.06 RCA 147.46 APO 225.83 V2 25.815
RC 299.061 GL 27.86 GP -6.87 ZAL 81.24 ZAP 55.28 ETS 174.47 ZAE 82.76 ETE 178.21 ZAC 77.40 ETC 257.78 CLP 54.99

PLANETOCENTRIC CONIC

C3 9.995 VHL 3.162 DLA 37.22 RAL 163.93 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.533 DPA 2.02 RAP 162.06 ECC 1.1645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.76	8 33 46	3947.19	-29.90	168.60	24.75	66.71	9 39 33	3347.2	-32.77	160.27
115.24	14 31 15	2820.66	-29.89	83.68	24.75	66.70	15 18 16	2220.7	-32.76	75.36
64.76	8 33 46	3947.19	-29.90	168.60	24.75	66.71	9 39 33	3347.2	-32.77	160.27
115.24	14 31 15	2820.66	-29.89	83.68	24.75	66.70	15 18 16	2220.7	-32.76	75.36
64.76	8 33 46	3947.19	-29.90	168.60	24.75	66.71	9 39 33	3347.2	-32.77	160.27
115.24	14 31 15	2820.66	-29.89	83.68	24.75	66.70	15 18 16	2220.7	-32.76	75.36

DIFFERENTIAL CORRECTIONS
TDE 2.3514 TRA .5101 TC-14.1527 BAU 1.8962
RDE .3389 RRA .1728 RC3-1.0380 FAU .37600
FDE 3.8652 FRA 2.5572 FC-32.5676 BSP 34670
BDE 2.3757 BRA .5386 BC314.1907 FSP 6476

MID-COURSE EXECUTION ACCURACY
SGT 9979.4 SGR 981.0 SG3 1945.4
RRT .9138 RRF .9102 RTF .9830
SGB10027.5 R23 .0257 R13 .9831
SG110019.6 SG2 396.8 THA 5.14

ORBIT DETERMINATION ACCURACY
ST 4284.0 SR 625.6 SS 2211.8
CRT .9937 CRS -.9971 CST -.9866
LSA 4850.8 MSA 324.1 SSA 28.3
EL1 4328.9 EL2 69.5 ALF 8.26

LAUNCH DATE DEC 2 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 735.957 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.000 GAL .28 AZL 87.47 HCA 219.12 SMA 186.73 ECC .21023 INC 2.5311 V1 30.210
RP 212.29 LAP -1.60 LOP 288.95 VP 23.229 GAP -9.27 AZP 91.96 TAL 1.62 TAP 220.74 RCA 147.47 APO 225.98 V2 25.847
RC 300.120 GL 27.56 GP -6.60 ZAL 82.17 ZAP 54.11 ETS 174.45 ZAE 81.31 ETE 178.10 ZAC 77.66 ETC 257.79 CLP 53.83

PLANETOCENTRIC CONIC

C3 9.921 VHL 3.150 DLA 36.54 RAL 164.84 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.583 DPA 2.25 RAP 162.19 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.87	8 43 15	3928.47	-29.42	166.85	25.31	67.28	9 48 44	3328.5	-32.23	158.54
114.13	14 29 2	2836.42	-29.41	84.73	25.30	67.26	15 16 19	2236.4	-32.22	76.42
65.87	8 43 15	3928.47	-29.42	166.85	25.31	67.28	9 48 44	3328.5	-32.23	158.54
114.13	14 29 2	2836.42	-29.41	84.73	25.30	67.26	15 16 19	2236.4	-32.22	76.42
65.87	8 43 15	3928.47	-29.42	166.85	25.31	67.28	9 48 44	3328.5	-32.23	158.54
114.13	14 29 2	2836.42	-29.41	84.73	25.30	67.26	15 16 19	2236.4	-32.22	76.42

DIFFERENTIAL CORRECTIONS
TDE 2.3411 TRA .6049 TC-14.5043 BAU 1.9279
RDE .3287 RRA .1768 RC3 -.9543 FAU .36086
FDE 3.6208 FRA 2.6676 FC-31.4896 BSP 35809
BDE 2.3640 BRA .6302 BC314.5357 FSP 6389

MID-COURSE EXECUTION ACCURACY
SGT10173.3 SGR 937.6 SG3 1879.8
RRT .9003 RRF .8962 RTF .9830
SGB10216.4 R23 .0225 R13 .9831
SG110208.3 SG2 406.8 THA 4.75

ORBIT DETERMINATION ACCURACY
ST 4287.1 SR 610.1 SS 2122.9
CRT .9942 CRS -.9959 CST -.9850
LSA 4811.2 MSA 331.0 SSA 28.8
EL1 4329.8 EL2 64.9 ALF 8.05

LAUNCH DATE DEC 2 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 740.220 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.005 GAL .19 AZL 87.50 HCA 220.33 SMA 186.81 ECC .21056 INC 2.4976 V1 30.210
RP 212.01 LAP -1.62 LOP 290.15 VP 23.271 GAP -9.39 AZP 91.90 TAL 1.08 TAP 221.41 RCA 147.48 APO 226.14 V2 25.879
RC 301.167 GL 27.27 GP -6.35 ZAL 83.13 ZAP 52.96 ETS 174.44 ZAE 79.90 ETE 178.01 ZAC 77.92 ETC 257.79 CLP 52.70

PLANETOCENTRIC CONIC

C3 9.855 VHL 3.139 DLA 35.85 RAL 165.78 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.635 DPA 2.45 RAP 162.35 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.03	8 53 17	3908.50	-28.93	165.02	25.90	67.83	9 58 25	3308.5	-31.67	156.73
112.97	14 26 31	2853.74	-28.92	85.88	25.90	67.82	15 14 5	2253.7	-31.66	77.59
67.03	8 53 17	3908.50	-28.93	165.02	25.90	67.83	9 58 25	3308.5	-31.67	156.73
112.97	14 26 31	2853.74	-28.92	85.88	25.90	67.82	15 14 5	2253.7	-31.66	77.59
67.03	8 53 17	3908.50	-28.93	165.02	25.90	67.83	9 58 25	3308.5	-31.67	156.73
112.97	14 26 31	2853.74	-28.92	85.88	25.90	67.82	15 14 5	2253.7	-31.66	77.59

DIFFERENTIAL CORRECTIONS
TDE 2.3068 TRA .6816 TC-14.9384 BAU 1.9717
RDE .3177 RRA .1779 RC3 -.8894 FAU .35044
FDE 3.3389 FRA 2.7033 FC-30.7849 BSP 36227
BDE 2.3286 BRA .7045 BC314.9648 FSP 6069

MID-COURSE EXECUTION ACCURACY
SGT10394.8 SGR 899.1 SG3 1828.3
RRT .8873 RRF .8811 RTF .9833
SGB10433.6 R23 .0157 R13 .9833
SG110425.4 SG2 413.4 THA 4.40

ORBIT DETERMINATION ACCURACY
ST 4244.7 SR 592.4 SS 2006.3
CRT .9947 CRS -.9943 CST -.9832
LSA 4720.4 MSA 333.1 SSA 29.7
EL1 4285.4 EL2 60.1 ALF 7.91

LAUNCH DATE DEC 2 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 744.489 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.010 GAL .09 AZL 87.53 HCA 221.53 SMA 186.90 ECC .21090 INC 2.4657 V1 30.210
RP 211.73 LAP -1.63 LOP 291.36 VP 23.313 GAP -9.51 AZP 91.85 TAL .53 TAP 222.06 RCA 147.48 APO 226.31 V2 25.911
RC 302.203 GL 26.98 GP -6.12 ZAL 84.12 ZAP 51.85 ETS 174.42 ZAE 78.51 ETE 177.93 ZAC 78.17 ETC 257.79 CLP 51.59

PLANETOCENTRIC CONIC

C3 9.797 VHL 3.130 DLA 35.16 RAL 166.75 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.688 DPA 2.63 RAP 162.54 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.24	9 3 57	3886.96	-28.42	163.08	26.54	68.38	10 8 43	3287.0	-31.10	154.80
111.76	14 23 36	2872.94	-28.41	87.18	26.54	68.37	15 11 28	2272.9	-31.09	78.91
68.24	9 3 57	3886.96	-28.42	163.08	26.54	68.38	10 8 43	3287.0	-31.10	154.80
111.76	14 23 36	2872.94	-28.41	87.18	26.54	68.37	15 11 28	2272.9	-31.09	78.91
68.24	9 3 57	3886.96	-28.42	163.08	26.54	68.38	10 8 43	3287.0	-31.10	154.80
111.76	14 23 36	2872.94	-28.41	87.18	26.54	68.37	15 11 28	2272.9	-31.09	78.91

DIFFERENTIAL CORRECTIONS
TDE 2.2764 TRA .7597 TC-15.3532 BAU 2.0139
RDE .3090 RRA .1775 RC3 -.8295 FAU .34097
FDE 3.0996 FRA 2.6993 FC-30.1295 BSP 36903
BDE 2.2973 BRA .7802 BC315.3755 FSP 5893

MID-COURSE EXECUTION ACCURACY
SGT10612.9 SGR 864.7 SG3 1780.1
RRT .8744 RRF .8648 RTF .9842
SGB10648.0 R23 .0058 R13 .9842
SG110639.8 SG2 418.4 THA 4.08

ORBIT DETERMINATION ACCURACY
ST 4208.0 SR 578.4 SS 1906.6
CRT .9955 CRS -.9926 CST -.9823
LSA 4644.2 MSA 327.6 SSA 30.6
EL1 4247.2 EL2 54.6 ALF 7.79

LAUNCH DATE DEC 2 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 748.761 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.015 GAL -.01 AZL 87.56 HCA 222.75 SMA 186.98 ECC .21127 INC 2.4352 V1 30.210
RP 211.47 LAP -1.65 LOP 292.57 VP 23.354 GAP -9.63 AZP 91.79 TAL 359.96 TAP 222.71 RCA 147.48 APO 226.49 V2 25.941
RC 303.228 GL 26.70 GP -5.90 ZAL 85.16 ZAP 50.77 ETS 174.41 ZAE 77.16 ETE 177.85 ZAC 78.42 ETC 257.78 CLP 50.52

PLANETOCENTRIC CONIC

C3 9.748 VHL 3.122 DLA 34.45 RAL 167.75 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.743 DPA 2.78 RAP 162.76 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.51	9 15 21	3863.49	-27.90	161.00	27.23	68.93	10 19 45	3263.5	-30.51	152.75
110.49	14 20 9	2894.40	-27.89	88.63	27.22	68.92	15 8 23	2294.4	-30.50	80.38
69.51	9 15 21	3863.49	-27.90	161.00	27.23	68.93	10 19 45	3263.5	-30.51	152.75
110.49	14 20 9	2894.40	-27.89	88.63	27.22	68.92	15 8 23	2294.4	-30.50	80.38
69.51	9 15 21	3863.49	-27.90	161.00	27.23	68.93	10 19 45	3263.5	-30.51	152.75
110.49	14 20 9	2894.40	-27.89	88.63	27.22	68.92	15 8 23	2294.4	-30.50	80.38

DIFFERENTIAL CORRECTIONS
TDE 2.0881 TRA .8507 TC-15.5732 BAU 2.0316
RDE .2655 RRA .1786 RC3 -.7188 FAU .31556
FDE 1.9262 FRA 2.7289 FC-28.0262 BSP 37924
BDE 2.1049 BRA .8692 BC315.5898 FSP 5861

MID-COURSE EXECUTION ACCURACY
SGT10622.1 SGR 772.6 SG3 1629.3
RRT .8511 RRF .8230 RTF .9746
SGB10650.2 R23 -.0145 R13 .9745
SG110642.5 SG2 404.8 THA 3.55

ORBIT DETERMINATION ACCURACY
ST 3884.8 SR 501.9 SS 1297.1
CRT .9945 CRS -.9671 CST -.9455
LSA 4106.4 MSA 403.4 SSA 31.9
EL1 3916.8 EL2 51.9 ALF 7.32

LAUNCH DATE DEC 2 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 753.043 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.020 GAL -.11 AZL 87.59 HCA 223.96 SMA 187.07 ECC .21165 INC 2.4060 V1 30.210
RP 211.20 LAP -1.67 LOP 293.79 VP 23.395 GAP -9.74 AZP 91.73 TAL 359.38 TAP 223.34 RCA 147.48 APO 226.67 V2 25.971
RC 304.242 GL 26.42 GP -5.69 ZAL 86.22 ZAP 49.72 ETS 174.40 ZAE 75.83 ETE 177.79 ZAC 78.65 ETC 257.76 CLP 49.48

PLANETOCENTRIC CONIC

C3 9.706 VHL 3.115 DLA 33.72 RAL 168.77 RAD 6567.3 VEL 11.450 PTH 1.99 VHP 3.798 DPA 2.90 RAP 163.00 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.87	9 27 36	3837.76	-27.37	158.76	27.95	69.48	10 31 34	3237.8	-29.90	150.53
109.13	14 16 4	2918.46	-27.35	90.28	27.95	69.46	15 4 43	2318.5	-29.89	82.05
70.87	9 27 36	3837.76	-27.37	158.76	27.95	69.48	10 31 34	3237.8	-29.90	150.53
109.13	14 16 4	2918.46	-27.35	90.28	27.95	69.46	15 4 43	2318.5	-29.89	82.05
110.00	15 3 49	2772.51	-30.53	80.12	29.15	73.81	15 50 1	2172.5	-32.44	71.43
110.00	13 39 2	3031.71	-24.28	97.67	26.52	65.17	14 29 33	2431.7	-27.42	89.90

DIFFERENTIAL CORRECTIONS
TDE 2.1940 TRA .9574 TC-16.0572 BAU 2.0856
RDE .2922 RRA .1830 RC3 -.6907 FAU .31464
FDE 2.5900 FRA 2.8464 FC-28.0639 BSP 38367
BDE 2.2134 BRA .9747 BC316.0721 FSP 5569

MID-COURSE EXECUTION ACCURACY
SGT10993.9 SGR 798.6 SG3 1657.6
RRT .8350 RRF .8245 RTF .9838
SGB11022.9 R23 .0031 R13 .9838
SG111014.2 SG2 438.6 THA 3.48

ORBIT DETERMINATION ACCURACY
ST 4095.6 SR 551.1 SS 1690.4
CRT .9966 CRS -.9849 CST -.9754
LSA 4451.3 MSA 345.8 SSA 31.9
EL1 4132.2 EL2 45.1 ALF 7.64

LAUNCH DATE DEC 2 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 757.327 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.026 GAL -.21 AZL 87.62 HCA 225.18 SMA 187.17 ECC .21207 INC 2.3779 V1 30.210
RP 210.95 LAP -1.69 LOP 295.01 VP 23.435 GAP -9.86 AZP 91.68 TAL 358.79 TAP 223.96 RCA 147.47 APO 226.86 V2 26.001
RC 305.247 GL 26.14 GP -5.49 ZAL 87.32 ZAP 48.71 ETS 174.39 ZAE 74.53 ETE 177.73 ZAC 78.89 ETC 257.75 CLP 48.47

PLANETOCENTRIC CONIC

C3 9.674 VHL 3.110 DLA 32.99 RAL 169.82 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.856 DPA 3.00 RAP 163.27 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.32	9 40 53	3809.13	-26.81	156.31	28.72	70.02	10 44 22	3209.1	-29.28	148.11
107.68	14 11 10	2945.76	-26.80	92.16	28.71	70.00	15 0 15	2345.8	-29.27	83.96
72.32	9 40 53	3809.13	-26.81	156.31	28.72	70.02	10 44 22	3209.1	-29.28	148.11
107.68	14 11 10	2945.76	-26.80	92.16	28.71	70.00	15 0 15	2345.8	-29.27	83.96
110.00	15 33 50	2691.66	-31.91	74.23	30.45	77.04	16 18 42	2091.7	-33.36	65.30
110.00	13 17 23	3111.23	-21.92	102.63	26.39	63.09	14 9 14	2511.2	-25.35	95.15

DIFFERENTIAL CORRECTIONS
TDE 2.1479 TRA 1.0621 TC-16.3892 BAU 2.1212
RDE .2854 RRA .1851 RC3 -.6281 FAU .30274
FDE 2.3572 FRA 2.9029 FC-27.0931 BSP 38898
BDE 2.1668 BRA 1.0781 BC316.4012 FSP 5325

MID-COURSE EXECUTION ACCURACY
SGT11181.9 SGR 770.9 SG3 1601.4
RRT .8134 RRF .8020 RTF .9837
SGB11208.4 R23 .0010 R13 .9837
SG111199.5 SG2 447.7 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 4029.8 SR 539.9 SS 1589.5
CRT .9971 CRS -.9791 CST -.9712
LSA 4351.0 MSA 353.8 SSA 32.6
EL1 4065.6 EL2 40.5 ALF 7.61

LAUNCH DATE DEC 2 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 761.616 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.031 GAL -.32 AZL 87.65 HCA 226.40 SMA 187.26 ECC .21250 INC 2.3510 V1 30.210
RP 210.70 LAP -1.70 LOP 296.23 VP 23.474 GAP -9.97 AZP 91.62 TAL 358.18 TAP 224.57 RCA 147.47 APO 227.05 V2 26.029
RC 306.243 GL 25.86 GP -5.31 ZAL 88.46 ZAP 47.72 ETS 174.39 ZAE 73.26 ETE 177.68 ZAC 79.12 ETC 257.72 CLP 47.49

PLANETOCENTRIC CONIC

C3 9.650 VHL 3.106 DLA 32.24 RAL 170.89 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.914 DPA 3.08 RAP 163.56 ECC 1.1588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.90	9 55 28	3776.69	-26.24	153.60	29.52	70.56	10 58 24	3176.7	-28.64	145.42
106.10	14 5 8	2977.25	-26.23	94.34	29.52	70.54	14 54 45	2377.2	-28.63	86.16
73.90	9 55 28	3776.69	-26.24	153.60	29.52	70.56	10 58 24	3176.7	-28.64	145.42
106.10	14 5 8	2977.25	-26.23	94.34	29.52	70.54	14 54 45	2377.2	-28.63	86.16
110.00	15 56 45	2632.33	-32.73	69.80	31.51	79.55	16 40 38	2032.3	-33.83	60.73
110.00	13 3 1	3169.60	-20.08	106.16	26.56	61.73	13 55 51	2569.6	-23.69	98.88

DIFFERENTIAL CORRECTIONS
TDE 2.0985 TRA 1.1696 TC-16.7019 BAU 2.1560
RDE .2795 RRA .1864 RC3 -.5684 FAU .29124
FDE 2.1379 FRA 2.9385 FC-26.1275 BSP 39490
BDE 2.1170 BRA 1.1843 BC316.7116 FSP 5123

MID-COURSE EXECUTION ACCURACY
SGT11365.0 SGR 745.5 SG3 1545.8
RRT .7904 RRF .7775 RTF .9838
SGB11389.5 R23 -.0023 R13 .9838
SG111380.3 SG2 456.1 THA 2.97

ORBIT DETERMINATION ACCURACY
ST 3957.6 SR 529.9 SS 1492.5
CRT .9976 CRS -.9717 CST -.9666
LSA 4247.5 MSA 359.3 SSA 33.2
EL1 3992.8 EL2 36.5 ALF 7.61

LAUNCH DATE DEC 2 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 765.910 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.037 GAL -.43 AZL 87.67 HCA 227.62 SMA 187.36 ECC .21297 INC 2.3251 V1 30.210
RP 210.46 LAP -1.72 LOP 297.45 VP 23.513 GAP -10.08 AZP 91.57 TAL 357.56 TAP 225.18 RCA 147.46 APO 227.26 V2 26.057
RC 307.229 GL 25.58 GP -5.13 ZAL 89.63 ZAP 46.76 ETS 174.38 ZAE 72.01 ETE 177.64 ZAC 79.34 ETC 257.70 CLP 46.54

PLANETOCENTRIC CONIC

C3 9.636 VHL 3.104 DLA 31.48 RAL 171.99 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.973 DPA 3.13 RAP 163.88 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.65	10 11 41	3739.31	-25.65	150.53	30.36	71.09	11 14 0	3139.3	-27.98	142.37
104.35	13 57 39	3014.04	-25.63	96.91	30.36	71.08	14 47 53	2414.0	-27.98	88.76
75.65	10 11 41	3739.31	-25.65	150.53	30.36	71.09	11 14 0	3139.3	-27.98	142.37
104.35	13 57 39	3014.04	-25.63	96.91	30.36	71.08	14 47 53	2414.0	-27.98	88.76
110.00	16 16 36	2582.38	-33.29	66.01	32.48	81.73	16 59 38	1982.4	-34.07	56.85
110.00	12 51 55	3218.97	-18.46	109.07	26.90	60.70	13 45 34	2619.0	-22.22	101.96

DIFFERENTIAL CORRECTIONS
TDE 2.0476 TRA 1.2844 TC-16.9919 BAU 2.1900
RDE .2747 RRA .1879 RC3 -.5114 FAU .28011
FDE 1.9381 FRA 2.9766 FC-25.1657 BSP 40132
BDE 2.0660 BRA 1.2981 BC316.9996 FSP 4942

MID-COURSE EXECUTION ACCURACY
SGT11545.4 SGR 723.4 SG3 1492.5
RRT .7658 RRF .7517 RTF .9840
SGB11568.1 R23 -.0047 R13 .9840
SG111558.7 SG2 464.7 THA 2.75

ORBIT DETERMINATION ACCURACY
ST 3883.2 SR 521.7 SS 1405.1
CRT .9978 CRS -.9622 CST -.9614
LSA 4146.2 MSA 365.2 SSA 33.7
EL1 3918.0 EL2 34.1 ALF 7.64

LAUNCH DATE DEC 2 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 770.208 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.042 GAL -.54 AZL 87.70 HCA 228.84 SMA 187.46 ECC .21346 INC 2.3000 V1 30.210
RP 210.22 LAP -1.73 LOP 298.67 VP 23.551 GAP -10.19 AZP 91.51 TAL 356.92 TAP 225.76 RCA 147.44 APO 227.47 V2 26.085
RC 308.206 GL 25.29 GP -4.96 ZAL 90.83 ZAP 45.82 ETS 174.38 ZAE 70.79 ETE 177.60 ZAC 79.57 ETC 257.67 CLP 45.61

PLANETOCENTRIC CONIC

C3 9.632 VHL 3.103 DLA 30.70 RAL 173.11 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 4.034 DPA 3.17 RAP 164.22 ECC 1.1585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.63	10 30 12	3694.87	-25.04	146.96	31.24	71.63	11 31 47	3094.9	-27.31	138.83
102.37	13 48 2	3058.30	-25.02	100.02	31.24	71.62	14 39 1	2458.3	-27.30	91.89
77.63	10 30 12	3694.87	-25.04	146.96	31.24	71.63	11 31 47	3094.9	-27.31	138.83
102.37	13 48 2	3058.30	-25.02	100.02	31.24	71.62	14 39 1	2458.3	-27.30	91.89
110.00	16 34 38	2537.94	-33.67	62.60	33.41	83.71	17 16 56	1937.9	-34.17	53.39
110.00	12 42 47	3263.23	-16.96	111.63	27.35	59.87	13 37 10	2663.2	-20.84	104.65

DIFFERENTIAL CORRECTIONS
TDE 1.9898 TRA 1.4040 TC-17.2708 BAU 2.2247
RDE .2702 RRA .1893 RC3 -.4583 FAU .26979
FDE 1.7328 FRA 3.0100 FC-24.2503 BSP 40741
BDE 2.0080 BRA 1.4167 BC317.2768 FSP 4773

MID-COURSE EXECUTION ACCURACY
SGT11725.9 SGR 703.4 SG3 1442.0
RRT .7403 RRF .7243 RTF .9841
SGB11747.0 R23 -.0081 R13 .9841
SG111737.5 SG2 472.4 THA 2.55

ORBIT DETERMINATION ACCURACY
ST 3796.8 SR 513.5 SS 1313.3
CRT .9977 CRS -.9488 CST -.9542
LSA 4032.7 MSA 373.6 SSA 34.2
EL1 3831.2 EL2 34.7 ALF 7.69

LAUNCH DATE DEC 2 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 774.510 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.048 GAL -.66 AZL 87.72 HCA 230.07 SMA 187.56 ECC .21397 INC 2.2759 V1 30.210
RP 209.99 LAP -1.75 LOP 299.90 VP 23.589 GAP -10.29 AZP 91.46 TAL 356.27 TAP 226.34 RCA 147.43 APO 227.69 V2 26.111
RC 309.174 GL 25.01 GP -4.81 ZAL 92.06 ZAP 44.91 ETS 174.37 ZAE 69.60 ETE 177.57 ZAC 79.79 ETC 257.63 CLP 44.71

PLANETOCENTRIC CONIC

C3 9.637 VHL 3.104 DLA 29.90 RAL 174.24 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.096 DPA 3.19 RAP 164.58 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.97	10 52 10	3639.50	-24.41	142.60	32.16	72.17	11 52 50	3039.5	-26.61	134.49
100.03	13 35 7	3113.91	-24.40	103.94	32.16	72.15	14 27 1	2513.9	-26.61	95.84
79.97	10 52 10	3639.50	-24.41	142.60	32.16	72.17	11 52 50	3039.5	-26.61	134.49
100.03	13 35 7	3113.91	-24.40	103.94	32.16	72.15	14 27 1	2513.9	-26.61	95.84
110.00	16 51 28	2497.22	-33.93	59.44	34.31	85.56	17 33 5	1897.2	-34.17	50.21
110.00	12 35 0	3304.19	-15.55	113.97	27.91	59.17	13 30 4	2704.2	-19.52	107.10

DIFFERENTIAL CORRECTIONS
TDE 1.9299 TRA 1.5312 TC-17.5071 BAU 2.2563
RDE .2665 RRA .1905 RC3 -.4047 FAU .25884
FDE 1.5435 FRA 3.0398 FC-23.2515 BSP 41399
BDE 1.9482 BRA 1.5430 BC317.5118 FSP 4603

MID-COURSE EXECUTION ACCURACY
SGT11894.0 SGR 685.2 SG3 1388.9
RRT .7123 RRF .6948 RTF .9841
SGB11913.8 R23 -.0104 R13 .9841
SG111904.1 SG2 480.5 THA 2.35

ORBIT DETERMINATION ACCURACY
ST 3708.1 SR 506.7 SS 1229.7
CRT .9970 CRS -.9318 CST -.9459
LSA 3920.7 MSA 381.9 SSA 34.7
EL1 3742.3 EL2 38.9 ALF 7.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 778.817 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.054 GAL -.78 AZL 87.75 HCA 231.30 SMA 187.66 ECC .21452 INC 2.2526 V1 30.210
RP 209.77 LAP -1.76 LOP 301.13 VP 23.625 GAP -10.40 AZP 91.41 TAL 355.61 TAP 226.91 RCA 147.40 APO 227.92 V2 26.137
RC 310.132 GL 24.72 GP -4.66 ZAL 93.32 ZAP 44.03 ETS 174.37 ZAE 68.43 ETE 177.54 ZAC 80.01 ETC 257.60 CLP 43.83

PLANETOCENTRIC CONIC

C3 9.654 VHL 3.107 DLA 29.09 RAL 175.39 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 4.159 DPA 3.18 RAP 164.96 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.05	11 20 49	3562.76	-23.76	136.69	33.12	72.70	12 20 11	2962.8	-25.90	128.62
96.95	13 15 40	3191.32	-23.75	109.45	33.11	72.69	14 8 51	2591.3	-25.89	101.37
100.00	14 37 43	2928.07	-27.66	91.11	34.24	78.18	15 26 31	2328.1	-29.01	82.56
100.00	12 41 27	3301.24	-19.96	116.08	31.63	67.28	13 36 28	2701.2	-22.87	108.49
110.00	17 7 26	2459.20	-34.09	56.49	35.19	87.30	17 48 25	1859.2	-34.09	47.24
110.00	12 28 13	3342.88	-14.19	116.14	28.54	58.57	13 23 56	2742.9	-18.24	109.37

DIFFERENTIAL CORRECTIONS
TDE 1.8627 TRA 1.6607 TC-17.7380 BAU 2.2898
RDE .2634 RRA .1917 RC3 -.3547 FAU .24867
FDE 1.3612 FRA 3.0679 FC-22.3003 BSP 41940
BDE 1.8812 BRA 1.6717 BC317.7415 FSP 4430

MID-COURSE EXECUTION ACCURACY
SGT12065.5 SGR 669.4 SG3 1339.2
RRT .6829 RRF .6642 RTF .9842
SGB12084.1 R23 -.0122 R13 .9842
SG112074.2 SG2 488.7 THA 2.17

ORBIT DETERMINATION ACCURACY
ST 3607.3 SR 500.7 SS 1150.2
CRT .9956 CRS -.9095 CST -.9354
LSA 3798.9 MSA 392.2 SSA 35.1
EL1 3641.6 EL2 46.7 ALF 7.87

LAUNCH DATE DEC 2 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 783.127 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.060 GAL -.90 AZL 87.77 HCA 232.54 SMA 187.76 ECC .21509 INC 2.2300 V1 30.210
RP 209.55 LAP -1.77 LOP 302.37 VP 23.661 GAP -10.51 AZP 91.36 TAL 354.93 TAP 227.46 RCA 147.38 APO 228.15 V2 26.162
RC 311.080 GL 24.42 GP -4.51 ZAL 94.61 ZAP 43.17 ETS 174.36 ZAE 67.28 ETE 177.51 ZAC 80.22 ETC 257.56 CLP 42.98

PLANETOCENTRIC CONIC

C3 9.682 VHL 3.112 DLA 28.26 RAL 176.56 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.224 DPA 3.16 RAP 165.37 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 23	3327.39	-24.08	119.53	34.41	74.63	13 33 50	2727.4	-25.96	111.36
90.00	12 7 25	3427.82	-22.10	126.22	33.77	71.83	13 4 33	2827.8	-24.38	118.29
100.00	15 6 59	2848.23	-28.64	85.37	35.51	81.04	15 54 27	2248.2	-29.58	76.70
100.00	12 21 30	3382.22	-17.76	121.08	31.97	65.55	13 17 52	2782.2	-20.91	113.71
110.00	17 22 45	2423.25	-34.17	53.68	36.08	88.96	18 3 8	1823.3	-33.94	44.44
110.00	12 22 13	3379.96	-12.86	118.19	29.25	58.05	13 18 33	2780.0	-16.99	111.52

DIFFERENTIAL CORRECTIONS
TDE 1.7931 TRA 1.7974 TC-17.9350 BAU 2.3217
RDE .2610 RRA .1927 RC3 -.3063 FAU .23860
FDE 1.1887 FRA 3.0922 FC-21.3359 BSP 42503
BDE 1.8120 BRA 1.8077 BC317.9377 FSP 4258

MID-COURSE EXECUTION ACCURACY
SGT12230.8 SGR 655.5 SG3 1289.9
RRT .6522 RRF .6323 RTF .9842
SGB12248.4 R23 -.0140 R13 .9842
SG112238.3 SG2 496.6 THA 2.01

ORBIT DETERMINATION ACCURACY
ST 3505.0 SR 495.6 SS 1077.0
CRT .9931 CRS -.8810 CST -.9229
LSA 3677.9 MSA 403.4 SSA 35.5
EL1 3539.4 EL2 57.7 ALF 7.99

LAUNCH DATE DEC 2 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 787.440 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.066 GAL -1.02 AZL 87.79 HCA 233.77 SMA 187.87 ECC .21570 INC 2.2082 V1 30.210
RP 209.34 LAP -1.78 LOP 303.61 VP 23.696 GAP -10.61 AZP 91.31 TAL 354.23 TAP 228.01 RCA 147.35 APO 228.39 V2 26.186
RC 312.019 GL 24.11 GP -4.38 ZAL 95.93 ZAP 42.34 ETS 174.35 ZAE 66.15 ETE 177.49 ZAC 80.44 ETC 257.51 CLP 42.15

PLANETOCENTRIC CONIC

C3 9.721 VHL 3.118 DLA 27.42 RAL 177.74 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.289 DPA 3.12 RAP 165.79 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 11	3174.44	-26.42	108.95	36.18	79.43	14 23 6	2574.4	-27.61	100.48
90.00	11 25 2	3582.39	-18.49	136.12	33.69	68.17	12 24 45	2982.4	-21.30	128.57
100.00	15 30 46	2785.74	-29.21	80.82	36.66	83.37	16 17 11	2185.7	-29.83	72.07
100.00	12 7 9	3446.31	-15.91	124.94	32.50	64.35	13 4 35	2846.3	-19.23	117.73
110.00	17 37 33	2388.96	-34.18	51.00	36.97	90.55	18 17 22	1789.0	-33.73	41.79
110.00	12 16 51	3415.86	-11.56	120.16	30.02	57.60	13 13 47	2815.9	-15.75	113.56

DIFFERENTIAL CORRECTIONS
TDE 1.7196 TRA 1.9392 TC-18.1071 BAU 2.3535
RDE .2592 RRA .1935 RC3 -.2606 FAU .22901
FDE 1.0244 FRA 3.1103 FC-20.3948 BSP 43083
BDE 1.7391 BRA 1.9488 BC318.1090 FSP 4105

MID-COURSE EXECUTION ACCURACY
SGT12393.2 SGR 643.3 SG3 1242.3
RRT .6208 RRF .5993 RTF .9843
SGB12409.9 R23 -.0161 R13 .9843
SG112399.7 SG2 504.1 THA 1.85

ORBIT DETERMINATION ACCURACY
ST 3398.8 SR 491.2 SS 1009.4
CRT .9892 CRS -.8449 CST -.9078
LSA 3554.9 MSA 415.8 SSA 35.7
EL1 3433.3 EL2 71.4 ALF 8.14

LAUNCH DATE DEC 2 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 791.756 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.072 GAL -1.15 AZL 87.81 HCA 235.01 SMA 187.98 ECC .21633 INC 2.1869 V1 30.210
RP 209.14 LAP -1.79 LOP 304.84 VP 23.731 GAP -10.71 AZP 91.25 TAL 353.53 TAP 228.54 RCA 147.31 APO 228.64 V2 26.209
RC 312.950 GL 23.80 GP -4.25 ZAL 97.28 ZAP 41.52 ETS 174.35 ZAE 65.05 ETE 177.47 ZAC 80.65 ETC 257.47 CLP 41.34

PLANETOCENTRIC CONIC

C3 9.773 VHL 3.126 DLA 26.56 RAL 178.94 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.355 DPA 3.07 RAP 166.24 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 50	3092.91	-27.31	103.14	37.47	82.21	14 51 23	2492.9	-28.11	94.57
90.00	11 4 56	3666.02	-16.30	141.28	34.15	66.52	12 6 2	3066.0	-19.34	133.92
100.00	15 51 46	2732.04	-29.57	76.87	37.75	85.42	16 37 18	2132.0	-29.89	68.08
100.00	11 55 41	3502.13	-14.24	128.24	33.16	63.44	12 54 3	2902.1	-17.69	121.15
110.00	17 51 56	2356.03	-34.13	48.43	37.86	92.07	18 31 12	1756.0	-33.47	39.25
110.00	12 12 0	3450.89	-10.28	122.06	30.85	57.22	13 9 31	2850.9	-14.52	115.53

DIFFERENTIAL CORRECTIONS
TDE 1.6417 TRA 2.0873 TC-18.2491 BAU 2.3845
RDE .2580 RRA .1943 RC3 -.2165 FAU .21950
FDE .8702 FRA 3.1274 FC-19.4441 BSP 43641
BDE 1.6619 BRA 2.0963 BC318.2504 FSP 3952

MID-COURSE EXECUTION ACCURACY
SGT12551.2 SGR 632.8 SG3 1195.3
RRT .5880 RRF .5655 RTF .9843
SGB12567.2 R23 -.0175 R13 .9843
SG112556.8 SG2 511.6 THA 1.70

ORBIT DETERMINATION ACCURACY
ST 3288.9 SR 487.8 SS 949.9
CRT .9834 CRS -.8002 CST -.8902
LSA 3430.9 MSA 429.7 SSA 35.9
EL1 3323.7 EL2 87.6 ALF 8.30

LAUNCH DATE DEC 2 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 796.075 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.078 GAL -1.28 AZL 87.83 HCA 236.25 SMA 188.09 ECC .21700 INC 2.1663 V1 30.210
RP 208.94 LAP -1.80 LOP 306.09 VP 23.764 GAP -10.82 AZP 91.20 TAL 352.81 TAP 229.06 RCA 147.27 APO 228.90 V2 26.232
RC 313.871 GL 23.49 GP -4.13 ZAL 98.65 ZAP 40.73 ETS 174.34 ZAE 63.97 ETE 177.45 ZAC 80.86 ETC 257.42 CLP 40.56

PLANETOCENTRIC CONIC

C3 9.838 VHL 3.137 DLA 25.68 RAL 180.14 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.423 DPA 3.00 RAP 166.71 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 8	3028.54	-27.82	98.50	38.65	84.48	15 14 36	2428.5	-28.29	89.87
90.00	10 50 16	3733.01	-14.44	145.32	34.80	65.37	11 52 29	3133.0	-17.64	138.11
100.00	16 11 2	2683.86	-29.78	73.30	38.81	87.29	16 55 46	2083.9	-29.84	64.50
100.00	11 46 2	3552.93	-12.67	131.20	33.91	62.70	12 45 15	2952.9	-16.23	124.22
110.00	18 5 58	2324.28	-34.02	45.96	38.77	93.53	18 44 42	1724.3	-33.16	36.82
110.00	12 7 36	3485.28	-9.00	123.91	31.74	56.88	13 5 41	2885.3	-13.30	117.45

DIFFERENTIAL CORRECTIONS
TDE 1.5600 TRA 2.2415 TC-18.3587 BAU 2.4148
RDE .2575 RRA .1949 RC3 -.1740 FAU .21006
FDE .7243 FRA 3.1410 FC-18.4851 BSP 44178
BDE 1.5811 BRA 2.2500 BC318.3596 FSP 3802

MID-COURSE EXECUTION ACCURACY
SGT12704.2 SGR 623.9 SG3 1148.7
RRT .5542 RRF .5309 RTF .9843
SGB12719.5 R23 -.0186 R13 .9843
SG112709.0 SG2 519.1 THA 1.56

ORBIT DETERMINATION ACCURACY
ST 3177.6 SR 485.0 SS 897.8
CRT .9751 CRS -.7458 CST -.8699
LSA 3307.4 MSA 445.1 SSA 36.0
EL1 3212.7 EL2 106.4 ALF 8.47

LAUNCH DATE DEC 2 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 800.396 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.085 GAL -1.42 AZL 87.85 HCA 237.49 SMA 188.20 ECC .21770 INC 2.1462 V1 30.210
RP 208.76 LAP -1.81 LOP 307.33 VP 23.797 GAP -10.92 AZP 91.15 TAL 352.07 TAP 229.56 RCA 147.23 APO 229.17 V2 26.254
RC 314.784 GL 23.16 GP -4.01 ZAL 100.05 ZAP 39.96 ETS 174.34 ZAE 62.90 ETE 177.43 ZAC 81.07 ETC 257.37 CLP 39.80

PLANETOCENTRIC CONIC

C3 9.917 VHL 3.149 DLA 24.79 RAL 181.36 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.492 DPA 2.92 RAP 167.19 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 39	2973.09	-28.12	94.47	39.78	86.48	15 35 12	2373.1	-28.31	85.81
90.00	10 38 27	3791.63	-12.75	148.79	35.55	64.50	11 41 39	3191.6	-16.08	141.70
100.00	16 29 6	2639.56	-29.88	70.01	39.86	89.02	17 13 5	2039.6	-29.69	61.21
100.00	11 37 41	3600.39	-11.17	133.93	34.74	62.09	12 37 42	3000.4	-14.82	127.04
110.00	18 19 42	2293.53	-33.87	43.57	39.70	94.93	18 57 55	1693.5	-32.81	34.49
110.00	12 3 34	3519.19	-7.74	125.72	32.68	56.60	13 2 14	2919.2	-12.08	119.31

DIFFERENTIAL CORRECTIONS
TDE 1.4747 TRA 2.4026 TC-18.4402 BAU 2.4449
RDE .2574 RRA .1954 RC3 -.1339 FAU .20106
FDE .5851 FRA 3.1523 FC-17.5520 BSP 44721
BDE 1.4970 BRA 2.4106 BC318.4407 FSP 3655

MID-COURSE EXECUTION ACCURACY
SGT12855.8 SGR 616.3 SG3 1103.9
RRT .5202 RRF .4959 RTF .9842
SGB12870.6 R23 -.0199 R13 .9842
SG112859.8 SG2 526.2 THA 1.43

ORBIT DETERMINATION ACCURACY
ST 3067.2 SR 482.9 SS 853.4
CRT .9637 CRS -.6800 CST -.8466
LSA 3186.5 MSA 462.9 SSA 36.0
EL1 3102.4 EL2 127.5 ALF 8.64

LAUNCH DATE DEC 2 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 804.719 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.091 GAL -1.55 AZL 87.87 HCA 238.74 SMA 188.31 ECC .21844 INC 2.1266 V1 30.210
RP 208.58 LAP -1.82 LOP 308.58 VP 23.829 GAP -11.02 AZP 91.10 TAL 351.32 TAP 230.06 RCA 147.18 APO 229.45 V2 26.274
RC 315.690 GL 22.83 GP -3.90 ZAL 101.47 ZAP 39.22 ETS 174.33 ZAE 61.86 ETE 177.42 ZAC 81.28 ETC 257.32 CLP 39.05

PLANETOCENTRIC CONIC

C3 10.010 VHL 3.164 DLA 23.89 RAL 182.59 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.562 DPA 2.81 RAP 167.70 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 24	2923.34	-28.27	90.84	40.89	88.29	15 54 7	2323.3	-28.21	82.18
90.00	10 28 28	3845.11	-11.16	151.92	36.40	63.81	11 32 33	3245.1	-14.59	144.92
100.00	16 46 15	2598.20	-29.89	66.94	40.91	90.63	17 29 33	1998.2	-29.48	58.16
100.00	11 30 19	3645.48	-9.72	136.49	35.65	61.59	12 31 4	3045.5	-13.44	129.68
110.00	18 33 10	2263.70	-33.67	41.26	40.64	96.29	19 10 53	1663.7	-32.43	32.25
110.00	11 59 53	3552.75	-6.47	127.50	33.67	56.36	12 59 6	2952.7	-10.85	121.14

DIFFERENTIAL CORRECTIONS
TDE 1.3848 TRA 2.5682 TC-18.4914 BAU 2.4747
RDE .2580 RRA .1956 RC3 -.0959 FAU .19229
FDE .4526 FRA 3.1563 FC-16.6304 BSP 45242
BDE 1.4087 BRA 2.5757 BC318.4916 FSP 3515

MID-COURSE EXECUTION ACCURACY
SGT13002.9 SGR 609.9 SG3 1059.9
RRT .4857 RRF .4602 RTF .9842
SGB13017.2 R23 -.0213 R13 .9841
SG113006.3 SG2 533.0 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 2956.6 SR 481.4 SS 816.2
CRT .9482 CRS -.6033 CST -.8212
LSA 3066.8 MSA 482.1 SSA 35.9
EL1 2991.7 EL2 151.1 ALF 8.80

LAUNCH DATE DEC 2 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 809.044 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.097 GAL -1.69 AZL 87.89 HCA 239.99 SMA 188.43 ECC .21922 INC 2.1074 V1 30.210
RP 208.40 LAP -1.82 LOP 309.82 VP 23.860 GAP -11.13 AZP 91.05 TAL 350.56 TAP 230.54 RCA 147.12 APO 229.73 V2 26.294
RC 316.588 GL 22.49 GP -3.79 ZAL 102.91 ZAP 38.49 ETS 174.32 ZAE 60.83 ETE 177.41 ZAC 81.49 ETC 257.26 CLP 38.33

PLANETOCENTRIC CONIC

C3 10.119 VHL 3.181 DLA 22.97 RAL 183.82 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.633 DPA 2.70 RAP 168.22 ECC 1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 54	2877.63	-28.32	87.50	42.00	89.97	16 11 52	2277.6	-28.02	78.85
90.00	10 19 47	3895.13	-9.64	154.81	37.32	63.25	11 24 42	3295.1	-13.16	147.89
100.00	17 2 40	2559.17	-29.82	64.04	41.97	92.16	17 45 20	1959.2	-29.20	55.29
100.00	11 23 42	3688.82	-8.31	138.94	36.61	61.18	12 25 11	3088.8	-12.09	132.19
110.00	18 46 23	2234.69	-33.43	39.03	41.61	97.59	19 23 38	1634.7	-32.02	30.09
110.00	11 56 28	3586.07	-5.21	129.25	34.71	56.17	12 56 15	2986.1	-9.62	122.94

DIFFERENTIAL CORRECTIONS
TDE 1.2927 TRA 2.7422 TC-18.5095 BAU 2.5040
RDE .2591 RRA .1958 RC3 -.0599 FAU .18377
FDE .3310 FRA 3.1611 FC-15.7228 BSP 45786
BDE 1.3184 BRA 2.7491 BC318.5096 FSP 3381

MID-COURSE EXECUTION ACCURACY
SGT13148.0 SGR 605.0 SG3 1017.4
RRT .4514 RRF .4251 RTF .9841
SGB13161.9 R23 -.0223 R13 .9841
SG113150.8 SG2 539.7 THA 1.19

ORBIT DETERMINATION ACCURACY
ST 2852.3 SR 480.7 SS 789.2
CRT .9278 CRS -.5189 CST -.7966
LSA 2955.6 MSA 502.6 SSA 35.8
EL1 2887.1 EL2 177.2 ALF 8.92

LAUNCH DATE DEC 2 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 813.370 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.104 GAL -1.84 AZL 87.91 HCA 241.23 SMA 188.54 ECC .22003 INC 2.0888 V1 30.210
RP 208.24 LAP -1.83 LOP 311.07 VP 23.890 GAP -11.23 AZP 91.01 TAL 349.78 TAP 231.02 RCA 147.06 APO 230.03 V2 26.314
RC 317.480 GL 22.14 GP -3.69 ZAL 104.37 ZAP 37.78 ETS 174.31 ZAE 59.83 ETE 177.40 ZAC 81.70 ETC 257.21 CLP 37.62

PLANETOCENTRIC CONIC

C3 10.244 VHL 3.201 DLA 22.04 RAL 185.05 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 4.705 DPA 2.57 RAP 168.75 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 28	2835.01	-28.28	84.38	43.11	91.53	16 28 43	2235.0	-27.77	75.75
90.00	10 12 5	3942.67	-8.17	157.53	38.31	62.79	11 17 48	3342.7	-11.76	150.68
100.00	17 18 31	2522.07	-29.69	61.29	43.03	93.60	18 0 33	1922.1	-28.88	52.58
100.00	11 17 43	3730.84	-6.92	141.28	37.64	60.85	12 19 54	3130.8	-10.76	134.60
110.00	18 59 24	2206.46	-33.16	36.87	42.59	98.83	19 36 10	1606.5	-31.58	28.00
110.00	11 53 20	3619.21	-3.96	130.99	35.80	56.02	12 53 39	3019.2	-8.39	124.71

DIFFERENTIAL CORRECTIONS
TDE 1.1960 TRA 2.9210 TC-18.4957 BAU 2.5330
RDE .2608 RRA .1957 RC3 -.0260 FAU .17548
FDE .2146 FRA 3.1597 FC-14.8308 BSP 46296
BDE 1.2241 BRA 2.9276 BC318.4957 FSP 3247

MID-COURSE EXECUTION ACCURACY
SGT13288.4 SGR 600.9 SG3 975.6
RRT .4169 RRF .3896 RTF .9839
SGB13302.0 R23 -.0234 R13 .9839
SG113290.8 SG2 546.1 THA 1.08

ORBIT DETERMINATION ACCURACY
ST 2752.2 SR 480.5 SS 769.1
CRT .9012 CRS -.4257 CST -.7723
LSA 2849.6 MSA 524.9 SSA 35.5
EL1 2786.2 EL2 205.7 ALF 8.99

LAUNCH DATE DEC 2 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 817.697 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.111 GAL -1.99 AZL 87.93 HCA 242.49 SMA 188.66 ECC .22088 INC 2.0705 V1 30.210
RP 208.08 LAP -1.84 LOP 312.32 VP 23.919 GAP -11.33 AZP 90.96 TAL 348.99 TAP 231.48 RCA 146.99 APO 230.33 V2 26.332
RC 318.367 GL 21.78 GP -3.60 ZAL 105.84 ZAP 37.09 ETS 174.30 ZAE 58.84 ETE 177.39 ZAC 81.91 ETC 257.15 CLP 36.94

PLANETOCENTRIC CONIC

C3 10.386 VHL 3.223 DLA 21.10 RAL 186.29 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 4.778 DPA 2.43 RAP 169.31 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 17	2794.86	-28.17	81.45	44.22	93.00	16 44 52	2194.9	-27.46	72.86
90.00	10 5 10	3988.36	-6.74	160.12	39.36	62.43	11 11 38	3388.4	-10.38	153.33
100.00	17 33 52	2486.62	-29.51	58.67	44.12	94.97	18 15 19	1886.6	-28.51	50.01
100.00	11 12 15	3771.83	-5.56	143.56	38.72	60.58	12 15 7	3171.8	-9.44	136.92
110.00	19 12 12	2178.97	-32.85	34.79	43.60	100.03	19 48 31	1579.0	-31.12	25.99
110.00	11 50 25	3652.25	-2.70	132.72	36.94	55.91	12 51 17	3052.2	-7.15	126.47

DIFFERENTIAL CORRECTIONS
TDE 1.0965 TRA 3.1076 TC-18.4501 BAU 2.5617
RDE .2631 RRA .1954 RC3 .0057 FAU .16748
FDE .1065 FRA 3.1568 FC-13.9612 BSP 46806
BDE 1.1276 BRA 3.1137 BC318.4501 FSP 3116

MID-COURSE EXECUTION ACCURACY
SGT13427.0 SGR 597.9 SG3 935.3
RRT .3828 RRF .3546 RTF .9838
SGB13440.3 R23 -.0245 R13 .9838
SG113429.0 SG2 552.3 THA .98

ORBIT DETERMINATION ACCURACY
ST 2661.6 SR 480.9 SS 757.3
CRT .8674 CRS -.3288 CST -.7519
LSA 2754.4 MSA 548.2 SSA 35.1
EL1 2694.3 EL2 236.4 ALF 8.98

LAUNCH DATE DEC 2 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 822.024 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.117 GAL -2.14 AZL 87.95 HCA 243.74 SMA 188.78 ECC .22177 INC 2.0527 V1 30.210
RP 207.93 LAP -1.84 LOP 313.58 VP 23.948 GAP -11.43 AZP 90.91 TAL 348.18 TAP 231.92 RCA 146.91 APO 230.65 V2 26.349
RC 319.247 GL 21.41 GP -3.51 ZAL 107.33 ZAP 36.41 ETS 174.29 ZAE 57.87 ETE 177.38 ZAC 82.12 ETC 257.09 CLP 36.27

PLANETOCENTRIC CONIC

C3 10.546 VHL 3.247 DLA 20.15 RAL 187.53 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 4.852 DPA 2.28 RAP 169.88 ECC 1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 28	2756.77	-28.00	78.68	45.35	94.38	17 0 25	2156.8	-27.10	70.13
90.00	9 58 53	4032.63	-5.34	162.62	40.47	62.15	11 6 5	3432.6	-9.03	155.88
100.00	17 48 48	2452.61	-29.29	56.16	45.21	96.27	18 29 41	1852.6	-28.11	47.56
100.00	11 7 14	3812.02	-4.21	145.78	39.85	60.38	12 10 46	3212.0	-8.12	139.18
110.00	19 24 50	2152.18	-32.51	32.77	44.64	101.18	20 0 42	1552.2	-30.63	24.06
110.00	11 47 42	3685.22	-1.44	134.44	38.12	55.84	12 49 7	3085.2	-5.91	128.21

DIFFERENTIAL CORRECTIONS
TDE .9936 TRA 3.3003 TC-18.3695 BAU 2.5899
RDE .2659 RRA .1949 RC3 .0357 FAU .15960
FDE .0057 FRA 3.1487 FC-13.1018 BSP 47314
BDE 1.0286 BRA 3.3060 BC318.3696 FSP 2994

MID-COURSE EXECUTION ACCURACY
SGT13560.5 SGR 595.7 SG3 895.5
RRT .3488 RRF .3199 RTF .9836
SGB13573.5 R23 -.0254 R13 .9836
SG113562.0 SG2 558.2 THA .88

ORBIT DETERMINATION ACCURACY
ST 2581.5 SR 481.9 SS 751.9
CRT .8254 CRS -.2310 CST -.7370
LSA 2670.9 MSA 571.5 SSA 34.7
EL1 2612.3 EL2 268.9 ALF 8.85

LAUNCH DATE DEC 2 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 826.351 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.124 GAL -2.29 AZL 87.96 HCA 244.99 SMA 188.90 ECC .22271 INC 2.0351 V1 30.210
RP 207.79 LAP -1.84 LOP 314.83 VP 23.975 GAP -11.54 AZP 90.86 TAL 347.36 TAP 232.36 RCA 146.83 APO 230.97 V2 26.366
RC 320.122 GL 21.03 GP -3.42 ZAL 108.83 ZAP 35.76 ETS 174.28 ZAE 56.91 ETE 177.37 ZAC 82.33 ETC 257.03 CLP 35.62

PLANETOCENTRIC CONIC

C3 10.725 VHL 3.275 DLA 19.19 RAL 188.78 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 4.928 DPA 2.11 RAP 170.47 ECC 1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 9	2720.45	-27.79	76.04	46.49	95.68	17 15 29	2120.5	-26.71	67.54
90.00	9 53 7	4075.79	-3.96	165.04	41.63	61.94	11 1 3	3475.8	-7.69	158.34
100.00	18 3 21	2419.89	-29.02	53.77	46.33	97.50	18 43 41	1819.9	-27.68	45.22
100.00	11 2 36	3851.58	-2.87	147.96	41.03	60.23	12 6 48	3251.6	-6.82	141.39
110.00	19 37 16	2126.08	-32.15	30.82	45.69	102.29	20 12 42	1526.1	-30.13	22.19
110.00	11 45 11	3718.16	-.18	136.16	39.34	55.82	12 47 9	3118.2	-4.66	129.95

DIFFERENTIAL CORRECTIONS
TDE .8884 TRA 3.5005 TC-18.2581 BAU 2.6179
RDE .2693 RRA .1942 RC3 .0635 FAU .15200
FDE -.0881 FRA 3.1372 FC-12.2699 BSP 47832
BDE .9283 BRA 3.5059 BC318.2582 FSP 2873

MID-COURSE EXECUTION ACCURACY
SGT13692.1 SGR 594.3 SG3 857.0
RRT .3156 RRF .2857 RTF .9834
SGB13705.0 R23 -.0266 R13 .9834
SG113693.4 SG2 563.9 THA .79

ORBIT DETERMINATION ACCURACY
ST 2515.8 SR 483.4 SS 752.2
CRT .7745 CRS -.1349 CST -.7286
LSA 2602.7 MSA 594.4 SSA 34.1
EL1 2543.9 EL2 302.4 ALF 8.59

LAUNCH DATE DEC 2 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 830.678 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.131 GAL -2.45 AZL 87.98 HCA 246.25 SMA 189.02 ECC .22369 INC 2.0180 V1 30.210
RP 207.66 LAP -1.85 LOP 316.09 VP 24.002 GAP -11.64 AZP 90.81 TAL 346.53 TAP 232.78 RCA 146.74 APO 231.30 V2 26.381
RC 320.992 GL 20.65 GP -3.34 ZAL 110.35 ZAP 35.12 ETS 174.27 ZAE 55.98 ETE 177.37 ZAC 82.55 ETC 256.98 CLP 34.98

PLANETOCENTRIC CONIC

C3 10.924 VHL 3.305 DLA 18.22 RAL 190.02 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 5.004 DPA 1.94 RAP 171.07 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 22	2685.70	-27.53	73.53	47.65	96.92	17 30 8	2085.7	-26.28	65.08
90.00	9 47 49	4118.06	-2.60	167.41	42.84	61.79	10 56 27	3518.1	-6.36	160.74
100.00	18 17 34	2388.38	-28.72	51.47	47.47	98.67	18 57 22	1788.4	-27.22	42.99
100.00	10 58 18	3890.62	-1.55	150.11	42.26	60.14	12 3 9	3290.6	-5.51	143.56
110.00	19 49 31	2100.67	-31.77	28.94	46.78	103.34	20 24 32	1500.7	-29.61	20.39
110.00	11 42 50	3751.09	1.08	137.88	40.61	55.83	12 45 21	3151.1	-3.41	131.67

DIFFERENTIAL CORRECTIONS
TDE .7789 TRA 3.7069 TC-18.1166 BAU 2.6458
RDE .2733 RRA .1932 RC3 .0893 FAU .14458
FDE -.1750 FRA 3.1225 FC-11.4582 BSP 48332
BDE .8254 BRA 3.7119 BC318.1169 FSP 2757

MID-COURSE EXECUTION ACCURACY
SGT13820.6 SGR 593.6 SG3 819.4
RRT .2827 RRF .2521 RTF .9831
SGB13833.3 R23 -.0274 R13 .9831
SG113821.6 SG2 569.4 THA .70

ORBIT DETERMINATION ACCURACY
ST 2464.0 SR 485.5 SS 757.2
CRT .7138 CRS -.0432 CST -.7281
LSA 2549.5 MSA 615.7 SSA 33.5
EL1 2488.7 EL2 336.6 ALF 8.16

LAUNCH DATE DEC 2 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 835.004 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.138 GAL -2.61 AZL 88.00 HCA 247.51 SMA 189.14 ECC .22472 INC 2.0011 V1 30.210
RP 207.54 LAP -1.85 LOP 317.35 VP 24.027 GAP -11.74 AZP 90.77 TAL 345.68 TAP 233.19 RCA 146.64 APO 231.65 V2 26.396
RC 321.856 GL 20.26 GP -3.26 ZAL 111.87 ZAP 34.50 ETS 174.26 ZAE 55.05 ETE 177.36 ZAC 82.76 ETC 256.92 CLP 34.36

PLANETOCENTRIC CONIC

C3 11.144 VHL 3.338 DLA 17.25 RAL 191.26 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 5.082 DPA 1.75 RAP 171.68 ECC 1.1834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 11	2652.37	-27.23	71.14	48.83	98.08	17 44 23	2052.4	-25.83	62.75
90.00	9 42 54	4159.60	-1.27	169.73	44.10	61.71	10 52 13	3559.6	-5.04	163.08
100.00	18 31 28	2357.97	-28.39	49.28	48.63	99.78	19 10 46	1758.0	-26.74	40.86
100.00	10 54 17	3929.24	-.24	152.22	43.53	60.11	11 59 47	3329.2	-4.22	145.69
110.00	20 1 37	2075.94	-31.37	27.12	47.89	104.34	20 36 13	1475.9	-29.08	18.67
110.00	11 40 38	3784.02	2.34	139.60	41.92	55.89	12 43 42	3184.0	-2.15	133.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6683 TRA 3.9220 TC-17.9398 BAU 2.6729 SGT13945.0 SGR 593.5 SG3 782.6 ST 2432.2 SR 488.0 SS 765.7
RDE .2778 RRA .1921 RC3 .1132 FAU .13731 RRT .2507 RRF .2193 RTF .9827 CRT .6446 CRS .0427 CST -.7341
FDE -.2556 FRA 3.1051 FC-10.6668 BSP 48844 SGB13957.6 R23 -.0284 R13 .9827 LSA 2517.1 MSA 635.0 SSA 32.9
BDE .7237 BRA 3.9267 BC317.9402 FSP 2643 SG113945.8 SG2 574.5 THA .61 EL1 2453.0 EL2 369.9 ALF 7.54

LAUNCH DATE DEC 2 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 839.328 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.145 GAL -2.78 AZL 88.02 HCA 248.77 SMA 189.27 ECC .22579 INC 1.9845 V1 30.210
RP 207.42 LAP -1.85 LOP 318.61 VP 24.052 GAP -11.85 AZP 90.72 TAL 344.82 TAP 233.59 RCA 146.53 APO 232.00 V2 26.409
RC 322.714 GL 19.86 GP -3.18 ZAL 113.39 ZAP 33.89 ETS 174.25 ZAE 54.15 ETE 177.35 ZAC 82.97 ETC 256.86 CLP 33.76

PLANETOCENTRIC CONIC

C3 11.387 VHL 3.375 DLA 16.27 RAL 192.50 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 5.161 DPA 1.55 RAP 172.31 ECC 1.1874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 38	2620.34	-26.90	68.85	50.03	99.18	17 58 18	2020.3	-25.36	60.52
90.00	9 38 19	4200.55	.06	172.01	45.41	61.68	10 48 19	3600.6	-3.73	165.38
100.00	18 45 5	2328.62	-28.03	47.17	49.81	100.84	19 23 54	1728.6	-26.25	38.82
100.00	10 50 32	3967.51	1.05	154.32	44.85	60.12	11 56 40	3367.5	-2.93	147.80
110.00	20 13 32	2051.91	-30.95	25.37	49.03	105.30	20 47 44	1451.9	-28.54	17.00
110.00	11 38 35	3816.98	3.60	141.32	43.26	55.98	12 42 12	3217.0	-.89	135.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5540 TRA 4.1419 TC-17.7383 BAU 2.7006 SGT14066.9 SGR 593.9 SG3 747.0 ST 2417.5 SR 490.9 SS 776.0
RDE .2829 RRA .1906 RC3 .1349 FAU .13033 RRT .2192 RRF .1870 RTF .9823 CRT .5673 CRS .1215 CST -.7466
FDE -.3294 FRA 3.0822 FC3-9.9084 BSP 49313 SGB14079.4 R23 -.0294 R13 .9823 LSA 2502.7 MSA 650.3 SSA 32.1
BDE .6221 BRA 4.1463 BC317.7389 FSP 2532 SG114067.5 SG2 579.4 THA .53 EL1 2433.9 EL2 401.6 ALF 6.76

LAUNCH DATE DEC 2 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 843.651 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.152 GAL -2.95 AZL 88.03 HCA 250.03 SMA 189.39 ECC .22692 INC 1.9682 V1 30.210
RP 207.31 LAP -1.85 LOP 319.87 VP 24.075 GAP -11.96 AZP 90.67 TAL 343.94 TAP 233.97 RCA 146.42 APO 232.37 V2 26.422
RC 323.566 GL 19.46 GP -3.11 ZAL 114.92 ZAP 33.30 ETS 174.23 ZAE 53.25 ETE 177.35 ZAC 83.18 ETC 256.80 CLP 33.17

PLANETOCENTRIC CONIC

C3 11.654 VHL 3.414 DLA 15.29 RAL 193.73 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.242 DPA 1.34 RAP 172.96 ECC 1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 45	2589.53	-26.55	66.66	51.26	100.22	18 11 54	1989.5	-24.87	58.40
90.00	9 34 2	4241.00	1.36	174.27	46.76	61.71	10 44 43	3641.0	-2.43	167.64
100.00	18 58 26	2300.28	-27.65	45.15	51.02	101.84	19 36 46	1700.3	-25.74	36.87
100.00	10 47 2	4005.48	2.34	156.41	46.21	60.19	11 53 47	3405.5	-1.64	149.89
110.00	20 25 17	2028.56	-30.52	23.69	50.20	106.21	20 59 5	1428.6	-27.99	15.41
110.00	11 36 40	3849.97	4.85	143.05	44.65	56.12	12 40 50	3250.0	.37	136.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4373 TRA 4.3705 TC-17.5099 BAU 2.7282 SGT14187.8 SGR 594.8 SG3 712.4 ST 2423.2 SR 494.3 SS 787.7
RDE .2886 RRA .1889 RC3 .1547 FAU .12354 RRT .1887 RRF .1557 RTF .9819 CRT .4836 CRS .1929 CST -.7638
FDE -.3968 FRA 3.0568 FC3-9.1773 BSP 49808 SGB14200.3 R23 -.0304 R13 .9818 LSA 2509.6 MSA 661.6 SSA 31.4
BDE .5239 BRA 4.3746 BC317.5106 FSP 2427 SG114188.2 SG2 584.1 THA .45 EL1 2435.3 EL2 430.5 ALF 5.82

LAUNCH DATE DEC 2 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 847.971 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.159 GAL -3.12 AZL 88.05 HCA 251.29 SMA 189.52 ECC .22810 INC 1.9521 V1 30.210
RP 207.21 LAP -1.85 LOP 321.13 VP 24.098 GAP -12.07 AZP 90.63 TAL 343.05 TAP 234.34 RCA 146.29 APO 232.75 V2 26.434
RC 324.413 GL 19.05 GP -3.04 ZAL 116.45 ZAP 32.73 ETS 174.22 ZAE 52.37 ETE 177.34 ZAC 83.39 ETC 256.74 CLP 32.60

PLANETOCENTRIC CONIC

C3 11.946 VHL 3.456 DLA 14.31 RAL 194.96 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 5.323 DPA 1.12 RAP 173.61 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 33	2559.88	-26.17	64.57	52.50	101.21	18 25 13	1959.9	-24.36	56.37
90.00	9 30 1	4281.03	2.65	176.50	48.15	61.80	10 41 22	3681.0	-1.14	169.87
100.00	19 11 32	2272.93	-27.25	43.21	52.25	102.78	19 49 25	1672.9	-25.22	35.00
100.00	10 43 44	4043.21	3.62	158.48	47.62	60.31	11 51 7	3443.2	-.36	151.96
110.00	20 36 52	2005.93	-30.07	22.08	51.39	107.07	21 10 18	1405.9	-27.44	13.87
110.00	11 34 53	3882.98	6.10	144.79	46.08	56.30	12 39 36	3283.0	1.63	138.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3195 TRA 4.6067 TC-17.2522 BAU 2.7554 SGT14304.5 SGR 596.1 SG3 678.8 ST 2449.2 SR 498.1 SS 799.4
RDE .2948 RRA .1869 RC3 .1726 FAU .11692 RRT .1591 RRF .1254 RTF .9813 CRT .3971 CRS .2567 CST -.7835
FDE -.4575 FRA 3.0277 FC3-8.4736 BSP 50300 SGB14316.9 R23 -.0314 R13 .9813 LSA 2537.4 MSA 668.3 SSA 30.6
BDE .4347 BRA 4.6105 BC317.2530 FSP 2323 SG114304.8 SG2 588.5 THA .38 EL1 2457.5 EL2 455.6 ALF 4.78

LAUNCH DATE DEC 2 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 852.288 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.166	GAL	-3.30	AZL	88.06	HCA	252.55	SMA	189.65	ECC	.22933	INC	1.9362
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.119	GAP	-12.18	AZP	90.58	TAL	342.15	TAP	234.70	RCA	146.16	APO	233.14
RC	325.253	GL	18.63	GP	-2.97	ZAL	117.98	ZAP	32.17	ETS	174.20	ZAE	51.51	ETE	177.34	ZAC	83.61	ETC	256.68

V1 30.210 V2 26.444 CLP 32.04

PLANETOCENTRIC CONIC

C3	12.264	VHL	3.502	DLA	13.33	RAL	196.18	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	5.406	DPA	.89	RAP	174.28

ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 4	2531.33	-25.78	62.58	53.77	102.13	18 38 15	1931.3	-23.85	54.44
90.00	9 26 14	4320.68	3.93	178.72	49.59	61.93	10 38 15	3720.7	.14	172.08
100.00	19 24 22	2246.54	-26.84	41.36	53.50	103.68	20 1 49	1646.5	-24.69	33.22
100.00	10 40 37	4080.71	4.88	160.55	49.07	60.47	11 48 38	3480.7	.91	154.01
110.00	20 48 17	1984.01	-29.63	20.53	52.61	107.89	21 21 21	1384.0	-26.90	12.40
110.00	11 33 12	3916.01	7.35	146.54	47.54	56.52	12 38 28	3316.0	2.89	140.28

DIFFERENTIAL CORRECTIONS

TDE	.1979	TRA	4.8493	TC-16.9699	BAU	2.7826	
RDE	.3016	RRA	.1847	RC3 .1886	FAU	.11049	
FDE	-.5142	FRA	2.9947	FC3-7.7995	BSP	50763	
BDE	.3607	BRA	4.8528	BC316.9710	FSP	2222	

MID-COURSE EXECUTION ACCURACY

SGT14417.4	SGR	597.7	SG3	646.0			
RRT	.1301	RRF	.0955	RTF	.9807		
SGB14429.8	R23	-.0326	R13	.9807			
SG114417.6	SG2	592.6	THA	.31			

ORBIT DETERMINATION ACCURACY

ST	2493.1	SR	502.1	SS	811.2		
CRT	.3085	CRS	.3153	CST	-.8040		
LSA	2583.4	MSA	671.3	SSA	29.9		
EL1	2498.0	EL2	476.7	ALF	3.69		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 856.602 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.173	GAL	-3.49	AZL	88.08	HCA	253.82	SMA	189.78	ECC	.23061	INC	1.9206
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.140	GAP	-12.29	AZP	90.54	TAL	341.23	TAP	235.05	RCA	146.01	APO	233.54
RC	326.088	GL	18.21	GP	-2.91	ZAL	119.51	ZAP	31.62	ETS	174.19	ZAE	50.66	ETE	177.33	ZAC	83.82	ETC	256.62

V1 30.210 V2 26.454 CLP 31.50

PLANETOCENTRIC CONIC

C3	12.611	VHL	3.551	DLA	12.36	RAL	197.39	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	5.490	DPA	.65	RAP	174.96

ECC 1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 18	2503.87	-25.37	60.67	55.07	103.01	18 51 2	1903.9	-23.33	52.59
90.00	9 22 41	4360.01	5.18	180.93	51.07	62.12	10 35 21	3760.0	1.41	174.28
100.00	19 36 59	2221.10	-26.42	39.58	54.79	104.52	20 14 0	1621.1	-24.16	31.51
100.00	10 37 41	4118.01	6.13	162.62	50.55	60.68	11 46 19	3518.0	2.17	156.06
110.00	20 59 31	1962.82	-29.17	19.04	53.86	108.66	21 32 14	1362.8	-26.35	11.00
110.00	11 31 38	3949.06	8.58	148.30	49.05	56.78	12 37 27	3349.1	4.15	142.01

DIFFERENTIAL CORRECTIONS

TDE	.0750	TRA	5.1004	TC-16.6672	BAU	2.8102	
RDE	.3089	RRA	.1821	RC3 .2028	FAU	.10424	
FDE	-.5642	FRA	2.9583	FC3-7.1562	BSP	51235	
BDE	.3179	BRA	5.1036	BC316.6684	FSP	2122	

MID-COURSE EXECUTION ACCURACY

SGT14529.7	SGR	599.7	SG3	614.2			
RRT	.1021	RRF	.0666	RTF	.9799		
SGB14542.1	R23	-.0337	R13	.9799			
SG114529.8	SG2	596.5	THA	.24			

ORBIT DETERMINATION ACCURACY

ST	2555.0	SR	506.5	SS	821.7		
CRT	.2216	CRS	.3671	CST	-.8244		
LSA	2647.6	MSA	670.2	SSA	29.1		
EL1	2557.5	EL2	493.4	ALF	2.61		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 860.911 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.180	GAL	-3.67	AZL	88.09	HCA	255.08	SMA	189.90	ECC	.23196	INC	1.9051
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.159	GAP	-12.40	AZP	90.49	TAL	340.30	TAP	235.38	RCA	145.85	APO	233.96
RC	326.917	GL	17.79	GP	-2.85	ZAL	121.03	ZAP	31.09	ETS	174.17	ZAE	49.82	ETE	177.32	ZAC	84.04	ETC	256.57

V1 30.210 V2 26.463 CLP 30.97

PLANETOCENTRIC CONIC

C3	12.987	VHL	3.604	DLA	11.38	RAL	198.59	RAD	6567.5	VEL	11.592	PTH	2.03	VHP	5.576	DPA	.40	RAP	175.66

ECC 1.2137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 17	2477.45	-24.96	58.84	56.39	103.83	19 3 34	1877.4	-22.81	50.83
90.00	9 19 19	4399.04	6.42	183.13	52.59	62.36	10 32 38	3799.0	2.67	176.46
100.00	19 49 22	2196.59	-25.99	37.89	56.09	105.31	20 25 58	1596.6	-23.63	29.88
100.00	10 34 55	4155.13	7.36	164.69	52.08	60.95	11 44 10	3555.1	3.43	158.10
110.00	21 10 36	1942.37	-28.72	17.63	55.13	109.39	21 42 59	1342.4	-25.81	9.66
110.00	11 30 10	3982.12	9.81	150.07	50.59	57.09	12 36 32	3382.1	5.41	143.75

DIFFERENTIAL CORRECTIONS

TDE	-.0506	TRA	5.3590	TC-16.3421	BAU	2.8376	
RDE	.3168	RRA	.1792	RC3 .2151	FAU	.09818	
FDE	-.6095	FRA	2.9182	FC3-6.5451	BSP	51700	
BDE	.3208	BRA	5.3620	BC316.3436	FSP	2026	

MID-COURSE EXECUTION ACCURACY

SGT14638.3	SGR	601.8	SG3	583.4			
RRT	.0749	RRF	.0384	RTF	.9791		
SGB14650.7	R23	-.0351	R13	.9791			
SG114638.4	SG2	600.1	THA	.18			

ORBIT DETERMINATION ACCURACY

ST	2632.5	SR	511.1	SS	830.9		
CRT	.1377	CRS	.4139	CST	-.8435		
LSA	2727.1	MSA	666.1	SSA	28.4		
EL1	2633.4	EL2	506.1	ALF	1.59		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 865.216 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.187	GAL	-3.86	AZL	88.11	HCA	256.35	SMA	190.04	ECC	.23337	INC	1.8898
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.178	GAP	-12.52	AZP	90.45	TAL	339.35	TAP	235.70	RCA	145.69	APO	234.38
RC	327.742	GL	17.36	GP	-2.79	ZAL	122.55	ZAP	30.57	ETS	174.15	ZAE	48.99	ETE	177.32	ZAC	84.26	ETC	256.51

V1 30.210 V2 26.471 CLP 30.45

PLANETOCENTRIC CONIC

C3	13.394	VHL	3.660	DLA	10.42	RAL	199.79	RAD	6567.5	VEL	11.610	PTH	2.03	VHP	5.663	DPA	.14	RAP	176.36

ECC 1.2204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 0	2452.05	-24.53	57.10	57.73	104.60	19 15 52	1852.1	-22.29	49.15
90.00	9 16 8	4437.80	7.64	185.33	54.15	62.65	10 30 5	3837.8	3.91	178.63
100.00	20 1 31	2173.01	-25.56	36.27	57.42	106.06	20 37 44	1573.0	-23.11	28.33
100.00	10 32 18	4192.08	8.57	166.75	53.65	61.25	11 42 10	3592.1	4.67	160.14
110.00	21 21 31	1922.68	-28.27	16.27	56.43	110.07	21 53 34	1322.7	-25.27	8.38
110.00	11 28 47	4015.18	11.03	151.86	52.17	57.44	12 35 42	3415.2	6.66	145.49

DIFFERENTIAL CORRECTIONS

TDE	-.1769	TRA	5.6251	TC-16.0025	BAU	2.8659	
RDE	.3252	RRA	.1760	RC3 .2258	FAU	.09234	
FDE	-.6489	FRA	2.8735	FC3-5.9683	BSP	52149	
BDE	.3702	BRA	5.6278	BC316.0041	FSP	1932	

MID-COURSE EXECUTION ACCURACY

SGT14746.1	SGR	604.1	SG3	553.5			
RRT	.0485	RRF	.0110	RTF	.9782		
SGB14758.5	R23	-.0366	R13	.9782			
SG114746.1	SG2	603.4	THA	.11			

ORBIT DETERMINATION ACCURACY

ST	2723.1	SR	516.0	SS	837.8		
CRT	.0591	CRS	.4555	CST	-.8607		
LSA	2819.2	MSA	659.7	SSA	27.6		
EL1	2723.3	EL2	515.1	ALF	.67		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 869.515 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.195 GAL -4.06 AZL 88.13 HCA 257.62 SMA 190.17 ECC .23484 INC 1.8747 V1 30.210
RP 206.84 LAP -1.83 LOP 327.46 VP 24.195 GAP -12.63 AZP 90.40 TAL 338.39 TAP 236.01 RCA 145.51 APO 234.83 V2 26.477
RC 328.562 GL 16.93 GP -2.73 ZAL 124.05 ZAP 30.06 ETS 174.13 ZAE 48.18 ETE 177.31 ZAC 84.48 ETC 256.46 CLP 29.95

PLANETOCENTRIC CONIC

C3 13.835 VHL 3.720 DLA 9.46 RAL 200.98 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 5.751 DPA -.12 RAP 177.08 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 29	2427.67	-24.10	55.45	59.10	105.33	19 27 57	1827.7	-21.77	47.55
90.00	9 13 6	4476.32	8.84	187.52	55.75	62.99	10 27 43	3876.3	5.14	180.79
100.00	20 13 28	2150.35	-25.12	34.73	58.78	106.76	20 49 18	1550.4	-22.58	26.85
100.00	10 29 49	4228.86	9.77	168.83	55.25	61.61	11 40 17	3628.9	5.90	162.18
110.00	21 32 16	1903.75	-27.82	14.98	57.76	110.72	22 4 0	1303.8	-24.75	7.16
110.00	11 27 30	4048.23	12.23	153.66	53.79	57.83	12 34 58	3448.2	7.90	147.25

DIFFERENTIAL CORRECTIONS
TDE -.3066 TRA 5.8980 TC-15.6461 BAU 2.8943
RDE .3341 RRA .1725 RC3 .2348 FAU .08663
FDE -.6841 FRA 2.8252 FC3-5.4209 BSP 52560
BDE .4535 BRA 5.9005 BC315.6478 FSP 1839

MID-COURSE EXECUTION ACCURACY
SGT14850.1 SGR 606.6 SG3 524.4
RRT .0227 RRF -.0158 RTF .9771
SGB14862.5 R23 -.0381 R13 .9771
SG114850.1 SG2 606.5 THA .05

ORBIT DETERMINATION ACCURACY
ST 2824.8 SR 521.0 SS 842.8
CRT -.0147 CRS .4934 CST -.8760
LSA 2921.7 MSA 651.6 SSA 26.9
EL1 2824.9 EL2 521.0 ALF 179.84

LAUNCH DATE DEC 2 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 873.808 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.202 GAL -4.26 AZL 88.14 HCA 258.88 SMA 190.30 ECC .23637 INC 1.8597 V1 30.210
RP 206.79 LAP -1.82 LOP 328.73 VP 24.211 GAP -12.75 AZP 90.36 TAL 337.42 TAP 236.30 RCA 145.32 APO 235.28 V2 26.483
RC 329.378 GL 16.50 GP -2.68 ZAL 125.55 ZAP 29.57 ETS 174.11 ZAE 47.38 ETE 177.30 ZAC 84.70 ETC 256.40 CLP 29.46

PLANETOCENTRIC CONIC

C3 14.311 VHL 3.783 DLA 8.51 RAL 202.15 RAD 6567.6 VEL 11.649 PTH 2.04 VHP 5.841 DPA -.40 RAP 177.80 ECC 1.2355

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 43	2404.28	-23.67	53.87	60.49	106.01	19 39 48	1804.3	-21.25	46.03
90.00	9 10 14	4514.59	10.01	189.72	57.39	63.37	10 25 29	3914.6	6.36	182.94
100.00	20 25 11	2128.62	-24.69	33.26	60.16	107.42	21 0 40	1528.6	-22.07	25.44
100.00	10 27 27	4265.49	10.95	170.91	56.89	62.01	11 38 33	3665.5	7.12	164.21
110.00	21 42 51	1885.61	-27.38	13.76	59.11	111.32	22 14 16	1285.6	-24.23	6.00
110.00	11 26 17	4081.26	13.42	155.48	55.44	58.26	12 34 19	3481.3	9.13	149.01

DIFFERENTIAL CORRECTIONS
TDE -.4373 TRA 6.1802 TC-15.2753 BAU 2.9229
RDE .3436 RRA .1686 RC3 .2422 FAU .08111
FDE -.7146 FRA 2.7733 FC3-4.9067 BSP 52973
BDE .5562 BRA 6.1825 BC315.2773 FSP 1749

MID-COURSE EXECUTION ACCURACY
SGT14952.7 SGR 609.2 SG3 496.3
RRT -.0021 RRF -.0420 RTF .9759
SGB14965.1 R23 .0400 R13 -.9759
SG114952.7 SG2 609.2 THA 180.00

ORBIT DETERMINATION ACCURACY
ST 2936.1 SR 526.2 SS 845.6
CRT -.0820 CRS .5277 CST -.8890
LSA 3033.0 MSA 642.8 SSA 26.1
EL1 2936.5 EL2 524.4 ALF 179.13

LAUNCH DATE DEC 2 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 878.094 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.209 GAL -4.47 AZL 88.16 HCA 260.15 SMA 190.43 ECC .23798 INC 1.8448 V1 30.210
RP 206.75 LAP -1.82 LOP 330.00 VP 24.227 GAP -12.88 AZP 90.32 TAL 336.43 TAP 236.58 RCA 145.11 APO 235.75 V2 26.488
RC 330.190 GL 16.07 GP -2.63 ZAL 127.03 ZAP 29.09 ETS 174.09 ZAE 46.60 ETE 177.30 ZAC 84.92 ETC 256.35 CLP 28.98

PLANETOCENTRIC CONIC

C3 14.824 VHL 3.850 DLA 7.56 RAL 203.31 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 5.932 DPA -.68 RAP 178.54 ECC 1.2440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 44	2381.87	-23.25	52.37	61.91	106.64	19 51 26	1781.9	-20.74	44.59
90.00	9 7 31	4552.63	11.16	191.92	59.06	63.81	10 28 23	3952.6	7.55	185.10
100.00	20 36 43	2107.80	-24.25	31.86	61.57	108.03	21 11 50	1507.8	-21.56	24.10
100.00	10 25 13	4301.94	12.11	173.00	58.58	62.46	11 36 55	3701.9	8.32	166.25
110.00	21 53 15	1868.25	-26.94	12.60	60.48	111.88	22 24 24	1268.3	-23.73	4.90
110.00	11 25 10	4114.25	14.60	157.31	57.13	58.74	12 33 44	3514.3	10.35	150.79

DIFFERENTIAL CORRECTIONS
TDE -.5693 TRA 6.4699 TC-14.8943 BAU 2.9521
RDE .3537 RRA .1644 RC3 .2483 FAU .07572
FDE -.7400 FRA 2.7178 FC3-4.4221 BSP 53377
BDE .6703 BRA 6.4719 BC314.8964 FSP 1661

MID-COURSE EXECUTION ACCURACY
SGT15053.0 SGR 612.0 SG3 468.9
RRT -.0263 RRF -.0674 RTF .9745
SGB15065.4 R23 .0418 R13 -.9745
SG115053.0 SG2 611.7 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 3053.9 SR 531.6 SS 845.6
CRT -.1431 CRS .5583 CST -.9001
LSA 3150.0 MSA 633.3 SSA 25.5
EL1 3054.9 EL2 525.9 ALF 178.53

LAUNCH DATE DEC 2 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 882.372 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.217 GAL -4.68 AZL 88.17 HCA 261.42 SMA 190.57 ECC .23965 INC 1.8301 V1 30.210
RP 206.71 LAP -1.81 LOP 331.27 VP 24.241 GAP -13.00 AZP 90.27 TAL 335.43 TAP 236.85 RCA 144.90 APO 236.24 V2 26.492
RC 331.000 GL 15.64 GP -2.58 ZAL 128.50 ZAP 28.62 ETS 174.07 ZAE 45.82 ETE 177.29 ZAC 85.14 ETC 256.30 CLP 28.51

PLANETOCENTRIC CONIC

C3 15.376 VHL 3.921 DLA 6.63 RAL 204.47 RAD 6567.6 VEL 11.694 PTH 2.06 VHP 6.025 DPA -.97 RAP 179.29 ECC 1.2530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 31	2360.44	-22.82	50.94	63.35	107.24	20 2 52	1760.4	-20.25	43.21
90.00	9 4 55	4590.45	12.29	194.13	60.78	64.29	10 21 25	3990.5	8.73	187.25
100.00	20 48 1	2087.89	-23.83	30.54	62.99	108.60	21 22 49	1487.9	-21.07	22.83
100.00	10 23 6	4338.24	13.24	175.10	60.29	62.95	11 35 24	3738.2	9.51	168.30
110.00	22 3 30	1851.69	-26.52	11.50	61.88	112.41	22 34 22	1251.7	-23.24	3.86
110.00	11 24 7	4147.20	15.75	159.17	58.86	59.26	12 33 14	3547.2	11.56	152.57

DIFFERENTIAL CORRECTIONS
TDE -.7023 TRA 6.7681 TC-14.5025 BAU 2.9816
RDE .3643 RRA .1598 RC3 .2529 FAU .07047
FDE -.7607 FRA 2.6579 FC3-3.9678 BSP 53788
BDE .7911 BRA 6.7700 BC314.5047 FSP 1575

MID-COURSE EXECUTION ACCURACY
SGT15150.2 SGR 614.7 SG3 442.3
RRT -.0496 RRF -.0921 RTF .9730
SGB15162.7 R23 .0438 R13 -.9730
SG115150.3 SG2 614.0 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 3176.5 SR 537.0 SS 842.7
CRT -.1979 CRS .5862 CST -.9094
LSA 3271.0 MSA 623.8 SSA 24.8
EL1 3178.4 EL2 526.0 ALF 178.03

LAUNCH DATE DEC 2 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 886.643 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.224 GAL -4.89 AZL 88.18 HCA 262.69 SMA 190.70 ECC .24140 INC 1.8154 V1 30.210
RP 206.69 LAP -1.80 LOP 332.54 VP 24.254 GAP -13.13 AZP 90.23 TAL 334.41 TAP 237.10 RCA 144.67 APO 236.74 V2 26.494
RC 331.806 GL 15.21 GP -2.53 ZAL 129.96 ZAP 28.16 ETS 174.05 ZAE 45.06 ETE 177.28 ZAC 85.36 ETC 256.25 CLP 28.06

PLANETOCENTRIC CONIC

C3 15.969 VHL 3.996 DLA 5.71 RAL 205.61 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 6.120 DPA -1.26 RAP 180.05 ECC 1.2628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 5	2339.97	-22.40	49.58	64.81	107.79	20 14 5	1740.0	-19.76	41.91
90.00	9 2 26	4628.05	13.39	196.34	62.53	64.81	10 19 34	4028.1	9.89	189.41
100.00	20 59 8	2068.89	-23.41	29.28	64.44	109.14	21 33 37	1468.9	-20.58	21.63
100.00	10 21 4	4374.37	14.35	177.21	62.05	63.49	11 33 59	3774.4	10.67	170.34
110.00	22 13 34	1835.93	-26.10	10.46	63.30	112.90	22 44 10	1235.9	-22.77	2.88
110.00	11 23 8	4180.09	16.89	161.04	60.63	59.83	12 32 48	3580.1	12.75	154.37

DIFFERENTIAL CORRECTIONS
TDE -.8379 TRA 7.0741 TC-14.1060 BAU 3.0120
RDE .3754 RRA .1548 RC3 .2563 FAU .06541
FDE -.7779 FRA 2.5945 FC3-3.5458 BSP 54154
BDE .9181 BRA 7.0758 BC314.1083 FSP 1491

MID-COURSE EXECUTION ACCURACY
SGT15246.3 SGR 617.6 SG3 416.6
RRT -.0725 RRF -.1165 RTF .9712
SGB15258.8 R23 .0461 R13 -.9712
SG115246.3 SG2 615.9 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3302.9 SR 542.4 SS 837.5
CRT -.2479 CRS .6119 CST -.9172
LSA 3395.1 MSA 614.3 SSA 24.2
EL1 3305.7 EL2 525.0 ALF 177.61

LAUNCH DATE DEC 2 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 890.904 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.232 GAL -5.11 AZL 88.20 HCA 263.96 SMA 190.84 ECC .24323 INC 1.8008 V1 30.210
RP 206.68 LAP -1.79 LOP 333.81 VP 24.266 GAP -13.26 AZP 90.19 TAL 333.39 TAP 237.34 RCA 144.42 APO 237.26 V2 26.496
RC 332.609 GL 14.79 GP -2.48 ZAL 131.40 ZAP 27.72 ETS 174.03 ZAE 44.30 ETE 177.27 ZAC 85.58 ETC 256.20 CLP 27.61

PLANETOCENTRIC CONIC

C3 16.607 VHL 4.075 DLA 4.81 RAL 206.73 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 6.216 DPA -1.57 RAP 180.82 ECC 1.2733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 27	2320.46	-21.99	48.30	66.29	108.30	20 25 7	1720.5	-19.28	40.67
90.00	9 0 4	4665.43	14.46	198.56	64.31	65.39	10 17 50	4065.4	11.02	191.57
100.00	21 10 3	2050.79	-23.00	28.09	65.91	109.64	21 44 14	1450.8	-20.11	20.49
100.00	10 19 9	4410.33	15.43	179.33	63.84	64.08	11 32 40	3810.3	11.82	172.40
110.00	22 23 29	1820.98	-25.70	9.48	64.75	113.35	22 53 50	1221.0	-22.32	1.96
110.00	11 22 13	4212.91	18.00	162.94	62.43	60.44	12 32 26	3612.9	13.93	156.19

DIFFERENTIAL CORRECTIONS
TDE -.9744 TRA 7.3876 TC-13.7060 BAU 3.0435
RDE .3870 RRA .1495 RC3 .2585 FAU .06048
FDE -.7909 FRA 2.5270 FC3-3.1528 BSP 54488
BDE 1.0485 BRA 7.3891 BC313.7084 FSP 1407

MID-COURSE EXECUTION ACCURACY
SGT15339.9 SGR 620.4 SG3 391.7
RRT -.0947 RRF -.1403 RTF .9691
SGB15352.5 R23 .0486 R13 -.9691
SG115340.1 SG2 617.6 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3430.4 SR 547.8 SS 829.7
CRT -.2925 CRS .6356 CST -.9235
LSA 3519.9 MSA 605.2 SSA 23.6
EL1 3434.2 EL2 523.3 ALF 177.26

LAUNCH DATE DEC 2 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 895.154 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.239 GAL -5.34 AZL 88.21 HCA 265.23 SMA 190.98 ECC .24514 INC 1.7863 V1 30.210
RP 206.67 LAP -1.78 LOP 335.08 VP 24.278 GAP -13.40 AZP 90.15 TAL 332.34 TAP 237.57 RCA 144.16 APO 237.79 V2 26.497
RC 333.409 GL 14.36 GP -2.44 ZAL 132.82 ZAP 27.28 ETS 174.00 ZAE 43.56 ETE 177.26 ZAC 85.81 ETC 256.16 CLP 27.18

PLANETOCENTRIC CONIC

C3 17.291 VHL 4.158 DLA 3.92 RAL 207.85 RAD 6567.7 VEL 11.776 PTH 2.08 VHP 6.314 DPA -1.88 RAP 181.60 ECC 1.2846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 36	2301.88	-21.59	47.09	67.79	108.78	20 35 57	1701.9	-18.82	39.50
90.00	8 57 49	4702.59	15.50	200.79	66.13	66.00	10 16 12	4102.6	12.13	193.74
100.00	21 20 46	2033.60	-22.60	26.97	67.41	110.10	21 54 40	1433.6	-19.66	19.41
100.00	10 17 20	4446.11	16.48	181.47	65.67	64.70	11 31 26	3846.1	12.94	174.47
110.00	22 33 13	1806.83	-25.32	8.56	66.21	113.77	23 3 20	1206.8	-21.89	1.09
110.00	11 21 22	4245.64	19.09	164.85	64.26	61.09	12 32 7	3645.6	15.08	158.02

DIFFERENTIAL CORRECTIONS
TDE-1.1129 TRA 7.7104 TC-13.3024 BAU 3.0756
RDE .3992 RRA .1437 RC3 .2596 FAU .05570
FDE -.8002 FRA 2.4559 FC3-2.7886 BSP 54812
BDE 1.1823 BRA 7.7117 BC313.3049 FSP 1327

MID-COURSE EXECUTION ACCURACY
SGT15431.7 SGR 623.3 SG3 367.6
RRT -.1162 RRF -.1636 RTF .9667
SGB15444.3 R23 .0514 R13 -.9667
SG115431.9 SG2 619.1 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3559.2 SR 553.3 SS 819.4
CRT -.3328 CRS .6574 CST -.9287
LSA 3645.4 MSA 596.4 SSA 23.0
EL1 3564.0 EL2 521.0 ALF 176.97

LAUNCH DATE DEC 2 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 899.394 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.247 GAL -5.57 AZL 88.23 HCA 266.50 SMA 191.12 ECC .24713 INC 1.7718 V1 30.210
RP 206.67 LAP -1.77 LOP 336.35 VP 24.288 GAP -13.54 AZP 90.11 TAL 331.29 TAP 237.79 RCA 143.89 APO 238.35 V2 26.497
RC 334.204 GL 13.94 GP -2.40 ZAL 134.22 ZAP 26.86 ETS 173.98 ZAE 42.83 ETE 177.25 ZAC 86.04 ETC 256.12 CLP 26.76

PLANETOCENTRIC CONIC

C3 18.024 VHL 4.245 DLA 3.04 RAL 208.95 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 6.414 DPA -2.19 RAP 182.39 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 32	2284.24	-21.20	45.94	69.32	109.23	20 46 36	1684.2	-18.38	38.40
90.00	8 55 40	4739.53	16.51	203.03	67.99	66.67	10 14 39	4139.5	13.21	195.91
100.00	21 31 18	2017.29	-22.22	25.91	68.92	110.53	22 4 55	1417.3	-19.22	18.40
100.00	10 15 35	4481.71	17.50	183.61	67.53	65.38	11 30 17	3881.7	14.04	176.54
110.00	22 42 48	1793.49	-24.95	7.70	67.69	114.16	23 12 41	1193.5	-21.47	.27
110.00	11 20 34	4278.27	20.15	166.78	66.14	61.78	12 31 53	3678.3	16.22	159.86

DIFFERENTIAL CORRECTIONS
TDE-1.2520 TRA 8.0421 TC-12.8980 BAU 3.1086
RDE .4118 RRA .1375 RC3 .2597 FAU .05104
FDE -.8057 FRA 2.3802 FC3-2.4514 BSP 55123
BDE 1.3180 BRA 8.0433 BC312.9007 FSP 1247

MID-COURSE EXECUTION ACCURACY
SGT15521.7 SGR 626.1 SG3 344.1
RRT -.1372 RRF -.1866 RTF .9640
SGB15534.3 R23 .0546 R13 -.9640
SG115521.9 SG2 620.2 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3687.0 SR 558.6 SS 806.4
CRT -.3687 CRS .6778 CST -.9327
LSA 3769.6 MSA 588.3 SSA 22.4
EL1 3692.9 EL2 518.4 ALF 176.74

LAUNCH DATE DEC 2 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 903.622 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.255 GAL -5.81 AZL 88.24 HCA 267.77 SMA 191.26 ECC .24920 INC 1.7573 V1 30.210
RP 206.68 LAP -1.76 LOP 337.62 VP 24.297 GAP -13.68 AZP 90.07 TAL 330.22 TAP 237.99 RCA 143.60 APO 258.92 V2 26.495
RC 334.996 GL 13.53 GP -2.36 ZAL 135.61 ZAP 26.45 ETS 173.96 ZAE 42.11 ETE 177.23 ZAC 86.26 ETC 256.08 CLP 26.35

PLANETOCENTRIC CONIC

C3 18.810 VHL 4.337 DLA 2.18 RAL 210.04 RAD 6567.8 VEL 11.840 PTH 2.10 VHP 6.515 DPA -2.51 RAP 183.19 ECC 1.3096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 17	2267.51	-20.82	44.86	70.86	109.64	20 57 4	1667.5	-17.95	37.36
90.00	8 53 36	4776.25	17.49	205.29	69.88	67.37	10 13 12	4176.2	14.27	198.09
100.00	21 41 38	2001.86	-21.84	24.92	70.45	110.93	22 15 0	1401.9	-18.80	17.44
100.00	10 13 56	4517.13	18.50	185.78	69.42	66.09	11 29 13	3917.1	15.11	178.62
110.00	22 52 13	1780.96	-24.60	6.89	69.20	114.52	23 21 54	1181.0	-21.08	359.51
110.00	11 19 50	4310.80	21.18	168.74	68.05	62.52	12 31 41	3710.8	17.34	161.73

DIFFERENTIAL CORRECTIONS
TDE-1.3929 TRA 8.3828 TC-12.4952 BAU 3.1428
RDE .4250 RRA .1310 RC3 .2589 FAU .04650
FDE -.8078 FRA 2.3010 FC3-2.1404 BSP 55393
BDE 1.4563 BRA 8.3838 BC312.4978 FSP 1169

MID-COURSE EXECUTION ACCURACY
SGT15610.1 SGR 629.0 SG3 321.4
RRT -.1577 RRF -.2091 RTF .9609
SGB15622.8 R23 .0581 R13 -.9609
SG115610.4 SG2 621.1 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3813.9 SR 563.9 SS 791.1
CRT -.4011 CRS .6968 CST -.9359
LSA 3892.6 MSA 580.5 SSA 21.9
EL1 3820.7 EL2 515.6 ALF 176.54

LAUNCH DATE DEC 2 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 907.837 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.262 GAL -6.05 AZL 88.26 HCA 269.03 SMA 191.40 ECC .25137 INC 1.7429 V1 30.210
RP 206.70 LAP -1.74 LOP 338.89 VP 24.305 GAP -13.83 AZP 90.03 TAL 329.14 TAP 238.17 RCA 143.29 APO 239.51 V2 26.493
RC 335.784 GL 13.12 GP -2.32 ZAL 136.97 ZAP 26.05 ETS 173.93 ZAE 41.40 ETE 177.22 ZAC 86.49 ETC 256.04 CLP 25.95

PLANETOCENTRIC CONIC

C3 19.650 VHL 4.433 DLA 1.34 RAL 211.11 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 6.619 DPA -2.84 RAP 183.99 ECC 1.3234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 50	2251.68	-20.45	43.84	72.42	110.02	21 7 21	1651.7	-17.54	36.38
90.00	8 51 38	4812.74	18.43	207.55	71.80	68.11	10 11 50	4212.7	15.30	200.27
100.00	21 51 47	1987.30	-21.49	23.98	72.00	111.30	22 24 55	1387.3	-18.40	16.55
100.00	10 12 21	4552.36	19.45	187.96	71.35	66.85	11 28 13	3952.4	16.15	180.72
110.00	23 1 28	1769.22	-24.26	6.15	70.72	114.85	23 30 57	1169.2	-20.71	358.80
110.00	11 19 10	4343.20	22.19	170.72	69.99	63.30	12 31 33	3743.2	18.43	163.61

DIFFERENTIAL CORRECTIONS
TDE-1.5343 TRA 8.7316 TC-12.0936 BAU 3.1778
RDE .4386 RRA .1240 RC3 .2573 FAU .04207
FDE -.8063 FRA 2.2181 FC3-1.8536 BSP 55644
BDE 1.5958 BRA 8.7325 BC312.0963 FSP 1092

MID-COURSE EXECUTION ACCURACY
SGT15694.9 SGR 631.8 SG3 299.4
RRT -.1776 RRF -.2311 RTF .9571
SGB15707.6 R23 .0619 R13 -.9571
SG115695.3 SG2 621.7 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 3937.7 SR 569.0 SS 773.4
CRT -.4301 CRS .7145 CST -.9383
LSA 4012.3 MSA 573.2 SSA 21.4
EL1 3945.5 EL2 512.7 ALF 176.38

LAUNCH DATE DEC 2 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 912.038 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.270 GAL -6.30 AZL 88.27 HCA 270.30 SMA 191.54 ECC .25363 INC 1.7286 V1 30.210
RP 206.73 LAP -1.73 LOP 340.16 VP 24.311 GAP -13.99 AZP 89.99 TAL 328.05 TAP 238.35 RCA 142.96 APO 240.12 V2 26.490
RC 336.567 GL 12.71 GP -2.28 ZAL 138.31 ZAP 25.66 ETS 173.91 ZAE 40.70 ETE 177.20 ZAC 86.72 ETC 256.00 CLP 25.57

PLANETOCENTRIC CONIC

C3 20.550 VHL 4.533 DLA .51 RAL 212.17 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 6.724 DPA -3.18 RAP 184.81 ECC 1.3382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 11	2236.74	-20.10	42.89	74.00	110.38	21 17 28	1636.7	-17.15	35.46
90.00	8 49 45	4849.00	19.33	209.83	73.75	68.90	10 10 34	4249.0	16.29	202.47
100.00	22 1 46	1973.59	-21.15	23.11	73.57	111.63	22 34 39	1373.6	-18.02	15.71
100.00	10 10 51	4587.38	20.38	190.15	73.31	67.64	11 27 18	3987.4	17.17	182.82
110.00	23 10 33	1758.26	-23.95	5.45	72.26	115.15	23 39 52	1158.3	-20.36	358.15
110.00	11 18 33	4375.47	23.16	172.72	71.97	64.13	12 31 28	3775.5	19.49	165.50

DIFFERENTIAL CORRECTIONS
TDE-1.6759 TRA 9.0904 TC-11.6953 BAU 3.2138
RDE .4528 RRA .1166 RC3 .2550 FAU .03776
FDE -.8011 FRA 2.1309 FC3-1.5909 BSP 55885
BDE 1.7360 BRA 9.0911 BC311.6981 FSP 1017

MID-COURSE EXECUTION ACCURACY
SGT15777.8 SGR 634.5 SG3 278.1
RRT -.1968 RRF -.2527 RTF .9528
SGB15790.5 R23 .0661 R13 -.9528
SG115778.3 SG2 622.1 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 4058.3 SR 574.0 SS 753.0
CRT -.4559 CRS .7312 CST -.9399
LSA 4128.6 MSA 566.4 SSA 20.9
EL1 4066.8 EL2 509.8 ALF 176.25

LAUNCH DATE DEC 2 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 916.223 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.278 GAL -6.56 AZL 88.29 HCA 271.57 SMA 191.68 ECC .25599 INC 1.7142 V1 30.210
RP 206.77 LAP -1.71 LOP 341.43 VP 24.317 GAP -14.14 AZP 89.95 TAL 326.94 TAP 238.51 RCA 142.61 APO 240.75 V2 26.485
RC 337.346 GL 12.31 GP -2.24 ZAL 139.64 ZAP 25.28 ETS 173.88 ZAE 40.01 ETE 177.19 ZAC 86.95 ETC 255.97 CLP 25.19

PLANETOCENTRIC CONIC

C3 21.511 VHL 4.638 DLA -.30 RAL 213.22 RAD 6567.9 VEL 11.954 PTH 2.13 VHP 6.832 DPA -3.52 RAP 185.64 ECC 1.3540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 21	2222.67	-19.76	41.99	75.59	110.70	21 27 24	1622.7	-16.77	34.60
90.00	8 47 56	4885.03	20.20	212.12	75.74	69.72	10 9 21	4285.0	17.26	204.68
100.00	22 11 34	1960.72	-20.82	22.29	75.15	111.95	22 44 14	1360.7	-17.66	14.92
100.00	10 9 25	4622.20	21.26	192.35	75.31	68.48	11 26 27	4022.2	18.15	184.94
110.00	23 19 29	1748.09	-23.65	4.81	73.81	115.43	23 48 37	1148.1	-20.03	357.54
110.00	11 17 59	4407.68	24.10	174.74	73.98	64.99	12 31 26	3807.6	20.53	167.42

DIFFERENTIAL CORRECTIONS
TDE-1.8194 TRA 9.4581 TC-11.3027 BAU 3.2512
RDE .4674 RRA .1087 RC3 .2520 FAU .03357
FDE -.7934 FRA 2.0397 FC3-1.3509 BSP 56094
BDE 1.8784 BRA 9.4587 BC311.3055 FSP 944

MID-COURSE EXECUTION ACCURACY
SGT15858.6 SGR 637.2 SG3 257.5
RRT -.2157 RRF -.2741 RTF .9476
SGB15871.4 R23 .0711 R13 -.9476
SG115859.2 SG2 622.2 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4175.8 SR 578.8 SS 731.0
CRT -.4794 CRS .7474 CST -.9407
LSA 4241.8 MSA 560.0 SSA 20.5
EL1 4185.2 EL2 506.8 ALF 176.14

LAUNCH DATE DEC 2 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 920.392 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.285	GAL	-6.82	AZL	88.30	HCA	272.84	SMA	191.82	ECC	.25845	INC	1.6998
RP	206.81	LAP	-1.70	LOP	342.69	VP	24.322	GAP	-14.31	AZP	89.92	TAL	325.82	TAP	238.66	RCA	142.25	APO	241.40
RC	338.120	GL	11.92	GP	-2.21	ZAL	140.94	ZAP	24.92	ETS	173.86	ZAE	39.33	ETE	177.17	ZAC	87.18	ETC	255.94

V1 30.210 V2 26.480 CLP 24.82

PLANETOCENTRIC CONIC

C3	22.538	VHL	4.747	DLA	-1.09	RAL	214.26	RAD	6567.9	VEL	11.997	PTH	2.14	VHP	6.942	DPA	-3.86	RAP	186.47

ECC 1.3709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 21	2209.44	-19.44	41.16	77.21	111.00	21 37 10	1609.4	-16.42	33.79
90.00	8 46 12	4920.82	21.03	214.41	77.76	70.59	10 8 13	4320.8	18.19	206.89
100.00	22 21 11	1948.68	-20.51	21.53	76.76	112.23	22 53 40	1348.7	-17.32	14.19
100.00	10 8 3	4656.81	22.11	194.58	77.33	69.35	11 25 40	4056.8	19.10	187.07
110.00	23 28 16	1738.69	-23.38	4.22	75.38	115.68	23 57 15	1138.7	-19.73	356.98
110.00	11 17 27	4439.57	25.01	176.78	76.03	65.90	12 31 27	3839.6	21.54	169.35

DIFFERENTIAL CORRECTIONS

TDE	-1.9634	TRA	9.8356	TC	-10.9162	BAU	3.2900
RDE	.4824	RRA	.1004	RC3	.2485	FAU	.02946
FDE	-.7825	FRA	1.9444	FC3	-1.1318	BSP	56276
BDE	2.0218	BRA	9.8361	BC3	10.9191	FSP	872

MID-COURSE EXECUTION ACCURACY

SGT	15937.4	SGR	639.8	SG3	237.5		
RRT	-.2340	RRF	-.2951	RTF	.9414		
SGB	15950.2	R23	.0766	R13	-.9415		
SG1	15938.1	SG2	622.0	THA	179.46		

ORBIT DETERMINATION ACCURACY

ST	4289.2	SR	583.4	SS	706.8		
CRT	-.5005	CRS	.7629	CST	-.9409		
LSA	4350.9	MSA	554.1	SSA	20.0		
EL1	4299.3	EL2	503.9	ALF	176.05		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 924.544 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.293	GAL	-7.09	AZL	88.31	HCA	274.11	SMA	191.97	ECC	.26101	INC	1.6853
RP	206.87	LAP	-1.68	LOP	343.96	VP	24.326	GAP	-14.47	AZP	89.88	TAL	324.68	TAP	238.79	RCA	141.86	APO	242.07
RC	338.890	GL	11.53	GP	-2.18	ZAL	142.22	ZAP	24.56	ETS	173.83	ZAE	38.66	ETE	177.15	ZAC	87.42	ETC	255.92

V1 30.210 V2 26.474 CLP 24.47

PLANETOCENTRIC CONIC

C3	23.635	VHL	4.862	DLA	-1.86	RAL	215.28	RAD	6568.0	VEL	12.042	PTH	2.15	VHP	7.054	DPA	-4.21	RAP	187.32

ECC 1.3890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 9	2197.05	-19.14	40.37	78.83	111.28	21 46 47	1597.0	-16.08	33.04
90.00	8 44 33	4956.37	21.81	216.72	79.80	71.49	10 7 9	4356.4	19.08	209.12
100.00	22 30 38	1937.45	-20.22	20.82	78.37	112.50	23 2 56	1337.4	-17.00	13.51
100.00	10 6 45	4691.20	22.92	196.81	79.39	70.26	11 24 57	4091.2	20.02	189.21
110.00	23 36 54	1730.04	-23.12	3.68	76.97	115.91	24 5 44	1130.0	-19.44	356.47
110.00	11 16 59	4471.38	25.87	178.85	78.11	66.84	12 31 31	3871.4	22.51	171.30

DIFFERENTIAL CORRECTIONS

TDE	-2.1101	TRA	10.2206	TC	-10.5395	BAU	3.3311
RDE	.4980	RRA	.0916	RC3	.2445	FAU	.02547
FDE	-.7690	FRA	1.8450	FC3	-.9328	BSP	56395
BDE	2.1680	BRA	10.2210	BC3	10.5423	FSP	802

MID-COURSE EXECUTION ACCURACY

SGT	16013.9	SGR	642.4	SG3	218.2		
RRT	-.2521	RRF	-.3159	RTF	.9339		
SGB	16026.7	R23	.0828	R13	-.9340		
SG1	16014.7	SG2	621.6	THA	179.42		

ORBIT DETERMINATION ACCURACY

ST	4399.0	SR	587.9	SS	680.9		
CRT	-.5199	CRS	.7780	CST	-.9405		
LSA	4456.3	MSA	548.3	SSA	19.6		
EL1	4409.7	EL2	500.9	ALF	175.97		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 928.676 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.301	GAL	-7.37	AZL	88.33	HCA	275.37	SMA	192.11	ECC	.26368	INC	1.6709
RP	206.93	LAP	-1.66	LOP	345.23	VP	24.329	GAP	-14.65	AZP	89.84	TAL	323.54	TAP	238.91	RCA	141.46	APO	242.77
RC	339.657	GL	11.15	GP	-2.14	ZAL	143.48	ZAP	24.21	ETS	173.81	ZAE	38.01	ETE	177.13	ZAC	87.65	ETC	255.89

V1 30.210 V2 26.466 CLP 24.12

PLANETOCENTRIC CONIC

C3	24.805	VHL	4.981	DLA	-2.62	RAL	216.29	RAD	6568.0	VEL	12.091	PTH	2.16	VHP	7.168	DPA	-4.56	RAP	188.17

ECC 1.4082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 48	2185.46	-18.85	39.65	80.47	111.53	21 56 13	1585.5	-15.76	32.33
90.00	8 42 58	4991.68	22.56	219.05	81.87	72.42	10 6 9	4391.7	19.94	211.35
100.00	22 39 55	1927.00	-19.95	20.17	80.00	112.74	23 12 2	1327.0	-16.70	12.88
100.00	10 5 31	4725.37	23.68	199.06	81.47	71.21	11 24 17	4125.4	20.90	191.37
110.00	23 45 22	1722.12	-22.88	3.18	78.57	116.12	24 14 4	1122.1	-19.19	356.00
110.00	11 16 34	4503.02	26.70	180.93	80.22	67.82	12 31 37	3903.0	23.46	173.27

DIFFERENTIAL CORRECTIONS

TDE	-2.2561	TRA	10.6181	TC	-10.1676	BAU	3.3728
RDE	.5140	RRA	.0824	RC3	.2401	FAU	.02154
FDE	-.7523	FRA	1.7418	FC3	-.7518	BSP	56515
BDE	2.3139	BRA	10.6184	BC3	10.1704	FSP	733

MID-COURSE EXECUTION ACCURACY

SGT	16088.2	SGR	644.8	SG3	199.5		
RRT	-.2695	RRF	-.3361	RTF	.9247		
SGB	16101.1	R23	.0898	R13	-.9248		
SG1	16089.2	SG2	620.9	THA	179.38		

ORBIT DETERMINATION ACCURACY

ST	4503.9	SR	592.0	SS	652.9		
CRT	-.5372	CRS	.7927	CST	-.9393		
LSA	4557.1	MSA	543.0	SSA	19.2		
EL1	4515.3	EL2	498.1	ALF	175.91		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 932.788 EARTH TO MARS

RL	147.48	LAL	-.00	LOL	69.85	VL	33.309	GAL	-7.65	AZL	88.34	HCA	276.64	SMA	192.26	ECC	.26647	INC	1.6563
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.330	GAP	-14.83	AZP	89.81	TAL	322.38	TAP	239.02	RCA	141.03	APO	243.49
RC	340.420	GL	10.77	GP	-2.11	ZAL	144.71	ZAP	23.88	ETS	173.78	ZAE	37.36	ETE	177.11	ZAC	87.88	ETC	255.87

V1 30.210 V2 26.458 CLP 23.79

PLANETOCENTRIC CONIC

C3	26.055	VHL	5.104	DLA	-3.35	RAL	217.29	RAD	6568.1	VEL	12.142	PTH	2.18	VHP	7.284	DPA	-4.92	RAP	189.03

ECC 1.4288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 16	2174.66	-18.58	38.97	82.13	111.76	22 5 31	1574.7	-15.46	31.68
90.00	8 41 26	5026.73	23.26	221.37	83.96	73.38	10 5 13	4426.7	20.76	213.59
100.00	22 49 3	1917.31	-19.69	19.56	81.64	112.95	23 21 0	1317.3	-16.41	12.30
100.00	10 4 21	4759.31	24.41	201.32	83.57	72.19	11 23 40	4159.3	21.75	193.54
110.00	23 53 42	1714.92	-22.67	2.74	80.18	116.30	24 22 17	1114.9	-18.95	355.58
110.00	11 16 11	4534.47	27.49	183.04	82.36	68.84	12 31 46	3934.5	24.37	175.26

DIFFERENTIAL CORRECTIONS

TDE	-2.4017	TRA	11.0248	TC	-9.8061	BAU	3.4167
RDE	.5304	RRA	.0727	RC3	.2353	FAU	.01770
FDE	-.7331	FRA	1.6342	FC3	-.5881	BSP	56601
BDE	2.4596	BRA	11.0251	BC3	9.8089	FSP	666

MID-COURSE EXECUTION ACCURACY

SGT	16160.3	SGR	647.2	SG3	181.5		
RRT	-.2865	RRF	-.3559	RTF	.9133		
SGB	16173.2	R23	.0980	R13	-.9133		
SG1	16161.3	SG2	620.0	THA	179.34		

ORBIT DETERMINATION ACCURACY

ST	4603.1	SR	595.9	SS	623.4		
CRT	-.5527	CRS	.8072	CST	-.9373		
LSA	4652.1	MSA	538.1	SSA	18.8		
EL1	4615.0	EL2	495.3	ALF	175.86		

LAUNCH DATE DEC 2 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 936.878 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.317 GAL -7.94 AZL 88.36 HCA 277.90 SMA 192.40 ECC .26937 INC 1.6418 V1 30.210
RP 207.08 LAP -1.63 LOP 347.76 VP 24.331 GAP -15.02 AZP 89.77 TAL 321.21 TAP 239.11 RCA 140.58 APO 244.23 V2 26.449
RC 341.179 GL 10.41 GP -2.08 ZAL 145.93 ZAP 23.55 ETS 173.76 ZAE 36.72 ETE 177.09 ZAC 88.12 ETC 255.86 CLP 23.46

PLANETOCENTRIC CONIC

C3 27.387 VHL 5.233 DLA -4.07 RAL 218.27 RAD 6568.1 VEL 12.197 PTH 2.19 VHP 7.403 DPA -5.29 RAP 189.90 ECC 1.4507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 35	2164.62	-18.33	38.34	83.79	111.97	22 14 39	1564.6	-15.18	31.07
90.00	8 39 59	5061.53	23.92	223.71	86.08	74.38	10 4 21	4461.5	21.55	215.85
100.00	22 58 1	1908.37	-19.45	19.00	83.29	113.15	23 29 49	1308.4	-16.15	11.77
100.00	10 3 14	4793.01	25.09	203.59	85.71	73.20	11 23 7	4193.0	22.55	195.71
110.00	0 5 49	1708.42	-22.47	2.34	81.80	116.46	0 34 17	1108.4	-18.73	355.19
110.00	11 15 51	4565.72	28.24	185.16	84.53	69.89	12 31 57	3965.7	25.24	177.27

DIFFERENTIAL CORRECTIONS

TDE-2.5490 TRA11.4427 TC3-9.4513 BAU 3.4615
RDE .5472 RRA .0625 RC3 .2302 FAU .01393
FDE -.7112 FRA 1.5227 FC3 -.4402 BSP 56658
BDE 2.6071 BRA11.4429 BC3 9.4541 FSP 601

MID-COURSE EXECUTION ACCURACY

SGT16229.2 SGR 649.4 SG3 164.2
RRT -.3031 RRF -.3751 RTF .8988
SGB16242.2 R23 .1073 R13 -.8988
SG116230.4 SG2 618.8 THA 179.30

ORBIT DETERMINATION ACCURACY

ST 4698.2 SR 599.5 SS 592.4
CRT -.5668 CRS .8217 CST -.9344
LSA 4743.3 MSA 533.4 SSA 18.5
EL1 4710.6 EL2 492.6 ALF 175.82

LAUNCH DATE DEC 2 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 940.944 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.325 GAL -8.24 AZL 88.37 HCA 279.17 SMA 192.55 ECC .27240 INC 1.6271 V1 30.210
RP 207.17 LAP -1.61 LOP 349.02 VP 24.330 GAP -15.21 AZP 89.74 TAL 320.02 TAP 239.19 RCA 140.10 APO 245.00 V2 26.438
RC 341.936 GL 10.05 GP -2.05 ZAL 147.13 ZAP 23.23 ETS 173.73 ZAE 36.09 ETE 177.06 ZAC 88.36 ETC 255.84 CLP 23.15

PLANETOCENTRIC CONIC

C3 28.809 VHL 5.367 DLA -4.77 RAL 219.24 RAD 6568.2 VEL 12.255 PTH 2.20 VHP 7.525 DPA -5.65 RAP 190.78 ECC 1.4741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 44	2155.31	-18.09	37.76	85.47	112.17	22 23 39	1555.3	-14.92	30.52
90.00	8 38 35	5096.07	24.53	226.06	88.22	75.40	10 3 31	4496.1	22.29	218.11
100.00	23 6 50	1900.15	-19.23	18.49	84.96	113.33	23 38 30	1300.1	-15.91	11.28
100.00	10 2 11	4826.47	25.73	205.87	87.86	74.24	11 22 37	4226.5	23.32	197.90
110.00	0 13 52	1702.60	-22.29	1.98	83.44	116.61	0 42 14	1102.6	-18.54	354.85
110.00	11 15 34	4596.78	28.95	187.30	86.73	70.98	12 32 11	3996.8	26.08	179.29

DIFFERENTIAL CORRECTIONS

TDE-2.6970 TRA11.8708 TC3-9.1094 BAU 3.5095
RDE .5645 RRA .0518 RC3 .2250 FAU .01024
FDE -.6870 FRA 1.4067 FC3 -.3077 BSP 56676
BDE 2.7554 BRA11.8709 BC3 9.1122 FSP 537

MID-COURSE EXECUTION ACCURACY

SGT16297.5 SGR 651.5 SG3 147.6
RRT -.3193 RRF -.3936 RTF .8802
SGB16310.5 R23 .1183 R13 -.8803
SG116298.8 SG2 617.4 THA 179.27

ORBIT DETERMINATION ACCURACY

ST 4788.2 SR 602.9 SS 560.1
CRT -.5797 CRS .8364 CST -.9305
LSA 4829.5 MSA 528.8 SSA 18.1
EL1 4801.1 EL2 489.9 ALF 175.78

LAUNCH DATE DEC 2 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 944.985 EARTH TO MARS

RL 147.48 LAL -.00 LOL 69.85 VL 33.333 GAL -8.54 AZL 88.39 HCA 280.43 SMA 192.70 ECC .27555 INC 1.6124 V1 30.210
RP 207.27 LAP -1.59 LOP 350.29 VP 24.329 GAP -15.41 AZP 89.71 TAL 318.82 TAP 239.25 RCA 139.60 APO 245.80 V2 26.427
RC 342.690 GL 9.70 GP -2.03 ZAL 148.30 ZAP 22.93 ETS 173.71 ZAE 35.47 ETE 177.04 ZAC 88.59 ETC 255.84 CLP 22.84

PLANETOCENTRIC CONIC

C3 30.324 VHL 5.507 DLA -5.45 RAL 220.20 RAD 6568.2 VEL 12.317 PTH 2.22 VHP 7.649 DPA -6.03 RAP 191.67 ECC 1.4991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 44	2146.71	-17.87	37.23	87.15	112.34	22 32 30	1546.7	-14.68	30.00
90.00	8 37 15	5130.35	25.10	228.41	90.38	76.44	10 2 46	4530.3	22.99	220.37
100.00	23 15 30	1892.61	-19.03	18.03	86.63	113.50	23 47 2	1292.6	-15.69	10.83
100.00	10 1 10	4859.67	26.33	208.16	90.04	75.30	11 22 10	4259.7	24.05	200.10
110.00	0 21 46	1697.43	-22.14	1.66	85.08	116.74	0 50 4	1097.4	-18.37	354.55
110.00	11 15 19	4627.62	29.62	189.45	88.95	72.10	12 32 27	4027.6	26.89	181.33

DIFFERENTIAL CORRECTIONS

TDE-2.8455 TRA12.3091 TC3-8.7756 BAU 3.5587
RDE .5822 RRA .0407 RC3 .2195 FAU .00659
FDE -.6601 FRA 1.2867 FC3 -.1881 BSP 56654
BDE 2.9044 BRA12.3092 BC3 8.7783 FSP 475

MID-COURSE EXECUTION ACCURACY

SGT16361.5 SGR 653.6 SG3 131.7
RRT -.3350 RRF -.4105 RTF .8556
SGB16374.6 R23 .1310 R13 -.8557
SG116363.0 SG2 615.7 THA 179.23

ORBIT DETERMINATION ACCURACY

ST 4873.1 SR 605.9 SS 526.5
CRT -.5914 CRS .8514 CST -.9255
LSA 4910.8 MSA 524.5 SSA 17.8
EL1 4886.4 EL2 487.2 ALF 175.75